On the phonological structure of /i/-suffixed English nicknames

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0. Introduction. As previously described in the literature on hypocoristic formations of English names [1](see McCarthy and Prince 1986, Weeda 1992, Itô and Mester 1997, Davis 2000, Simpson 2002), the base element that surfaces in the shortened form, the *truncatum,* is the maximal stand-alone syllable taken from the left edge of the full form; to this truncatum a suffix such as *-i*[2]*, -o,* or *-ers* is added . This is captured in the derivation defined in (1a) and carried out with the name *Hildred* in (1b).

(1) a. /input/
- i. maximally map base segments onto a monosyllable (no skipping, left-to-right)
- ii. suffix /i/, /-o/, etc.
- iii. resyllabify (McCarthy and Prince 1986 in Itô and Mester 1997)

[output]

b. /hildred/
- i. hild
- ii. hild-i
- iii. hil.di

[hil.di]

This generalization is an adequate first approximation, however, it is unable to describe all the data. This paper systematically investigates English hypocoristic formations in terms of Optimality-Theory (OT), with special reference to the nature of the syllable. The paper is organized as follows: in § 1 the data are described; in § 2 the data are subjected to an OT analysis with the use of Sympathy Theory; in § 3 the reader is introduced to relevant theoretical issues; in § 3.1 the nature of the syllable in English is considered, specifically with regard to post-vocalic consonants; in § 3.2 the syllable is formally considered in OT terms; in § 4.1 and § 4.2 the present interpretation of syllable structure is shown to be necessary when considering obstruent-obstruent post-vocalic sequences in the formation of English hypocoristics. An OT account is given that unifies the data under a single analysis. In § 4.3 some residual data are considered that are not accounted for by previous observations in this paper including a possible orthographic effect on the hypocoristic data. In § 5 a summary and conclusion of the current findings are offered. The final section also lays out a plan for future research on this topic.

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[1]Technically the forms investigated are apocopative anthroponymic hypocoristics.

[2]For consistency in the data presented, suffixes that surface generally as the sound [i] are presented throughout as *-i* regardless of traditional orthographic representation (e.g. *-i, -ey, -ie,* etc.). Likewise, I abstract away from some phonological facts (such as vowel length, assimilations, etc.) so that transcription details irrelevant to the present study can be avoided.

1. A description of the data. Before the data are presented, several comments are appropriate. First, all forms throughout are attested in the literature. Onomastics (the broader study of naming including hypocoristics) in any language include variation that cannot be fully captured by any (morpho-) phonological description. A comprehensive description of onomastic forms would include (semantic, cultural, social, etc.) factors that in many cases supercede the phonological processes described here. Second, with regard to the full forms of names, the current data concerns hypocoristic processes of apocopy (the elimination of final elements), not aphaeresis (the elimination of initial elements) or syncope (the elimination of word-medial elements, usually an unstressed vowel). In this sense, hypocoristic formations consisting only of (consecutive) elements from the left of full forms are considered (e.g., *Abb-i* < *Abigail, Mart-i* < *Martina,* etc., but not *Tricia* < *Patricia, Beck-i* < *Rebecca, Tin-o* < *Martin,* etc.). Hypocoristics as a result of other processes are ignored. Third, the current data concerns suffixed hypocoristic forms, not unaffixed truncations (e.g. *Pat* < *Patricia, Sal* < *Salvatore,* etc.).

In the English hypocoristic data discussed below, the truncatum is the largest possible syllable from the left of the base word. A suffix (such as /i/, /o/, /ers/, etc.) is then added to the truncatum.[3] Forms are from Weeda (1992), Davis (2000), and Simpson (2002).[4]

Tables below show the full form, the hypocoristic form, and the bare truncatum (as well as other forms if relevant). The actual hypocoristic form is always the truncatum plus the relevant hypocoristic suffix. The current discussion is exclusively concerned with the relationship between the full form, or base, and the truncatum (and, of course, the eventually-surfacing output form). It should be noted that the truncatum itself never surfaces, but that the base and the actual hypocoristic forms do have output representations. The explicit claim is that the truncatum, by definition, does not surface. If a form identical to the truncatum has a surface representation, it must be considered the result of some process other than the hypocoristic formation presently considered. This claim is important because in some cases the truncatum is unattested. For example, the full form *Charles* has surface representations *Charles* and *Charl-i*, but never the truncatum *Charl*. Because the truncatum does not *require* a surface representation, any output-to-output analysis depending on a surface representation of the truncatum would fail.

Three detailed observations about the nature of the data will be discussed in turn below. First, no truncatum minimizes (or eliminates) the first post-vocalic consonant from the full form. In each of the forms in (2) the full form is an initial (C)VCV sequence (double letters indicate a preceding short vowel, not a geminate consonant).

[3] The form of the suffix itself (/i/, /o/, /ers/, etc) is not relevant to the current discussion. The current description is primarily concerned with the nature of the truncatum in processes of hypocoristic morphology. In this sense, all suffixes in this discussion are assumed to behave identically.

[4] Weeda (1992) and Davis (2000) give American English forms, and Simpson (2002) gives Australian English forms. Hypocoristic formation is presumably more productive in Australian English than it is in American English. For example, American English hypocoristic forms of common nouns are largely affective (cf. the pejoratives *copper* (from *cop* 'police officer'), *baldy* (from *bald* 'hairless person'), etc.), but the same distinction is not clear in the Australian English forms presented by Simpson. I mingle the Australian and American English data throughout, and make no theoretical distinction between the two. Nonetheless, all phonological generalizations are expected to hold in both American and Australian varieties of English.

The corresponding hypocoristic form in every case begins with the initial (C)VC sequence plus the hypocoristic suffix yielding (C)VC-{sfx}; the truncatum in these examples always contains the initial post-vocalic segment. For example, the full forms *Rudolf* and *Beaconsfield* surface as *Rud-i* and *Beac-i* respectively from the truncatums *Rud* and *Beac*—not the otherwise well-formed minimal syllables, *Ru* [ru] or *Bea* [bi].

(2)

full form	**hypocoristic**	**bare truncatum**
Abigail	Abb-i	Ab
Adelaide	Add-ers	Ad
Beaconsfield	Beac-i	Beac
Drummoyne	Drumm-i	Drumm
Harold	Harr-i	Har
Jennifer	Jenn-i	Jen
Josephine	Jos-i	Jos
Lebanese	Leb-o	Leb
Paddington	Padd-o	Pad
Peter	Pet-i	Pet
Philadelphia	Phill-i	Phil
Ronald	Ronn-i	Ron
Rudolph	Rud-i	Rud
Terence	Terr-i	Ter
Wellington	Well-o	Well

Second, every truncatum is a possible stand-alone syllable in English. That is, all bare truncatums respect well-formedness, phonotactic, and prosodic requirements of English[5]—despite the fact that truncatums are not actual surface outputs (coincidental homophones excepted). This well-formedness requirement is maintained throughout without exception: all English truncatums are possible English words.

