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Nominal plurals in Antwerp Hasidic Yiddish: An empirical study

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Abstract: Yiddish is a Germanic Jewish language that is natively spoken by adults and children in segregated Hasidic communities around the world. The current study investigates the system of noun plurals as spoken by Hasidic adults living in Antwerp, Belgium. In the absence of evidence-based detailed grammatical descriptions of Antwerp Hasidic Yiddish, the aims of this study were (a) to arrive at a description of the plural system and (b) to detect if phonological regularities govern the selection of plural suffixation and stem change.

An experimental pluralization task containing 87 singular nouns was administered to 100 Yiddish-speaking adults. Findings show that the system of noun plurals in Antwerp Hasidic Yiddish consists of plural markers that do not exist in Standard Yiddish (e. g. *bikh-bíkhers* ‘book-s’), combinations of existing markers (*lip-lípenes* ‘lip-s’) and loans from Dutch (*ay-áyeren* ‘egg-s’) – the ambient language. Nevertheless, suffixes that already exist in Standard Yiddish occur in a higher frequency than those that are specific to Antwerp. In order to investigate which phonological regularities govern the selection of plural suffix and stem change several factors in the inflected singular form were taken into account. Our results reveal an intricate system of some strong phonological regularities, islands of subregularities and exceptions that appear to be lexically determined.

Keywords: Antwerp Hasidic Yiddish, noun plurals, phonological factors

1 Introduction

Yiddish, literally ‘Jewish’, has been the home language of Jews in Central and Eastern Europe in the last thousand years. Yiddish grammar and lexicon are mostly Germanic, combined with considerable influences from Hebrew and some from Slavic languages. While formerly used by millions of European Jews, annihilation of the Jewish population during World War II restricted

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current Yiddish native usage to elderly survivors of pre-Holocaust Europe and a rising number of Ultra-Orthodox Hasidic Jews in Israel and worldwide. In the Hasidic context, Yiddish is maintained as a native living language that is acquired by children, usually along with other local languages.

1.1 Hasidic Yiddish

Overall, the Jewish Ultra-Orthodox community is a heterogeneous group regarding its members' countries of origin, study methods, dress codes and subgroup leaderships. All these elements interact in the daily lives of these groups, and often act as a visible or invisible barrier between them and their secular surroundings. The Ultra-Orthodox community includes two main groups: Hasidim, followers of the Hasidic movement, which is divided into sub-groups such as Belz, Ger and Sanz (often named for the towns and villages in Eastern Europe where they first appeared); and *Misnagdim* (or *Litvish*), historic opponents of the Hasidic movement. Most native Yiddish speakers today are Hasidim. Yiddish has become an important means of segregation between Hasidic communities and their non-Jewish as well as secular-Jewish surroundings (Fader 2001; Tannenbaum and Abugov 2010). The exact number of native Hasidic Yiddish speakers today is inaccessible; roughly estimated figures are half a million worldwide (Katz 2004: 2), but high birth rates and a strong will to maintain a religious lifestyle gradually add to these figures. The main Hasidic Yiddish-speaking centers today are Antwerp (the largest European native Yiddish-speaking community), New York, and several cities in Israel.

1.1.1 Antwerp Hasidic Yiddish

Hasidic Yiddish speakers in Antwerp live in close proximity to Dutch – the language of the non-Jewish majority, so most of them are Yiddish-Dutch bilinguals. Unlike Israeli Hasidic Yiddish speakers, who may speak both Yiddish and Hebrew at home (Abugov et al. 2014a), Dutch is used only for communicating with the local non-Jewish population and is not used as a home language. In most cases Yiddish is the exclusive home language, though some families also speak Hebrew, English and French at home.

The current study focuses on the Belz Hasidic community in Antwerp, which is considered an established organized group in the Antwerp Jewish community providing its 600 families an independent religious lifestyle, including a large educational system from infancy to adulthood. The community employs three

main languages: Yiddish and Dutch – two living languages used in a bilingual sociolinguistic setting – and what is termed *Loshn Koydesh* (literally, ‘the holy tongue’), i. e., historical varieties of Hebrew used in prayer and scriptural learning.

A major obstacle in the investigation of contemporary native Antwerp Hasidic Yiddish is the virtual absence of evidence-based, detailed grammatical descriptions. While linguistic research on Standard Yiddish has yielded numerous dictionaries and grammar books (*inter.alia* Weinreich 1977), the empirical psycholinguistic examination of current spoken Hasidic Yiddish has been rather limited, focusing on Hasidic Yiddish in Israel and the US (Abugov and Ravid 2013; Berman 2007; Barrière 2010). The main reason for this absence has to do with the highly segregated nature of the Hasidic community. Hasidic communities lead a life of self-imposed isolation from any outside secular environment – for example, their members do not watch television and refrain from using smartphones. They are also reluctant to cooperate with researchers who do not adapt research methods so as to respect their privacy, behavioral norms, and dress codes. The first author of the article gained the cooperation of Belz leaders and members by strictly adhering to these codes. To the best of our knowledge, to date no research has been carried out on any facet of native Yiddish usage in the Antwerp Hasidic community.

1.2 Yiddish noun plurals

Our window onto native Antwerp Yiddish usage is the system of noun plurals, a central area of inflectional morphology, whereby a singular noun (e. g., *kind* ‘child’) takes on a plural suffix (e. g., *kinder* ‘children’). Since no linguistic description of the system of noun plurals in Antwerp Hasidic Yiddish exists, the point of departure for the current study is the system of noun plurals in Standard Yiddish, our major source of knowledge about Yiddish grammar, which involves suffixation, stem modification or a combination of the two (Reyzen 1924; Glasser 1990; Krogh 2007) as presented in Table 1.

Standard Yiddish plural markers are of two origins: Germanic – as the umlaut in *kats-kets* ‘cat-s’ and *Loshn Koydesh* – as the umlaut combined with *-im* as in *dokter-doktóryim* ‘doctor-s’. The system consists of nine plural markers that are formed by six different suffixes *-(e)n*, *-s*, *-es*, *-er*, *-im*, *-ekh* or by a zero morpheme. Four of these plural markers (*-er*, *-im*, *-es* and zero) may combine with a stem-vowel change whose effect is similar to the umlaut in German (*séyfer-sfórim* ‘book-s’).

A single study to date described in detail the Yiddish plural system spoken in a Hasidic community in Israel (Abugov et al. 2014b). Results of this study revealed a new system of no less than seventeen plural markers (compared to nine markers in Standard Yiddish). Thus, for example, new Germanic markers

Table 1: Plural markers in Standard Yiddish.

