

Towards a typology of sibling languages

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1 INTRODUCTION

Sibling languages form an under-documented class of speech registers, which are generated from an ambient language by a pre-adolescent close peer. Like creoles, they are particularly interesting objects of linguistic analysis, since they potentially demonstrate innate knowledge and biases with respect to language.

To date, only one example of a sibling language has been documented in the linguistic literature. In this paper, we introduce three additional examples in varying levels of detail - Boudledidge, Ni, and Cushin - and examine what sorts of rules are applied, and how these relate typologically to other processes of natural language.

2 SPAKA LANGUAGE

The Spaka sibling language is documented by its creator, who later completed graduate study in linguistics, and her colleague (Diehl & Kolodzey 1980a,b). The language was created by a pair of sisters at the ages of 7 and 11 years old, growing up in a monolingual environment in Texas.

Spaka is the most highly elaborated of the sibling languages which will be discussed here, in that it involves morphosyntactic transformations as well as phonological ones. The novel (for English) morpheme ‘um’ was introduced and used to mark grammatical subjects and predicates, in prefixal position. Spaka also involves affix stripping of verbal roots, as well as other forms of affixal innovation. Additional function words are introduced, and Spaka-specific substitutions made for some English function words. All this results in considerably more syntactic ambiguity in Spaka as compared to typical English.

Various other phonological changes also result in the introduction of onset [mr] and [hr] clusters, as in [hrʌnθ] ‘hearth’, which are phonotactically impermissible in typical English phonology. Thus, Spaka is *non-structure-preserving*. This sets it apart from the usual sort of language game, in which base language phonology such as syllable phonotactics is respected (Bagemihl 1988, 1989).

Elsewhere in the phonological domain, Diehl and Kolodzey observe a ‘considerable reduction in the size of the Spaka vowel space, relative to ... English.’ The number of vowel segments is reduced from 15 to only 7 segments. Diehl and Kolodzey observe that ‘individual mappings between English and Spaka vowels do not appear to be governed by simple ... relationships’ but that there is a ‘strong tendency toward the use of lax or centralized vowels.’ This overall tendency is illustrated in Figure 1 below.¹

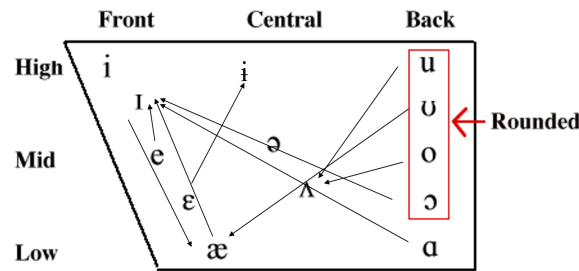


Figure 1 Vowel movements in Spaka language

In sum, Spaka was created by prepubescent siblings who have largely completed the process of native language acquisition, and involves insertion (of ‘um’) with (possibly later-developing) syntactically restricted occurrence, as well as neutralization of vowel contrasts and the use of new vocabulary.

3 BOUDLEDIDGE

Boudledidge is the joint creation and one of the many claims to fame of the Mitford sisters Unity and Jessica (Decca). In the 1930s, the Mitfords were a particularly socially prominent and politically active English family. Unity and Decca grew up in a largely English-speaking environment, though they also acquired French from a relatively young age.

The language’s name is based on the English word ‘pallish’ (as the language was meant for ‘pals’) with the associated phonological changes required by Boudledidge itself. Decca (as quoted in Pryce-Jones (1977)) recalls that:

‘We were starting it at about the age of 7, and went on perfecting it until about 10. The language had to go with the facial expression, which was one of great sorrow, and the noise was pressed out of the side of the mouth.’

Unity, the older of the two sisters, was 10 to 13 years old when Decca was 7 to 10. Therefore, there is close agreement in age regarding the genesis of Boudledidge in comparison with Spaka. The game was employed by the sisters into adulthood and,

¹ Background diagram from <http://www.utexas.edu/courses/linguistics/resources/phonetics/vowelmap/index.html>

in Unity's case, even after a significant amount of brain damage. Their nephew and biographer Jonathan Guinness ([Guinness 1984](#)) describes Boudledidge as follows:

'It had to be uttered while making a miserable, frowning and rather costive-looking grimace with the mouth pulled sharply down to one side. Hopeless yearning was the keynote, together of course with deadly seriousness. The language was English with the vowels distorted, the consonants softened and extra syllables inserted.'