This second observation concerns only the prosodic status of the truncatum and says nothing of the relationship between the truncatum and output forms or of the output forms themselves. Since monosyllables are largely unrestricted in English (especially (C)VC shapes), this raises the question of what status *h*-medial names, such as *Ahab,* receive in hypocoristic formation. [h] is not a possible coda segment in English, so what status would a truncatum such as *Ah* have under the above observations? English hypocoristics are generally not widely productive, so data of this type is difficult to assess. In fact, Weeda (1992: 403-411) claims his "list is exhaustive" of over 350 English nicknames, and it contains not a single *h*-medial surface form (and does not indicate truncatums). The prediction of the current account is that *Ah-i* [ehi] is an impossible hypocoristic form because the truncatum *Ah* [.eh.] is an impossible syllable of English.

Third, syllabic boundaries in the full form are not relevant in the formation of the truncatum. The data in (3) below show forms that contain a post-vocalic complex (consonant) cluster in the full form. In each case, the complex cluster is fully realized in the hypocoristic form. For example, *Albert* would tautosyllabify the first two consonants,

[5] The specific constraints are assumed at this point but will be described in great detail below.

Al.bert, but the hypocoristic form, *Alb-i*, is presumed not to be affected by this syllabification.

(3)

full form	**hypocoristic**	**bare truncatum**
Albert	Alb-i	Alb
Arnold	Arn-i	Arn
Barbara	Barb-i	Barb
Barcaldine	Bark-i	Barc
Belconnen	Belc-o	Belc
Bermagui	Berm-i	Berm
Bolshevist	Bolsh-i	Bolsh
Bundaberg	Bund-i	Bund
Campese	Camp-o	Camp
Cincinatti	Cinc-i	Cinc
Charles	Charl-i	Charl
Carlingford	Carl-o	Carl
Carnival (worker)	Carn-i	Carn
Gordon	Gord-i	Gord
Helmut	Helm-i	Helm
Indianapolis	Ind-i	Ind
Martina	Mart-i	Mart
Melvin	Melv-i	Melv
Vanderbilt	Vand-i	Vand

In order to identify syllable boundaries we must examine the nature of the English syllable (to be discussed below in greater detail). In the most general terms, syllable constituents are the onset, nucleus, and coda. Since all truncatums are monosyllabic, these (traditional) boundaries are easy to identify. With regard to the base, however, identification of word-level syllable structure is more difficult to determine. In the base, word-initial consonants are always onsets, and the following vowel is the nucleus (associated with the adjacent onset). These syllable constituents are of minimal interest to the present study because they are invariant. Occurring immediately after the onset and nucleus in the full form are post-vocalic consonant(s). In the base, post-vocalic consonants can be elements of the coda of the first syllable, elements of the onset of the second syllable, or some combination of these.[6] For example, the first name in (3), *Albert*, receives the syllabification between the first two consonants, *Al.bert*. Despite heterosyllabification of the consonants *lb* in the full form, the truncatum *Alb* tautosyllabifies *lb* into a single coda. Because of this observation, syllable boundaries of the full form cannot restrict or have influence on the formation of the truncatum.[7]

[6] Ambisyllabicity is also a possibility, but is not relevant here. In any case, an ambisyllabic analysis does not pose significant problems for the current analysis.

[7] I assume the Maximal Onset Principle (MOP) throughout. The MOP says that intervocalic consonants syllabify as onsets (rather than codas) when possible.

In the data in (2) and (3) above, all truncatums maximize the corresponding post-vocalic consonant or consonants from the full form. However, as seen in the data in (4), it is not the case that all post-vocalic consonants in the full form are mapped to the truncatum (despite the fact that in the cases maximization is descriptively accurate). The post-vocalic consonants that do occur in the truncatum form the maximal coda that respects English phonotactics for a syllable even though that syllable does not actually surface. A hypothetical maximal possible truncatum is shown in the last column of (4). The non-occurring forms in this column maximize the first intervocalic consonant sequence despite that sequence being prohibited as a coda in English. In each case the max-truncatum does not surface in the actual hypocoristic form. As pointed out by Davis (2000), the starred forms in (4) do not violate any English phonotactics if they are suffixed with a vowel because the coda consonants of the bare max truncatum would be re-syllabified into separate syllables if suffixed with a vowel, but as truncatums they contain impossible English codas and are therefore eliminated as possible truncatums. For example, the full form *Archfield* [arčfield] in (4) contains the tri-consonantal cluster *rčf*, but only the first two segments *rč* appear in the truncatum *Arch* [arč]. The non-occurring maximized truncatum *Archf* [arčf] is not a possible stand-alone English syllable because [rčf] is not a well-formed coda.

(4)

full form	**hypocoristic**	**bare truncatum**	**max truncatum**
Abraham	Ab-i	Ab	*Abr
Andrew	And-i	And	*Andr
Archfield	Arch-ers	Arch	*Archf
Baulkham	Baulk-o	Baulk	*Baulkh
Bismarck	Bis-i	Bis	*Bism
Blackburn	Black-i	Black	*Blackb
Bodleian	Bodd-er	Bod	*Bodl
Bosnich	Bozz-a	Bos	*Bosn
Bradford	Bradd-i	Brad	*Bradf
Brisbane	Brizz-o	Bris	*Brisb
Broadmeadows	Broad-i	Broad	*Broadm
Bronwyn	Bron-o	Bron	*Bronw
Brooklyn	Brook-i	Brook	*Brookl
Douglas	Doug-i	Doug	*Dougl
Edmund	Edd-i	Ed	*Edm
Franklin	Frank-i	Frank	*Frankl
Gabrielle	Gabb-i	Gab	*Gabr
Hildred	Hild-i	Hild	*Hildr
Patricia	Patt-i	Pat	*Patr
Sandra	Sand-i	Sand	*Sandr
Sigmund	Sigg-i	Sig	*Sigm
Woodrow	Wood-i	Wood	*Woodr

In summary, the challenge facing English hypocoristic formation is to take exactly the right base segments to form the truncatum--never too few and never too many. To do this successfully, a monosyllabic, never-surfacing truncatum is maximally mapped from a corresponding full form so long as the truncatum does not violate any of the language's phonotactic constraints.

2. An Optimality-Theoretic analysis. The data of German truncations in Itô and Mester (1997) very closely parallel the English data presented here. Both languages map the maximal syllable from the left of the base word to form the truncatum to which a hypocoristic suffix is added. Relevant portions of the German data from Itô and Mester (1997) are reproduced in (5) below.[8] All surface (output) hypocoristic forms take the suffix *-i.* Data in (5a) represent maximized post-vocalic consonant clusters (as in the English examples in (2), (3)); data in (5b) show non-maximized post-vocalic consonant clusters (as in the English examples in (4)). The full form is shown in the left column, the actual surface hypocoristic and the non-occurring hypocoristic (indicated by an asterisk) is shown in the middle column, and the gloss is in the right column.