Plural Marker	Example		Gloss
	Singular	Plural	
<i>(e)n</i>	<i>tish</i>	<i>tíshn</i>	tables
<i>s</i>	<i>kháye</i>	<i>kháyes</i>	animals
<i>es</i>	<i>tsháynik</i>	<i>tsháynikes</i>	teapots
<i>er</i>	<i>kind</i>	<i>kínder</i>	children
<i>ekh</i>	<i>méydl</i>	<i>méydlekh</i>	girls
zero	<i>épl</i>	<i>épl</i>	apples
umlaut	<i>kop</i>	<i>kép</i>	heads
umlaut <i>er</i>	<i>boym</i>	<i>béymer</i>	trees
<i>im</i>	<i>kháver</i>	<i>khavéyrim</i>	friends

have evolved (e. g., *tishtekh-tishtekhers* for Standard *tishtekh-tishtekher* ‘table cloth-s’) in addition to Modern Israeli Hebrew markers (*makhshév-makhshevím* ‘computer-s’), showing how Israeli Hasidic Yiddish incorporates new elements and thus starts deviating from Standard Yiddish due to contact with Hebrew.

Since Antwerp Hasidic Yiddish constantly interacts with Dutch – the language of the non-Jewish secular majority – the current study also takes into account the Dutch plural system. The contact between Yiddish and Dutch is especially interesting since they are both Germanic languages that share similar plural markers (*-(e)n*, *-s*), while Yiddish also includes Semitic plural markers (*-im*, *-es*) (Jacobs et al. 1994: 402). Dutch plurals are formed by adding a suffix to the singular and include only two productive suffixes: *-(e)n* and *-s*, which are (largely) in complementary distribution. However, there is a sophisticated interplay between suffix selection (*-(e)n* or *-s*) and the final rhyme of the stem as well as the stem’s stress pattern, resulting in interesting patterns of subregularities (van Wijk 2002).

1.3 Suffix and stem change selection

The complexity of Yiddish plural formation is reflected in two major operations: suffix application and changes to the base. Previous studies described the plural system in Standard Yiddish by listing phonological, morphological and semantic rules that may govern the selection of the plural suffix (Glasser 1990; Jacobs 2005; Krogh 2007; Mark 1978; Reyzen 1924; Volf 1977). For example, the plural marker *-(e)n* is usually added to multisyllabic nouns that end in a consonant with a final stress (*kontákt-kontákt(e)n* ‘contact-s’), the marker *-s* is used for nouns ending in *-er*, *-(e)n*, *-em* (*zéyger-zéygers* ‘watch-

watches'), nouns ending in an unstressed vowel (*frage-frages* 'question-s'), and often to nouns of Slavic origin that end in a consonant (*tsháynik-tsháynikes* 'teapot-s'). Singulars ending in diminutive or root final *-l* take the suffix *-ekh* (*shlisl-shlíslekh* 'key-s'). Both Zaretski (1926) and Volf (1977) agree that *-(e)n* and *-s* are the "common" way to form Yiddish plurals.

The *Loshn Koydesh* plural marker *-im* (with or without umlaut) is used with nouns of *Loshn Koydesh* origin (*kháver-khavéyrim* 'friend-s') though there are also some nouns from other origins (*dóokter-doktóyrim* 'doctor-s'). Yiddish stress is predominantly fixed on initial root syllables (Jacobs et al. 1994) (e.g. *nárish* 'silly', *meydl* 'girl'). In plural formation, a large number of *Loshn Koydesh* words exhibit stress shift, reflecting a shift from the original Hebrew/Aramaic origin final stress (*ganáv* 'thief') to prefinal stress (*gánev*), adapting the Germanic pattern of a final trochee also in the plural form (*gánev-ganóvim* 'thief-thieves').

Recent research has been devoted to the predictability of plural formation in other languages taking into account factors such as gender, stress, syllabic make-up and sonority of the stem final rhyme (Köpcke 1993; van Wijk 2002). Ravid et al. (2008) investigated the predictability of plural formation in four languages (Dutch, German, Danish and Hebrew). They focused on the sonority of the final rhyme and gender as predicting factors. Results showed that in Dutch, for example, if a sonorant is preceded by a full vowel, *-(e)n* is preferred in a majority of cases (tokens: 91%, types: 89%) and when a schwa precedes the sonorant, the suffix *-s* is predominantly chosen (tokens: 94.4%, types: 94.1%). In Hebrew, 81% of all feminine noun tokens ending with obstruents other than *-t* and sonorants other than *-n* receive the *-im* suffix.

Our framework starts from the assumption that four recurrent phonological factors are important for predicting the application of suffix and stem change (umlaut) in Yiddish: (i) The sonority of the final consonant, (ii) The vowel of the final syllable, (iii) The syllabic make-up, and (iv) The stress pattern. Although gender plays a role in plural application in other languages, including Standard Yiddish (Reyzen 1924), it was left out of our scope since it is not a phonological factor and since similar to other Hasidic Yiddish dialects, the system of grammatical gender no longer exists in Antwerp Hasidic Yiddish.

2 Aims

Against this background, the aim of the current study is twofold: First, it aims to describe the plural system of Antwerp Hasidic Yiddish: which suffixes are used and are stem changes applied? Second, it aims to find out whether phonological factors in the singular form govern the selection of plural markers in Antwerp

Hasidic Yiddish. More specifically, our study aims to explore in what way sonority of the final consonant, the vowel of the final syllable, the syllabic make-up, and the stress pattern of the singular form govern the application of suffix and stem change in Yiddish plural formation.

3 Method

The study employed an experimental picture-naming task where participants were asked to produce the plural form of a singular noun (Abugov et al. 2014a). Since a lexical and grammatical description of Antwerp Hasidic Yiddish is basically lacking and in order to design a valid research tool, we first initiated a pilot study on six bilingual Yiddish-Dutch adults from the Belz Hasidic community who spoke only Yiddish at home. Participants were asked to provide the Yiddish singular and plural forms of 300 items taken from the MacArthur-Bates Communicative Development Inventories in Dutch (Zink and Lejaegere 2003) and in American English (Fenson et al. 2000) including a list of basic everyday nouns (e. g., balloon, fish, swing) and excluding non-countable nouns (e. g., milk) or items that were irrelevant to the Jewish Hasidic context (e. g., church). Results of this pilot provided a pool of 300 nouns and their plural forms used in spoken Antwerp Hasidic Yiddish and thus served as a basis for choosing the items for the current “large-scale” study.

