

First Diminutive Formation and [d]-Epenthesis in Yiddish*

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I. Introduction

In this paper, we examine first diminutive formation in Yiddish, focusing on the interaction of first diminutive formation and the phonological process of [d]-epenthesis. The theoretical background of our analysis is Optimality Theory (OT), specifically the ‘classical’ monostratal model, originally codified in Prince and Smolensky (1993), according to which forms move from input (i.e. underlying representations) to output (i.e. surface forms) in one step, without passing through various strata of rules. We use OT here because of its demonstrated successes in dealing with prosodic issues – as the topics discussed here most certainly are, as they are best accounted for in terms of syllable structure (cf. Jacobs 1995). The paper is structured as follows: we first present relevant data from Yiddish, culled from Jacobs (1995, 2005),¹ and then briefly review two earlier analyses of the interaction of first diminutive formation and [d]-epenthesis in Yiddish, namely those presented in Jacobs (1995) and Boas (2000). This is followed by an abbreviated overview of approaches to phonological opacity within monostratal OT, in order to help contextualize the theoretical aspects of our analysis. We then present our own analysis of the problems, and conclude with some remarks on certain issues that remain unresolved.

* An earlier version of this paper was presented at the Germanic Linguistics Annual Conference 15 (Banff, Alberta, Canada, May 2009). We are grateful to the conference participants for helpful comments and discussion; to San Duanmu, Robert King, and an anonymous referee for comments on earlier drafts; and to Irmengard Rauch for her assistance in her role as editor. This paper supersedes Boas (2000).

¹ The Yiddish syllabification patterns assumed here are those described in those works and in Viler (1924).

II. The data

According to Jacobs (2005: 162), there are two types of diminutives in Yiddish; the first, traditionally referred to as ‘first diminutive’ (1ST DIM) “expresses diminution”, while the second, called ‘second diminutive’ (2D DIM) “expresses endearment”. 1ST DIM is expressed by attaching a syllabic [l] suffix, as in forms like *keml*, ‘comb’ (1ST DIM);² nouns ending with [n] insert [d] before the diminutive ending, as in forms like *bejndl*, ‘leg, bone’ (1ST DIM), while nouns ending in non-syllabic [l] insert [x]. 1ST DIM is normally blocked if the noun ends in a vowel, a diphthong, or a syllabic [l].³ Our analysis is restricted to first diminutive formation; second diminutive formation, which involves adding an –ələ suffix, is not treated here. The forms in (1) explicate these points.

(1) Yiddish diminutives (data from Jacobs 1995, 2005)⁴

<u>Base form</u>	<u>1st Diminutive</u>	<u>Gloss</u>
fus	fisl	‘foot’
bank	benkl	‘bench’
bejn	bejndl	‘bone’
ku	no 1ST DIM	‘cow’
fojgl	no 1ST DIM	‘bird’
mojl	majxl	‘mouth’

While our analysis focuses on [d]-epenthesis, a few remarks about some of these other phenomena are in order. The epenthesis of [x], as in *mojl* ~ *majxl* ‘mouth ~ mouth 1ST DIM’, is presumably due to an attempt to avoid having identical consonants adjacent to each other (the well-known Obligatory Contour Principle, or OCP, originally proposed

² A similar process of diminutive formation occurs in Bavarian (cf. Merkle 1975: 106-109). We have no comment on the possible connections between the Bavarian and Yiddish processes and/or any implications for the Bavarian hypothesis of the origin of Yiddish (on which see Faber and King 1984 and King 1992, among other works). We thank Frans Plank for reminding us of the Bavarian facts.

³ There are a few exceptions to this generalization. Jacobs (2005: 162 fn 21) points out that some personal names end in schwa, but this schwa can be deleted, thus allowing 1ST DIM to apply.

