UCLA
UCLA Previously Published Works

Title

Suppletion in Zapotec

Permalink

Journal

Linguistics, 55(4)

ISSN

0024-3949

Author

Operstein, Natalie

Publication Date

2017-01-26

DOI

10.1515/ling-2017-0010

Peer reviewed

Suppletion in Zapotec

Natalie Operstein

This paper provides an overview of suppletion phenomena in Zapotec. As established by previous cross-linguistic studies of suppletion, most suppletion phenomena in Zapotec occur in the verb system. Nominal suppletion is attested in the possessed forms of selected nouns, such as *tortilla*, *clothing*, *house*, and *pueblo*, and the numeral system includes suppletive forms of the numeral *first*. Verbal suppletion types include suppletion based on aspect, mood, person/number of the subject, person of the oblique object, and valence. Each category of nominal and verbal suppletion is represented by a small number of strongly suppletive forms that appear to be etymologically distinct and a larger number of weakly suppletive forms that appear to derive from morphological processes that have ceased to be productive. By documenting suppletion phenomena across the Zapotec family, the present study aims to contribute both to the comparative Zapotec linguistics and to the empirical basis of the typological and theoretical investigation of suppletion.

KEYWORDS: inflectional suppletion, nominal suppletion, aspect suppletion, recipient person suppletion, addressee person suppletion

1. Introduction[1]

This paper reports on patterns of suppletion found in Zapotec, a language family of Mesoamerica. As the first study to document the phenomenon of suppletion across this language family, it aims to contribute both to the historical and comparative Zapotec linguistics, currently a field with many unanswered questions, and to the empirical basis of the cross-linguistic typological and theoretical investigation of suppletion, such as found in the works of Mel'čuk (1976, 1994), Markey (1985), Veselinova (1997, 2006), Corbett (2007, 2009), and Vafaeian (2013). By investigating suppletion patterns that are common in Zapotec but perhaps less common cross-linguistically, this paper also aims to contribute to our understanding of the phenomenon of suppletion itself, including its scope, diachronic sources, and possible areal and/or genetic biases.

Various researchers have acknowledged that defining suppletion in a comprehensive, theoretically neutral way is difficult, and in-depth cross-linguistic studies of suppletion have revealed a number of issues pertaining to a satisfactory definition of this phenomenon (cf. Veselinova 2006: 4). A useful and widely cited working definition of suppletion is the one proposed by Mel'čuk (1976: 52, 1994: 358):

> We propose to call s u p p l e t i o n the relationship between any two linguistic units A and B which meet the following condition: the semantic distinction between A and B is regular, while the formal distinction between them is not regular. (Mel'čuk 1976: 52) [emphasis original]

The above definition is usefully broad to encompass a wide range of irregular morphological relationships spanning both inflectional and non-inflectional categories.

Though the individual researchers often disagree on the range of phenomena included within the scope of suppletion,[2] previous published research has identified some of the typical areas of grammar that tend to provide the environment for the rise of suppletive relationships. In verb inflection, such areas include the TAM categories (cf. *ghadi* 'go [indicative]' ~ *sir* 'go [imperative]' in Moroccan Arabic or *go* ~ *went* in English), person and/or number of the verb's subject (cf. *muku 'die [singular]' ~ *ko(i)- 'die [plural]' in Proto-Uto-Aztecan, *vais* 'I go' ~ *allons* 'we go' in French or *am* ~ *is* in English), and person and/or number of the verb's direct object (cf. *wiiki* 'bring along [singular/dual object]' ~ *tsaama* 'bring along [plural object]' in Hopi) or indirect object (cf. *tadi:* 'give to 3rd person' ~ *kej-* 'give to 1st/2nd person' in Kolyma Yukaghir). Outside the verb system, some typical areas of inflectional suppletion include nominal number (compare *ox* ~ *oxen* with *cow* ~ *cows*), nominal possession (compare *ŋah* 'house [unpossessed]' ~ *-otot* 'house [possessed]' with *oje* 'foot [unpossessed]' ~ *-oj* 'foot [possessed]' in Jacaltec), pronominal case (cf. *I* ~ *me*), and comparison in adjectives (compare *good* ~ *better* with *nice* ~ *nicer*). Outside inflection, suppletion has been noted in the relationship between the names of male and female humans and animals (cf. *ram* ~ *ewe* versus *lion* ~ *lioness*), cardinal and ordinal numerals (cf. *one* ~ *first* versus *ten* ~ *tenth*), nouns and corresponding adjectives (cf. both French *people* ~ *populaire* and English *people* ~ *popular*), and verbs and corresponding nouns (cf. French *dormir* 'to sleep' ~ *sommeil* 'sleep') (Chinchlej 1980; Dressler 1985; Markey 1985; Smith Stark 2001; Comrie 2003; Veselinova 1997, 2006; Vafaeian 2013; Haugen and Everdell 2015). The lexical meanings that are particularly conducive to the development of suppletion have also been identified by previous research. For example, Veselinova (2006: 67, 139) finds that tense-based suppletion most commonly affects the verb meanings 'be/exist' and 'go/come' and that suppletive imperatives most commonly occur with the verbs 'come' and 'go'. Vafaeian (2013) finds that nominal suppletion is most often attested among nouns denoting humans, particularly the noun 'child', while the adjectival meanings most prone to suppletion refer to value (e.g. 'good') or size (e.g. 'big').

The relationship of suppletion is generally understood as being free from etymological considerations; the forms in a suppletive relationship may be etymologically distinct, or they may be etymologically identical (cf. a discussion of this issue in Mel'čuk 1994: 355 and Veselinova 2006: 14; see Rudes 1980 for an alternative view). Other pertinent concepts are "strong" suppletion, in which the forms in a suppletive relationship share no phonological material; and "weak" suppletion, when some phonological material is shared between the forms (Dressler 1985).[3] An example of strong suppletion is Spanish *va* 's/he goes' versus *fue* 's/he went'; an example of weak suppletion is Latin *fio* (passive) versus *facio* (active) 'I do' (Juge 2000). In practical terms, strong and weak suppletion represent end points in a continuum rather than discrete categories, as irregular morphological relationships often range from strongly to

---

[2] For example, Veselinova (2006: 10) observes that suppletion operating within derivation is often not regarded as suppletion. Haugen and Everdell (2015: 237) advocate a gradient approach to suppletion and the areas of grammar in which it operates: "Indeed, as there is no theory-neutral way to define 'suppletive' vs. 'non-suppletive', nor even 'lexical' vs. 'functional', the best approach may be one that recognizes a cline between these notions rather than force a discrete discontinuity based solely on theory-internal motivations".

[3] Other terms covering this distinction are "full" and "partial" suppletion (Corbett 2007) and "prototypical" and "less prototypical" suppletion (Veselinova 2006: 47).

weakly suppletive (Mel'čuk 1994: 379-381; Veselinova 2006: 15-18). Weak suppletion may arise historically from sound change, as is the case of Spanish *dig-o* 'I say' versus *dic-es* 'you say'; or from analogy, as in Campidanese Sardinian *bandu* 'I go', technically from *andai* 'go' but influenced by the semantically related descendant of Latin *vadere* 'go' (Juge 2000, 2013). Strong suppletion may arise from a more drastic sound change, as in English *am* versus *is*, both from Proto-Indo-European *es-; or from sharing of forms between two lexemes, as seen in the paradigm of Italian *andare* 'go', which substantially incorporates forms of *vadere* (shown in 1).

(1)   Suppletion in the present indicative of Italian *andare* 'go'

   vado 'I go'   *andiamo* 'we go'
   vai 'you (sg.) go'   *andate* 'you (pl.) go'
   va 's/he goes'   *vanno* 'they go'

Another source of suppletion are morphological processes that have ceased to be productive and have become synchronically opaque (Mel'čuk 1994: 392-393; Veselinova 2006: 97-98). As shown in this paper, most suppletive forms in Zapotec derive from this source.

 The remainder of the paper is organized as follows. Section 2 provides the background information about Zapotec, focusing on its internal classification and the most relevant morphophonemic properties. Section 3 is devoted to suppletion phenomena operating within inflection. Subsection 3.1 focuses on the only type of suppletion reported in the noun system, found in the possessed forms of selected nouns. Subsection 3.2 looks at suppletion based on the person of the verb subject. Subsection 3.3 examines suppletion in the verbs *give* and *say* which is based on the person of the oblique object. Subsection 3.4 is devoted to suppletive imperatives, and Subection 3.5 looks at suppletion based on aspect. Section 4 is devoted to suppletion patterns outside the area of inflection, focusing on suppletion in the domain of valence (in 4.1) and the derivation of ordinal numerals (in 4.2). Section 5 summarizes the main findings and points out some directions for future research.

2. Zapotec
This section provides relevant background information about Zapotec. Additional aspects of Zapotec morphology will be outlined in the sections devoted to the corresponding types of suppletion.

 Zapotec languages are spoken primarily in the southern Mexican state of Oaxaca. *The Ethnologue* (Lewis et al. 2015) recognizes upwards of fifty varieties of Zapotec, grouped into several branches of unequal size. The mutual relationships among the branches are not yet completely worked out, as is the precise taxonomic status of the Zapotec varieties listed in *The Ethnologue*. The Zapotec family tree in Figure 1 reflects the work of Kaufman (1989, 1994-2007, 2006), Smith Stark (2007), and Operstein (2012).
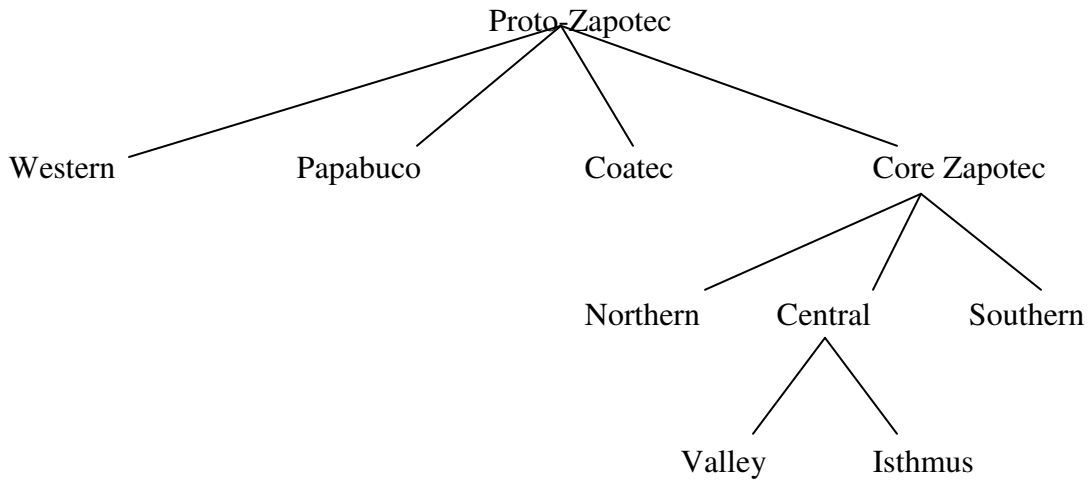
Figure 1—Zapotec language family

The data cited in this paper comes from a number of Zapotec varieties. Their names and genetic affiliation are listed in Table 1; Figure 2 provides their approximate location in the Mexican State of Oaxaca.