(5) a. maximized C-clusters

full form	**hypocoristic**		**gloss**
Hans	Hans-i	*Hann-i	(personal name)
Gorbatschow	Gorb-i	*Gorr-i	(name of politician)
Stoltenberg	Stolt-i	*Stoll-i	(name of politician)
Alkoholiker	Alk-i	*All-i	'alcoholic'
Computer	Comp-i	*Comm-i	'computer'
Fundamentalist	Fund-i	*Funn-i	'Fundamentalist party member'
Gruft	Gruft-i	*Gruff-i	'older person' (*Gruft* 'grave')
Tourist	Tour-i	*Tou-i	'tourist'

b. non-maximized C-clusters

full form	**hypocoristic**		**gloss**
Andreas	And-i	*Andr-i	(personal name)
Dagmar	Dagg-i	*Dagm-i	(personal name)
Edmund	Ed-i	*Edm-i	(personal name)
Gabriele	Gab-i	*Gabr-i	(personal name)
Siegfried	Sigg-i	*Sigf(r)-i	(personal name)
Ulrich	Ull-i	*Ulr-i	(personal name)
Wilhelm	Will-i	*Wilh-i	(personal name)
Littbarski	Litt-i	*Littb-i	(name of soccer player)
Imker	Imm-i	*Imk-i	'beekeeper'

The OT analysis ultimately posited by Itô and Mester (1997) discards Base-Truncatum (BT) correspondences in favor of (Extended) Sympathy Theory (ST) and its interaction with traditional Input-Output (IO) constraints. Extended ST states that structural (prosody-to-prosody) alignment constraints can determine the designated sympathetic candidate.[9] Then, armed only with extended sympathy and the usual IO

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[8] Relevant phonotactics are essentially the same in German and English. Orthographic forms are represented. Double consonants indicate a preceding short vowel.

[9] According to Itô and Mester (1997: 10), "in the original version of the theory [of Sympathy], it was stipulated that $\mathbb{C}^{⊛}$ [i.e., the sympathy constraint] must be a faithfulness constraint."

family of constraints, the correct winner is determined through the overall grammar without the need to reference an Output-Output (OO) BT family of constraints.

Since the current English data and the German data analyzed by Itô and Mester (1997:2) both contain "a certain type of prosodic-morphological formation requiring access to virtual forms accessible neither at input nor at output," I will closely follow their approach, but with the current English data rather than German forms. The 'virtual form' for the English hypocoristic formation is the truncatum. Similar to Itô and Mester (1997), the following discussion seeks to dispense with the formal notion of a truncatum (and BT correspondence) in favor of an ST approach. Within ST is the notion of a *sympathetic candidate* replacing what was previously referred to as the *bare truncatum*.[10] Itô and Mester (1997: 14) show that "distinguishing Max-BT from Max-IO does not do all the work; sympathetic faithfulness is independently necessary". That is to say, a BT analysis relies on ST, but ST does not crucially rely on BT correspondences. In the current approach, BT correspondence is not postulated, therefore, the truncatum has no formal status. Rather, an analysis couched in ST will account for the actual output forms without reference to BT theory.

Input-Output constraints interact to determine correspondences between members of the input and members of the output in the usual fashion. ST constraints are used "to find a way of singling out one of the (infinitely many) co-candidates of the output" which is not the winner, but nonetheless "plays a special role by influencing the selection of the optimal candidate" (Itô and Mester 1997:9). Under this analysis, the input contains two elements: the underlying form of the base and the overt hypocoristic suffix specified with the lexical requirement to take the sympathetic selector constraint.

As noted in Itô and Mester (1997:17), the requirement to lexically mark the hypocoristic "is not a further complication, since the BT analysis needs a similar lexical requirement on its abstract morpheme TRUNC." In more general terms, it seems appropriate that something more than only the sequence of phonemes must identify hypocoristic formation. Because only forms with this lexical specification are affected, underlying forms such as (the morphologically complex) *lovely, understandably, nationality,* etc. that also end in the vocalic segment [i] are not subject to truncation. Also important is that this approach allows the grammar to select the correct output without having to posit additional constraints (which would make the grammar more complex).

The ST constraint demands certain correspondence between a non-winning *sympathy candidate*, which is determined by the *sympathy constraint*, and the actual output form. To carry out this type of analysis, the sympathetic candidate is first determined in a separate tableau for display purposes; a central tenet of OT is that it operates in parallel (not in a derivational or cyclical or time-constrained fashion). The current approach is assumed to be in accord with the parallel account of OT, but for display and clarity purposes, the selection of the sympathetic candidate will be shown in a separate tableau. The necessary constraints are shown in (6) below.

[10] Although there is a theoretical distinction preferring *sympathetic candidate* over *bare truncatum*, for descriptive purposes they are identical. Henceforth, reference will be limited to ST terminology.

(6) MAX-IO every segment in the input has a correspondent in the output (no deletion)

SONSEQ complex onsets rise in sonority, and complex codas fall in sonority (Kager 1999 uses this constraint citing Clements 1990 as the original source of the observation of the Sonority Sequencing Principle)

NON-FINALITY no head-σ of PrWd is final in PrWd (Kubozono, Itô and Mester 1997 cited in Itô and Mester 1997)

ALL-σ-LEFT Align (σ, Left, PrWd, Left) align the left edge of every syllable with the left edge of the prosodic word

MAX-IO penalizes segments present in the input but not present in the output. SONSEQ penalizes syllable onsets that do not rise in sonority or syllable codas that do not fall in sonority according to the sonority scale in (7).[11]

(7) vowel > glide > liquid (*r* > *l*) > nasal > obstruent (fricative > stop)[12]

Notice that the category *liquid* has internal structure in which *r* is more sonorous than *l*; this correctly predicts [rl] coda sequences in forms such as the sympathetic candidate *Charl* as well as eliminating [lr] coda sequences from surfacing in a name such as *Elroy* whose hypocoristic form is *El-i*, not *Elr-i*. Similarly, the category *obstruent* has internal structure suggesting fricatives are more sonorous than stops. NON-FINALITY militates against the initial syllable occurring as the final syllable of the output; NON-FINALITY is violated for a monosyllabic output. ALL-σ-LEFT militates against syllables that do not occur on the left edge of the output; ALL-σ-LEFT is violated for each syllable not on the left of the output. The result of NON-FINALITY dominating ALL-σ-LEFT in the desired disyllabic structural requirement of the hypocoristic output form.