⁴ Following Jacobs (1995), we assume that the underlying representation of the first diminutive suffix is a syllabic [l], and give it as such in the tableaux below. As the forms cited here show, however, the underlyingly syllabic [l] can become non-syllabic in certain circumstances, as Yiddish “syllabification is determined by the sonority of segments relative to one another in linearly ordered sets of segments” (Jacobs 1995: 174). We do not attempt to formalize this phenomenon here.

by Goldsmith 1976).⁵ The failure of 1ST DIM to apply following syllabic [l], as in forms like *fojgl* ‘bird’, presumably also results from the OCP, since attaching a syllabic [l] to a form that already ends in [l] would violate this constraint. As for the failure of 1ST DIM to apply to nouns ending in vowels and diphthongs, as in *ku* ‘cow’, we speculate that this may occur because the syllabic [l] is in a syllable nucleus (by definition), and the relative sonority of the vowel or diphthong to the syllabic [l] does not allow for its resyllabification as a syllable coda or onset in this situation, which would result in an onsetless syllable. Given that the prosodic constraint mandating that syllables have onsets is high-ranking in Yiddish, as argued by Boas (2000), such formations are less preferred and therefore to be avoided if possible (we return to the status of syllable onsets in Yiddish below).

The process of d-epenthesis is phonetically straightforward: Jacobs (1995) argues that it is the result of the transition from [n] to syllabic [l] (*à la* the analysis of stop epenthesis presented in works like Sievers 1881 and Page 1996), and we see no compelling reason to dissent from his conclusion. As to why specifically [d] is epenthesized, rather than some other consonant, [d], [l], and [n] are all alveolar consonants, and it makes more sense phonetically to insert a homorganic consonant, rather than one with a different place of articulation. However, the situation is more complicated than it first seems, as [d]-epenthesis does not always occur when [n] and [l] are adjacent to each other; it does not occur in forms like *finland* ‘Finland’, for instance. There are also contrasting forms like *pajnləx* ‘painfully unpleasant’ and *bejndləx* ‘small legs/bones’ (1ST DIM plural) where it

⁵ The process of [x]-epenthesis can be traced back to diachronic factors; Jacobs (1995: 183 fn 8) states that this particular form is historically “a blend of the *k* diminutive marker (cf. Standard German *-chen*) and the *l* diminutive marker.”

is not readily apparent why one form shows [d] epenthesis and the other does not. Thus, [d]-epenthesis in Yiddish is an opaque process, i.e. one that is not always surface-true.

III. Earlier analyses

In serial approaches to phonological theory, whether rule- or constraint-based, opacity can be handled via the theoretical devices of rule ordering and/or separate phonological strata. That is, one rule can trigger a specified phonological development in a specified environment, and a later rule can then obscure the original environment, resulting in opacity. This view is exhibited by Jacobs (1995), who, in a Lexical Phonology analysis, accounts for the opacity of the Yiddish process via cyclic rule application.⁶ He argues that [d]-epenthesis applies to tautosyllabic [nl] sequences (and therefore does not apply in forms like *finland* where the [nl] sequence is heterosyllabic), and accounts for the lack of [d]-epenthesis in *pajnləx* vs. its appearance in *bejndləx* with two ordered (cyclic) rules. The first rule, Diminutive Formation, suffixes a syllabic [l];⁷ the second rule, [d]-epenthesis, inserts [d] before a syllabic [l]. Diminutive Formation applies before [d]-epenthesis; consonants inserted by [d]-epenthesis are retained in later cycles. In *bejndləx*, the application of Diminutive Formation feeds [d]-epenthesis, the originally syllabic [l] becomes non-syllabic by the later application of syllabification rules, and the inserted [d] is retained in later cycles (and on the surface), but in *pajnləx* the relevant [l] was never syllabic (because the attached suffix was *-ləx*, meaning that the relevant [l] was in a syllable onset, and hence could not be syllabic), and [d]-epenthesis therefore could never apply, resulting in the absence of [d] on the surface. This analysis is illustrated in (2), adapted from Jacobs (1995: 175):

⁶ A similar analysis is presented in Jacobs (2005).

⁷ This rule triggers umlaut, which presents its own problems and is therefore not treated here.

(2) Sample derivations adapted from Jacobs (1995: 175)

	Underlying representation	paj̯n	bejn
First cycle	Diminutive Formation	paj̯nləx	bejnl̩
	Syllabification rules and [d]-epenthesis	paj̯nləx	bejndl̩
Second cycle	Syllabification rules and [d]-epenthesis	paj̯nləx	bejndləx
	Surface forms	paj̯nləx	bejndləx

Jacobs' analysis successfully accounts for the Yiddish facts; however, we find that a more conceptually elegant analysis is possible using OT (a monostratal OT analysis avoids having syllabification rules apply more than once, for instance).

In an earlier analysis within monostratal OT, Boas (2000), like Jacobs (1995), relies on syllable structure to account for the Yiddish facts. Boas (2000) argues that most cases of first diminutive formation in Yiddish fall out from general principles of syllabification.