3.1 Participants

Participants were 100 bilingual adults (51 men and 49 women) aged 21–60, all members of the Belz Hasidic community in Antwerp. They were all Yiddish-Dutch bilinguals who spoke Yiddish in the home.

3.2 Materials

Participants were administered a noun plural naming test consisting of 87 target items selected from the pool of items used in the pilots according to three criteria: First, they mainly denoted concrete, countable objects like animals (*kats-kets* ‘cat-s’), body parts (*kop-kep* ‘head-s’), clothes (*hém(e)d- hém(e)der* ‘shirt-s’), which could be presented in pictures. Second, items represented nouns taking plural categories in Standard Yiddish, as described in Table 1. Third, items were selected to represent the four phonological factors – sonority of the final consonant, vowel of the final syllable, syllabic make-up, and stress pattern of the singular form.

3.3 Procedure

Each participant was interviewed orally and individually: pointing to a picture of a ‘ball’ (for example), the researcher first asked (In Hasidic Yiddish) *vus iz dus?* ‘What is this?’ And the participant replied *bal*. Then the researcher went to inquire *un in loshn rabim?* (How is it called in the plural?) The participant then replied *bal(e)n*.

3.4 Coding and analysis

Participants were asked to provide the singular form of each of the 87 target items and were allowed to give more than one singular or plural form for each target item. Thus, in some cases the total number of responses exceeds 100. Each plural response was coded for plural markers taking into account plural suffix and stem change. Notice that the plural marker *-(e)n* exhibited phonetic variation including *-n*, *-ən* and *-en* (as in *zókən*, *zókən* and *zóken* ‘socks’ respectively).

In order to detect the phonological regularities that govern the application of plural suffixes in Antwerp Hasidic Yiddish, each singular form ($N = 126$) was coded for four (supra-)segmental factors: (i) The final consonant was coded in terms of its major class features, viz. stop (*zok* ‘sock’), affricate (*tats* ‘tray’), fricative (*bikh* ‘book’), nasal (*blim* ‘flower’), and liquid (*bar* ‘pear’). Glides, as in *blay* ‘pencil’, were categorized as part of a diphthong. Accordingly, for example, *melón* ‘melon’ was coded as nasal etc. (ii) The vowel of the final syllable was coded using a three-way distinction: full vowel (*bal* ‘ball’), diphthong (*shtayn* ‘stone’) and schwa (*kíkh (e)n* ‘cake’). Two supra-segmental characteristics were coded: (i) Monosyllabic words (e. g., *yám* ‘sea’) were distinguished from multisyllabic words, such as bisyllabic *vélo* ‘bicycle’ and trisyllabic (*matúne* ‘present’) words. (ii) Stress patterns were divided into prefinal (*fórang* ‘curtain’) and final (*tírét* ‘zipper’).

4 Results

The analysis of our data revealed not only variation in the singular forms elicited for the target pictures but also variation in the plural forms so that many singular nouns had more than one plural form. In sheer numbers: 87 target items yielded 126 singular tokens. For example, the target item ‘present’ yielded the singulars *kadó*, *matúne* and *geshénk*. These 126 singular nouns yielded 364 plural forms. For example, the singular lemma *tats* ‘tray’ yielded four plural forms – *tétser*, *tets*, *tats(e)n* and zero *tats*.

The findings of our study are presented in two sections: First, we describe the system of noun plurals in Antwerp Hasidic Yiddish. Then, we analyze the phonological regularities that govern the selection of plural suffix and stem change.

4.1 Plural markers

We started by assigning each plural response in our inventory into the nine plural markers in Standard Yiddish (displayed in Table 1). Analyses of adults' responses showed that, similar to Standard Yiddish, Antwerp Hasidic Yiddish plurals employ suffixation (*tish- tish(e)n* 'table-s'), stem modifications (*barg-berg* 'mountain-s'), a combination of suffixation and stem modification (*flash-flésher* 'bottle-s'), and (iv) zero marking (*shtér(e)n-shtér(e)n* 'star-s'). However, Antwerp Hasidic Yiddish plurals did not entirely adhere to their origins. Our analysis yielded no less than 20 plural markers used in Antwerp, including a zero morpheme. Table 2 presents the plural markers and their relative frequencies in Antwerp Hasidic Yiddish as they appear from our list of test items.

Table 2: Plural markers and their frequencies in Antwerp Hasidic Yiddish.

Plural Marker	Frequencies	Singular example	Plural example	Gloss
<i>(e)n</i>	39.7	<i>tish</i>	<i>tish(e)n</i>	tables
<i>s</i>	10.7	<i>vélo</i>	<i>vélos</i>	bicycles
umlaut	10.3	<i>volf</i>	<i>vélf</i>	wolfs
umlaut <i>er</i>	9.2	<i>vald</i>	<i>vélder</i>	forest
<i>ekh</i>	7.7	<i>mántl</i>	<i>mántlekh</i>	coats
<i>er</i>	7.3	<i>shtayn</i>	<i>shtáyner</i>	stone
umlaut <i>im</i>	5.2	<i>kháver</i>	<i>khaváyrim</i>	friends
<i>es</i>	4.3	<i>vólk(e)n</i>	<i>vólkənes</i>	clouds
zero	2.1	<i>shtérən</i>	<i>shtérən</i>	stars
<i>im</i>	1.2	<i>yam</i>	<i>yámim</i>	seas
umlaut <i>n</i>	1	<i>blum</i>	<i>blímen</i>	flower
umlaut <i>ekh</i>	0.3	<i>korb</i>	<i>kérblekh</i>	baskets
<i>ns</i>	0.1	<i>kéynig</i>	<i>kéynigns</i>	kings
<i>ot</i>	0.07	<i>zébraz</i>	<i>zébrot</i>	zebras
<i>eren</i>	0.05	<i>ay</i>	<i>áyeren</i>	eggs
umlaut <i>s</i>	0.03	<i>top</i>	<i>téps</i>	pots
<i>enes</i>	0.02	<i>lip</i>	<i>lípenes</i>	lips
<i>ens</i>	0.02	<i>zók</i>	<i>zókens</i>	socks
<i>ers</i>	0.02	<i>bikh</i>	<i>bíkhers</i>	books
<i>ser</i>	0.01	<i>kíkh(e)n</i>	<i>kíkh(e)nser</i>	chairs

Table 2 shows that in addition to markers such as *-(e)n*, *-s* and *-er* that already exist in Standard Yiddish, new markers are used. Some apparently are combinations of existing markers such as *-ns* (*lip-lipns* ‘lip-s’) and *-ser* (*kíkh(e)n-kíkh(e)nser* ‘cake-s’). More combinations were also produced with an umlaut, adding to the familiar umlaut + *er* the marker umlaut + *ers* as in *mol-máylers* ‘mouth-s’, umlaut + *(e)n* as in *tug-tegn* ‘day-s’, umlaut + *s* as in *barg-bergs* ‘mountain-s’ and umlaut + *ekh* as in *korb-kérblekh* ‘basket’. Others appear to be a straightforward loan from Hebrew or Dutch, as for instance in *ay-áyeren* ‘egg-s’, where the Dutch exceptional non-productive suffix *-eren* is used as in the Dutch plural *ey-éyeren* ‘eggs’. The use of the suffix *-ot* in *zébra-zébrot* ‘zebras’ appears to be a direct loan from Hebrew.