Tableau 1 shows the selection of the sympathetic candidate *And-i* from the full form *Andrew*. Recall that the hypocoristic suffix is comprised of phonetic content (in this case [i]) as well as the lexical marker requiring the sympathetic selector constraint. For the English data represented by the hypocoristic suffix *-i* in Tableau 1 (and for the data presented in Itô and Mester 1997), the lexically marked sympathetic selector constraint is ALL-σ-LEFT, designated by the flower suffixed to the constraint name, ALL-σ-LEFT-❀. The constraints are ranked in the following tableaux according to the ranking order laid out in detail in Itô and Mester (1997).[13]

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[11] Complex onsets and complex codas with segments of equal sonority violate this constraint. However, it is not clear how [kt], as in *Viktor* > *Vik, *Vikt*, violates SONSEQ in the same way that a (greater?) mismatch in the sonority scale, such as [kl] in *Brooklyn* > *Brook-i, *Brookl-i*, violates the same constraint. Furthermore, since [kt] codas are abundant in English (*act, pact, fact, slick-ed, pack-ed*, *pock-ed,* etc.), there must not be an undominated constraint restricting post-vocalic [kt] on account of the constraint SONSEQ. This is surely an area to be investigated in detail in future work but is beyond the scope of the current approach because exceptional behavior is not attested in the hypocoristic process.

[12] According to Hall (2002: 39), "many linguists believe that fricatives are more sonorous than stops on the sonority hierarchy".

[13] Strictly speaking, Itô and Mester (1997) do not use constraints identical to the ones employed here, but the essence of their argument is nonetheless preserved.

Tableau 1: sympathy selection of [.and.] from the full form *Andrew*

/ andrew + i /		SONSEQ	NONFINALITY	MAX-IO	ALL-σ-LEFT-❀
a.	.andr.	*!	*	ewi	
b. ❀	.and.		*	rewi	
c.	.an.		*	d ! rewi	
d.	.a.		*	n ! drewi	
e.	.a.n-i			drew	σ
f.	.an.d-i			rew	σ
g.	.an.dr-i			ew	σ
h. 👎	.an.dre.w-i				σ σ

The shaded candidates violate the sympathetic selector constraint ALL-σ-LEFT-❀ and, because of this violation, they are not considered in Tableau 1[14]; that is, the candidates that do not satisfy the selector constraint are not competitors evaluated in the same way as the candidates that satisfy the selector constraint.[15] Notice that if this stipulation were removed the winner in Tableau 1 would be candidate (h), indicated by the thumbs-down 👎. Only the candidates (a-d) satisfy ALL-σ-LEFT-❀ and are evaluated by the remaining constraints. Candidate (a) is eliminated on account of a violation of SONSEQ. The remaining candidates (b-d) equally violate NON-FINALITY, but candidate (b) best satisfies MAX-IO and survives as the sympathetic candidate.

In order to allow the sympathetic candidate to influence the actual output under ST, "rankable constraints require the output forms to resemble the sympathetic candidate" in certain ways (McCarthy 2002: 176). For the current analysis, the constraint in (8) below is active.

(8) DEP-❀-O every segment in the output has a correspondent in the ❀-candidate

DEP-❀-O, ranked below NONFINALITY in Tableau 2, militates against output candidates that insert segments not present in the sympathetic ❀-candidate. Violations are determined by comparing each candidate with the sympathetic candidate (b): one violation mark is incurred for every segment present in an output candidate that is not a segment in the sympathetic candidate.

[14] In following tableaux, shading will be shown only to indicate candidates which are eliminated from the sympathetic candidate selection process. No shading is indicated in the full tableaux.

[15] Certain candidates are not considered throughout due to the (assumed) activity of undominated constraints such as MPARSE (McCarthy and Prince 1993, Kager 1999) requiring non-null output, and a host of (markedness) constraints restricting, for example, the segment [h] in the coda. A particular sub-set of these constraints will be discussed later with regard to complex post-vocalic consonant sequences.

Tableau 2: full constraint ranking

/ andrew + i /	SONSEQ	NONFINALITY	DEP-❀-O	MAX-IO	ALL-σ-LEFT-❀
a. .andr.	*!	*	r	ewi	
b.❀ .and.		*!		rewi	
c. .an.		*!		drewi	
d. .a.		*!		ndrewi	
e. .a.n-i.			i	d ! rew	σ
f. ☞ .an.d-i.			i	rew	σ
g. .an.dr-i.			ri !	ew	σ
h. .an.dre.w-i.			r ! ewi		σ σ

In Tableau 2 SONSEQ and NONFINALITY are top-ranked to ensure that the disyllabic (or, more specifically, the non-monosyllabic) form of the hypocoristic is realized without sonority violations. Monosyllabic candidates (a-d), including the sympathetic candidate (b), are eliminated because of fatal violations of SONSEQ and NONFINALITY. DEP-❀-O is ranked in the full tableau above MAX-IO so that candidates (g) and (h) are correctly eliminated while candidate (f) incurs fewer violations and is not eliminated by this constraint. Since the input contains the full form and the output is not fully faithful, segmental deletion (a violation of MAX-IO) must be allowed. The violability of MAX-IO with regard to DEP-❀-O accomplishes this task by eliminating candidates (g) and (h) on account of a violation each of DEP-❀-O despite better performance than the actual winner with respect to MAX-IO. Candidate (f) performs better than any other candidate and is selected as the winner.

Since NON-FINALITY is indispensable in order to eliminate candidates (b-d) in Tableau 2 above (and not restricted to ST but ranked in the full output tableau), we must check to ensure it does not cause problems elsewhere in the grammar. If NON-FINALITY penalizes head syllables that surface as final syllables in the prosodic output, then simple monosyllabic outputs will always violate NONFINALITY. This does not pose a significant problem in OT since constraints are inherently violable, and equal performance on a single constraint, if shared by distinct candidates, is simply not conclusive.[16] That is, all monosyllabic candidates will equally violate NONFINALITY[17] leaving the decision to other constraints. In the present case, the undominated constraint DEP-IO (militating against insertion) will do the work not done by previously discussed constraints. Tableaux 3 and 4 below confirm that NONFINALITY must, in fact, be high ranked in order to correctly eliminate non-surface candidates. The monosyllabic English full name *Mark* is shown in Tableau 3, and the related hypocoristic *Mark-i* is shown in Tableau 4.

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[16] Constraints equally respected or violated fall under this notion. The *fallacy of perfection* (see Kager 1999, McCarthy 2002) states that no output is 'perfect' or incurs no constraint violations. Since all candidates violate at least some constraint, only a specific single violation ultimately eliminates particular candidates.

[17] The zero-candidate (null parse) is not considered. I assume an undominated constraint such as MPARSE or a comparable constraint eliminates such a candidate.