Boudledidge is well-attested in published letters and other biographical materials about the sisters ([Mitford 1960, 2006](#); [Pryce-Jones 1977](#); [Lovell 2001](#); [Mosley 2007](#)), from which the following data are taken. The examples below are given in the orthography used in these materials - the intended English pronunciation is relatively clear.

Boudledidge involves [d]-insertion after stressed vowels:

- | | |
|------------|----------|
| (1) Robin | Rudbin |
| (2) still | dzdiddle |
| (3) dear | deedr |
| (4) appeal | abbidle |

Insertion applies consistently to polysyllabic forms, though not always to monosyllables. When unpronounceable consonant clusters result, the final consonant of a cluster becomes syllabic when it is a liquid, or otherwise an intervening epenthetic vowel is inserted (apparently schwa, though this is not clear from the orthography).

Notably, however, not all impermissible (in standard English) clusters are repaired in this way. Example 2 above exemplifies such an impermissible cluster word-initially, which is nonetheless tolerated in Boudledidge.

Unvoiced consonants are uniformly voiced in Boudledidge, as in the following examples.

- | | |
|-----------|------|
| (5) check | jegg |
| (6) force | vudz |

Another consonantal change is the affrication of alveolar fricatives, exemplified in (7) and (8) below.

- | | |
|--------------|-----------|
| (7) stage | dzdedge |
| (8) enclosed | engludzed |

The voicing and affrication changes in conjunction lead to the neutralization of [s], [z], and [ts], [dz] sequences to [dz]. This affrication change is typologically highly unusual in adult language. The only affrication changes documented in the phonological database P-Base ([Mielke 2004](#)) are generated via the epenthesis of transitional stop consonants between nasals and other non-plosive consonants, which is clearly not the case here. However, a strikingly similar rule applies in the

formation of nicknames from Spanish, in which the voiceless alveolar fricative [s] is affricated to palatal [tʃ], in tandem with syllable truncation:

- (9) Rosario > Charo
 (10) Alicia > Licha

An exhaustive search of the literature yields one additional example of a similar affrication rule, attested in West North American sound-symbolic diminutive ‘intensity shifts’ (Nichols 1971). This rule involves the alteration of root consonants as follows: [s]/[θ]>[tʃ]/[c], according to a continuum of lenis>fortis>ejective stops. Suggestively, these three affrication rules in Boudledidge, Spanish and West North American occur in the semantically similar speech domain of sibling language, nicknames, and diminutives, all of which involve speech between close and frequent interlocutors and the implied expression of affection.

Variation in vowels displays considerably more idiosyncrasy. It usually involves monophthongization (as in example (7) above), along with centralization of [ɔ] to [ʌ] (cf. example (1) above).²

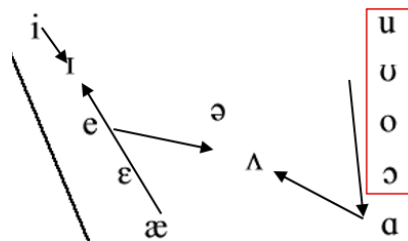


Figure 2 Vowel movements in Boudledidge language

In summary, the social contexts in which Spaka and Boudledidge were created and used are strikingly similar. Both of them also involve segmental insertion, in typical language game fashion, in tandem with more extensive changes to both consonants and vowels. These segmental changes result in a high degree of contrast neutralization in comparison to typical English. At the same time, the consonant changes are reminiscent of those found (only) in other specialized speech registers used in similar contexts, indicating social closeness. Finally, violations of typical English phonotactics, at least in syllable onsets, are widespread. Thus Boudledidge, like Spaka and unlike typical language games, is non-structure-preserving.

4 NI LANGUAGE

Ni language was created by the second author with her younger brother at some point by the ages of 15 and 13 years old, respectively. The two are native speakers of standard southern British English (SSBE), growing up in the Arab Gulf where they also had exposure in the classroom to French and (to a lesser extent) Arabic, as

² Background diagram from <http://www.utexas.edu/courses/linguistics/resources/phonetics/vowelmap/index.html>

well as some passive exposure to Hindi, Tagalog and other languages. Therefore, its genesis was possibly significantly later than for the two sibling languages described above.