Table 1. Zapotec varieties in this paper

| Northern Zapotec	Central Zapotec	Southern Zapotec	Papabuco	Western Zapotec
Zoogocho ISO code zpq	Chichicapan ISO code zpv	Coatecas Altas ISO code zca	Zaniza ISO code zpw	Lachixío ISO code zpl
Yatzachi ISO code zav	Quiaviní ISO code zab	Quiegolani ISO code zpi	Texmelucan ISO code zpz	
Yalálag ISO code zpu	Güilá ISO code ztu			
Atepec ISO code zaa	Ocotepec ISO code ztu			
Macuiltianguis ISO code zaa	Córdova's (no ISO code)			
Choapan ISO code zpc	Mitla ISO code zaw			
	Quiatoni ISO code zpf			
	Albarradas ISO code zas			
	Isthmus ISO code zai			
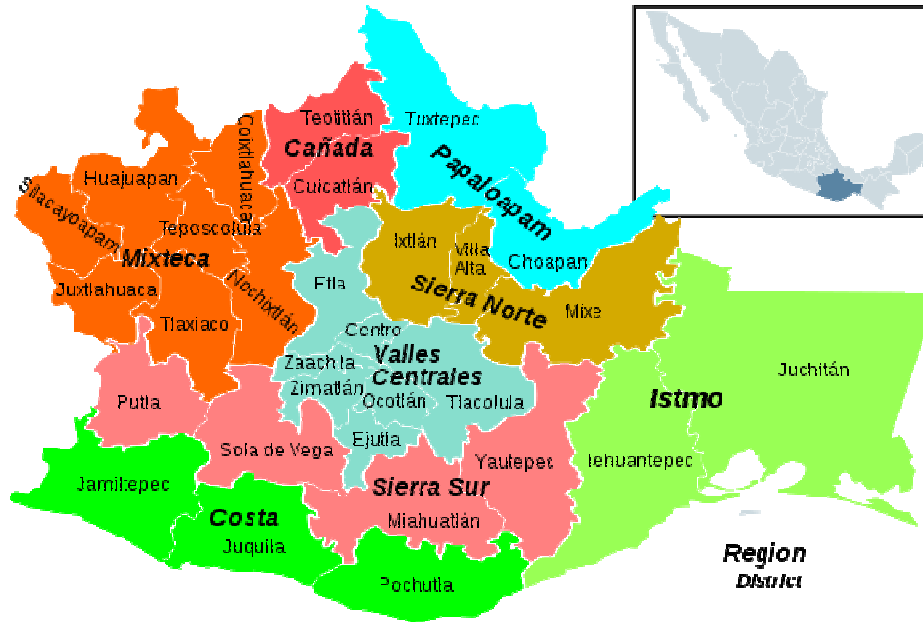
Figure 2—Map of the State of Oaxaca[4]

Zapotec languages have a fortis/lenis opposition in the consonant system, typically realized as a difference in duration in the sonorants and as a combination of duration, voicing, aspiration, and/or degree of stricture in the obstruents. Historically, the fortis/lenis contrast derives from a geminate/single one (Swadesh 1942). Proto-Zapotec heteromorphemic consonant sequences have developed in the same way as geminates; as a result, some morphological alternations that are relevant to this study, such as mood- and valence-based alternations, may be realized by means of the fortis/lenis contrast. The examples in (2) provide an illustration of this pattern.[5] As may be observed, the difference in transitivity between *gaʂ* 'hide (intr.)' and *kaʂ* 'hide (tr.)' is expressed in the modern language by means of the lenis/fortis contrast on the initial consonant. In Proto-Zapotec, the transitive verb contained the causative prefix *k-.

(2)   *kaʔttziʔ   >   Zaniza Zapotec *gaʂ* 'hide (intr.)'
        *k-ka:ʔttziʔ   >   Zaniza Zapotec *kaʂ* 'hide (tr.)'

Morphologically, Zapotec languages are head-marking and mainly agglutinative. The agglutinative morphology of Zapotec may be illustrated with the verb form in (3), from Yalálag Zapotec.

---

(3)   *B-tʃe'-gak=e'=be'.*
       COMP-take.away-PL=3RESP=3FAM
       'S/he took them away' or 'They took it away'.[6]
       (López and Newberg 2005: 10)

Zapotec languages mark verbal inflectional categories by means of prefixes on verbs. The primary categories include mood and aspect, and their number differs across the varieties. For example, Pickett et al. (2001) distinguish seven such categories in Isthmus Zapotec, exemplified in (4) (Pickett et al. 2001: 60-61). The aspect prefixes are separated from the verb stems by dashes.

(4)   Habitual   *ri-re'e*   'comes out'   *r-e'*   'drinks'
       Progressive   *ka-re'e*   'is coming out'   *kaj-é'*   'is drinking'
       Potential   *gi-re'e*   'may come out'   *g-e'*   'may drink'
       Perfect   *wa-re'e*   'has come out'   *waj-é'*   'has drunk'
       Future   *za-re'e*   'will come out'   *z-e'*   'will drink'
       Irrealis   *ni-re'e*   'would come out'   *ɲ-e'*   'would drink'
       Completive   *bi-re'e*   'came out'   *gw-e'*   'drank'

Some of the above categories are not found in all the varieties; for example, the definite and progressive forms are not attested in the documented varieties of Papabuco. The inflectional categories found in all Zapotec varieties are the habitual and completive aspect and the potential and irrealis mood forms. Tense has no independent morphological expression in Zapotec, and temporal reference is derived from meanings that are primarily aspectual or modal, as seen in the approximate English translations in (4).

The verb forms that are particularly relevant for the study of suppletion are the completive aspect and potential mood. The completive aspect form typically indicates a completed action in the future or in the past; it has no inherent temporal reference, which is derived from the context (cf. Munro 2006: 176). Another use of the completive is as imperative (this use is further discussed in Section 3.4). The potential mood form may be used in a variety of dependent clauses; in main clauses, it typically indicates actions that are unrealized at the moment of speaking, which may include future actions, wishes, and imperatives (Munro 2006: 176-178; Butler 1980: 30-33). Although the completive is primarily viewed as an aspectual category and potential as a mood category, each form can also be used in the primary domain of the other; for example, modal uses of the completive include its use as the imperative and as a substitute for irrealis in counterfactual conditionals (Munro 2006: 181). Given their wide range of modal and

---

[6] The following abbreviations and symbols are used: COMP = completive aspect, F = feminine, FAM = familiar pronoun, HAB = habitual, intr. = intransitive, IMP = imperative, M = masculine, NEG = negative, PFVE = perfective aspect, PL = plural, POT = potential mood, RESP = respectful pronoun, S = singular, tr. = transitive, 1 = first person, 2 = second person, 3 = third person, V' = checked vowel, V'V = laryngealized (creaky) vowel, (-) = morpheme boundary, (=) = clitic boundary, (.) separates words in multi-word glosses. All the examples have been transcribed in the IPA following the indications in the original sources, in which practical orthographies tend to be employed. The only exceptions are forms from Quiaviní Zapotec (Munro and Lopez 1999; Munro 2006) and Córdova's Zapotec (Córdova 1578a [1987], 1578b [1987]), which are cited in the original orthographies and enclosed in angle brackets.

non-modal uses, the basic distinction between the completive and potential may also be viewed as at least partly aspectual, with the potential representing the imperfective and completive the perfective form. A close connection between imperfective and irrealis is confirmed by cross-linguistic studies (Fleischman 1995), and the modal uses of the potential may represent an extension of an earlier aspectual meaning.[7]

The allomorphs of the completive and/or potential marker are used by Zapotecanists for dividing Zapotec verbs into inflectional classes. The most comprehensive classification is the one proposed in Kaufman (1994-2007). It uses both these markers, in their reconstructed Proto-Zapotec shape, and distinguishes four verb classes labeled A through D. The first three classes are identified solely by the allomorphs of the potential and completive markers (see Table 2). Class D uses the same allomorphs as class C but differs from it by having a suppletive verb stem in the completive aspect.

Table 2. Zapotec verb classes

	Class A	Class B	Class C	Class D
Potential prefix	*ki-	*ki-	*k-	*k-
Completive prefix	*kʷe-	*ko-	*ko-	*ko-
Suppletive completive stem	No	No	No	Yes

Tables 3 and 4 illustrate the verb classes with forms from Zaniza Zapotec, cited after Operstein (2015: 38-40). For ease of analysis, wherever feasible the TAM prefix is separated from the verb stem by a dash. As seen in Table 3, the consonant-initial class D verb *baw* 'carve' uses a different (suppletive) stem, *law*, in the completive aspect. In Table 4, the vowel-initial class D verb *as* 'sleep' likewise uses a different (suppletive) stem, *tas*, in the completive aspect. Verbs of other inflectional classes use the same stem in the completive aspect as in the potential mood.

Table 3. Zaniza Zapotec verb classes: consonant-initial verbs

	Class A *ʐal* 'find'	Class B *zah* 'see'	Class C *bi'* 'turn (intr.)'	Class D *baw* 'carve'
Potential mood	*gi-ʐal*	*gi-zah*	*kʷi'*	*kʷaw*
Completive aspect	*bi-ʐal*	*u-zah*	*u-bi'*	*u-law*

---

[7] An indirect support for the aspectual basis of the potential/completive distinction is provided by the formation of the Zapotec imperative: while the positive second person singular imperative may use the completive or potential forms, depending on the level of politeness, only the potential form may be used in the corresponding negative imperative. This is similar to what takes place in Russian, where the positive imperative may use both the imperfective and perfective aspects while the negative imperative can only use the imperfective aspect form (Aikhenvald 2010: 182). The potentially aspectual nature of the distinction between the potential and completive cannot be pursued here further, however, and will be left for future investigation.

Table 4. Zaniza Zapotec verb classes: vowel-initial verbs

	Class A *ut* 'kill'	Class B	Class C *o* 'grind'	Class D *as* 'sleep'
Potential mood	*k-ut*	—	*g-o*	*g-as*
Completive aspect	*bi-t*	—	*gu*	*u-tas*

In Zapotec, most instances of suppletion appear to result from past morphological processes that have ceased to be productive and have become synchronically opaque; as such, they are instances of weak suppletion. Strong suppletion is present to a lesser extent, and most instances of it are found in the same domains of grammar as those of weak suppletion. The next section will look at suppletion in the domain of inflection, beginning with the only suppletion type reported in the noun system. The discussion in each subsection follows a common outline: first, it provides background information about the regular morphological means of forming the respective inflectional category, and then the suppletive patterns are outlined against this background.

Before proceeding, a brief note on the nature of the data. The field of Zapotec linguistics comprises several types of publications, not all of them of commensurable quality, availability, or level of detail. The primary sources consist of field data amassed by the individual researchers, as well as of dictionaries, brief descriptive or pedagogical grammars, and other descriptive materials published mainly by the Summer Institute of Linguistics. Other sources include theses and dissertations, some of which provide grammatical descriptions, articles exploring selected issues in individual or a group of Zapotec languages, and materials privately circulated by the researchers. Early documentation is available in the form of a sixteenth-century dictionary and grammar (Córdova 1578a [1987] and 1578b [1987]); the most complete reconstruction of Proto-Zapotec is in the form of an unpublished manuscript (Kaufman 1994-2007). This paper has made use of all these types of materials, and aims at providing the first synthesis of suppletion-related phenomena found therein.

3. Inflectional suppletion
3.1 Nominal suppletion
Previous observers have indicated that suppletive patterns are more at home in the verb than in the noun system (Mel'čuk 1976: 68; Bybee 1985: 93). This observation is borne out for Zapotec, though, at least for Zapotec languages, it may be an automatic consequence of their rich verbal and poor nominal morphology. The only area where inflection is marked on the Zapotec noun, and then not in all varieties of Zapotec, is in possessive constructions; this is where nominal suppletion has been reported. One way to organize the discussion is by focusing on a specific language, and below I examine the relevant data from Zoogocho Zapotec, a Northern variety, using Long and Cruz (2000) as my source.

Zoogocho Zapotec has three constructions for indicating attributive possession. The first one consists of juxtaposing the possessee and possessor nouns, as in (5a), or adding a pronominal clitic to the possessed noun, as in (5b).

(5a)   *jitʃχ   go'n:*
       head   bull
       'bull's head'

(5b)   *jitʃχ=a'*
       head=1s
       'my head'

In common with many other Zapotec varieties (Martínez and Marlett 2010), Zoogocho Zapotec nouns are divided into obligatorily (inherently) possessed and optionally (non-inherently) possessed. In Zoogocho Zapotec, inherently possessed nouns include many body part and kinship terms, and the possessive construction in (5) is used to express inherent possession. This construction is also used for inherent possession in other Zapotec varieties,[8] and is the only attested possessive construction in such varieties as Lachixío (Western) Zapotec and Zaniza (Papabuco) Zapotec (Persons et al. 2009; Operstein 2015). This construction is also used with body part terms grammaticalized as spatial orientation terms, both in Zoogocho and in other Zapotec varieties (cf. the examples below and pertinent remarks in Aikhenvald 2013: 10).

(6a)   *jitʃχ   puerta'*
       head   door
       'above the door'

(6b)   *koʒe'   puerta'*
       back   door
       'behind the door'

The other possessive constructions in Zoogocho Zapotec involve more formal marking and are used for optionally (non-inherently) possessed nouns. One of these consists in furnishing the possessee with the prefix *ʐ-* (shown in 7). This prefix causes some predictable phonological changes in the initial consonant of the noun.

(7)   *ʐ-χed=a'*
      POSS-chicken=1s
      'my chicken'

The other construction interposes between the possessee and possessor the possessive preposition *tʃe* (shown in 8). The possessor may be a noun phrase or a pronominal clitic.

---

[8] These include Quiegolani (Southern) Zapotec (Black 2000: 21), Isthmus (Central) Zapotec (Pickett et al. 2001: 22), and Mitla (Central/Valley) Zapotec (Stubblefield and Miller de Stubblefield 1991: 200).

(8a) *ʐoa' tʃe Bed*
  corn POSS Pedro
  'Pedro's corn'

(8b) *ʐoa' tʃe=gake'*
  corn POSS=3PL
  'their corn'

In some cases, either construction is possible with the same noun. Sonnenschein (2005: 107) notes that using different possessive constructions with the same possessee may result in a semantic difference (illustrated in 9).