Tableau 3 shows the input /mark/ surfacing faithfully as [mark].[18] This tableau does not show a hypocoristic process, but simply a common name in its full form to confirm that the constraints posed for the sympathy selection are not problematic in the grammar as a whole. Candidates (e-h) are eliminated because of an inserted segment that violates DEP-IO. Although any inserted segment will violate DEP-IO, the segment [i] is used to show that the hypocoristic form cannot surface given this input. Candidates (a-d) equally violate NONFINALITY (none fares better than another), and NONFINALITY is not responsible for eliminating any candidate. DEP-❀-O is vacuously satisfied by all candidates because there is no sympathetic constraint that selects a sympathetic candidate to be faithful to. The winner (a) incurs no violations of MAX-IO while the remaining candidates (b-d) are eliminated due to at least one violation each of MAX-IO. Candidate (a) best satisfies the constraints and is selected as optimal. The final constraint ALL-σ-LEFT is low ranked and plays no role in determining the winner.[19]

Tableau 3: full form *Mark*

/ mark /	DEP-IO	NONFINALITY	DEP-❀-O	MAX-IO	ALL-σ-LEFT
a. ☞ .mark.		*			
b. .mar.		*		k !	
c. .ma.		*		r ! k	
d. .m.		*		a ! rk	
e. .mar.k-i	*!				σ
f. .ma.r-i	*!			k	σ
g. .ma-i	*!			rk	σ
h. .m-i.	*!			ark	

Tableau 4 shows the hypocoristic formation of *Mark-i* from the monosyllabic full form *Mark*. The input is the full form and the hypocoristic suffix *-i* encoded to take the sympathetic selector constraint ALL-σ-LEFT-❀. NONFINALITY penalizes candidates (a-d) and (h) for monosyllabicity (the hypocoristic suffix *–i* is not realized in (a-d)) and those candidates are eliminated from the possibility of being the output. The sympathy constraint DEP-❀-O is equally violated by the remaining candidates (e-g). Notice that candidate (h) cannot be the sympathetic candidate because it incurs a violation of DEP-❀-O when another candidate, namely (a), better satisfies that constraint. MAX-IO eliminates candidates (f-g) because input segments are deleted in those candidates. The remaining candidate, (e), incurring only a violation of ALL-σ-LEFT-❀ and no violations of MAX-IO, is optimal and surfaces as the winner.

[18] Although this is a name (and relevant to the data in Tableau 4), any monosyllabic input in the language will perform equally well by the constraints in Tableau 3.
[19] The flower marker ❀ on constraints in other tableaux indicates that the hypocoristic suffix has 'selected' this constraint, but the constraint itself behaves identically whether 'selected' or not. Recall that the constraint doing the work of Sympathy is the sympathetic faithfulness constraint DEP-❀-O while ALL-σ-LEFT-❀ is the selector constraint.

Tableau 4: hypocoristic formation of *Mark-i* from monosyllabic full form *Mark*

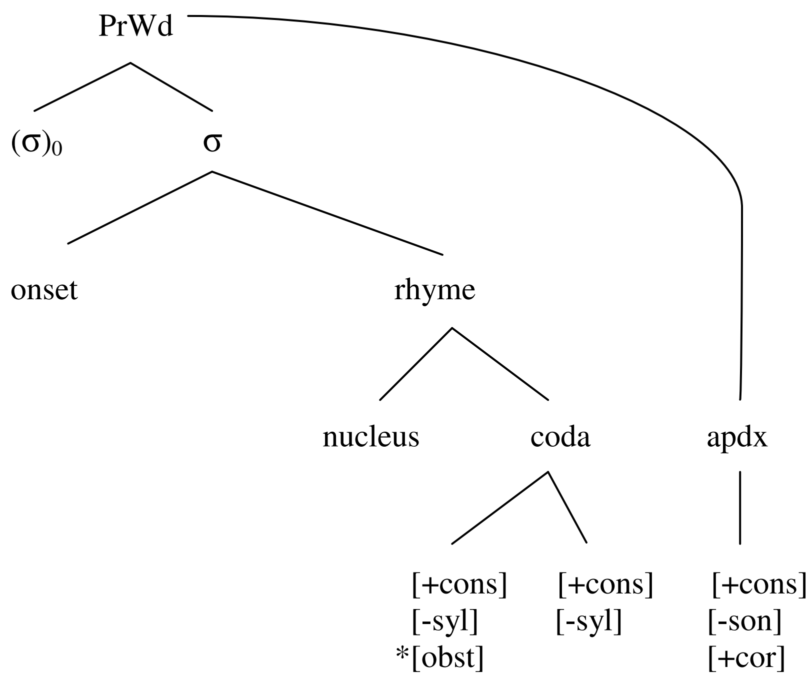
/ mark + i /	NONFINALITY	DEP-❀-O	MAX-IO	ALL-σ-LEFT-❀
a. ❀ .mark.	*!		i	
b. .mar.	*!		ki	
c. .ma.	*!		rki	
d. .m.	*!		arki	
e. ☞ .mar.k-i.		i		σ
f. .ma.r-i.		i	k !	σ
g. .ma-i.		i	r ! k	σ
h. .m-i.	*!	i	a ! rk	

In summary, Sympathy Theory is employed to correctly predict the winner in all cases of English hypocoristics so far considered. By extending ST to allow the hypocoristic form to select a prosody-to-prosody constraint (as in Itô and Mester 1997), the correct output is consistently predicted without complicating the overall grammar or causing unexpected problems in other parts of the grammar.

3.0. Theoretical considerations of problematic data. The challenge of hypocoristic formation is met above in OT, but the above discussion is inadequate when post-vocalic obstruent-obstruent sequences are considered (data to be presented below). In order to account for all the data including these obstruent-obstruent sequences, relevant syllable structure will be briefly examined in § 3.1, followed by a discussion of the syllable within the framework of OT in § 3.2. Armed with a formal expression of the syllable in OT terms, post-vocalic obstruent-obstruent sequences in English hypocoristics are addressed in § 4. It is shown in § 4 that obstruent sequences behave differently depending on the presence and the relative position of /s/ in clusters. In § 4.3 a small class of obstruent-obstruent(-obstruent) hypocoristic formations are discussed with special reference to their orthography.

3.1. Syllables. In order to systematically account for all the data in the present study, the status of the English syllable is briefly examined first. With regard to the entire English syllable, I assume the representation in (9) below (adapted from Fudge (1969), Halle and Vergnaud (1980), Selkirk (1982), and Jensen (1993)).