As for forms that show [d]-epenthesis, Boas (2000) notes that [d]-epenthesis only happens in forms containing the [l] diminutive suffix, and therefore argues that the presence or absence of this suffix is the deciding factor in [d]-epenthesis: if this suffix is present, then [d]-epenthesis will occur. If it is not present, then [d]-epenthesis is blocked.

Boas (2000: 10) accounts for this by means of the following constraint, which he abbreviates as NEEDS:

(3) N-DIM-NEEDS-D

*ALIGN (N, R, DIM, L)

This constraint “blocks alignment of the right edge of a word which ends with an ‘n’ ... with the left edge of the diminutive suffix” (Boas 2000: 11), i.e., disallows any candidates that end with [n] followed immediately by the diminutive suffix. In addition to NEEDS, Boas employs a variety of other constraints, including the following, all of which are familiar from the OT literature (e.g., Kager 1999):

(4) ONSET

Syllables must have onsets.

(5) ALIGN-RIGHT

The right edge of a stem must align with the right edge of a syllable.

(6) NO CODA

Syllables may not have codas.

These constraints are ranked as in (7):

(7) ONSET >> ALIGN-RIGHT >> NEEDS >> NO CODA

The influence of NEEDS can be seen in the following tableau, adapted from Boas (2000:

13).⁸

(8) *bejndl*, 'leg, bone' (1ST DIM), according to Boas (2000: 13)

<i>bejn + l</i>	ONSET	ALIGN-RIGHT	NEEDS	No CODA
<i>bejn\$l-l</i>	*!		*	*
<i>bej\$n-l</i>		*!	*	
F <i>bejn\$d-l</i>				*
<i>bej\$n-dl</i>		*!		

Here the relatively high ranking of NEEDS forces epenthesis: without epenthesis, NEEDS would be violated (and various faithfulness constraints prevent the use of some other strategy to satisfy NEEDS). In forms like *bixl*, 'book' (1ST DIM), where the stem does not end in [n], NEEDS does not have to apply, and the same faithfulness constraints prevent it from applying. While this analysis accounts for the facts, we find it less than satisfactory,

⁸ For typographical ease, we use a dollar sign to indicate a syllable boundary, a plus sign to indicate a morpheme boundary, and a dash to indicate a stem boundary.

as it relies on a ‘brute force’ approach to the data, which strikes us as less insightful (see below). NEEDS is also clearly an ad hoc constraint, rather than the more general (in fact, ideally universal) type of constraint favored by OT.

IV. Approaches to opacity within monostratal OT

It is difficult to account for opacity within the ‘classical’ monostratal OT model of Prince and Smolensky (1993), as, according to this model, phonological processes are motivated not by the application of a set of ordered rules, but instead by a set of hierarchically-ranked constraints, and occur in one step from input to output, and the devices of rule ordering and/or separate phonological strata are therefore unavailable to the analyst. A number of approaches to opacity within monostratal OT have been developed, and we now give a very brief overview of some such models, specifically constraint conjunction, candidate chain theory, and Paradigm Uniformity (aka output to output correspondence), in order to provide more background to the theoretical aspects of our analysis.⁹

Before outlining these approaches, two additional remarks should be made. First, it is of course possible to develop what one might refer to as ‘brute force’ analyses within monostratal OT. Boas (2000) is, in our view, one such analysis. Such approaches strike us as a restatement of the problem, not a solution to it, and are therefore less insightful. Second, one could analyze the Yiddish data within Stratal OT, a model of OT that more closely resembles serial, rule-based theories, in that it crucially relies on a system of strata (levels), each with its own OT grammar; the constraint rankings within the various strata may differ from each other; the output of one stratum is the input to the next, and

⁹ A number of possible approaches to opacity in monostratal OT are not covered here. See McCarthy (2007) for a much fuller overview of OT approaches to opacity.

the output of the last stratum is the surface form.¹⁰ While Stratal OT may be the most appropriate OT solution to certain phonological phenomena,¹¹ in this particular case we see no compelling reason to invoke it – in our view, the Yiddish data can be accounted for within monostratal OT without relying on any arcane theoretical devices, and a Stratal OT analysis has no major theoretical or empirical advantages over the Lexical Phonology analysis presented by Jacobs (1995). In other words, we see no real purpose in simply ‘translating’ Jacobs’ Lexical Phonology analysis into Stratal OT.