(9a) *ʐ-kuʒ=e'*
  POSS-pig=3F
  'her pig (one she has at the house)'

 (9b) *kuʒ tʃe=e'*
  pig POSS=3F
  'her pig (which she might be selling at the market)'[9]

   Suppletion is observed when the possessed allomorph of a noun shares no or only a part of its phonological material with the unpossessed allomorph of the noun. The examples either explicitly cited by Long and Cruz (2000: 410-411) or contained in their dictionary are presented in Table 5.

Table 5. Suppletion in possessed/unpossessed noun allomorphs in Zoogocho Zapotec

Unpossessed allomorph	Possessed allomorph	Meaning
ladʒe'	*ʐa*	'clothing'
jet	*tʃiʐe'*	'tortilla'
jo'o	*liʒ*	'house'
jeʒ	*laʒ*	'pueblo'
jisχ^w	*l:isχ^w*	'net, muzzle'

---

[9] The use of different possessive constructions with the same possessee may also bring out the different senses of a polysemous noun (cf. Aikhenvald 2013: 14). A relevant example is offered by Marlett (2014: 14-15) for Choapan Zapotec. Compare

ʃ-ti'dz=a'
POSS-word/language=1S
'my language'

with

diidza' ki=a'
word/language POSS=3F
'my words'

10

nis	s̩is	'water'
no'o	z̩o'o	'wife'
beko'	z̩iko'	'dog'
bedʒχ^w	z̩idʒχ^w	'turkey'

The examples in Table 5 may be grouped into two sets of unequal size. In the set consisting of *ladʒe'* ~ *z̩a* 'clothing', *jet* ~ *tʃiz̩e'* 'tortilla', and *jo'o* ~ *liʒ* 'house', the members of each pair share no phonological material and appear to be etymologically distinct. This conclusion is corroborated by such historical reconstructions as *yo'o 'house' ~ *lityi 'house, home, afterbirth' for the pair *jo'o* ~ *liʒ*. The etymological independence of these words is further corroborated by the dictionary entries in Long and Cruz (2000), which show that the possessed allomorphs are, in fact, polysemous nouns; only one of their meanings corresponds to the relevant meaning of the unpossessed allomorph (see the discussion of *ladʒe'* ~ *z̩a* below).

The remaining pairs differ only in the initial consonant or consonant-vowel sequence, which suggests that they derive from no longer transparent prefixation. Although the precise nature of all the prefixes involved is at present unclear, this conclusion is suggested, e.g., by the pair *beko'* ~ *z̩iko'* 'dog', where *be-* appears to descend from *kwe-, a sequence often reconstructed in the names of animals, while *z̩i-* may continue the possessive prefix, reconstructed by Kaufman (1994-2007) as *xi-.[10] The etymological connection between members of these pairs is further corroborated by the dictionary entries in Long and Cruz (2000), which show that the only meaning of each possessed form is that of the possessed allomorph of the corresponding non-possessed noun.

A closer look at the dictionary entries for *ladʒe'* and *z̩a* reveals additional information pertinent to an analysis of suppletion. The primary meaning of *ladʒe'* is 'cloth', while 'clothing' is listed as its secondary meaning; no further meanings are listed for this lexeme. By contrast, *z̩a* has seven meanings, the first of which corresponds to the English notion of 'skin' (the Spanish glosses are divided into *piel* 'human and animal skin' and *cáscara* 'skin of vegetables and fruit'). 'Clothing' is listed as the third meaning of *z̩a*, and its remaining meanings are as follows: 'saddle', 'case', 'book cover', and a member of such compounds as 'pork rind', 'sheep wool', 'hard-shelled', 'soft-shelled', and 'hairy'. Based on this entry, the primary meaning of *z̩a* appears to be 'skin', while 'clothing' appears to represent one of its extensions. Both *ladʒe'* and *z̩a* emerge as polysemous words, with the primary meaning of *ladʒe'* being 'cloth' and the primary meaning of *z̩a* 'skin'; 'clothing' appears to represent a secondary meaning for each word. Another interesting fact revealed by the dictionary entries is that the polysemy of *ladʒe'* may be disambiguated through the use of different possessive constructions (see Table 6 and footnote 7).

---

[10] Similarly, *bi-da'ani'* ~ *ʒ-ta'ani* 'huipil' (regional blouse) in Isthmus Zapotec (Pickett et al. 2001: 22).

Table 6. Polysemy of *ladʒe'* as revealed through possessive constructions

Unpossessed form	Possessed form	Meaning of the possessed form
ladʒe'	*z̦-ladʒe'*	'(someone's) cloth'
ladʒe'	*z̦a*	'(someone's) clothing'

In combination, the above facts appear to point to an initial stage of a pragmatically-guided merger between *ladʒe'* and *z̦a*, where each noun retains its autonomy in all meanings except 'clothing'. In the latter meaning, the two nouns have become formally interdependent through the possessive construction. In this respect, the suppletive pair *ladʒe'* ~ *z̦a* contrasts with the pair *jȩt* ~ *ku'n* 'tortilla' in Mitla Zapotec. Although *ku'n* appears to be etymologically distinct from *jȩt*, it has no meaning listed in the dictionary other than as the possessed form of *jȩt* (Stubblefield and Miller de Stubblefield 1991). This seems to correspond to the final stage of the merger, after the noun that had supplied the possessed allomorph to another noun has lost all independent existence.

A similar, if less detailed, picture also emerges from examining the entries for the pair *jet* ~ *tʃiz̦e'*. The only meaning listed for *jet* is 'tortilla', whereas *tʃiz̦e'*, in addition to being the possessed allomorph of 'tortilla', has the meaning 'honeycomb'. The meanings listed for *jo'o* are 'house, building', whereas those listed for *liʒ* are 'house, home, place where an animal lives (such as a nest, anthill, burrow, cocoon, stable or manger), shop, sheath'. It is thus possible to see a common pattern in all three strongly suppletive pairs: one of the meanings of a polysemous word enters into a complementary relationship with the equivalent meaning of a semantically related word, such that one of the pair of words lends the free, and the other the possessed, allomorph for that specific meaning. In all three cases, the possessed allomorph has been supplied by the word with the wider range of meanings: *z̦a* in the case of 'clothing', *tʃiz̦e'* in the case of 'tortilla', and *liʒ* in the case of 'house'. This fact may be explainable by the higher frequency of use of the possessed forms of a polysemous word in natural discourse, which presumably reflects the number of the word's meanings. It is also likely that among the possessed forms of such a word the ones with the 'suppletive' meaning may have higher frequency. For instance, of the two meanings of *tʃiz̦e'* that of 'tortilla' may be used in the possessed form more often than that of 'honeycomb'.

Frequency of use appears to be the main mechanism behind the creation of suppletive paradigms, and is invoked by Bybee (1985: 92) with respect to the suppletive paradigm *go* ~ *went* in English. It is also invoked by Rudes (1980: 663-664) in his analysis of the suppletive paradigm of 'want' in Romanian, in which some of the forms are supplied by the Latin-derived *a vrea* and others by the Slavic-derived *a voi*. Rudes observes that even though native speakers can access and produce a complete set of conjugational forms for each verb, both natural discourse and written language favor *a vrea* for present tense forms of 'want' and *a voi* for its (imperfect) past tense forms, effectively creating a mixed paradigm for this verb meaning. The role of frequency is emphasized by Rudes in the following passage:

Clearly certain forms of the verb *a vrea* have been replaced by forms of *a voi*, in the sense that certain forms of the former verb have become highly infrequent while corresponding forms of the latter verb have become highly frequent. This example from Romanian would seem to show that suppletion occurs gradually in that forms of one verb do not suddenly replace forms of another, but rather that there is a gradual shift in the frequency of occurrence of forms of two verbs in contexts where either would be equally appropriate. Over time, the frequency of one form and the infrequency of the other may lead to the complete loss of the latter and its permanent replacement by the former. At this point, a suppletive verb has been created. (Rudes 1980: 666)

Another factor whose role in the creation of suppletive paradigms bears mentioning is semantic extension. It would seem, for example, that the use of *ẕa* 'skin' in the sense of 'clothing' may stem from creative variation, resulting at first in a strongly idiomatic, perhaps even slangy usage. Subsequent rise in the frequency of *ẕa* in the meaning 'clothing' would gradually remove the idiomatic/slangy overtones from this form. The role of creative variation in the rise of strong suppletion has not been sufficiently investigated, but probably needs to be assumed not only in the shift from 'skin' to 'clothing' but also in other well known cases of suppletion, e.g. when the verb 'to grow' invades the paradigm of 'be', as is the case of *be* in English and its cognates in other Indo-European languages, or when the verbs 'to sit' and 'to stand' do so (cf. *ser* and *estar* in Spanish). It may be hypothesized that strong suppletion always begins as a creative semantic extension, gradually leading to a semantic bleaching of the suppletive allomorph through more frequent use accompanied by its refunctionalization by subsequent generations of L1 learners (cf. Lightfoot 2006).

The noun meanings 'clothing', 'tortilla', 'house', and/or 'pueblo' are suppletive in a number of Zapotec varieties (shown in Table 7).

Table 7. Suppletion in possessed/unpossessed noun allomorphs

	Zoogocho	Yatzachi	Mitla	Quiaviní	Zaniza
'clothing'	*ladʒe'* ~ *ẕa*	*ladʒə'* ~ *ẕa*	*lạd* ~ *ʃab*	<*laihdy*> ~ <*x:ahb*>	*ɲedʒ* ~ *ʃab*
'pueblo'	*jeʒ* ~ *laʒ*	*jeʒ* ~ *laʒ*	*gẹdʒ* ~ *lạdʒ*	<*guee'hizh*> ~ <*lahzh:*>	*geẕ* ~ *ʎeẕ*
'tortilla'	*jet* ~ *tʃìẕe'*	*jet* ~ *tʃìẕə'*	*yẹt* ~ *ku'n*		
'house'	*jo'o* ~ *liʒ*	*jo'o* ~ *liʒ*		<*yu'uh*> ~ <*liaz*>	

Even if not all the forms in Table 7 are etymologically equivalent, the persistence of suppletion in these noun meanings suggests that the patterns themselves are descended

from the proto-language. [11] This characteristic of suppletion is cross-linguistically common, as noted by Mel'čuk (1976: 79; 1994: 392f):

> The relationship of suppletion in itself often proves stable within the limits of a certain lexeme in several related languages, while suppletive forms as such are different in these languages. (Mel'čuk 1976: 79)

The noun meanings in the suppletive pairs in Tables 5 and 7 fall within the semantic domains for which suppletion has been described in other languages. The meanings 'house', 'tortilla' and 'clothing', for example, belong to what Mel'čuk (1994: 390) identifies as the "main objects of everyday life", while 'dog' (and presumably also 'turkey') belongs to his category of "main domestic animals". Other noun meanings for which suppletion in the possessed allomorphs has been reported include 'field' in Quiaviní Zapotec (Munro 2002), 'footwear' in Quiatoni Zapotec, 'bone' in Lachixío Zapotec (Martínez and Marlett 2010: 5), and 'child', 'flower', 'comb', and 'broom' in Yatzachi Zapotec (Butler 1980: 198). Some of these, including 'bone', 'clothing', 'comb', and 'footwear', may be categorized as items intimately associated with a person (cf. Aikhenvald 2013: 12). A detailed investigation of nominal suppletion in individual Zapotec varieties is needed in order to uncover its dialectal distribution and to achieve better understanding of the morphological patterns underlying the weak suppletion.

3.2 Subject person suppletion

Although suppletion for person is cross-linguistically uncommon (cf. remarks in Bybee 1985: 93 and its treatment as a minor suppletion type in Veselinova 2006), it is well represented in Otomanguean languages including Zapotec, Mazatec, Tlapanec, and Amuzgo (Smith Stark 2001: 99 fn. 12). In Zapotec, it consists in using a different verb stem when the subject is the first person plural, first person singular, or both first person plural and first person singular, than when the subject is a non-first person singular and/or plural. For illustration, the Yatzachi Zapotec verb *sing* in (10a) (Butler 1980: 56) is contrasted with the Mitla Zapotec verb *go* in (10b) (Stubblefield and Miller de Stubblefield 1991: 213) and Atepec Zapotec verb *say* in (10c) (Nellis and Goodner de Nellis 1983: 423). The Yatzachi Zapotec verb has an invariable stem regardless of the verb's subject, whereas the Mitla Zapotec verb has different stems when the subject is the first person singular or first person plural pronoun. The Atepec Zapotec verb uses a suppletive stem with the first person singular subject pronoun. The subject pronominal clitics are separated from the verb stems by the equal sign.