The frequency of each plural marker gives a clear picture of the plural markers that are indeed used in Antwerp Hasidic Yiddish. Plural markers that already exist in Standard Yiddish occur with a higher frequency unlike new or combined Antwerp-specific plural markers. The marker *-(e)n* was found to be the most frequent plural marker, selected in 39.7% of the plural responses. Markers that received less than 1% of the responses are all Antwerp specific.

4.2 Phonological (sub)regularities in plural formation

A decision tree analysis was performed with the plural marker as dependent variable and as predicting variables (supra-)segmental factors characterizing the singular form, viz. the rhyme of the final syllable (vowel final versus consonant final), the type of vowel in the final rhyme (full vowel versus diphthong versus schwa), the type of word final consonant (stop, affricate, fricative, nasal, liquid), the number of syllables of the singular (monosyllabic versus multisyllabic), and the stress pattern of the singular word form (final versus prefinal stress). The resulting decision tree appearing from this recursive procedure will be discussed in what follows. For the sake of the exposition, branches of the tree are presented separately.

4.2.1 Singulars ending in a vocalic segment

The decision tree for singulars ending in a vowel, a diphthong or schwa is presented in Figure 1.

If the singular ends in a vocalic segment ($N = 1,093$ word forms produced by the participants), there appears to be a basic opposition between monosyllabic and multisyllabic words. Monosyllabic words ($N = 617$ word forms) take the suffix *-(e)n* in 71% of the plural forms, and multisyllabic words ($N = 476$

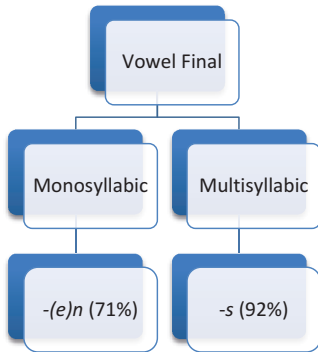


Figure 1: Decision tree for singulars ending in a vocalic segment.

wordforms) take *-s* in 92% of the cases. These figures can be read from the decision tree in Figure 1: following the path from the top of the tree to the leaves, two conditions are spelled out: if the singular ends in a vowel, and (1) the singular is monosyllabic then in 71% of the cases the suffix *-(e)n* is selected, but (2) if the singular is multisyllabic, then *-s* is selected in 92% of the cases. This simple rule derived from the decision tree accounts for 80% of the 1,093 responses provided by the participants.

Monosyllabic words ending in a vowel predominantly take *-(e)n* (*kni-kní(e)n* ‘knee-s’). Other suffixes appearing with a significant frequency, viz. *-es* and *-er*, are restricted to particular lexical items: *shu-shúes* ‘hour-s’ ($N=67$, 64% of all instances of the plural of *shu*) and *ay-áyer* ‘egg-s’ ($N=97$, 96% of all instances of the plural of *ay*). Interestingly, all of the suffixes used in this category, viz. *-(e)n*, *-es*, and *-er*, create an extra syllable, transforming the monosyllabic singulars into bisyllabic plurals, and more specifically, bisyllabic trochees.

Multisyllabic words ending in a vowel, diphthong or schwa take almost without exception (439 out of 476 plural responses, i. e., 92% of the plurals provided in this category) the plural suffix *-s*, e. g., *vélo-vélos* ‘bicycle-s’. Other suffixes occur with very low frequencies: *-(e)n* (4%, *kadó-kadó(e)n* ‘present-s’), *-es* (0.6%, *medáy-medáyes* ‘medal-s’), *-im* (0.2%, *tsfardéa-tsfardeím* ‘frog-s’), *-ot* (0.8%, *zébra-zébrot* ‘zebra-s’), the zero suffix (1%, *zébra-zébra* ‘zebras’), and umlaut combined with the zero suffix (0.2%, *frosch-fresh* ‘frog-s’).

4.2.2 Singulars ending in a consonant

The decision tree for singulars ending in a consonant is presented in Figure 2. If the singular ends in a consonant ($N=7,881$ wordforms produced by the

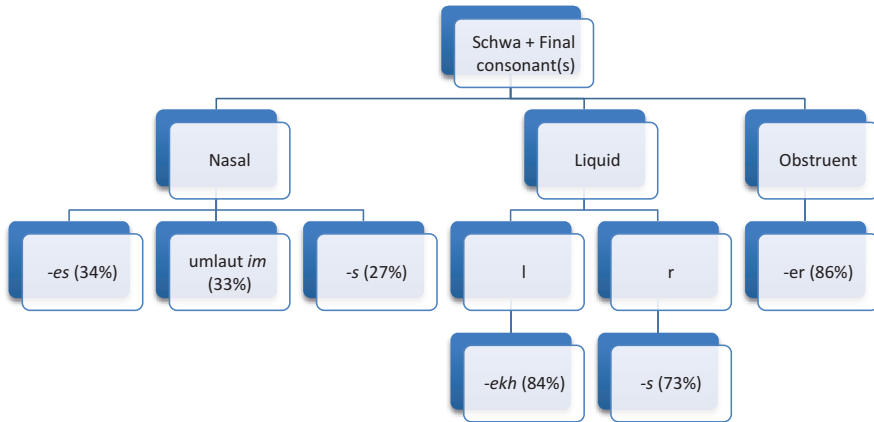


Figure 2: Decision tree for singulars ending in a schwa plus (a) consonant(s).