The most noticeable characteristic of Ni language is the change of all vowels to [i:], as observed in the following lexicalized dialogue used by its two speakers:

- | | | | |
|------|------------|-----------------|---------------|
| (11) | Clare? | kli: | [aunt's name] |
| | Yeah? | ji: | |
| | What? | wi:t | |
| | Hair. | hi: | |
| | Yeah? | ji: | |
| | Nah. | ni: | |
| | Hahahahaha | hi:hi:hi:hi:hi: | |

In polysyllabic words, the output of this change is perceptible as [ɪ] for unstressed vowels, or even deletion, though the [ɪ] re-emerges in careful speech.

- | | | |
|------|----------------|--------------|
| (12) | (ɪ)di:ri:b(ɪ)l | adorable |
| (13) | bi:θdi: | birthday |
| (14) | di:sti:ʃi:n | dissertation |
| (15) | mi:rki:n | American |

Note that coda [r]-deletion applies as expected in SSBE in examples (13) and (14), followed by deletion of the schwa vowel in (14). However, [r]-deletion does not apply in example (15), despite the surface [r] in coda position. It appears, then, that coda [r] deletion applies before vowel deletion in this case. This is an argument against the stance that language games involve the addition of rules only at the end of a phonological derivation, except for postlexical rules.

The change of vowels to [i:] also results in differing use of epenthetic glides in Ni language as compared to typical English, as exemplified in (16) below.

- | | | |
|------|---------|-------|
| (16) | gi:ji:ŋ | going |
| (17) | wi:mi:n | women |

Due to the replacement of the preceding back vowel with [i:], the intervocalic epenthetic glide which surfaces is palatal [j] rather than [w]. This substitution is specific to epenthetic [w], as example (17) demonstrates. As with the previous phenomenon, this indicates the precedence of vowel substitution with respect to glide epenthesis ? assuming an ordered application of rules.

Glide insertion does not occur in all contexts where it might be expected, as seen in example (18) below.

- | | | |
|------|----------|--------|
| (18) | fi:bi:i: | phobia |
|------|----------|--------|

The intuition of the second author is that this word remains trisyllabic, with three rhythmic 'beats,' but no epenthetic [j] surfaces to resolve the vowel hiatus

of two identical successive [i:] vowels. Such a glide may resurface in careful, hyperarticulated speech.

Additional consonantal changes in Ni language do not involve phonemic substitutions, but rather the atypical use of consonantal allophones. This differentiates Ni language from the previous two sibling languages discussed.

First, the second author and Ni language speaker's subjective impression is that Ni language is overall very 'dental.' Specifically, typical English alveolar consonants are all fronted and produced as dentals. In the case of the lateral [l] phoneme, this entails the use of only 'light' or 'clear' [l]. The typical English variation between light and dark [l] is entirely neutralized. The result is a perceptually very non-'English-like' impression.

In the lexical domain, Ni language is less innovative than either Spaka or Boudledge. Other than the lexicalized dialogue in example (11), lexically-specific glottalization occurs in one word, seen in example (19) below.

(19) mi:ʔn meeting

No other Ni-specific vocabulary items exist.

In summary, Ni language constitutes a third data point in the array of sibling languages. Its changes to typical English are less extensive, perhaps due to its later development in terms of the life cycle of the speakers/creators (so that less time was available to elaborate the grammar, before the older sibling left the household for university).

Notably, the primary change in Ni language is one of segmental substitution rather than insertion, in contrast to the other two sibling languages discussed so far. This also means that no new syllable profiles were introduced, unlike in Spaka and Boudledge. However, Ni language retains the non-structure-preserving nature of the other two languages, in the sense that it employs consonantal allophones in ways that would be illicit in typical English.

Ni language also differs in the outcome of its vowel changes. While the other two varieties both involve an overall laxing tendency, Ni is quite the opposite in favoring a vowel located in a corner of the vowel triangle. However, this type of change still entails massive neutralization of vowel contrasts, an effect common to all three sibling languages.

In addition, the substitution of [i:] for other vowels - in conjunction with fronting/dentalizing of alveolars, use of light [l], and [j] epenthesis, yields an overall trend towards frontness and palatality, which is shared by all three sibling languages discussed so far, as well as other similar speech registers.