We turn now to approaches to opacity within Monostratal OT, beginning with constraint conjunction, apparently first proposed in Smolensky (1995), and elucidated upon by various scholars since then. Constraint conjunction involves, as its name implies, the ‘conjoining’ of constraints. If constraints A and B are conjoined, the resulting constraint is “defined as a constraint that is violated once for each instance of the domain ... in which both A and B are violated” (McCarthy 2007: 34). Moreover, “[c]onjoined constraints are intrinsically, and without loss of generality, ranked higher than the elementary constraints that they are composed of” (Ito and Mester 2003: 276). Constraint conjunction remains controversial; McCarthy (2007: 35) argues that constraint conjunction “cannot account for the full range of opacity phenomena, and it predicts a kind of pseudo-opacity that does not seem to exist”. Additionally, constraint conjunction, in McCarthy’s view, is about process proximity, not process interaction. Whether there should in fact be a “one size fits all” approach to opacity within monostratal OT (an idea rejected explicitly by Ito and Mester 2003, but one that McCarthy 2007 appears to

¹⁰ See Kiparsky (2000, 2003) for some arguments in favor of Stratal OT, and McCarthy (2007: 38-44) for some arguments against it.

¹¹ Pierce (2008), for example, argues that a Stratal OT analysis of syllable codas in northern dialects of German is preferable to a monostratal OT analysis of the phenomenon.

endorse) remains undecided. Discussion of this issue would take us too far afield, and we therefore only note that we see no truly convincing empirical justification for the concept of constraint conjunction (although we acknowledge the conceptually-based observation that constraint conjunction allows for the retention of the classical monostratal model of OT). It is also not entirely clear to us which constraints would need to be conjoined in order to account for the Yiddish data discussed here with constraint conjunction, and we therefore set aside the possibility of using it in our analysis.

Next, consider Candidate Chain Theory (McCarthy 2007). According to McCarthy (2007: 60), a *chain* “is an ordered n -tuple that connects the input with the output through a sequence of intermediate forms, each of which differs minimally from the forms that immediately precede and follow it”. McCarthy (2007: 60) further states that “[t]here are three conditions on chain well-formedness: (i) the first member of any chain must be *fully faithful* to the input. (ii) The successive forms in a chain must accumulate differences from the input *gradually*. (iii) The forms in a chain are *locally optimal*” (italics in original). McCarthy then explicates these points, as follows. To (i), a “fully faithful parse of ...[the input] ... is any analysis of ... [the input] ... that violates no faithfulness constraints” (McCarthy 2007: 61). This does not mean that the fully faithful parse must be identical to the input, as it “can ... differ from ... [the input] ... in any phonological property that is not protected by faithfulness constraints” (McCarthy 2007: 61).¹² To (ii), the gradual accumulation of differences from the input entails that each form in a candidate chain differ from its predecessor in the candidate chain by violation of one

¹² An example of a “phonological property that is not protected by faithfulness constraints” would be syllabification. “Languages differ in whether they syllabify a form like /tabla/ as [tab.la] (Arabic) or [ta.bla] (English, Spanish), but no known language has a contrast between monomorphemic [tab.la] and [ta.bla]” (McCarthy 2007: 72). This is best accounted for within OT by assuming that there are no faithfulness constraints involving syllabification (see McCarthy 2007: 72 for further discussion).

faithfulness constraint. Finally, to (iii), being locally optimal requires each successive form in a candidate chain to conform more closely to the constraint hierarchy than its predecessor, and also to conform more closely to the constraint hierarchy than the other forms that could theoretically be created by violating the same faithfulness constraint. In the case of the Yiddish data discussed here, we could theoretically establish a candidate chain, beginning with a form lacking [d]-epenthesis but containing a tautosyllabic [nl] sequence. Such a form would be fully faithful to the input, as syllabification is not protected by any faithfulness constraints. The next form in the chain would show [d]-epenthesis, as that would violate only one faithfulness constraint, and be locally optimal, and would further be the surface form.