(10a) Yatzachi Zapotec

tʃol:=a'	'I sing'	*tʃol:=tʃo*	'we sing' (inclusive)
tʃol:=o'	'you (sg.) sing'	*tʃol:=to'*	'we sing' (exclusive)
tʃol:=e'	's/he sings' (respectful)	*tʃol:=le*	'you (pl.) sing'
tʃol:=bo	's/he sings' (familiar)		

---

[11] Mitla and Zaniza Zapotec, which do not have suppletion in the noun meaning 'house', each possess the etyma that form the suppletive pair 'house' in the other varieties, cf. Mitla Zapotec *ju'* 'house', *ro-liz* 'home' and Zaniza Zapotec *ju'* 'house', *ʎîdʒ* 'birdcage; afterbirth'.

tʃol:=əb   'it sings' (animal)
tʃol:=ən   'it sings' (thing)

(10b) Mitla Zapotec
ria'=a	'I go'	*rion:=nu*	'we go'
ri̠=lu	'you (sg.) go'	*ri̠=tu*	'you (pl.) go'
ri̠=ni	's/he goes'	*ri̠=reni*	'they go'

(10c) Atepec Zapotec[12]
repà'=à'	'I say'	*reja=tu'*	'we say' (exclusive)
		reja=rí'u	'we say' (inclusive)
reja=lu'	'you say' (familiar)	*reja=lé*	'you (pl.) say' (fam.)
reja=kʷĩ̃'lu'	'you say' (respectful)	*reja=kʷĩ̃'lé*	'you (pl.) say' (resp.)
reja=bí	'he says' (familiar)	*reja=kabí*	'they say' (familiar)
rej=eé	'he says' (respectful)	*reja=ké*	'they say' (respectful)
rej=ã	'he says' (impersonal)	*reja=kã*	'they say' (impersonl)

In the Papabuco branch, the suppletion regularly includes both the singular and the plural first person subject stems. Table 8 illustrates some of the suppletive first person stems in Zaniza (Papabuco) Zapotec.

Table 8. Subject person suppletion in Zaniza Zapotec

Verb stem used with 2nd and 3rd person subjects	Verb stem used with 1st person subjects	Meaning
jed	*jap*	come
ut	*dut*	kill
o'	*do'*	drink
ab	*dab*	make tortillas
az	*ɾuz*	bathe
bo'	*lo'*	take out
giw	*diw*	whistle
bez	*ʎez*	wait

Based on the amount of shared phonological material between the suppletive stems, it is possible to distinguish between strong and weak suppletion in this category. In the former type, the suppletive first person stem(s) appear(s) to be etymologically distinct from the other stem(s) in the paradigm. This may be illustrated with the verb *come* in Table 9.

---

[12] The morpheme boundaries in the first person singular, third person singular respectful, and third person singular impersonal forms have been supplied by the author based on the information in Nellis and Goodner de Nellis (1983). The third person object pronoun *bí* (resulting in the glosses 'I say to him', 'you say to him', etc.) has been omitted.

Table 9. Strong subject person suppletion

2nd/3rd person subject	1st person singular subject	1st person plural subject	Meaning	Language
<eta>	*<èle>*	*<òpe>*	'come'	Córdova's
<ìe'd>	*<yàall>*	*<yo'p>*	'come'	Quiaviní
jed	*jap*	*jap*	'come'	Zaniza

In the case of weak suppletion, the suppletive stem differs from the other stem by one or more of its initial segments. Here two subtypes may be distinguished, based on whether the suppletive stem is also used in the paradigm of the 2nd/3rd persons. In the first subtype, the suppletive stem is not used in the paradigm of the 2nd/3rd persons. This pattern is illustrated with the Zaniza Zapotec forms in Tables 10 and 11.

Table 10. Weak subject person suppletion in Zaniza Zapotec

Verb stem used with 2nd and 3rd person subjects	Verb stem used with 1st person subjects	Meaning
ut	*dut*	'kill'
u	*du*	'hit'
u'n	*du'n*	'weep'
o	*do*	'grind'
o'	*do'*	'drink'
ab	*dab*	'make tortillas'

Table 11. Subject person suppletion in the Zaniza Zapotec verb *weep*

	With a non 1st person subject	With a 1st person subject
potential mood	*gu'n=j* 'he will weep'	*du'n=ã* 'I will weep'
habitual aspect	*ɾu'n=j* 'he weeps'	*ɾidu'n=ã* 'I weep'
completive aspect	*bi'ɲ=j* 'he wept'	*bidu'n=ã* 'I wept'

In the second subtype, the suppletive first person stem is also used as the completive aspect stem with the 2nd/3rd persons. This subtype seems to be mostly found in class D verbs, and is illustrated in Table 12 with forms from Córdova's Zapotec. As seen in Table 12, the stem *<tibi>* is suppletive both with respect to the person of the subject and with respect to aspect (aspect suppletion will be addressed in Section 3.5).

Table 12. Subject person suppletion in the Córdova's Zapotec verb *wash*

	1st person singular subject	1st person plural subject
potential mood	*<ca-guibi=a>* 'I will wash'	*<qui-tibi=no>* 'we will wash'
habitual aspect	*<ti-guibi=a>* 'I wash'	*<pi-tibi=no>* 'we wash'
completive aspect	*<co-tibi=a>* 'I washed'	*<pi-tibi=no>* 'we washed'

Additional Córdova's Zapotec verbs with this type of suppletion are shown in Table 13.

Table 13. Additional subject person suppletion in Córdova's Zapotec

Stem used with 2nd/3rd persons	Stem used with 1st person plural and completive aspect of 2nd/3rd persons	Meaning
<báana>	<laana>	'steal'
<ágo>	<tago>	'eat'
<api>	<chi>	'say'

The number of suppletive first person forms in any given Zapotec variety is not large. Based on the presence in a number of these forms of the prefix *d-*, also found in suppletive imperatives (Section 3.4) and suppletive completive aspect forms (Section 3.5), Operstein (2002) hypothesized that the suppletive first person plural forms may have developed out of first person plural imperatives (hortatives). In outlining this development, Operstein relies on the typologically parallel evolution in Tuscan, in which the indicative endings of first person plural forms have been substituted with the subjunctive ending *-iamo* (< Latin *-eamus*). Rohlfs (1968) attributes this development to the close pragmatic connection arising in certain contexts between the indicative and the hortative use of the subjunctive:

La sostituzione di *-amo*, *-emo*, *-imo* colla desinenza congiuntiva *-iamo* < *-eamus* potrebbe derivare dalla stretta vicinanza funzionale esistente in non pochi casi fra l'indicativo interrogativo (*imus*?, *bevimo*?) e il congiuntivo esortativo (*eamus*!, *beviamo*!), cfr. nell'italiano moderno *mi dà un caffè*? = *mi dia un caffè*! (Rohlfs 1968: 250)

[Substitution of *-amo*, *-emo*, *-imo* with the subjunctive ending *-iamo* < *-eamus* could derive from the close functional affinity that exists in many cases between the interrogative indicative (*imus*?, *bevimo*?) and exhortative subjunctive (*eamus*!, *beviamo*!), cf. in Modern Italian *mi dà un caffè*? [Will you give me some coffee?] = *mi dia un caffè*! [Give me some coffee!]

Rohlfs' proposal is further elaborated by Tuttle (2000: 478), who derives this use from high-frequency verbs like *do*, *be*, *have*, *give* and *go*, which initially would have served as the targets for the substitution and subsequently as models of change for other verbs. In Zapotec, the connection between the hortative and the indicative may have been facilitated by the use of *d*-initial hortatives, such as *do'o* (the hortative of *go* in Mitla Zapotec), in the indicative function. As argued in Operstein (2002), some of the suppletive first person forms may, in fact, incorporate cognates of Mitla *do'o*. These include the Córdova's Zapotec morpheme <tò> and the Chichicapan Zapotec morpheme *du* in the first person forms shown in (11).

(11a) Córdova's Zapotec
      <te-tò-ta=no>
      HAB-*to*-go=1PL
      'we go to bed'

(11b) Chichicapan Zapotec
      bi-du-ta=nu
      COMP-*du*-go=1PL
      'we went to bed'

As with other areas of comparative Zapotec linguistics, more historical-comparative work on Zapotec morphology is needed in order to assess the accuracy of the above hypothesis.

3.3 Recipient/addressee person suppletion

Although the verb *give* often lends itself to being represented by suppletive paradigms, the particular type of suppletion displayed by Zapotec with respect to this verb is cross-linguistically so uncommon as to have been brought to the attention of the scientific community in two publications, Smith Stark (2001) and Comrie (2003).[13] In the same paper, Smith Stark (2001) reported a similar suppletion pattern with respect to the verb *say*. The suppletion in question is triggered by the oblique argument of these verbs (recipient in the case of *give*, addressee in the case of *say*), with a different stem of the verb chosen when the oblique argument is a first or second person than when it is a third person. Table 14 illustrates this type of suppletion with verb forms from several Zapotec varieties; the forms for Córdova's, Chichicapan, and Güilá Zapotec are cited after Smith Stark (2001), and the other forms are from Nellis and Goodner de Nellis (1983), Stubblefield and Miller de Stubblefield (1991), Butler (1997), Long and Cruz (1999), Munro and Lopez (1999), Foreman (2006), Benton (2008), Broadwell and Martínez (2009), and Operstein (2015). Córdova's verb form <*néchi*> is glossed in Córdova (1578a [1987]) as "dar tu a mi, o yo a ti" [give you to me, or I to you], and is taken here to correspond to the meaning 'give to $1^{st}/2^{nd}$ person'. Córdova's form <*òhui*> is glossed as "dar generalmente" [give generally], and then again as "[d]ar Pedro a otro" [give Peter to another], and is taken to correspond to the meaning 'give to 3rd person'. The semantics of these forms and their relevance to the distinction at hand are discussed by Smith Stark (2001: 96-97).

---

[13] More commonly reported types of suppletion involving *give* are triggered by TAM categories (Bybee 1985: 92-93) or the object of giving (see Comrie 2003 for Huichol and Newman 2002: 86-88 for Chipewyan).

Table 14. Recipient/addressee person suppletion in the verbs *give*/*say*

	give		*say*	
	to 1st /2nd person	to 3rd person	to 1st /2nd person	to 3rd person
Coatecas Altas Zapotec			*ne*	*ab*
Quiaviní Zapotec			*<nnììi'>*	*<e'ihpy>*
Güílá Zapotec	*níi'ʃ*	*dɨ̌d*	*nìi*	*è'ebj*
Mitla Zapotec	*ni'idʒ*	*de'ed*	*na'a ~ na̠*	*a̠p*
Ocotepec Zapotec	*nì'ítʃ*	*dèdj*	*nì'ì*	*è'èpj*[14]
Córdova's Zapotec[15]	*<néchi>*	*<òhui>*	*<nñij>*	*<api>*
Chichicapan Zapotec	*ní'i*	*di'i*		
Atepec Zapotec	*nná*	*tè*		
Macuiltianguis Zapotec	*nna(=ni)*	*ee'*		
Zoogocho Zapotec	*on:*	*neʒχo*		
Yatzachi Zapotec[16]	*on:*	*neʒχw*		
Zaniza Zapotec	*zed*	*bih*[17]		

Although the above distinction is not encoded with the same etyma in all the varieties, and although it is not reported for some varieties, such as Isthmus Zapotec (Smith Stark 2001: 97), its reported presence in four branches of Zapotec – Northern (Yatzachi, Atepec), Central (Chichicapan, Mitla, Güílá), Southern (Coatecas Altas), and Papabuco (Zaniza) – suggests that it may go back to the proto-language. Presence of this type of suppletion in at least three other branches of Otomanguean – Mixtec, Mazahua, and Otomí (Smith Stark 2001; Comrie 2003) – indicates that it may be even older. Outside the Otomanguean stock, suppletion with respect to the recipient of *give* has been described for Old Basque by Comrie and Aldai (2002), and for a number of unrelated languages of Caucasus, Asia, Africa, and Oceania by Comrie (2003).

Suppletion with respect to the addressee of *say* is also found in other branches of Otomanguean, including Mixtec and Mazahua (Smith Stark 2001: 100). In Zapotec, this verb can show suppletion with respect to aspect and/or person of the subject, either in lieu of or in addition to suppletion for the person of the addressee. Aspect suppletion is known to be cross-linguistically common for this verb (cf. the pair *govorit'* [imperfective] ~ *skazat'* [perfective] 'say' in Russian) and is attested, e.g., in Zaniza Zapotec (illustrated in 12). Córdova's Zapotec also shows aspect suppletion in this verb, with forms that are etymologically equivalent to the Zaniza Zapotec forms in (12): *<àpi>* (non-completive) ~ *<chi>* (completive) (Smith Stark 2008: 413).