participants), the top-level distinction in the decision tree is between the final rhyme of the singular containing a schwa ($N=1,949$ wordforms produced) versus a full vowel or a diphthong ($N=5,932$ wordforms produced). For words ending in a rhyme with the vowel schwa followed by a nasal ($N=607$ wordforms produced by the participants), three suffixes were selected with almost equal frequency: *-es* (34%), umlaut + *im* (33%), and *-s* (27%). But the distribution of these suffixes showed a clear lexical preference: *-es* is selected for *kish(e)n-kish(ene)s* ‘pillow-s’ (86/100, 86%), *vólk(e)n-vólk(ene)s* ‘cloud-s’ (93/100, 93%), umlaut + *im* is selected for *níg(e)n-nigínim* ‘melody-s’ (100/100, 100%) and *khús(e)n-khasánim* ‘groom-s’ (100/100, 100%), *-s* for *shtér(e)n-shtér(ene)s* ‘star-s’ (81/100, 81%) and *kíkh(e)n-kíkh(ene)s* ‘cake’ (66/106, 62%). Note that the latter words also take the zero suffix: *shtér(e)n-shtér(e)n* (15/100, 15%) and *kíkh(e)n-kíkh(e)n* (15/106, 14%). The other suffixes were produced very infrequently in this category: *-(e)n*, *-ekh*, *-ser* occur in less than 1% of the cases.

Singulars ending in a schwa followed by a liquid (e. g., *més(e)r* ‘knife’, *mánt(e)l* ‘coat’) predominantly take *-ekh* as a suffix (667/1250, 53%). However, there is a clear distinction between singulars ending in *-(e)l* and those ending in *-(e)r*. For singulars ending in *-(e)l* (e. g. *gúp(e)l* ‘fork’) *-ekh* is the preferred suffix (667/817, 82%). Those ending in *-(e)r* show a more diverse picture which appears to be lexically determined: *dókt(e)r* ‘doctor’ and *kháv(e)r* ‘friend’ predominantly take the *Loshn Koydesh* suffix *-im* with umlaut (*dókt(e)r-doktóyrim*: 69/107, 64%, and *kháv(e)r-khaváyrim*: 99/100, 99%). The other stimuli ending in *-(e)r* select *-s* as the plural suffix (without umlaut), e. g., *fénst(e)r-fénst(ers)* (93/100, 93%).

Finally in the case of a final rhyme that consists of a schwa followed by an obstruent, represented in our dataset by only one word, viz. *hém(e)d* ‘shirt’, the predominant suffix is *-er* ($N = 77$, 86%), while *-(e)n* is used in a minority of cases ($N = 13$, 14%).

In singulars with a final rhyme that consists of a full vowel or a diphthong plus a consonant ($N = 5,932$ plural responses), the basic distinction provided by the decision tree procedure (Figure 3) is that between monosyllabic and multisyllabic words. Bisyllabic and longer words predominantly take the suffix *-(e)n* ($N = 1,298$ out of 1,699, 76%). Moreover if the word’s stress pattern is taken into account, it appears that words with final stress (e. g., *tomát-tomát(e)n* ‘tomato-s’, *sandál-sandál(e)n* ‘sandal-s’) select *-(e)n* as their plural suffix in 86% of the cases (1,013/1,179), while this is far less the case for words with prefinal stress (285 out of 520, 55%, e. g., *pásik-pásik(e)n* ‘belt-s’, *óyer-óyer(e)n* ‘ear-s’, *kéinig-kéinig(e)n* ‘king-s’, *fórháng-fórháng(e)n* ‘curtain-s’). These words show much more variation: in addition to *-(e)n*, also umlaut + *im* (100/520, 19%), *-es* (42/520, 8%), *-s* (47/520, 9%), and umlaut (31/520, 6%) are attested. The other suffixes occur with a frequency of less than 1%. When individual lexical items are analyzed, the picture is rather diffuse: *óyer* ‘ear’ exclusively takes *-(e)n* ($N = 100$, 100%) while *ésrig* ‘citron’ exclusively takes umlaut + *im* ($N = 100$, 100%). *fórháng* ‘curtain’ predominantly takes *-(e)n* (50/95, 53%) but also

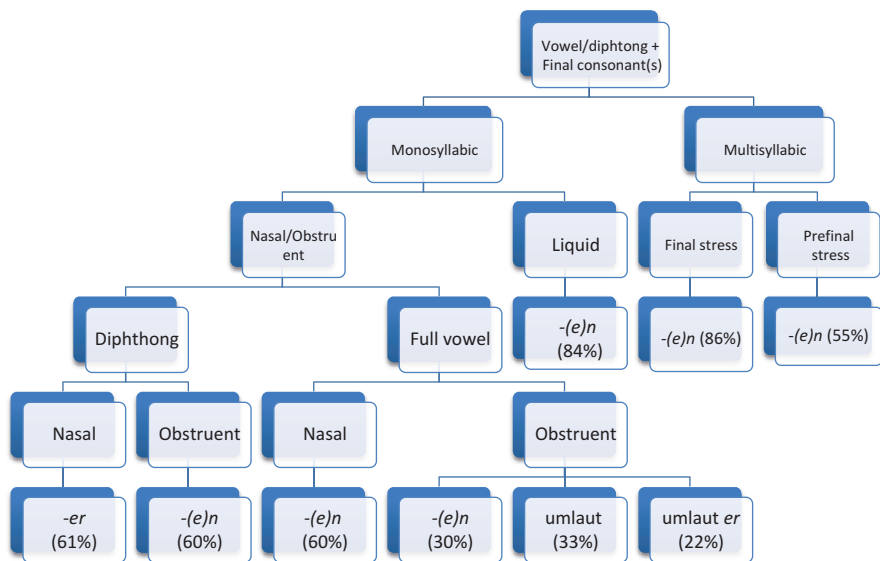


Figure 3: Decision tree for singulars ending in a vowel plus (a) consonant(s).

umlaut (31/95, 33 %) and to a lesser degree umlaut + *(e)n* (5/95, 5 %), umlaut + *er* (4/95, 4 %), *-s* (3/95, 3 %), umlaut + *ekh* (1/95, 1 %) and the zero suffix (1/95, 1 %). The singular *pásik* ‘belt’ takes *-(e)n* (37/107, 35 %), *-es* (39/107, 36 %) as well as *-s* (31/107, 29 %) with almost equal probability. In sum, there is a clear tendency for multisyllabic words with a final rhyme that consists of a full vowel or a diphthong, followed by at least one consonant, to take the suffix *-(e)n*, a tendency that is particularly outspoken in iambic words, and less so in trochaic words.