(9)



At the top of the representation in (9) is the *Prosodic Word* (PrWd) which may contain any (reasonable) number of syllables. Below the syllable level are the *onset* and the *rhyme*. The onset contains pre-vocalic consonants, and the *rhyme* contains the sonorous peak, the *nucleus*, and post-vocalic consonants, the *coda*. A syllable must minimally contain a nucleus, but the onset, coda, and appendix positions may be empty. Branching from the coda are two positions. The first (left) position may be occupied by a [+consonantal], [-syllabic] segment, and may not be occupied by an obstruent (indicated by *[obst][20]). In other words, the first coda position may be occupied by a non-syllabic glide, liquid, or nasal, but not by any obstruent. The second position may be occupied by any non-syllabic consonant.[21] Both of the two coda positions may be vacant (an *open* syllable), either one may be occupied (and not the other) (a *simple* or *simplex* coda), or both may be occupied (a *complex* coda). Importantly, the representation in (9) permits maximally two segments to co-occur in the coda, the first of which may not be an obstruent. It should be pointed out that Selkirk (1982) accomplishes this through a slightly different structure, specifically with reference to an "auxiliary template" that makes special provisions for *s*-clusters and coronal consonants in post-vocalic position.

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[20] A more conventional way to represent this might be to specify this position [+sonorant]. The notation *[obst] draws special attention to this position. It is not clear exactly what the best conceptualization of this position might be. In other words, a prohibition against obstruents is logically different from a requirement only satisfied by sonorants. The distinction is not relevant for the current analysis.

[21] Noted by Hammond (1999: 34), "the consonant [h] cannot occur word-finally, while the consonants [w, y] can only occur word-finally as part of the diphthongs [aw, ay, ɔy]".

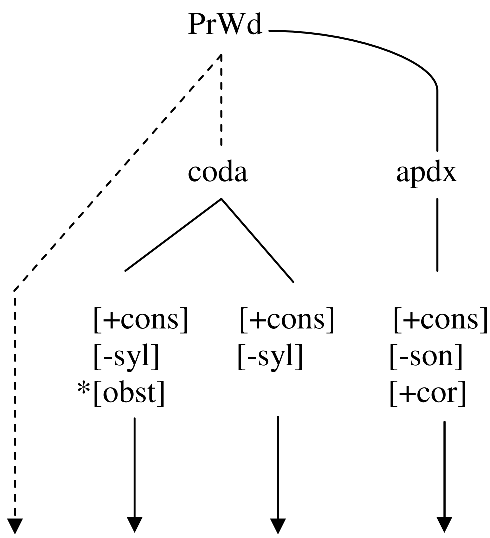
The structure represented and described above is, to my knowledge, a unique combination of previously described structural descriptions—namely, by those mentioned in the beginning of this section.

The remaining structural position is the appendix (labeled *apdx*) (Halle and Vergnaud 1980). Segments occurring in the appendix must be [+consonantal], [-sonorant], and [+coronal], i.e., coronal obstruents.[22] Notice that the appendix attaches directly to the PrWd and not to the coda. Because the appendix attaches to the PrWd, "coronal consonants at the end of a word can form an appendix, which is outside the rhyme proper," (Jensen 1993: 72-3). Predictably, the appendix position is only available at the periphery of the word and not word internally. In this way, the appendix is not a constituent of any syllable, but it is a constituent of the PrWd.

In the formation of words, a segment fills the left-most position where it can occur with each position limited to a single segment. The structure in (10) abbreviates the onset and nucleus positions with dashed lines but shows the full structure of word final post-vocalic consonants. The forms prefixed with the flower in (g-k) would be sympathetic candidates for the hypocoristics based on the full names *Jennifer, Lebanese, Bolshevist, Andrew,* and *Mark* respectively.

[22] It is not clear how to analyze forms where the second obstruent in a post-vocalic, two-obstruent cluster is not coronal. Such (monomorphemic) forms include both labials (*lisp, hasp, wasp, clasp*, etc.), and velars (*husk, bask, risk, ask, asterisk*, etc.). Not insignificantly, these forms appear to require that the first segment is [s] in all cases. Despite this apparent gap, the present study is concerned only with hypocoristic formations.

(10)



		orthography				
a.		*eel*	i	l		
b.		*eat*	i		t	
c.		*salt*	sa	l	t	
d.		*ark*	a	r	k	
e.		*lift*	lɪ		f	t
f.		*arc-ed*	a	r	k	t
g.	❁	*Jen*	ǰɛ	n		
h.	❁	*Leb*	lɛ		b	
i.	❁	*Bolsh*	bo	l	š	
j	❁	*And*	æ	n	d	
k.	❁	*Mark*	ma	r	k	

In summary, English syllables come in three varieties with regard to post-vocalic segments: open syllables have no post-vocalic segments, simple syllables contain a single segment in the coda position, and complex syllables contain maximally two segments in the coda position. Words with more than two post-vocalic segments and words with two post-vocalic obstruents must make use of the appendix. The appendix, limited to word-final coronals only, is an extrasyllabic constituent not associated with any syllable.

3.2. OT syllables. In order to account for post-vocalic obstruent-obstruent sequences in English hypocoristics, the treatment of syllables in OT must be briefly examined. The constraints discussed below will accomplish two things. First, they will assure that the sympathetic candidate properly coincides with the left of the full form. Second, they will assure that the sympathetic candidate is properly maximized on the right.

First, reconsider the sympathetic selector constraint ALL-σ-LEFT reproduced below in (11). This constraint is indispensable in selecting the sympathetic candidate: the hypocoristic suffix is encoded to select ALL-σ-Left as a high-ranking constraint in the hierarchy of constraints.[23]

(11) ALL-σ-LEFT Align (σ, Left, PrWd, Left) align the left edge of every syllable with the left edge of the prosodic word

ALL-σ-LEFT penalizes every syllable whose left edge does not co-occur with the left edge of the word. In other words, ALL-σ-LEFT is violated once for each syllable other than the leftmost, and monosyllabic words do not violate this constraint at all. According to Kager (1999: 117-121), this constraint (and the family of constraints governed by Generalized Alignment) is limited to distinguishing among (a) Grammatical Categories (GramCat) such as *Word, Stem, Root*, etc., (b) Prosodic Categories (ProsCat) such as *PrWd, Foot, Syllable,* etc., and (c) edges *Right* or *Left*. The domain of Align constraints refers strictly to these categories—not to internal structure within the category. For example, the Align constraint in (11) above evaluates *all* syllable types (open, closed, complex, etc.) equally. This poses no problem for ALL-σ-LEFT in the present study because all sympathetic candidates are in correspondence with the segments on the left edge of the full form: all members of the hypocoristic set (full form, sympathetic candidate, hypocoristic form) share phonologically identical onsets and nuclei.[24] In this sense, onsets and nuclei are maximized throughout the entire hypocoristic set. Because of this, no further considerations of onset or nucleus constituents are necessary.

Next, the right edge of the sympathetic candidate must be properly determined to incorporate exactly the right segments. No sympathetic candidate contains an open syllable since hypocoristic formation does not permit minimizing the post-vocalic segments standing in correspondence with the full form.[25] The sympathetic candidates that do occur contain either a simple coda (*Ab, Pet, Rud, Leb,* etc.) or a complex coda (*Alb, Barb, Vand, Bolsh, And,* etc.). In all of the preceding data, the right edge of the

[23] In keeping with OT, constraints are not part of the input, but rather the requirement to rank a specific constraint with regard to the input can be stipulated. It is not theoretically clear if this should be formally considered a process of so-called *constraint promotion* (or *demotion* of other relevant constraints) or some other process. Also, as pointed out by a reviewer, this particular constraint is ranked lowest compared to the other constraints in the tableaux, but it is nonetheless high-ranking compared to a host of undiscussed constraints.