---

[14] This is my interpretation of the forms in Broadwell and Martínez (2009). Like its Güílá Zapotec cognate, *è'èpj* 'say' has a suppletive form in the first person plural, *jèts*.

[15] Smith Stark (2008: 390): <ti-api=a> 'decir, hablar (a otro)' versus <ti-nñij=a> 'decir, hablar (no a otro)'.

[16] Yatzachi Zapotec and Zoogocho Zapotec both also have the verb *oe'* 'give', which can be used with any recipient (Butler 1997: 442). In addition, Zoogocho Zapotec has another verb meaning 'give', *beχ*, whose precise semantics is unclear from the dictionary entry.

[17] This verb also shows aspect-based suppletion, with the stem *ɾih* used for the completive aspect.

(12a) *ɾ-ab=j=m*
       HAB-say=3M=3F
       'He is speaking to her.'
       (Author's field notes)

(12b) *gu-dʒ=j*   *jã*   *gal*   *gu-dʒ=j*   *ɾu*
       COMP-say=3M   1S   and   COMP-say=3M   2S
       'He told me and he told you.'
       (Author's field notes)

In addition to the addressee person suppletion, Güilá Zapotec shows subject suppletion in the verb *say*. According to Smith Stark (2001: 100), the allomorph of *say* meaning 'say to 3rd person' displays the suppletion shown in (13).

(13)   1st singular subject: *è'ebj*   1st plural subject: *yêts*
       2nd singular subject: *è'ebj*   2nd plural subject: *è'e*
       3rd singular subject: *è'e*   3rd plural subject: *è'e*

Zoogocho and Yatzachi Zapotec are examples of languages showing suppletion for both aspect and subject in the verb *say*. Addressee person suppletion is not reported in these varieties. According to Long and Cruz (1999), *apa'* is the first person singular allomorph, and *ʒ* the completive aspect allomorph, of the verb *e'* 'say' in Zoogocho Zapotec. In Yatzachi Zapotec, *apa'a* is the first person singular allomorph, *i'o* the second person singular allomorph, and *ʒ* the completive aspect allomorph of *e'* 'say'.[18] In Coatecas Altas Zapotec, *say* is suppletive for aspect and the persons of the subject and addressee. In that variety, the *ab* allomorph of *say* uses the stem *ʒ* in the completive aspect and *apa* in the first person singular. All three types of suppletion are also present in this verb in Córdova's Zapotec (Córdova 1578a [1987]: 148). The patterns of suppletion in the verb *say* are summarized in Table 15, and the specific verb stems encoding aspect and subject suppletion in this verb are given in Table 16.

Table 15. Suppletion patterns in the verb *say*

	Addressee person suppletion	Subject person suppletion	Aspect suppletion
Zaniza Zapotec			Yes
Zoogocho and Yatzachi Zapotec		Yes	Yes
Güilá Zapotec	Yes	Yes	?
Coatecas Altas Zapotec	Yes	Yes	Yes

---

[18] Foreman (2006: 250) notes that in Macuiltianguis Zapotec the first person exclusive subjects of *say* likewise have a separate allomorph, *paa* (versus *aa* used with other subjects).

Table 16. Aspect and subject person suppletion in the verb *say*

	Zaniza Zapotec	Zoogocho Zapotec	Coatecas Altas Zapotec	Güilá Zapotec
non-completive stem	*ab*	*e'*	*ab*	*è'e*
completive stem	*dʒ*	*ʒ*	*ʒ*	*?*
1st person singular stem		*apa'*	*apa*	*è'ebj*
1st person plural stem				*jêts*

The aspect suppletion in the verb *say* is also interesting in that even those varieties for which it has not been reported may exhibit irregularities in the aspect morphology of this verb. For example, Munro and Lopez (1999: 247) note that Quiaviní Zapotec lacks the completive aspect of <*e'ihpy*> 'say', while Foreman (2006: 110-111) observes that the habitual form of *aa* 'say' in Macuiltianguis Zapotec can be used for progressive and completive meanings but cannot be used to describe habitual actions. The aspect suppletion of *say* appears to be deeply rooted in the pragmatics of language use, as is evidenced by the large number of languages that display this particular type of suppletion in this verb. In Veselinova's (2006: 75) sample, *say/speak* is the top third in the list of verb meanings that show suppletion according to aspect, yielding only to *go/come* and *take*.

In addition to suppletion with respect to aspect, subject and oblique object, some Zapotec varieties also have suppletive imperatives of *say* and/or *give*. For example, the imperative to <*e'ihpy*> 'say' in Quiaviní Zapotec is <*gwu'ahts*> (Munro and Lopez 1999) and the imperative of *aa* 'say' in Macuiltianguis Zapotec is *guusi* (Foreman 2006: 111). Suppletive imperatives will be further discussed in Section 3.4.

Smith Stark (2001) and Comrie (2003) both propose possible scenarios for the development of the recipient person suppletion in the verb *give*. Smith Stark (2001: 100) hypothesizes that the suppletion may be motivated by politeness, which has caused different verbs to become specialized for different communicative situations. Comrie (2003) offers an explanation based on the notion of deixis. He points out that the verb *come* in English denotes motion toward the speaker or addressee whereas *go* denotes motion toward a third person, and observes that a similar distinction also obtains in the pair *bring/take*, as seen below.[19] Comrie's (2003) proposed explanation for the recipient person suppletion is then couched in terms of grammaticalization of a deictic distinction which takes into account whether the action of giving is directed toward or away from the "deictic center".

---

[19] An anonymous reviewer points out that the situation may be more complex since, given the right context, phrases like "I'll come to him" and "He'll go to you" are also possible in English.

(14a)   I will go to him.
         He will come to me.
         I will come to you.

(14b)   I will take it to him.
         He will bring it to me.
         I will bring it to you.

It seems that Smith Stark's and Comrie's explanations are not incompatible, since both the politeness- and the deixis-based explanation agree in according special status to speech act participants. An explanation that opposes speech act participants to non-participants finds support in a typologically parallel suppletion in some New Guinea languages in which different allomorphs of kinship terms are selected depending on the person of the possessor. A subtype of this suppletion opposes a non-3rd person allomorph of the possessed noun to a 3rd-person allomorph of the same noun, and Baerman (2014: 427-428), referencing (Heath 2004) and Aikhenvald (2013), adopts an explanation for this suppletion that opposes speech act participants to non-participants. An explanation along these lines is additionally attractive in view of the close pragmatic connection between possessors and recipients (cf. Sonnenschein 2015), and in that it can be easily extended to accommodate the addressee suppletion in the verb *say*.

3.4 Suppletive imperatives

Zapotec languages have no dedicated imperative verb form, a situation with well-attested cross-linguistic parallels (Birjulin and Khjakovskii 1992; Aikhenvald 2010: 7, 38-40). Instead, imperatives are supplied by the completive aspect and potential mood. The imperative use of these verb forms may be seen in the Choapan Zapotec examples below.

(15a)   *U-zuli*
         COMP-stand
         'Stand up!' (singular)
         (Lyman 2007: 165)

(15b)   *Bi   g-ao=lo*
         NEG   POT-eat=2S
         'Don't eat!' (singular)
         (Lyman 2007: 166)

Both these strategies of the imperative formation are cross-linguistically common; as observed by Birjulin and Khrakovskij (1992: 49), it is common for verb forms that express actions not yet realized at the moment of speaking to be quasi-synonymous with the imperative. In Zapotec, this makes the potential mood form a likely candidate to serve in the imperative function; when used in main clauses, this form commonly refers to actions that are unrealized at the moment of speaking. The Tlacolula Valley Zapotec example in (16) provides an illustration.

(16)   *Y-tòo'oh   Gye'eihilly   ca'rr.*
       POT-sell   Mike   car
       'Mike will sell the car.'
       (Munro 2006: 179)

The use of the completive aspect form in the imperative function is also cross-linguistically common, as illustrated in (17) by the imperative use of the Russian past perfective.

(17)   *Se-l   v   maşinu   i   u-exa-l!*
       sit-PAST.PFVE.M   in   car   and   away-go-PAST.PFVE.M
       'Get in the car and go away!'
       (Personal knowledge)

As discussed in Section 2, the completive in Zapotec has no inherent temporal reference and can refer to events in the past or in the future, depending on the context. This form also can have the modal meaning of irrealis; for example, in Tlacolula Valley Zapotec it is used interchangeably with irrealis forms in negative past statements and in one or both clauses of counterfactual conditionals (Munro 2006: 180-182). In light of these properties, the completive's use as the imperative may derive both from its ability to refer to events not yet realized at the moment of speaking and from its ability to refer to events in the past, a possible source of its modal uses.[20]

The precise details of the use of the completive and potential as imperatives may differ from one variety to the next. For example, in Mitla Zapotec the second person singular ("canonical")[21] imperative is expressed by the subjectless form of the completive. The second person plural imperative is expressed by the subjectless potential prefixed by the dedicated imperative morpheme *kol:*. Politeness is indicated by suffixing *l:a'a* to the verb. Negative imperatives are formed by means of the adverb *na'k* followed by the potential mood form of the verb inflected for subject. Examples of Mitla Zapotec imperatives are shown in (18a) through (18c).

(18a)   *Bi-dʒetʃḷạz!*
        COMP-get.angry
        'Get angry!' (singular)
        (Stubblefield and Miller de Stubblefield 1991: 224)

(18b)   *Kol:-gi-dʒetʃḷạz!*
        IMP.PL-POT-get.angry
        'Get angry!' (plural)
        (Stubblefield and Miller de Stubblefield 1991: 224)

---

[20] De Haan (2006: 48-50) also discusses connections between the irrealis modality and future and past tenses.
[21] Cf. Aikhenvald (2010) for the term.

(18c) *Na'k*   *gi-nii=nu*   *lo̧=ni.*
       NEG   POT-speak=1PL   to=3S
       'Let's not talk to him.'
       (Stubblefield and Miller de Stubblefield 1991: 236)

The use of the subjectless completive for the second person singular imperative appears to be pan-Zapotec and is noted, among others, for Albarradas (Central) Zapotec, Zoogocho, Macuiltianguis, and Choapan (Northern) Zapotec, Lachixío (Western) Zapotec, and Zaniza (Papabuco) Zapotec (Long and Cruz 2000: 449; Adam 2003: 72; Foreman 2006: 285; Lyman 2007: 165; Persons et al. 2009: 39; Operstein 2015: 35). In most varieties it stands out among the imperative forms both semantically, by being the most basic, "unmarked" or "canonical" form of a command, and morphologically, by lacking subject clitics or imperative morphemes. Cross-language differences among Zapotec imperatives concern the morphology and semantics of the other imperative forms and revolve around the use of dedicated imperative prefixes or particles or lack thereof, the etymological source of the negative morpheme employed in negative imperatives, whether the polite imperatives use the potential or another verb form (Lyman 2007: 166; Foreman 2006: 285-286), and if the potential form is used, then whether it is inflected for subject.

Even taking into account the above differences in their morphology and semantics, the use of the completive and potential as imperatives appears to be universal in Zapotec. In light of this fact, the suppletive imperatives, such as the ones in Table 17, emerge as the only dedicated imperatives in these languages.

Table 17. Suppletive imperatives[22]

	Verb stem	Imperative	Meaning
Quiaviní Zapotec	*<ìe'd>*	*<(ri)dàa'>*	'come'
	<i'd=nèe>	*<da=nèe>*	'bring' (come=with)
	<ihah>	*<to'oh>*	'go'
	<àann>	*<do'oonn>*	'see'
	<e'ihpy>	*<gwu'ahts>*	'say'
Güilá Zapotec	*jée'd*	*dàa'*	'come'
Mitla Zapotec	*i̧*	*do'o*	'go'
Córdova's Zapotec[23]	*<eta>*	*<taha>*	'come'
Zoogocho Zapotec	*id*	*da*	'come'
	oe'	*doa'*	'give'

---

[22] Sources: Munro and Lopez (1999), López (1997), Stubblefield and Miller de Stubblefield (1991), Córdova (1578b), Smith Stark (2008), Long and Cruz (2000), Butler (1997), López and Newberg (2005), Foreman (2006), Speck (2005), author's field notes.

[23] Córdova (1578a [1987]: 97) also lists the plural form *<colataha>* 'venid aca' [come (pl.) here]. The basic stem of this suppletive pair is cited after Smith Stark (2008: 408). This verb also displays subject person suppletion (see Section 3.2).