Also for monosyllabic words ending in a full vowel or a diphthong followed by at least one consonant ($N=4,231$ responses) *-(e)n* is the most frequent marker (1,725/4,231, 41 %). Three other plural markers occur with a frequency of more than 10 %: *-er* (462/4,231, 11 %), umlaut + *er* (825/4,231, 19 %), and umlaut (886/4,231, 21 %). All other suffixes together represent only 8 % of the responses. The most basic dichotomy revealed by the decision tree procedure is that between singulars ending in a liquid versus those ending in a nasal or an obstruent.

Monosyllables ending in a full vowel followed by a liquid select either *-(e)n* (506/605, 84 %) or umlaut + *er* (90/605, 15 %) as plural marker. However, the plural marker umlaut + *er* is restricted to instances of *mol-máyler* ‘mouth-s’ (90/102, 88 %) and does not occur with any other word. All other monosyllabic words ending in a closed rhyme with a full vowel or a diphthong followed by a nasal or an obstruent ($N=3,627$) predominantly select *-(e)n* (1,219/3,626, 34 %), but also the plural markers umlaut (886/3,626, 24 %) and umlaut + *er* (735/3,626, 20 %) are well represented.

The main opposition that is indicated in our decision tree procedure entails a rhyme with a vowel (e. g., *zok* ‘sock’, *vald* ‘forest’) versus a diphthong (e. g., *shtayn* ‘stone’, *boym* ‘tree’). Both these branches split in a similar way, viz. opposing rhymes that end in a nasal versus rhymes that end in an obstruent.

When the rhyme of the monosyllabic singular contains a diphthong followed by a nasal (e. g., *boym* ‘tree’) the suffix *-er* is the most frequent (180/293, 61 %) as in *shtayn-shtáyner* ‘stone-s’, followed by umlaut + *er* (102/293, 35 %) as in *boym-báymer* ‘tree-s’. When the rhyme ends in an obstruent, as in *layb* ‘lion’, either *-(e)n* (165/274, 60 %) as in *layb-láyb(e)n* ‘lions’ is used as the plural suffix or *-er* (100/274, 36 %) as in *klayd-kláyder* ‘dress-es’.

When the rhyme of the monosyllabic singular contains a full vowel followed by a nasal, as in *yam* ‘sea’, the most frequent suffix is by far *-(e)n* (367/446, 60 %), with a lot of other plural markers being used infrequently: *-im* (40/446, 9 %), *-ns* (11/446, 2 %), umlaut + *(e)n* (29/446, 7 %), umlaut + *er* (55/446, 13 %), umlaut (26/446, 1 %), zero (7/446, 2 %), *-enes* (1/446, 0.2 %).

Monosyllabic singulars with a rhyme that consists of a full vowel followed by an obstruent, as in *zok* ‘sock’, exhibit the most diffuse picture: no less than 14

different plural markers are used with this category of words. The most frequently used are umlaut (855/2613, 33 %, e. g., *volf-velf* ‘wolves’), *-(e)n* (785/2613, 30 %, e. g., *zok-zok(e)n* ‘sock-s’), umlaut + *er* (578/2613, 22 %, e. g., *vald-vélder* ‘wood-s’).

Apparently monosyllabic singulars with a final rhyme that consists of a full vowel or a diphthong plus (a) nasal or obstruent consonant(s) are the most heterogeneous category for plural marking. Thus, there does not seem to be a clear (relatively) unambiguous characterization of the phonological regularities governing the choice of the plural markers. Hence the choice of the plural marker appears to be largely lexically specific. When we look at the plural forms of the individual test words, our informants largely agreed on the plural marker: for 28 out of the 36 test words that belong to this category the informants gave the same plural marker. For instance, 80 % or more of the informants agreed that *-(e)n* was the plural suffix for the following words: *bin-bín(e)n* ‘bee-s’ (99 %), *briv-brív(e)n* ‘letter-s’ (100 %), *ferd-férd(e)n* ‘horse-s’ (82 %), *koysh-kóysh(e)n* ‘basket-s’ (90 %), *lip-líp(e)n* ‘lip-s’ (86 %), *layb-láyb(e)n* ‘lion-s’ (99 %), *shíf-shíf(e)n* ‘ship-s’ (99 %) and *zok-zók(e)n* ‘sock-s’ (98 %). Also for *-er* there was considerable agreement: *bild-bílder* ‘picture-s’ (100 %), *bikh-bíkher* ‘book-s’ (85 %), *klayd-kláyder* ‘dress-s’ (99 %), *shtayn-shtáyner* ‘stone-s’ (100 %), *tsayn-tsáyner* ‘tooth-teeth’ (85 %). For umlaut + *er* the agreement was high for *boym-báymer* ‘tree-s’ (97 %), *flash-flésher* ‘bottle-s’ (96 %), *nus-nézer* ‘nose-s’ (83 %), *vald-vélder* ‘forest-s’ (98 %) and *vort-vérter* ‘word-s’ (100 %). Also for umlaut high agreement scores were achieved for: *bank-benk* ‘bench-s’ (91 %), *frosh-fresh* ‘frog-s’ (92 %), *ganz-genz* ‘goose-geese’ (86 %), *kats-kets* ‘cat-s’ (81 %), *kop-kep* ‘head-s’ (92 %), *shlang-shleng* ‘snake-s’ (86 %), *shtut-shtet* ‘city-s’ (100 %), and *volf-velf* ‘wolf-wolves’ (83 %). Finally 88 % of the informants agreed on the zero marker for *lekht* ‘candle’. Only in a minority of cases the agreement among the informants was (considerably) smaller – between brackets the highest proportion: umlaut + *er* led to the most disagreements (*bokh-bákher* ‘belly-s’ (66 %), *gas-géser* ‘street-s’ (76 %), *hun-híner* ‘hen-s’ (54 %), *tats-tétser* ‘tray-s’ (48 %). The suffix *-(e)n* had two cases where agreement did not reach 80 %: *blím-blím(e)n* ‘flower-s’ (73 %) and *yam-yam(e)n* ‘sea’ (63 %), and for umlaut there were also two cases: *korb-kerb* ‘basket-s’ (43 %) and *top-tep* ‘pot-s’ (63 %).

In sum, the plural suffix of monosyllabic singulars with a final rhyme that consists of a full vowel or a diphthong followed by a nasal or an obstruent appears to be largely lexically specific. The analysis did not reveal a specific phonological basis governing the selection of the suffix. Nevertheless, our subjects largely agreed on their choice of the plural marker for most words in this category. However, for a remaining set of words in this category, the frequency distribution of the suffixes was less skewed, and more than one suffix occurred with reasonable frequency.