However, we reject this type of analysis, for the following reasons. The parallels between derivational theories of phonology and Candidate Chain Theory are clear, as McCarthy (2007: 67) acknowledges, stating that “[t]here is an obvious resemblance between a candidate chain and the sequence of forms that appear in a phonological derivation: both involve intermediate representations that describe a path between the underlying and surface levels of representation”. Despite these similarities, McCarthy (2007: 67-71) argues that Candidate Chain Theory is really not a derivational theory (mainly due to the requirement of local optimality). We are not fully convinced by this claim; in our view, Candidate Chain Theory involves what we see as covert derivations, and we feel that it would be more intellectually honest to use overt derivations. This objection is of course theoretical, and in some respects, this theory-internal counterargument to Candidate Chain Theory suffices to reject it as a tool to use in the analysis of the Yiddish data. In more empirical terms, we are unsure about the possible empirical evidence favoring

Candidate Chain Theory over other approaches to opacity within monostratal OT. One can theoretically account for the Yiddish data using either constraint conjunction or Candidate Chain Theory, but we see no convincing empirical evidence favoring either of these alternatives. As discussed below, however, we do see such evidence in favor of Paradigm Uniformity. We therefore reject the use of Candidate Chain Theory in this case. We conclude our discussion of approaches to opacity within monostratal OT with some remarks on the particular theoretical device that we do employ, namely Paradigm Uniformity (aka Output to Output Correspondence).¹³ Paradigm Uniformity holds that “otherwise pervasive surface-based markedness constraints can be violated in order to make the relevant forms similar to morphologically related ones” (Hall 2005: 226), and has had two main uses within OT: (1) to account for developments traditionally attributed to the effects of analogy, and (2) to account for opaque (i.e. non-surface true) generalizations. Point (2) is of more interest to us here.¹⁴ Paradigm Uniformity can in fact account for opaque generalizations, as long as the generalization is transparent in at least one member of the paradigm. McCarthy (2007: 44) alludes, for instance, to a process of velar palatalization in Bedouin Arabic by which /k/ is palatalized when followed by a front vowel. In some surface forms, the /k/ is not followed by a front vowel and the alternation is therefore opaque, but in other surface forms it is indeed followed by a front vowel, the alternation is therefore transparent, and Paradigm Uniformity can therefore be invoked to account for the palatalization in the opaque forms. (The opaque

¹³ Hall (2005) uses the somewhat unfortunate abbreviation ‘PU’ for Paradigm Uniformity. We avoid this abbreviation here.

¹⁴ For a defense of the use of Paradigm Uniformity to account for analogy, see Kenstowicz (1996); for an attack on the use of Paradigm Uniformity to account for analogy, see Reiss (2003). For general discussion of Paradigm Uniformity, see Benua (1995, 2000).

forms must resemble the transparent forms in the same paradigm, hence the palatalization.)

Attempts to account for opacity within Paradigm Uniformity founder if the alternation in question is transparent nowhere in the paradigm. McCarthy (2007: 45) cites the case of epenthesis in Tiberian Hebrew, which results from the interaction of three separate processes: stress placement, epenthesis, and glottal stop deletion. Each of these processes renders the others opaque (glottal stop deletion destroys the environment for epenthesis, etc), such that the process of epenthesis is never transparent, indicating that Paradigm Uniformity alone is not sufficient to account for it. Other criticisms of Paradigm Uniformity include those made by Hale and Reiss (2008), building on earlier work like Hale, Kisser, and Reiss (1998). Hale and Reiss (2008: 221) argue, among other things, that studies invoking Paradigm Uniformity tend to be “opportunistic”; that such studies often fall victim to “misanalysis”; and that such studies can “lead to problematic predictions, some of which are strongly contra-indicated by existing data”. A full evaluation of their claims and arguments is beyond the scope of this paper, and they are therefore not addressed in detail here, although we do acknowledge their arguments, and take one of them up at the end of the paper. The objections of Hale and Reiss (2008) notwithstanding, in our view, Paradigm Uniformity can profitably be applied to the Yiddish material.

V. Paradigm Uniformity and First Diminutive Formation in Yiddish

We turn now to the formation of the Yiddish 1ST DIM forms, first considering forms without [d]-epenthesis, and then forms showing [d]-epenthesis. As noted above, this process is phonetically motivated as the result of the transition from [n] to syllabic [l], as

argued by Jacobs (1995). We model this within OT by means of a high-ranking markedness constraint banning tautosyllabic [nl] sequences, regardless the syllabicity of the [l]. This constraint is given in (9).

(9) *_σ[nl]

Tautosyllabic [nl] sequences are not allowed.