Yatzachi Zapotec	idə'	(be)da	'come'
	(unclear)	do	'go'
	oe'	doa'	'give'
Yalálag Zapotec	(unclear)	do	'go'
Macuiltianguis Zapotec	aa	guusi	'say'
Texmelucan Zapotec	(c)jid	da	'come'
	(r)ik na	doo	'give'
Zaniza Zapotec	jed	(u)da	'come'
	bih	(u)do'	'give'

Diachronically, there appear to be two layers of suppletive imperatives. The imperatives to *say* in both Quiaviní and Macultianguis Zapotec appear to utilize synchronically productive TAM markers (completive aspect). The imperatives to the remaining verbs (*come/bring*, *go*, *see* and *give*) appear to include a no longer productive prefix *d-* (*t-*) combined with a vowel-initial root. In the second group of imperatives, two functional categories may be distinguished. The forms related to *come/bring* and *give* are currently used as second person singular imperatives, while those related to *go* and *see* have become refunctionalized. The imperatives of *go* are used as first person plural imperatives (hortatives) and/or have become grammaticalized as hortative markers. For example, Mitla Zapotec *do'o*, when used by itself, is translated as 'let's go', while in combination with the potential mood form of other verbs it is used as a hortative marker. The examples below show that the potential mood forms of the lexical verbs are not inflected for subject, which suggests that the first person plural reference is communicated to these forms by *do'o*.

(19a) *Do'o gi-dauu*
  HORT POT-eat
  'Let's eat!'
  (Stubblefield and Miller de Stubblefield 1991: 225)

(19b) *Do'o gi-wii gido'o*
  HORT POT-see church
  'Let's see the church!'
  (Stubblefield and Miller de Stubblefield 1991: 225)

In (20) one may see the paradigm of the Mitla Zapotec verb *go* in the completive aspect (Stubblefield and Miller de Stubblefield 1991: 213). This verb shows suppletion for the person and number of the subject, with the first person forms being different from the form used for other persons and from each other. It is possible that the suppletive imperative *do'o* is morphologically related to the first person plural stem.

(20) *w-a'=a*   *w-ion:=nu*, *b-ion:=nu*
  w-i̱=lu   *w-i̱=tu*
  w-i̱=ni   *w-i̱=reni*

The related Quiaviní Zapotec form *<to'oh>* is translated in the dictionary as 'let's go'. According to the dictionary entry, *<to'oh>* may be used by itself, with the potential first person plural form of *go*, or with what looks like the andative form of a lexical verb (this form is translated in the dictionary as 'goes and', as in *goes and throws*) (Munro and Lopez 1999: 259, 344). In various Northern Zapotec varieties, *do-* functions as a hortative prefix, as seen in the following examples from Yatzachi and Yalálag Zapotec.

(21a)   Yatzachi Zapotec
        L:e-do-yen   *ʒinnə'*!
        IMP-HORT-do   work
        'Let's do the work!'
        (Butler 1980: 106)

(21b)   Yalálag Zapotec
        Do-kwe'e
        HORT-sit
        'Let's sit!'
        (López and Newberg 2005: 13)

   The reason for the different functioning of the suppletive imperatives of *go*, on the one hand, and *come/bring* and *give*, on the other, may stem from the cross-linguistically well-attested tendency to grammaticalize *go* into a hortative marker. As noted by Aikhenvald (2010: 346-348, 414), this is a frequent grammaticalization path; for instance, in Rama (Chibchan) the form *bang* simultaneously functions as a suppletive imperative to *taak* 'go' and as a hortative marker. This is similar to the functioning of *do'o* described above for Mitla Zapotec. The verb *go* appears to behave similarly in Chalcatongo Mixtec (Aikhenvald 2010: 348), which points to the possibility that this grammaticalization path may in addition be a genetic and/or areal feature. The tendency to use the verb *go* in the hortative function appears periodically to resurface in Zapotec, as is evidenced by the use of the exhortative interjection *jo'o*, with variants *jo'oʃk* and *l:əʃo'o*, plausibly coming from the same source as the Mitla *do'o*, in Yatzachi Zapotec, where it is glossed as *vámonos* 'let's (go)', as in "Let's sit under the shade of that tree" (Butler 1997: 394). Choapan Zapotec similarly uses the exhortative *ja'* 'let's go' with the inflected potential mood of lexical verbs, as in *ja' gao=ro* 'let's eat'. According to Lyman (2007: 167), this construction implies actual movement ("implica movimiento para hacer algo [implies movement to do something]"), suggesting that the grammaticalization of *ja'* may be in its initial stages.
   Another refunctionalized form is Quiaviní Zapotec *do'oonn*, related to *àann* 'see' and glossed by Munro and Lopez (1999) as 'if, whether: esp. to see if, to know if'. Its former function as an imperative-related morpheme is still apparent in its use after an imperative to express a familiar request, seen in the following example.

(22)   *Bìi'lldy*   *do'onn*   *mnìi'ny*.
        COMP.sing   child
        'Let me hear you sing, child.'
        (Munro and Lopez 1999: 109)

The suppletive imperatives are apparently perceived by the speakers as morphologically irregular, which explains the tendency to supply them with "missing" morphology in the form of redundant aspect markers (cf. the Quiaviní, Yatzachi, and Zaniza Zapotec forms in Table 17). In varieties in which the verb *give* shows recipient person suppletion, the suppletive imperative serves only one of the suppletive stems. For example, in Zaniza Zapotec the suppletive imperative *(u)do'* corresponds only to the stem *bih* 'give to 1st/2nd person', while the imperative corresponding to the stem *zed* 'give to 3rd person' is non-suppletive. This difference is illustrated in (23).

(23a) *U-do'*!
       COMP-IMP.give
       'Give (it) to me!'
       (Author's field notes)

(23b) *Bi-zed   lo=j*!
       COMP-give   to=3M
       'Give (it) to him!'
       (Author's field notes)

The languages in Veselinova's (2006: 138-139) sample have at most one or two suppletive imperatives, with the list of verb meanings having suppletive imperatives topped by *come/go* and *give*. Zapotec data conforms to both these cross-linguistic trends. Another cross-linguistic observation that may be relevant is that suppletive imperatives "may preserve archaic forms and archaic patterns" (Aikhenvald 2010: 341). This aspect of the suppletive imperatives opens up interesting lines of inquiry, and was partially relied on in the account of subject person suppletion in Section 3.2.

3.5 Aspect suppletion
Most Zapotec verbs use the same verb stem in all TAM categories. The invariance of the verb stem may be exemplified with the Isthmus Zapotec verbs *re'e* 'come out' and *e'* 'drink', repeated below from (4).

(24) Habitual   *ri-re'e*   'comes out'   *r-e'*   'drinks'
      Progressive   *ka-re'e*   'is coming out'   *kaj-é'*   'is drinking'
      Potential   *gi-re'e*   'may come out'   *g-e'*   'may drink'
      Perfect   *wa-re'e*   'has come out'   *waj-é'*   'has drunk'
      Future   *za-re'e*   'will come out'   *z-e'*   'will drink'
      Irrealis   *ni-re'e*   'would come out'   *ɲ-e'*   'would drink'
      Completive   *bi-re'e*   'came out'   *gw-e'*   'drank'

Aspect suppletion consists in using a different stem in the completive aspect than the one used in the other TAM categories. It may be exemplified with the Tlacolula Valley

Zapotec verb 'wear, put on', cited after Munro (2006: 174-175). In this verb, the completive aspect stem is different from the stem used in the other TAM categories.[24]

(25) Habitual   *<r-a'ahcw>*   'puts on (a shirt)'
     Progressive *<cay-a'ahcw>*   'is putting on (a shirt)'
     Stative   *<n-aa'cw>*   'is wearing (a shirt)'
     Potential   *<g-a'acw>*   'will put on (a shirt)'
     Definite   *<z-a'ahcw>*   'will surely put on (a shirt)'
     Irrealis   *<ny-a'ahcw>*   '(if…) had put on (a shirt)'
     Completive   *<gwu-a'ht>*   'put on (a shirt)'

Additional examples of strong aspect-based suppletion may be seen in Tables 18 and 19.

Table 18. Aspect suppletion in the verb *say*

	Zaniza Zapotec	Zoogocho Zapotec	Coatecas Altas Zapotec
Non-completive stem	*ab*	*e'*	*ab*
Completive stem	*dʒ*	*ʒ*	*ʒ*

Table 19. Aspect suppletion in the verb *vomit*

	Zaniza Zapotec	Texmelucan Zapotec	Córdova's Zapotec
Non-completive stem	*ab*	*ab*	*<àapi>*
Completive stem	*dʒ*	*ʃ*	*<chi>*

The majority of suppletive completive stems represent instances of weak suppletion. In his classification of the Zapotec verb (cf. Section 2 of this paper), Kaufman (1994-2007) reserves a minority verb class, labeled class D, for verbs with this type of suppletion. Representative examples of class D verbs from a single Zapotec variety are given in Table 20.

Table 20. Selected class D verbs in Zaniza Zapotec

	'eat'	'sleep'	'play'	'water'	'distribute'	'carve'
Non-completive stem	*aw*	*as*	*git*	*giʎ*	*gez*	*baw*
Completive stem	*daw*	*tas*	*ɽit*	*diʎ*	*ʎez*	*law*

---

[24] To maintain a uniform terminology, the names of the TAM categories have been changed as follows from the original publication: "perfective" has been replaced with "completive', "neutral" with "stative", "irrealis" with "potential", and "subjunctive" with "irrealis".

The number of class D verbs is not uniform across the varieties. Chichicapan Zapotec, for instance, has eighteen such verbs (shown in 26, based on the information in Smith Stark 2002: 204). For each verb, the basic stem is listed first, followed by the suppletive stem used in the completive aspect.

(26) Class D verbs in Chichicapan Zapotec

abí ~ dabí	'swallow'	*bʷidʑ̢ ~ didʑ̢*	'call'
awu ~ dawu	'eat'	*gaa' ~ daa'*	'throw'
bagu ~ lagu	'carve'	*ga'abi ~ da'abi*	'smear'
batʃi ~ latʃi	'sow'	*gapá ~ dapá*	'slap'
baa'n ~ laa'n	'steal'	*ga'ăn ~ da'ăn*	'dig'
bʷĕza ~ lĕza	'wait'	*guu' ~ luu'*	'put'
bʷe'ĕ ~ le'ĕ	'take out'	*gu'ăn ~ gu'ăn*	'comb (textiles)'
bʷĭ ~ lĭ	'choose'	*go'oba ~ do'oba*	'take away'
bʷĭ ~ ri	'be sown'	*goo'ba ~ doo'ba*	'suck'

Only a small number of verbs, particularly *eat*, are stably suppletive across the family. Other verbs show variation; for example, *wash* is suppletive in Córdova's and Zaniza Zapotec but is morphologically regular in Chichicapan Zapotec (Smith Stark 2002: 204).

It is argued in Operstein (2015b) that aspect suppletion in class D verbs may have resulted from the merging of paradigms of verbs of opposite valence. The process may be illustrated by observing the triplet of Quiaviní Zapotec verbs in (27) (Munro 2012).

(27) Transitive verb   Intransitive verb   Suppletive class D verb
      <gìeb> 'sew'   <dìeb> 'get sewn'   <gìeb> ~ <dìeb> 'sew'

In this triplet, the transitive verb *<gìeb>* and the intransitive verb *<dìeb>* 'get sewn' show different initial consonants, apparently frozen prefixes. The verb in the third column is suppletive with respect to aspect, with the completive stem *<dìeb>* apparently supplied by the intransitive verb *<dìeb>* and the non-completive stem *<gìeb>* by the transitive verb *<gìeb>*. The resulting verb is transitive, and shows suppletion with respect to aspect (see Operstein 2015b for a fuller exposition).

According to Veselinova (2006: 73), the use of perfective versus imperfective stems is the default semantic distinction encoded in aspect-based suppletion, and in this respect the Zapotec data conforms to the observed cross-linguistic trend. It is unusual only with respect to the number of verbs with aspect suppletion: in Veselinova's globally distributed sample, this number varies between 1 and 9, whereas in some Zapotec varieties class D may contain upwards of thirty verbs. It is likely that some class D paradigms may have been created through the action of analogy, though more comparative-historical work on Zapotec is needed in order to ascertain the origin of each of the class D verbs in the individual varieties.

4. Non-inflectional suppletion
4.1 Valence
Mel'čuk (1976: 68, 1994: 390), Bybee (1985: 93), and Veselinova (2006: 63) identify suppletion with respect to tense or aspect as the most common kind of suppletion in verb stems; Veselinova also notes its areal concentration in western Eurasia, Papua New Guinea, and Mesoamerica. By contrast, voice is identified as only a minor cross-linguistic source of suppletive verb paradigms (Veselinova 2006: 60).