5 CUSHIN

Television personality Greg Davies [Davies \(2014\)](#) briefly describes a sibling language in an episode of the program *Would I Lie to You?*. According to him, he and his sister developed it as children in order to have a secret language. He goes on to say that 'I would say you're arbitrarily adding a sort of 'shk' sound.' The first example he

gives is the word [jeʃk] ‘yeshk,’ meaning ‘yes.’ This word in itself illustrates that Cushin is more than the simple addition of [ʃk], just as Ni language is more than the simple substitution of [i:] for all vowels. In his transformation of the word ‘yes,’ Davies deletes/replaces the coda [s] as well as inserting [ʃk].

In other tokens, often but not always words ending in open syllables, there is indeed only addition involved, as in the following examples.

- | | | |
|------|----------|----|
| (20) | ɑʃk/aɪʃk | I |
| (21) | nɔʃk | no |
| (22) | æmʃk | am |

In others, there is some simplification in the environment of identical consonants (23), and also simple substitution of [ʃ] for [s] (24)

- | | | |
|------|--------|--------|
| (23) | lʊkʃ | looks |
| (24) | ʃɪmpəl | simple |

Vowel changes seem to occur as well, as in example (20), but there is too little data available to establish any pattern for these.

Cushin also involves a specific lexical innovation. As Davies says, part of the language was to, ‘sometimes mid-sentence, sometimes at the end of the sentence, just to loudly proclaim ‘[kʊʹʃã]!’

While the sample of Cushin based on this recording is exceedingly limited, some important commonalities can still be observed between it and the other sibling languages discussed previously. First, there is segmental insertion/substitution in typical language game fashion. But as seen for Spaka and Boudledidge, this results in a wider range of consonant clusters than is permitted in typical English (in the case of Cushin, these occur in coda rather than onset position). An additional phonological innovation is the use of an exaggeratedly nasalized vowel in the word so ‘loudly proclaimed.’ Finally, the choice of inserted/substituted consonant phonemes includes palatal [ʃ], thereby continuing the trend toward frontness/palatality exemplified in all of the attested sibling languages except Spaka.

6 SIBLING LANGUAGES AND OTHER SPECIAL SPEECH REGISTERS

Perhaps the most obvious comparison to be made is with so-called ‘twin language.’ Twins are often anecdotally observed to speak with each other in a way which is difficult or impossible for others to understand.

However, this typically occurs at much younger ages than we see in the development of sibling languages. ‘Twin language’ is typically used at toddler age, among 1, 2 and 3 year old children, and is typically abandoned well before the children reach school age. In contrast, the sibling languages documented here were developed by school-age children, in some cases approaching puberty, and, in one case, during/afterwards.

In addition, the consensus in the scholarly literature on twin language is that their idiosyncratic speech is in reality due to developmental speech delay (Dodd &

MacEvoy 1994; Preisser, Hodson & Paden 1988; Thorpe, Rutter & Greenwood 2003). Such delays are especially likely to occur for twins. The constant companionship of another such speaker tends to prolong these delayed forms of speech for social as well as biological reasons. The phenomena associated with twin speech tend to be typical child speech processes of syllable simplification, replacement of more 'marked' phonemes with less 'marked' ones, and so on. As we have seen, the trend in sibling languages goes in quite the opposite direction.

Finally, it is worth noting that out of the 4 known sibling language cases, for two of them, the speakers went on to pursue advanced studies in linguistics (Spaka and Ni). For Boudledidge, one of the speakers became a professional writer, and the fourth, a comedy writer/performer. It can of course be argued that the sample selection is biased, in that sibling language speakers who become linguists are more likely to document their sibling languages. But it is also plausible that inventing a sibling language as a child is evidence of a precocious insight into metalinguistic analysis and linguistic creativity - a far cry from the mild impairment often seen with twins, at least in early childhood.

We conclude, therefore, that sibling languages and twin language are quite separate and unrelated phenomena.

This is far from clear when it comes to another type of specialized speech domain. We have already noted that the affrication rule seen in Boudledidge has attested counterparts only in nickname and diminutive formation. Another noteworthy commonality is the tendency toward vowel neutralization and centralization/laxing. Lappe's 2007 corpus study of English nickname formation documents a strong tendency toward the use of more marked vowels, located in more central articulatory/acoustic space. In her data, laxing makes up over half of all vowel changes other than those due to the effects of stress-driven schwa deneutralization.