Table 3: Percentage of correctly predicted suffixes.

Suffix	Correctly predicted (%)
<i>ekh</i>	96
<i>(e)n</i>	75
umlaut	63
<i>es</i>	53
<i>s</i>	45
umlaut <i>er</i>	40
<i>er</i>	39
zero	7
<i>enes, ens, eren, ers, im, ns, ot, ser, umlaut en, umlaut ekh, umlaut im, umlaut s</i>	0

Based on the decision tree derived from the data, we can tentatively generalize as to the predictability of the Yiddish plural suffixes. More specifically, how accurate can each suffix be predicted given the outcome of our decision tree? Results are presented in Table 3.

The results in Table 3 clearly show that the best predictable suffix is *-ekh*. That suffix is accurately predicted in 96 % of the cases by the regularities discovered in our decision tree procedure. The success scores for the other suffixes are much lower: *-(e)n* is correctly predicted in 75 %, umlaut in 63 %, *-es* in 53 %, *-s* in 45 %, umlaut + *er* in 40 %, *-er* in 39 %, and finally zero in 7 %. This provides a clear gradient in the predictability of the various suffixes. Note that the non-Standard Yiddish suffixes that our subjects used as well as the Hebrew suffix *-im* have a predictability of 0 %. In other words, they are unpredictable.

5 Discussion

In this paper we described the system of noun plurals in Antwerp Hasidic Yiddish and identified the factors that govern plural suffixation and stem change based on the phonological make-up of the singular form. The study had three major motivations. First, the highly segregated lifestyle of the Hasidic community in Antwerp poses considerable difficulties on researchers who wish to gain access and collect data resulted in the virtual absence of any grammatical descriptions of Antwerp Hasidic Yiddish. This study provides, for the first time, a significant evidence-based body of knowledge on plural formation in Antwerp Yiddish. Second, while previous studies on plural formation in

Standard Yiddish based their analysis on dictionaries and grammar books, this study brings to the front Yiddish plural formation in actual naive use, taking into account measures like variability frequency and systematicity. Third, using updated scientific linguistic methods, the current study advances our knowledge on the regularities underlying the selection of plural markers in Antwerp Hasidic Yiddish, thus showing how the plural marker can be predicted from the phonological makeup of the singular form.

5.1 Plural markers

Our grammatical point of departure was the plural system in Standard Yiddish. Similarly, Antwerp Hasidic Yiddish noun plurals involve suffixation, stem modification and a combination of the two. However, in addition to Standard Yiddish plural markers *-(e)n*, *-s*, *-er*, *-ekh*, *-es*, *zero*, *-im*, *umlaut*, *umlaut + er*, new suffixes emerged (*-enes*, *-ens*, *-eren*, *-ers*, *-ns*, *-ser*, *umlaut + n*, *umlaut + im*, *umlaut + s*, *umlaut + ekh*) sometimes combining existing markers (*-enes* as in *lip-lípenes* ‘lip-s’, *-ens* as in *zok-zókens* ‘sock-s’, *-ers* as in *ay-áyers* ‘egg-s’, *-ns* as in *kéynig-kéynigns* ‘king-s’, *-ser* as in *kíkh(e)n-kíkh(e)nser* ‘cake-s’) and sometimes under the influence of Dutch (as in *-eren ay-áyeren* ‘egg-s’). These findings are in line with previous studies (Abugov and Ravid 2014) that revealed new plural markers in Israeli Hasidic Yiddish (for instance, Israeli Hasidic Yiddish *bíkh-bíkh(e)n* ‘book-s’ in addition to the Standard *bíkh-bíkher*).

Since Dutch plurals overlap with the Yiddish suffixes *-s* and *-(e)n* it is difficult to pinpoint a clear influence on Yiddish plural formation. The only clear case where the influence of Dutch was easily observed is the suffix *-eren* (as in *ay-áyeren* ‘egg-s’). It remains to be investigated whether Dutch influence on Antwerp Hasidic Yiddish is as profound as Hebrew on Israeli Hasidic Yiddish. Carefully speaking, Dutch influences the plural system in Antwerp to a rather limited extent compared to the Israeli Hebrew influence, where Hebrew plural makers are fully integrated into Israeli Hasidic Yiddish (*makhshév-makhshevím* ‘computer-s’), reflecting an intensive process of language change. Another interesting example is the word *kadó* ‘present’ which is an influence of French *kadó-kadó* ‘present-s’ widely used in Dutch while adapting its plural form to Dutch as in *kadó-kadós*. Thus, Antwerp Hasidic Yiddish speakers are now widely using the Dutch plural form *kadós*, which is in coherence with the phonological subregularities revealed in the current paper. It remains to be further investigated how singular and plural forms found their way into Antwerp Hasidic Yiddish.

Though limited to a chosen set of items and to only 100 participants, our analysis reveals the frequencies of each plural suffix, showing that suffixes that already exist in Standard Yiddish occur in a higher frequency unlike new or combined Antwerp-specific plural markers. Thus, *-(e)n* was found to be by far the most frequent plural marker in our data set (39.7%), while Antwerp-specific plural markers received less than 1% of the responses.

5.2 Phonological (sub)regularities in plural formation

In order to detect to what extent phonological rules govern the selection of plural markers in Antwerp Hasidic Yiddish we used several factors to characterize the inflected singular form: (i) the sonority of the final consonant of the simplex, (ii) the vowel of the final syllable, (iii) the word length in terms of the number of syllables, and (iv) the stress pattern. A decision tree method was applied in order to find possible combinations of the four factors (subregularities) in the system leading to a quantitative picture of a predictability pattern. Our findings revealed some strong phonological regularities as well as islands of subregularities and exceptions that appear to be lexically determined.

Traditional descriptions of Standard Yiddish relate to a mixture of factors (i. e., morphological, phonological, lexical, etymological and semantic) in plural formation (Glasser 1990; Jacobs 2005; Krogh 2007; Mark 1978; Reyzen 1924; Volf 1977). In the current study we concentrated on one single factor –the phonological make up of the singular form. The reason for this stems from the way languages are learned. Children learn to make plurals by observing word singulars and word plurals in the language. What they hear is the phonetic string. In German (and also in Standard Yiddish), for example, gender is not embedded in the phonological structure of the word, but in the definite article.