In Zapotec, due to the importance of the morphological encoding of valence, valence-related alternations can be seen as a major source of suppletion. As detailed in the studies assembled in Operstein and Sonnenschein (2015), Zapotec verbs typically come in morphologically related pairs of opposite valence. The "less valent" member of such pairs is typically monovalent and can have a range of intransitive meanings including passive, middle, impersonal, and inchoative. The "more valent" verb is typically divalent and reflects the semantics of its monovalent counterpart (cf. Operstein 2015c for details).

The majority of the less valent verbs are morphologically basic, while the more valent verbs are derived from their less valent counterparts by means of prefixes. In some cases the prefixes are synchronically segmentable, cf. *niti* 'be lost' ~ *u-niti* 'lose' in Isthmus Zapotec or *adʒ* 'suckle' ~ *g-adʒ* 'breastfeed' in Zaniza Zapotec. In other cases, they are realized as predictable morphophonemic alternations (see 28; the forms are cited after Operstein 2015c).

(28)   Consonant fortition as a marker of valence increase in Zaniza Zapotec

gaʂ 'be hidden'	~	*kaʂ* 'hide, bury'
de' 'get together'	~	*te'* 'put together, collect'
zug 'be chopped'	~	*sug* 'chop'
ʐ̣ib 'be scared'	~	*ʂib* 'scare'

In addition to predictable alternations such as the ones in (28), Zapotec languages also display pairs like the Zaniza Zapotec pairs in (29a), where the two verbs are etymologically distinct, and the Coatec Zapotec pairs in (29b), where the verbs are derived from a common root via synchronically unpredictable affixes. In the synchronic grammars of Zapotec languages, such pairs may be viewed as suppletive.

(29a)	*jah* 'become', *ah* 'be'	~	*itʃ* 'make'	
	daʂ 'be empty'	~	*lat* 'empty (tr.)'	

(29b)	*âθ* 'die'	~	*ùθ* 'kill'	
	bìʃ 'be measured'	~	*ti⁷ʃ* 'measure'	
	go⁷b 'be swept'	~	*lo⁷b* 'sweep'	
	ba⁷ 'be let go'	~	*la⁷* 'let go'	

4.2 Numerals
Another non-inflectional area in which suppletion is attested is the derivation of the ordinal numeral *first*. In some Zapotec languages, ordinal numerals are formally distinct

from the corresponding cardinal numerals only in a few low numerals. For example, Lachixío Zapotec has distinct ordinal forms only for numerals under 3, Choapan Zapotec for numerals under 4, and Yatzachi Zapotec for numerals under 10 (Butler 1980: 213; Lyman 2007: 52; Perkins et al. 2009: 26). In the case of a complete formal identity, the cardinal versus ordinal reading of a numeral is indicated via its location relative to the noun phrase, with preposed numerals parsed as cardinal and postposed numerals as ordinal (cf. the Choapan Zapotec examples in 30).

(30a)   *tsona   jaga   reo*
        three   tree   thick
        'three thick trees'
        (Lyman 2007: 50)

(30b)   *ʃkuidi'   ʃuna'*
        child   eight
        'eighth child'
        (Lyman 2007: 52)

In cases of a formal distinction, the cardinal and ordinal numerals, except for the pair *one/first*, are relatable to each other through synchronic or historically reconstructible prefixes. For example, in Mitla Zapotec ordinal numerals are formed by adding the prefix *r-* to cardinal numerals (Stubblefield and Miller de Stubblefield 1991: 260). The Choapan Zapotec pairs in (31) are historically relatable through the prefix *k-, reconstructed by Kaufman (1994-2007) for the cardinal series.

(31)   *tʃopa* 'two'   *rupa, urupe* 'second'[25]
       tsona 'three'   *juna, ujune* 'third'
       tapa 'four'   *dapa, udape* 'fourth'

   In the pair *one/first*, the numerals consist of unrelated stems (illustrated in 32). The cardinal numeral in each case continues the Proto-Zapotec numeral whereas the ordinal numeral is derived from words meaning 'face, in front of' (< *lawo), 'in front of' (cf. Isthmus Zapotec *niru* 'in front, forward', Pickett et al. 2007), or is borrowed from Spanish (cf. Spanish *primero* 'first').

(32)   'one'   'first'
       tuku   *rluti*   Lachixío Zapotec
       tu   *nɛro*   Choapan Zapotec
       to   *nedʒ^w*   Zoogocho Zapotec
       to   *nedʒ, primer*   Yatzachi Zapotec
       tub   *loga*   Texmelucan Zapotec
       tib   *ulo*   Zaniza Zapotec
       tobi   *nírudo', primé*   Isthmus Zapotec

---

[25] Differences in the use of *rupa ~ urupe*, *juna ~ ujune* and *dapa ~ udape* are addressed in Lyman (2007: 52).

<tobi>, *<chaga>*	*<niçobalao>*	Córdova's Zapotec
<te'ihby>	*<yloh>*, *<primeer>*	Quiaviní Zapotec
tẹ	*prime'er*	Mitla Zapotec
tojbj	*prime'er*	San Dionisio Ocotepec Zapotec
tube	*galo*	Coatecas Altas Zapotec

Suppletion in the pair *one/first* conforms to a common cross-linguistic tendency (Veselinova 1997: 437; Stoltz and Veselinova 2013). Another cross-linguistic tendency displayed by this pair is the stability of the suppletive pattern even though the actual suppletive forms may be different. The forms in (32) also show the stability of the cardinal numeral vis-à-vis the ordinal numeral in this suppletive pair.

5. Summary and some directions for future research

This paper has surveyed the major suppletion phenomena in Zapotec reported in the literature. In common with the cross-linguistic tendency noted in previous studies, most suppletion patterns in Zapotec occur in verb paradigms; in the noun system, suppletion is found in the possessed forms of selected nouns such as *pueblo*, *house*, *clothing*, and *tortilla*. In the verb system, several types of suppletion are attested, including suppletion with respect to aspect, mood (imperatives), person of the subject, and person of the oblique object. Outside inflection, Zapotec attests suppletion in the area of valence and in the pair *one/first*. Most categories of suppletion are represented by a small number of strongly suppletive, apparently etymologically distinct forms, and a larger number of weakly suppletive forms deriving from no longer productive morphological processes. Pending further historical-comparative research, the morphological processes underlying certain types of verbal suppletion may turn out to be historically related.

Another typological tendency confirmed by the Zapotec data is for high-frequency verbs to display more than one type of suppletion concurrently and/or to show more than two suppletive stems. The high incidence of suppletion tends to be found in the verbs *say*, *give*, *come* and *go*. For example, the verb *say* in Güilá Zapotec is suppletive for the person of the addressee; the 3rd person addressee allomorph is additionally suppletive for the person of the subject. The verb *give* in Zaniza Zapotec is suppletive for the person of the recipient; the non-3rd person recipient allomorph is additionally suppletive for aspect and mood. The verb *<ìe'd>* 'come' in Quiaviní Zapotec uses the stem *<yàall>* for the first person singular subject and *<yo'p>* for the first person plural subject (Munro and Lopez 1999: 270). In Córdova's Zapotec, <eta> 'come' uses the stem <èle> with the first person singular and <òpe> with the first person plural subject, while <ee> 'go' uses the stem <aa> for the first person singular and <ao> for the first person plural subjects (Smith Stark 2008: 408). Bybee (1985: 94) suggests, with respect to the verb *be*, that its high frequency and variety of functions "probably leads to the autonomy of all of its forms". A similar explanation may be adopted for the high level of suppletion in the Zapotec verbs *say*, *give*, *come* and *go*, lending support to theories of language change that emphasize frequency of use as a major factor of change.

Among areas of future research is suppletion in groups of semantically related verbs in which the verbs may create suppletive paradigms by invading each other's space. At least some Zapotec languages make finely grained distinctions in the verbs *come* and *go*, which are sensitive to the direction of movement relative to the speaker and the abstract

"base". In Texmelucan Zapotec, each of these verb meanings is represented by two verbs, with the distinction between *come* and *go* determined by the direction of motion relative to the Place of Locutionary Action (PLA), and the distinction between $come_1$ and $come_2$ (resp. go_1 and go_2) by the direction of motion relative to the Base (shown in Table 21, based on Speck and Pickett 1976: 59).

Table 21. Verbs *come* and *go* in Texmelucan Zapotec

	Toward PLA	Away from PLA
Toward Base	$come_1$	go_1
Away from Base	$come_2$	go_2

Speck and Pickett (1976) observe that each of the verbs in Table 22 implies a round trip rather than a one-way trip to the destination. In order to express arrival without the implied movement back, two additional verbs are used, $arrive_1$ (for arrival at a Base) and $arrive_2$ (for arrival at a non-Base). The actual verb roots encoding these meanings are given in (33).

(33)   *ja* 'go_1'   *je'ed ~ jed* '$come_1$'   *ri* '$arrive_1$'
       a ~ za 'go_2'   *ji'id ~ jad* '$come_2$'   *ru'ɲa* '$arrive_2$'

Although detailed studies of the morphology and semantics of motion verbs in other Zapotec varieties are not available, the information that can be gleaned from published dictionaries suggests that some motion verbs appear to have suppletive paradigms. The suppletion is along the lines of TAM and/or subject person categories. For example, in Atepec Zapotec some forms of the verb *dá'* 'walk, go, come' can also be used in the paradigm of *tá* 'come' (Nellis and Goodner de Nellis 1983: 49, 131). In Yatzachi Zapotec, the paradigm of *idə* 'come' also includes the stems *za'* and *za'ac* (stative) and *da'ac* (completive and potential) (Butler 1997: 145). Although the dictionary lists *za'* only as the stative allomorph of *idə* 'come', the greeting *baza'o* 'ya vienes' [here you come] gives some idea about its possible original meaning. The explanation supplied for this greeting is "saludo a uno que camina hacia el hablante, pero alejándose de su propia casa" [greeting to one who is walking toward the speaker but moving away from his/her own house]. When stripped of the proclitic *ba=* 'already' and the subject pronoun *=o*, this form includes only the verb stem *za'*, which is clearly responsible for the meaning of movement toward the speaker and away from the Base. In Yalálag Zapotec, *za'* is likewise used for the stative form of *(j)ed* 'come' (Newberg and López 2005: 25). In Mitla Zapotec, the stative aspect and definite future of *go* are built to a different stem than the other TAM forms (Stubblefield and Miller de Stubblefield 1991: 213). As mentioned in Section 3.4, verbs of motion also typically have suppletive imperatives.

Another potentially interesting semantically coherent group is positional verbs. In Zapotec languages, locative and existential relations are expressed by means of about a dozen positional verbs that classify the object in terms of its spatial orientation and some additional properties (Sonnenchein and Lillehaugen 2012). Bybee (1985: 92) lists *sit/be located* among the verb meanings most likely to have suppletion; the pair *be/exist* tops the list of verbs with tense-aspect suppletion in Veselinova (2006: 67); while Markey

(1985: 60) calls the copula "the parade example of verb suppletion". In view of these facts, some suppletion in this domain is to be expected in Zapotec, too, and it seems that in some cases the paradigms of positional verbs are indeed suppletive. For example, in Yatzachi Zapotec the paradigm of *atə́* 'be (of horizontal things like land, road and river)' includes the stem *de*, used for the stative aspect of this verb (Butler 1997: 69, 240), while in Yalálag Zapotec *de* is used for the stative of *a't* 'lay down' (López and Newberg 2005: 25). As in other areas surveyed in this paper, a more detailed investigation of the full paradigms of the positional verbs, when they become available in published form, may reveal additional instances of suppletion in this category.

References

Adam, Christopher C. 2003. *A study of Dihidx Bilyáhab (Santo Domingo Albarradas Zapotec) morphophonology*. Northridge, CA: California State University Northridge MA thesis.

Aikhenvald, Alexandra Y. 2010. *Imperatives and commands*. Oxford: Oxford University Press.

Aikhenvald, Alexandra Y. 2013. Possession and ownership: A cross-linguistic perspective. In Alexandra Y. Aikhenvald & R. M. W. Dixon (eds.), *Possession and ownership: A cross-linguistic typology*, 1-64. Oxford: Oxford University Press.

Baerman, Matthew. 2014. Suppletive kin term paradigms in the languages of New Guinea. *Linguistic Typology* 28. 413-448.

Benton, Joseph. 2008. Vocabulario de zapoteco de Coatecas Altas. Summer Institute of Linguistics unpublished manuscript.

Birjulin, L. A. & V. S. Khrakovskij. 1992. Povelitelnye predlozhenija: problemy teorii [Imperative sentences: theoretical issues]. In V. S. Khrakovskij (ed.), *Tipologija imperativnykh konstruktsyj* [Typology of imperative constructions], 5-50. Sankt-Petersburg: Nauka.