These three types of speech - sibling languages, nicknames, and diminutives - share a certain social context of usage in that they are primarily produced among speakers with close social ties of affection. This entails that they are also used in very small (even dyadic) speech communities, between speakers who are highly familiar with the interlocutor voices.

Such familiarity is well known to have effects on both perception and production such that perception and comprehension is enhanced even with less clear production, and this in turn leads to less clear speech between such dyads, as it is not strictly necessary for good comprehension. Listeners are highly sensitive to phonetic microvariation in familiar voices (Allen & Miller 2004), and this sensitivity makes it easier to identify lexical items when produced by familiar speakers (Nygaard, Sommers & Pisoni 1994). This reduces the need for articulatory distinctiveness or clear speech on the part of the speaker, as also observed for tight social networks. Neutralization also yields a smaller segmental inventory, already known to be associated with a smaller speech community (Trudgill 2004; Hay & Bauer 2007).

All of these factors can explain why sibling languages remain comprehensible to their speakers in spite of the widespread neutralization they involve.

Many of the specific segmental changes involved, in particular the introduction of high front vowels and palatal consonants, are also compatible with common claims about sound symbolism. In this approach, such segments connote smallness and cuteness, and therefore, affection (Hinton, Nichols & Ohala 1994). It is no surprise, therefore, to see them predominate for sibling languages as well as nicknames and diminutives.

Sibling languages can also be fruitfully compared with language games, such as Pig Latin, schm-reduplication, et cetera. It has been claimed that language games are governed by the grammar - like other phonological processes like reduplication, infixation, affixation, etc. - and necessarily involve either extending, modifying, or exaggerating attested natural language processes (Bagemihl 1988, 1989). This claim is implicit in the many extant phonological analyses of language games (e.g. for English schm-reduplication, see McCarthy & Prince 1986, Alderete, Beckman, Benua, Gnanadesikan, McCarthy & Urbanczyk 1999, Nevins & Vaux 2003). This raises the question, if all language game processes correspond to natural language ones, can all natural language phonological processes be used in language games? Somewhat surprisingly, the typology of language games documented so far suggests an answer of 'no' - language games seem to be narrowly restricted to the operations of segment deletion, insertion, reordering, or substitution.

The sibling languages documented here also seem to rely primarily on segment insertion and substitution. However, all of them, except perhaps Cushin, also call for the kind of segment/featural modification that is frequently found in phonological alternations of the world's languages, yet to our knowledge has never been described in a language game. Here we refer primarily to the observed patterned variation in voicing, affrication, and vowel quality.

We conclude, therefore, that sibling languages are qualitatively different from language games as commonly construed. However, we find it quite plausible that the language game-like insertion/substitution found in each sibling language ('um' for Spaka, [d] for Boudledidge, [i:] for Ni, [k] for Cushin) formed the starting point for that language. Each language was thereafter elaborated beyond that point and in an eventually qualitatively different way, influenced by socially context-specific factors as outlined above. The result, then, is a more 'language-like' variety which does not necessarily respect source language phonological structures and rules - again, unlike language games.

A final comparison may be made involving age or kinship group-based varieties and the phenomenon of esoterogeny. The term refers to the purposeful generation of linguistic diversity, even language-internally, on the assumption that this has sociolinguistic adaptive value (Evans 2009).

The intentionality of introducing linguistic difference is highly reminiscent of sibling languages. Additional examples put forward by Evans include kinship avoidance registers as used in southern Africa and Australia, in which speech between certain groups of relatives requires lexical avoidance and substitution which may involve segmental substitution as well, and age-group based speech varieties, often introduced as part of an initiation process. This too is comparable to

the social context of sibling languages, generated (though not taught) by children close in age and linked by family ties.

7 CONCLUSION

In this paper, we have adduced three newly-documented examples of what we call sibling languages. We argue that these speech varieties represent an important and under-documented source of information on human generative linguistic capacity, and hope that these new examples will spur further documentation and research on sibling languages that will enable future researchers to make more reliable typological generalizations.

Based on the available evidence, we conclude that sibling languages are distinct from ‘twin language’ and, to a lesser extent, from language games. Instead, they share commonalities with other forms of speech used in small social networks between highly familiar interlocutors, such as nicknames, diminutives, languages with small numbers of speakers, and kinship/age-mate registers. In particular, common characteristics include segmental insertion, segmental neutralization (especially vowel centralization/laxing) and articulatory fronting.

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