This constraint does not apply to heterosyllabic sequences – a point which will be of some importance in our analysis. We make no claims either way as to the universality of this constraint, but only note that it strikes us as a reasonably insightful way to account for the emergence of [d] as part of a phonetic transition between consonants.

In addition to *_σ[nl], our analysis relies on ONSET. In forms like *bejndl*, the underlyingly syllabic [l] remains syllabic in order to obey *_σ[nl], and ONSET therefore compels [d]-epenthesis to make sure that such syllables have onsets.¹⁵ We also draw on various faithfulness constraints, as follows. Like ONSET, these constraints are also familiar from the OT literature (e.g. Kager 1999).

(10) MAX

Every element of the input must correspond to an element in the output.

(11) DEP

Every element of the output must correspond to an element in the input.

(12) LINEARITY

The precedence structure of the input must correspond to the precedence structure of the output, and vice versa.

¹⁵ The sonority considerations mentioned above apparently prevent the underlyingly syllabic [l] from being parsed as a syllable onset or coda here, and the ban on tautosyllabic [nl] sequences similarly prevents [n] from serving as a syllable onset in this situation.

The first of these constraints, MAX, bans deletion; DEP bans epenthesis; and LINEARITY bans metathesis (i.e. the reordering of elements).

We further propose the following constraint ranking:

(13) ONSET, MAX, LINEARITY >>*_σ[nl] >> DEP

This proposed ranking is motivated by the strategy chosen to satisfy *_σ[nl]: deletion and metathesis do not take place to satisfy it, but epenthesis does. Hence, it must be more important to avoid deletion and metathesis than it is to avoid tautosyllabic [nl] sequences; but it is in turn more important to avoid tautosyllabic [nl] sequences than it is to avoid epenthesis. Exactly where ONSET fits in the constraint hierarchy is unclear, but it is clearly high-ranking, and we therefore provisionally rank it with the faithfulness constraints here.

At this point, the lack of [d]-epenthesis in forms like *finland* ‘Finland’ is not problematic: *_σ[nl] rules out tautosyllabic [nl] sequences, and in such forms, the [nl] cluster is therefore heterosyllabified, in accordance with normal patterns of syllabification in Yiddish (see Viler 1924 or Jacobs 2005 on this point). The interaction of *_σ[nl] and the various faithfulness constraints also successfully accounts for the presence of [d] in transparent forms like *bejndl* ‘leg, bone’ (1ST DIM) or *špindl* ‘spider’ (1ST DIM): in order to avoid a tautosyllabic [nl] cluster, while simultaneously avoiding deletion and metathesis, in line with the constraint ranking given in (13), epenthesis takes place. The following tableau illustrates this:

(14) Tableau 1: *bejndl* ‘leg, bone’ (1ST DIM)

<i>bejn + l</i>	ONSET	MAX	LINEARITY	* _σ [nl]	DEP
F <i>bejn\$dl</i>					*
<i>bej\$nl</i>				*!	
<i>bej</i> _l		*!			
<i>bej</i> _l n			*!		
<i>bejn</i> _l	*!				

Here, although the surface form *bejndl* does violate DEP, the other possible candidates all violate higher-ranking constraints, and are therefore eliminated.

While the analysis as developed to this point successfully accounts for the Yiddish data considered so far, the question of forms like *pajnləx* ‘painfully unpleasant’ and *bejndləx* ‘small legs/bones’ (1ST DIM plural) remains open. Specifically, why is there [d]-epenthesis in *bejndləx* ‘small legs/bones’, but not in *pajnləx* ‘painfully unpleasant’? To an extent, we have already given the game away, as we suggested above that an approach rooted in Paradigm Uniformity would be the most successful monostratal OT approach to this problem. In our view, [d]-epenthesis is exactly the type of opacity that Paradigm Uniformity is designed to account for, namely a phenomenon that is transparent in some members of a paradigm (i.e. group of morphologically related forms), but not in others. We rely on a constraint mandating that segments present in one member of a paradigm to be present in the other members of the paradigm, which we formalize as follows:

(15) O-O-MAX [SEGMENT]

Any segment present in “form A” must also be present in derived words containing “form A”.

We view this constraint as very high-ranking in the phonology of Yiddish, as it must be, in order to compel the presence of [d] in forms like *bejndləx*, where [d]-epenthesis is not transparent. It must outrank at least DEP, and possibly the other faithfulness constraints as well, although we currently have no solid evidence pointing either way on that issue.