Black, Cheryl. 2000. *Quiegolani Zapotec syntax: A Principles and Parameters account*. Dallas, TX: SIL International & University of Texas at Arlington.

Broadwell, Aaron & Luisa Martínez. 2009. Preliminary dictionary of San Dionisio Ocotepec Zapotec. City University of New York unpublished manuscript.

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

Butler H., Inez M. 1980. *Gramática zapoteca: Zapoteco de Yatzachi El Bajo*. México, D.F.: Instituto Lingüístico de Verano.

Butler H., Inez M. 1997. *Diccionario zapoteco de Yatzachi: Yatzachi El Bajo, Yatzachi El Alto, Oaxaca*. Tucson, AZ: Instituto Lingüístico de Verano.

Chinchlej, G.S. 1980. *Voprosy tozhdestva morfemy i supletivizm* [Problems of morpheme identity and suppletion]. Kishinev: Shtiintsa.

Comrie, Bernard. 2003. Recipient person suppletion in the verb 'give'. In Mary Ruth Wise, Thomas N. Headland & Ruth M. Brend (eds.), *Language and life: Essays in memory of Kenneth L. Pike*, 265-281. Dallas, TX: SIL International & University of Texas at Arlington.

Comrie, Bernard & Gontzal Aldai. 2002. Suppletion in the Old Basque verb "to give": A typological perspective. In Xabier Artiagoitia, Patxi Goenaga & Joseba A. Lakarra (eds.), *Erramu bonata: Festschrift for Rudolf P. G. de Rijk*, 145-151. Bilbao: Universidad del País Vasco.

Córdova, Juan de. 1987 [1578a]. *Arte del idioma zapoteco*. México: Ediciones Toledo.

Córdova, Juan de. 1987 [1578b]. *Vocabvlario en lengva çapoteca*. México: Ediciones Toledo.

Corbett, Greville G. 2007. Canonical yypology, suppletion, and possible words. *Language* 83. 8-42.

Corbett, Greville G. 2009. Suppletion: typology, markedness, complexity. In Patrick O. Steinkruger & Manfred Krifka (eds.), *On inflection*, 25-40. Berlin & New York: Mouton de Gruyter.

Dressler, Wolfgang U. 1985. Suppletion in word formation. In Jacek Fisiak (ed.), *Historical semantics – historical word-formation*, 97-112. Berlin & New York: Mouton de Gruyter.

Fleischman, Suzanne. 1995. Imperfective and irrealis. In Joan Bybee & Suzanne Fleischman (eds.), *Modality in grammar and discourse*, 519-551. Amsterdam: Benjamins.

Foreman, John Olen. 2006. *The morphosyntax of subjects in Macuiltianguis Zapotec*. Los Angeles, CA: University of California Los Angeles dissertation.

Haan, Ferdinand de. 2006. Typological approaches to modality. In William Frawley (ed.), *The expression of modality*, 27-69. Berlin & New York: Mouton de Gruyter.

Haugen, Jason D. & Michael Everdell. 2015. 'To kill' and 'to die' (and other suppletive verbs) in Uto-Aztecan. *Language Dynamics and Change* 5. 227-281.

Heath, Jeffrey. 2004. Person. In Geert Booij, Christian Lehmann, Joachim Mugdan & Stavros Skopeteas (eds.), *Morphology: An international handbook on inflection and word-formation*, 998-1015. Berlin & New York: Mouton de Gruyter.

Juge, Matthew L. 2000. On the rise of suppletion in verbal paradigms. *Berkeley Linguistics Society* 25. 183-194.

Juge, Matthew L. 2013. Analogy as a source of suppletion. In Ritsuko Kikusawa & Laurence A. Reid (eds.), *Historical linguistics 2011*, 175-198. Amsterdam: Benjamins.

Kaufman, Terrence. 1994-2007. Proto-Zapotec reconstructions. University of Pittsburgh unpublished manuscript.

Lewis, M. Paul, Gary F. Simons & Charles D. Fennig (eds.). 2014. *Ethnologue: Languages of the world*. 18th ed. Dallas, TX: SIL International. Online version: http://www.ethnologue.com.

Lightfoot, David. 2006. *How new languages emerge*. Cambridge: Cambridge University Press.

Lillehaugen, Brook Danielle & Aaron Huey Sonnenschein (eds.). 2012. *Expressing location in Zapotec*. Munich: Lincom Europa.

Long, Rebecca C. & Sofronio Cruz M. 2000. *Diccionario zapoteco de San Bartolomé Zoogocho*. 2nd electronic edition. Coyoacán, D.F.: Instituto Lingüístico de Verano. http://www-01.sil.org/MEXICO/zapoteca/zoogocho/S038a-Diccionario-zpq.htm

López, Filemón L. & Ronalde Newberg Y. 2005. *La conjugación del verbo zapoteco: Zapoteco de Yalálag*. 2nd electronic edition. México, D.F.: Instituto Lingüístico de Verano.

López Cruz, Ausensia. 1997. Morfología verbal del zapoteco de San Pablo Güilá. Instituto Nacional de Antropología e Historia MA thesis.

Lyman Boulden, Hilario. 2007. *Gramática popular del zapoteco de Comaltepec, Choapan, Oaxaca*. Tlalpan, D.F.: Instituto Lingüístico de Verano.

Markey, T. L. 1985. On suppletion. *Diachronica* 11: 51-66.

Marlett, Stephen. 2014. Possession. In Cheryl A. Black, H. Andrew Black & Stephen A. Marlett (eds.), *The Zapotec Grammar Files*. http://www-01.sil.org/mexico/workpapers/WP001-PDF/PossessionZapotec.pdf

Martínez, Valerie & Stephen A. Marlett. 2010. Nouns. In Cheryl A. Black, H. Andrew Black & Stephen A. Marlett (eds.), *The Zapotec Grammar Files*. http://www.sil.org/mexico/WorkPapers/WP001i--ZapotecGrammarFiles.htm

Mel'čuk, Igor. 1976. On suppletion. *Linguistics* 170. 45-90.

Mel'čuk, Igor. 1994. Suppletion: Toward a logical analysis of the concept. *Studies in Language* 18. 339-410.

Munro, Pamela. 2002. Creepy suppletion in San Lucas Quiaviní Zapotec. Paper presented at the America Indian Seminar, University of California, Los Angeles, 29 October 2002.

Munro, Pamela. 2006. Modal expression in Valley Zapotec. In William Frawley (ed.), *The expression of modality*, 173-205. Berlin & New York: Mouton de Gruyter.

Munro, Pamela & Felipe H. Lopez. 1999. *Di'csyonaary X:tèe'n Dìi'zh Sah Sann Lu'uc/San Lucas Quiaviní Zapotec dictionary/Diccionario zapoteco de San Lucas Quiaviní*. Vol. 1. Los Angeles, CA: Chicano Studies Research Center Publications.

Newman, John. 2002. Culture, cognition, and the crammar of 'give' clauses. In N. J. Enfield (ed.), *Ethnosyntax: Explorations in grammar and culture*, 74-95. Oxford: Oxford University Press.

Operstein, Natalie. 2002. First-person plural and the aspect morphology of Zapotec. *Proceedings of the 5th Annual Workshop on the American Indigenous Languages, Santa Barbara Papers in Linguistics* n.n. 53-64.

Operstein, Natalie. 2012. Proto-Zapotec *tty/*ty and *ttz/*tz. *International Journal of American Linguistics* 78. 1-40.

Operstein, Natalie. 2015a. *Zaniza Zapotec*. Munich: Lincom Europa.

Operstein, Natalie. 2015b. Verb inflection and valence in Zapotec. In Natalie Operstein & Aaron Huey Sonnenschein (eds.), *Valence changes in Zapotec: Synchrony, diachrony, typology*, 323-344. Amsterdam: Benjamins.

Operstein, Natalie. 2015c. Valence-altering operations in Zapotec. In Natalie Operstein & Aaron Huey Sonnenschein (eds.), *Valence changes in Zapotec: Synchrony, diachrony, typology*, 23-54. Amsterdam: Benjamins.

Operstein, Natalie & Aaron Huey Sonnenschein (eds.) 2015. *Valence changes in Zapotec: Synchrony, diachrony, typology*. Amsterdam: Benjamins.

Persons, David D., Cheryl A. Black & Jan A. Persons. 2009. *Gramática de zapoteco de Lachixío*. Instituto Lingüístico de Verano. http://www-01.sil.org/mexico/zapoteca/lachixio/G040-LachixioGram-zpl.htm.

Pickett, Velma B., Cheryl Black & Vicente Marcial Cerqueda. 2001. *Gramática popular del zapoteco del Istmo*. 2nd electronic edition. Juchitán: Centro de Investicación y Desarrollo Binnizá & Tucson: Instituto Lingüístico de Verano. http://www-01.sil.org/Mexico/zapoteca/istmo/G023a-GramaticaZapIstmo-zai.htm.

Pickett, Velma B., Cheryl Black & Vicente Marcial Cerqueda. 2007. *Vocabulario zapoteco del Istmo*. 5th electronic edition. Instituto Lingüístico de Verano.

Rohlfs, Gerhard. 1968. *Grammatica storica della lingua italiana e dei suoi dialetti: Morfologia*. Transl. Temistocle Franceschi. Torino: Giulio Einaudi.

Rudes, Blair. 1980. On the nature of verbal suppletion. *Linguistics* 18. 655-676.

Smith Stark, Thomas C. 2001. Supletivismo según la persona del receptor en el verbo 'dar' de algunas lenguas otomangues. *Caravelle* 76-77. 95-103.

Smith Stark, Thomas C. 2002. Las clases verbales del zapoteco de Chichicapan. In Zarina Estrada Fernández & Rosa María Ortiz Ciscomani (eds.), *Memorias del VI Encuentro Internacional de Lingüística en el Noroeste*, vol. 2, 166-212. Hermosillo: University of Sonora.

Smith Stark, Thomas C. 2007. Algunas isoglosas zapotecas. In Cristina Buenrostro, Samuel Herrera Castro, Yolanda Lastra, Juan José Rendón, Otto Schumann, Leopoldo Valiñas & María Aydée Vargas Monroy (eds.), *Clasificación de las lenguas indígenas de México. Memorias del III Coloquio Internacional de Lingüística Mauricio Swadesh*, 69-133. México, D.F.: Universidad Nacional Autónoma de México & Instituto Nacional de Lenguas Indígenas.

Smith Stark, Thomas C. 2008. La flexión de tiempo, aspecto y modo en el verbo del zapoteco colonial del Valle de Oaxaca. In Ausencia López Cruz & Michael Swanton (eds.), *Memorias del Coloquio Francisco Belmar*, 377-419. Oaxaca: Biblioteca Francisco de Burgoa.

Sonnenschein, Aaron Huey. 2005. *A descriptive grammar of San Bartolomé Zoogocho Zapotec*. Munich: Lincom Europa.

Sonnenschein, Aaron Huey. 2015. Indirect object 'lowering' in San Bartolomé Zoogocho Zapotec. In Natalie Operstein & Aaron Huey Sonnenschein (eds.), *Valence changes in Zapotec: Synchrony, diachrony, typology*, 281-296. Amsterdam: Benjamins.

Speck, Charles H. 2005. Vocabulario zapoteco (parte zapoteco – español). Summer Institute of Linguistics unpublished manuscript.

Speck, Charles H. & Velma B. Pickett. 1976. Some properties of the Texmelucan Zapotec verbs go, come, and arrive. *International Journal of American Linguistics* 42. 58-64.

Stolz, Thomas & Ljuba N. Veselinova. 2013. Ordinal numerals. In Matthew S. Dryer & Martin Haspelmath (eds.), *The World Atlas of Language Structures Online*. Leipzig: Max Planck Institute for Evolutionary Anthropology.
(Available online at http://wals.info/chapter/53, Accessed on 2016-01-17.)

Swadesh, Morris. 1947. The phonemic structure of Proto-Zapotec. *International Journal of American Linguistics* 13. 220-230.

Tuttle, Edward F. 2001. La pragmatica contro il paradigma come fonti di asimmetrie strutturali e dialettalizzazione morfologica. In Alberto Zamboni et al., *La dialettologia oggi: Fra tradizione e nuove metodologie*, 477-531. Pisa: Edizioni ETS.

Vafaeian, Gazaleh. 2013. Typology of nominal and adjectival suppletion. *Sprachtypologie und Universalienforschung* 66. 112-140.

Veselinova, Ljuba N. 1997. Suppletion in the derivation of ordinal numerals: A case study. *Papers from the Eighth Student Conference in Linguistics, MIT Working Papers in Linguistics* 31. 429-447.

Veselinova, Ljuba N. 2006. *Suppletion in verb paradigms: Bits and pieces of the puzzle*. Amsterdam: Benjamins.