[24] As mentioned in § 1, a fuller analysis of English nicknames might also include hypocoristic formations whose sympathetic candidates are garnered from non-initial positions. The generalizations contained here are expected to hold in all data.

[25] The present analysis does not consider forms whose sympathetic candidate might terminate in a vocalic segment (at the right edge). For example, *Louis* and *Stuart* have hypocoristic forms, *Lou-i* and *Stu-i* respectively, that have potentially open-syllable sympathetic candidates, *Lou* and *Stu*. Formations such as these are presumably only possible in the presence of a back vowel in the full form and might be influenced by an (inserted) glide /w/.

sympathetic candidates respect SONSEQ while incurring the fewest violations of MAX-IO. In order to achieve the proper output, SONSEQ dominates MAX-IO. All sympathetic forms are the maximum possible syllable that does not violate the sonority sequencing principle. No sympathetic candidate contains a complex coda of more than two segments.

In the data so far considered, if a sympathetic candidate contains two post-vocalic segments, then those two segments fall into different categories on the sonority scale and the evaluation of the sympathetic candidate with regard to SONSEQ is easily determined. SONSEQ is also violated by two segments of equal sonority in the same coda. If, however, there are two post-vocalic obstruents, then the second obstruent may not occupy a position in the coda but, as described above in (9), is relegated to the appendix—a position that is not associated with a syllable, but rather the Prosodic Word—and SONSEQ has no jurisdiction because it is restricted to governing sonority *in an onset or coda*. In other words, SONSEQ does not apply to any appendix even if that construction would otherwise violate SONSEQ. In order to properly limit post vocalic obstruent-obstruent sequences in sympathetic candidates, the constraint in (12) is necessary.[26]

(12) ALIGN-σ-R the right edge of a PrWd coincides with the right edge of a syllable
(Kager 1999: 113 uses a very similar constraint, ALIGN-R)

ALIGN-σ-R is a prosodic markedness constraint that militates against the right edge of any word that does not coincide with the right edge of some syllable. ALIGN-σ-R penalizes an output whose right-most segment is not associated with some syllable.[27] (ALL-σ-LEFT, on the other hand, penalizes gradiently for *each* syllable that does not occur on the left of the word.) The effect of ALIGN-σ-R is that an appendix is dispreferred at the right edge of words (the only position an appendix is available to occupy).[28] ALIGN-σ-R is a constraint that is active in all constraint hierarchies, but (in this case) it is only violated by a word with an occupied appendix, and in that way it is only relevant to the discussion of words with an appendix. If a complex coda consists of two segments that are both obstruents, then the final obstruent must be assigned to the appendix position. Since the appendix is not part of the syllable proper, ALIGN-σ-R will be violated for every word with an appendix slot filled. Below it will be demonstrated that the appendix slot is never filled in the successful sympathetic candidate. In formal OT terms, candidates that contain an appendix will be eliminated from the sympathy selection by a violation of ALIGN-σ-R and will not be allowed to surface in the output hypocoristic form.

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[26] Another option at this point would be to allow SONSEQ to have jurisdiction over an appendix. This is undesirable for three reasons. First, there is insufficient motivation to alter the conditions of a previously motivated constraint (Kager 1999). Second, SONSEQ is apparently undominated in the language and there is not reason to believe this is a proper extension of that constraint. Third, as will be shown below, SONSEQ cannot do all the work of properly eliminating candidates; some of the work will be done by ALIGN-σ-R.

[27] Used by Hall (2002), the constraint PARSESEG requires segments to be parsed into syllables. The activity of PARSESEG or the current constraint ALIGN-σ-R would result in the (same) desired output.

[28] Although outputs with appendices do indeed proliferate throughout the language, there are further undiscussed issues associated with the appendix slot. For example, It seems not to be a coincidence that the inflectional endings are the most usual occupants of the appendix. According to Selkirk (1982: 350), "the domain over which well-formed syllable structure is defined, would require that, in underlying representation, the inflectional suffixes *not* be taken into consideration".

4.0. Obstruent clusters. Up to this point, the present analysis of English hypocoristics has not considered post-vocalic obstruent-plus-obstruent clusters. For present purposes, English obstruents are organized into two groups: *s* and not-*s* (or ¬*s*). The representation in (13) below exhausts the logically possible two-obstruent sequences with regard to this organization. In all post-vocalic sequences, the first segment is part of the coda and the second segment is in the appendix position as shown in (9) above.

(13)

	coda	**appendix**
a.	*s*	*s*
b.	obstruent (¬*s*)	obstruent (¬*s*)
c.	*s*	obstruent (¬*s*)
d.	obstruent (¬*s*)	*s*

(13a) suggests a form that amounts to a word final geminate [ss] sequence. Since geminates are not permitted in English this structure is categorically ruled out and needs no further consideration.[29] (13b) represents a two-obstruent cluster where neither consonant is *s*. These are considered below in § 4.1. The remaining possible sequences are either an *s*-initial sequence as in (13c) or an *s*-final sequence as in (13d). These forms are considered below in § 4.2.

4.1. Sympathetic non-*s* obstruent clusters. Consider the hypocoristic data below in (14). In each full form two obstruents occur after the first vowel. (14) shows the full form, the surface hypocoristic, and the sympathetic candidate for each name.

(14)

full form	**hypocoristic**	**sympathetic candidate**
Edgar	Edd-i	Ed
Bradford	Brad-i	Brad
Viktor	Vikk-i	Vik
Bogdonovich	Bogg-i	Bog
Bliffkins	Bliff-i	Blif
Eggshells	Egg-i	Eg
Magdeline	Magg-i	Mag
Baptist	Bapp-o	Bap
Octopus	Okk-i	Ok

The selection of the sympathetic candidate *Vik* (from *Viktor*) is shown below in Tableau 5. Recall that the sympathy candidate is selected as the most harmonic candidate from the set of candidates that satisfy the selector constraint ALL-σ-LEFT-❀. Polysyllabic candidates, shaded in Tableau 5, violate ALL-σ-LEFT-❀ and are not

[29] The restriction against a geminate [ss] sequence is strongly supported even across morpheme boundaries. An epenthetic vowel is categorically inserted before (inflectional) morphology that would otherwise create a geminate [ss] sequence in words such as *lass-es* [læsəs] , *hiss-es* [hɪsəs] , *crease-'s* [krisəs], etc. which never surface as *[læss], *[hɪss], *[kriss] respectively.

considered in the selection of the sympathy candidate. If the shaded candidates were allowed to participate in Tableau 5, the wrong sympathy candidate, (l), indicated by the thumbs-down 👎, would be selected. Syllable boundaries are shown by periods. Appendices are shown in parenthesis. The syllable break before an appendix, as in candidate (a), indicates the (right) boundary of the preceding syllable but does not imply the appendix has syllabic properties.