In the case of *bejndləx*, the process of [d]-epenthesis is transparent in the 1ST DIM singular form *bejndl*. In accordance with O-O-MAX [SEGMENT], then, it must be present in forms like *bejndləx*, even though [d]-epenthesis is not motivated here. That is, the relevant [nl] sequence can be heterosyllabified, therefore avoiding the ban on tautosyllabic [nl] sequences, in which case DEP would block epenthesis (this further supports our claim that O-O-MAX [SEGMENT] outranks DEP). In the case of *pajnləx*, however, [d]-epenthesis was never motivated, because the relevant [nl] sequence was never tautosyllabic, and there was therefore never a point in actually having [d]-epenthesis occur (as is also the case in forms like *finland*, discussed above). The following tableaux illustrate this view. (Candidates not essential to the argument at hand have been omitted, and keep in mind that the Yiddish syllabification patterns mentioned above can cause the underlyingly syllabic [l] to become non-syllabic.)

(16) Tableau 2: *bejndləx* ‘small legs/bones’ (1ST DIM plural)

bejn + l + əx	O-O-MAX [SEGMENT]	MAX	LINEARITY	* _σ [nl]	DEP
F bejn\$dləx					*
bejn\$ləx	*!				
bej\$nləx	*!			*	

Here again the surface form violates the relatively low-ranking constraint DEP, but that is not sufficient to eliminate it, while its main competitor violates the higher-ranking constraint O-O-MAX [SEGMENT] and is therefore eliminated.

But consider *pajnləx* ‘painfully unpleasant’ (again, candidates not essential to the argument at hand have been omitted):

(17) Tableau 3: *pajnləx* ‘painfully unpleasant’

pajn + ləx	O-O-MAX [SEGMENT]	MAX	LINEARITY	* _σ [nl]	DEP
F pajn\$ləx					
pajn\$dləx	*!				*

Here [d]-epenthesis was never motivated, and therefore **pajndləx* is ruled out both by its violation of O-O-MAX [SEGMENT] and its violation of the lower-ranked constraint DEP.

VI. Conclusion

We conclude with a brief summary of our analysis and with some remarks intended to situate our analysis within the larger context of the study of Yiddish phonology. In this paper, we offered a monostratal Optimality Theory analysis of the interaction of diminutive formation and [d]-epenthesis in Yiddish. We motivated [d]-epenthesis via the interaction of a high-ranking constraint banning tautosyllabic [nl] sequences and another high-ranking constraint mandating that syllables must have onsets. The appearance of [d] in forms like *bejndləx* is motivated by a high-ranking Paradigm Uniformity constraint, requiring segments present in one member of a paradigm to be present in the other members of the paradigm. In this particular case, the application of [d]-epenthesis in forms like *bejndl* is transparent, and the high ranking of O-O-MAX [SEGMENT] leads to the appearance of the relevant [d] in forms like *bejndləx*, even though the process of [d]-epenthesis is opaque in such forms. In forms like *pajnləx* ‘painfully unpleasant’, however, [d]-epenthesis was never motivated, and therefore never occurs. This proposal accounts for the relevant data without requiring cyclic rule application, and moreover sidesteps many of the problematic issues surrounding approaches to opacity in monostratal OT.

Our analysis hinges on Paradigm Uniformity, which suggests to us that Paradigm Uniformity plays an important role in the synchronic phonology of Yiddish, although further research is necessary to prove (or disprove) this claim. We admit that at this point our analysis is, in the words of Hale and Reiss (2008), “opportunistic”, as we have only analyzed a small set of Yiddish data. We plan to expand our study of Paradigm

Uniformity effects in Yiddish in future work, in the hope of finding solid empirical evidence supporting our claims – as well as no solid empirical evidence countering them.