How far did it take us? As far as the data that we have allows. On the one hand, 100 participants and 87 items provide a fair amount of data. On the other hand, compared to Dutch, for example, where large corpora are analyzed (Baayen et al. 1995), it is poor. Our data show that predictability of plural markers in Antwerp Hasidic Yiddish is not that high. It is actually pretty low except for the marker *-ekh* (96%). The markers *-(e)n* is predictable only in 75%, umlaut in 63%, *-es* in 53% and *-s*, *-er*, umlaut + *er* and zero are each predictable in less than 50%. All other uses of plural markers cannot be predicted. In contrast, predictability in Dutch it is much higher. According to Ravid et al. (2008), the token counts in Dutch Child Directed Speech all reach a level of more than 90% predictability of plural markers (except for one category: words ending in a full vowel, with final stress). Since, to the best of our knowledge, no

large corpora of spontaneously spoken Yiddish exist, results of our study are limited to the data we collected. The question whether the low predictability is due to the limited number of participants and test items remains.

Our data also revealed variability in the choice of the plural marker in certain types of words where there was more than one plural form (e. g., plural *yám(e)n*, *yámim* and *yámens* for singular *yam* ‘sea’). And another dilemma arises: which came first? “The chicken or the egg?” Is the low predictability due to variation in plural forms or is there variation in plural forms due to low predictability. That remains to be further investigated.

This paper is a preliminary step in investigating which phonological factors govern plural formation in contemporary spoken Antwerp Hasidic Yiddish. This type of analysis is not only important for the description of the language but also for studies on acquisition of Yiddish plurals investigating to what extent children adhere to these predictions. Knowledge gained in such studies is of great value especially for testing and evaluating children in educational and clinical settings.

References

- Abugov, Netta & Dorit Ravid. 2013. Assessing Yiddish plurals in acquisition: Impacts of bilingualism. In Virginia Mueller Gathercole (ed.) *Bilinguals and assessment: Issues*, 90–110. Bristol: Multilingual Matters.
- Abugov, Netta & Dorit Ravid. 2014a. The impact of Israeli Hebrew on Yiddish: Noun plurals in Sanz Ultra Orthodox Yiddish. *International Journal of the Sociology of Language* 226. 190–211.
- Abugov, Netta & Dorit Ravid. 2014b. Noun plurals in Israeli ultra-orthodox Yiddish: A psycholinguistic perspective. In Marion Aptroot & Björn Hansen (eds.) *Yiddish language structures*, 9–39. Berlin & Boston: De Gruyter Mouton.
- Baayen, Harald, Richard Piepenbrock & Leon Gulikers. 1995. *The CELEX lexical database*. Philadelphia: Linguistic Data Consortium.
- Barrière, Isabelle. 2010. The vitality of Yiddish among Hasidic infants and toddlers in a low SES preschool in Brooklyn. In Wolf Moskovich (ed.), *Yiddish: A Jewish national language at 100. Proceedings of Czernowitz Yiddish Language 2008 International Centenary Conference*, 170–196. Jerusalem: Hebrew University.
- Berman, Dalit. 2007. *Shimur ve-tmura bayiddish haharedit be-Israel* [Maintenance and change in Haredi Yiddish in Israel]. Jerusalem: Hebrew University doctoral dissertation.
- Fader, Ayala. 2001. Literacy, bilingualism and gender in a Hasidic community. *Linguistics and Education* 12(3). 261–283.
- Fenson, Larry, Steve Pethick, Connie Renda, Jeffrey Cox, Philip Dale & Steven Reznick. 2000. Short form version of the MacArthur communication development inventory. *Applied Psycholinguistics* 21(1). 95–115.
- Glasser, Paul. 1990. *A distributed approach to Yiddish inflection*. New York: Columbia University doctoral dissertation.

- Jacobs, Neil. 2005. *Yiddish: A linguistic introduction*. Cambridge: Cambridge University Press.
- Jacobs, Neil, Ellen Prince & Johan van der Auwera. 1994. Yiddish. In Ekkehard König & Johan van der Auwera (eds.), *The Germanic languages*, 388–420. London: Routledge.
- Katz, Dovid. 2004. *Words on fire: The unfinished story of Yiddish*. New York: Basic Books.
- Köpcke, Klaus-Michael. 1993. *Schemata bei der Pluralbildung im Deutschen: Versuch einer kognitiven Morphologie*. Tübingen: Narr.
- Krogh, Steffen. 2007. Zur Diachronie der nominalen Pluralbildung im Ostjiddischen. In Hans Fix (ed.), *Beiträge zur Morphologie. Germanisch, Baltisch, Ostseefinnisch*, 259–285. Odense: University Press of Southern Denmark.
- Mark, Yudl. 1978. *Gramatik fun der yidisher klal-shprakh* [Grammar of Standard Yiddish]. New York: Congress of Jewish Culture.
- Ravid, Dorit, Wolfgang Dressler, Bracha Nir-Sagiv, Katharina Korecky-Kröll, Agnita Souman, Katja Rehfeldt, Sabine Laaha, Johanes Bertl, Hans Basbøll & Steven Gillis. 2008. Core morphology in child directed speech: Crosslinguistic corpus analyses of noun plurals. In Heike Behrens (ed.), *Corpora in language acquisition research: History, methods, perspectives.*, 25–60. Amsterdam & Philadelphia: John Benjamins.
- Reyzen, Zalman. 1924. Gramatisher min in yidish [Grammatical gender in Yiddish]. *Yidische filologye* 1. 11–22, 2–2, 180–192, 4–6, 303–322.
- Tannenbaum, Michal & Netta Abugov. 2010. The legacy of the linguistic fence: Linguistic patterns among ultra-orthodox Jewish girls. *Heritage Language Journal* 7(1). 74–90.
- van Wijk, Judith. 2002. The Dutch plural landscape. In Hans Broekhuis & Paula Fikkert (eds.), *Linguistics in the Netherlands 2002*, 211–221. Amsterdam & Philadelphia: John Benjamins.
- Volf, Meyer. 1977. Fonologishe protsesn by mertsol-formatsye [Phonological processes in plural formation]. In Shmuel Werses, Nathan Rotenstreich & Chone Shmeruk (eds.), *Sefer dov sadan*, 120–137. Tel Aviv: Hakibbutz Hameuchad.
- Weinreich, Uriel. 1977 [1968]. *Modern English-Yiddish, Yiddish-English dictionary*. New York: Yivo Institute for Jewish Research.
- Zaretski, Ayzik. 1926. *Praktishe yidische gramatik* [Practical Yiddish grammar]. Moscow: Shul un Bukh.
- Zink, Inge & Maryline Lejaegere. 2003. *N-CDI's: Korte vormen* [D-CDIs: Short forms]. Antwerpen: ACCO.