References

- Benua, Laura. 1995. Identity effects in morphological truncation. *University of Massachusetts Occasional Papers in Linguistics: Papers in Optimality Theory*, ed. by Jill Beckman et al, 77-136. Amherst, MA: GLSA.
- _____. 2000. *Phonological relations between words*. New York: Garland. [Revised version of 1998 University of Massachusetts dissertation.]
- Boas, Hans C. 2000. Optimal syllabification of Yiddish first grade diminutives. *Carolina Working Papers in Linguistics* 1: 1-25.
- Faber, Alice and Robert D. King. 1984. Yiddish and the settlement history of Ashkenazic Jewry. *The Mankind Quarterly* 24: 393-425.
- Goldsmith, John. 1976. *Autosegmental phonology*. Doctoral dissertation, Massachusetts Institute of Technology.
- Hale, Mark and Charles Reiss. 2008. *The phonological enterprise*. Oxford: Oxford University Press.
- _____, Madelyn Kissonock, and _____. 1998. What is Output? Output-Output Correspondence in OT Phonology. *Proceedings of the Sixteenth West Coast Conference on Formal Linguistics*, ed. by Emily Curtis et al, 223-236. Stanford, CA: CSLI.
- Hall, Tracy Alan. 2005. Paradigm Uniformity effects in German phonology. *Journal of Germanic Linguistics* 17:225-264.
- Ito, Junko and Armin Mester. 2003. On the sources of opacity in OT: Coda processes in German. *The syllable in Optimality Theory*, ed. by Caroline Féry and Ruben van de Vijver, 271-303. Cambridge: Cambridge University Press.

- Jacobs, Neil. 1995. Diminutive formation in Yiddish: A syllable-based account. *Insights in Germanic Linguistics I*, ed. by Irmengard Rauch and Gerald F. Carr, 169-184. Berlin: de Gruyter.
- _____. 2005. *Yiddish: A Linguistic Introduction*. Cambridge: Cambridge University Press.
- Kager, René. 1999. *Optimality Theory*. Cambridge: Cambridge University Press.
- Kenstowicz, Michael. 1996. Base identity and uniform exponence: Alternatives to cyclicity. *Current trends in phonology: Models and methods*, ed. by Jacques Durand and Bernard Laks, 363-394. Salford: ESRI.
- King, Robert D. 1992. Migration and linguistics as illustrated by Yiddish. *Reconstructing languages and cultures*, ed. by Edgar C. Polomé and Werner Winter, 419-439. Berlin: Mouton de Gruyter.
- Kiparsky, Paul. 2000. Opacity and cyclicity. *The Linguistic Review* 17:351-366.
- _____. 2003. Syllables and moras in Arabic. *The syllable in Optimality Theory*, ed. by Caroline Féry and Ruben van de Vijver, 147-182. Cambridge: Cambridge University Press.
- McCarthy, John J. 2007. *Hidden generalizations: Phonological opacity in Optimality Theory*. London: Equinox.
- Merkle, Ludwig. 1975. *Bairische Grammatik*. Munich: Heimeran.
- Page, B. Richard. 1996. Articulatory phonology as a tool for explanation in historical phonology: The case of stop epenthesis in Germanic. *Insights in Germanic Linguistics II*, ed. by Gerald F. Carr and Irmengard Rauch, 175-188. Berlin: Mouton de Gruyter.

- Pierce, Marc. 2008. *Opacity and Optimality Theory: A case study from Northern German*. MS, University of Texas at Austin.
- Prince, Alan and Paul Smolensky. 1993. *Optimality Theory: Constraint interaction in generative grammar*. Technical Report #2, Rutgers University Center for Cognitive Science.
- Reiss, Charles. 2003. Language change without constraint reranking. *Optimality Theory and language change*, ed. by Eric Holt, 143-168. Dordrecht: Kluwer.
- Sievers, Eduard. 1881. *Grundzüge der Phonetik*. Leipzig: Breitkopf und Härtel.
- Smolensky, Paul. 1995. On the internal structure of the constraint component *CON* of UG. Lecture presented at UCLA, April 7, 1995.
- Viler, Yankev. 1924. Fonetik fun mizrekh-galitsishn yidish. *Yidishe filologye* 1: 23-33, 141-151.

Abstract:

In this paper, we examine first diminutive formation in Yiddish, focusing on the interaction of first diminutive formation and the phonological process of [d]-epenthesis, using Optimality Theory (OT). We first present relevant data from Yiddish, and then briefly review two earlier analyses of the interaction of first diminutive formation and [d]-epenthesis in Yiddish, namely Jacobs (1995) and Boas (2000). This is followed by an abbreviated overview of approaches to phonological opacity within monostratal OT, in order to help contextualize the theoretical aspects of our analysis. We then present our own analysis of the problems, which relies on the theoretical device of Paradigm Uniformity, and conclude with some remarks on certain issues that remain unresolved.

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