Tableau 5: selection of the sympathetic candidate *Vik* (from *Viktor*)

/ viktor + i /	SonSeq	NonFinality	Align-σ-R	Max-IO	All-σ-Left-❀
a. .vik.(t)		*	*!	ori	
b. ❀ .vik.		*		tori	
c. .vi.		*		k ! tori	
d. .v.		*		i ! ktori	
e. .vik.to.				ri	σ
f. .vik.tor.				i	σ
g. .vik.t-i				or	σ
h. .vi.k-i				tor	σ
i. .v-i.		*		i ! ktor	
j. .vik.to-i.				r	σ
k. .vik.to.-i				r	σ σ
l. 👎 .vik.to.r-i					σ σ

NonFinality is not decisive for any candidate due to equal violation by all candidates that satisfy All-σ-Left-❀.[30] Candidate (a) is eliminated because of a critical violation of Align-σ-R: the segment [t] is the final element, but, as an appendix, it is unassociated with any syllable. Align-σ-R must be ranked above Max-IO; if Max-IO were ranked above Align-σ-R, candidate (a) would wrongly be selected as the sympathetic candidate because the winning sympathetic candidate, (b), incurs more violations of Max-IO. Candidates (a), (c), (d), and (i) incur more violation marks of Max-IO than (b) and do not surface as optimal. Candidate (b) survives as the most harmonic, optimal candidate and, therefore, the sympathetic candidate.

Tableau 6 below incorporates the sympathy constraint Dep-❀-O into the tableau for the actual output of [.vi.k-i.] in the same fashion as above. The candidates which survive the sympathy selection in Tableau 5 are eliminated in this full representation for violations of NonFinality. Of the remaining candidates (e-h) and (k-m), candidate (h) best satisfies Dep-❀-O and is deemed the winner.

[30] The candidate [.vi-i.] is not considered. I assume certain constraints (such as *VV, NoHiatus, or Onset) are high-ranking and prevent such a candidate from surfacing. Additionally, the candidate [.vikt.] is not considered; because of the syllable structure in (9), I assume two obstruents cannot co-occur in a coda.

Tableau 6: output of *Vik-i* from full form *Viktor*

/ viktor + i /	SonSeq	NonFinality	Align-σ-R	Dep-❀-O	Max-IO	All-σ-Left-❀
a. .vik.(t)		*!	*	t	ori	
b. ❀ .vik.		*!			tori	
c. .vi.		*!			ktori	
d. .v.		*!			iktori	
e. .vik.to.				t ! o	ri	σ
f. .vik.tor.				t ! or	i	σ
g. .vik.t-i				t ! i	or	σ
h. ☞ .vi.k-i				i	tor	σ
i. .vi-i		*!		i	ktor	
j. .v-i.		*!		i	iktor	
k. .vik.to-i.				t ! oi	r	σ
l. .vik.to.-i				t ! oi	r	σ σ
m. .vik.to.r-i				t ! ori		σ σ

The data presented in this section illustrate an important point to be returned to in the following section: a sympathetic candidate does not incorporate an appendix. In formal terms, any sympathetic candidate with an appendix violates Align-σ-R while a comparable candidate without an appendix does not violate Align-σ-R and survives the sympathy selection process.

4.2. Sympathetic *s*-clusters. The consideration of post-vocalic obstruent sequences so far has neglected discussion of sequences containing the obstruent /s/. As will be shown below, *s*-plus-obstruent clusters behave differently than other clusters in English.

First, consider the *s*-initial post-vocalic sequences in the forms in (15). In each case, the full form contains a post-vocalic *s*-plus-obstruent sequence, and the sympathetic candidate has a simple coda containing only [s]. These data are consistent with the observation that the second obstruent in two-obstruent sequences does not surface in the hypocoristic form because it is an appendix.

(15) a. *s*-plus-velar

full form	**hypocoristic**	**sympathetic candidate**
Oskar	Oss-i	Os
Rosco	Ross-i	Ros

b. *s*-plus-bilabial

full form	**hypocoristic**	**sympathetic candidate**
Caspar	Cass-i	Cas
Rasputan	Rass-i	Ras
Osborn	Oss-i	Os
Fosbrooke	Foss-i	Fos

c. *s*-plus-alveolar

full form	**hypocoristic**	**sympathetic candidate**
Kristin	Kriss-i	Kris
Tristan	Triss-i	Tris
Justine	Juss-i	Jus

The *s*-plus-obstruent data in (15) above can be further distinguished by place of articulation of the final obstruent. Data in (15) are presented as three kinds of post-vocalic *s* plus obstruent sequences: [s] preceding a velar obstruent [k] in (15a), [s] preceding a labial obstruent [p, b] in (15b), and [s] preceding a coronal obstruent [t] in (15c).

The data in (15) are all attested hypocoristic forms and pose no problem to the current OT analysis. Any candidate with an appendix (*Osk, Casp, Trist,* etc.) is eliminated from the sympathy selection because of a violation of ALIGN-σ-R. Of the sympathetic candidates that survive ALIGN-σ-R (monosyllables without an appendix), the candidate that best satisfies MAX-IO is selected as the sympathetic candidate.

Post-vocalic consonantal *s*-initial sequences, however, are not so quickly dispensed with. English speakers quickly recognize that the forms in (15c) are not the only possible hypocoristic forms of those names. Data in (16) show alternate hypocoristic forms (from Weeda 1992) of the names in (15c).

(16)

full form	**hypocoristic**	**sympathetic candidate**
Kristin	Krist-i	Krist
Tristan	Trist-i	Trist
Justine	Just-i	Just

In each of the forms in (16), the sympathetic candidate contains the entire post-vocalic, two-obstruent sequence from the full form. Under the current analysis, the final consonant of this sequence is analyzed as an appendix. The problem with these sympathetic candidates is that they necessarily violate ALIGN-σ-R (due to an occupied appendix) and should be eliminated as possible sympathetic candidates altogether. If they are eliminated as sympathetic candidates, they cannot survive the full tableau to influence the actual surface hypocoristic form.

Several considerations must be taken into account before a solution to this problem is offered. First, the goal of the analysis should not be to absolutely restrict the occurrence of (sympathetic) output forms either with a post-vocalic [s] or a post-vocalic [st].[31] To do so would predict that the other form is not a possible form as well as cause problems elsewhere in the language where these monomorphemic forms are attested (*grass, lass, hiss, alas,* etc. vs. *blast, fast, list, east,* etc). On the other hand, the analysis should be able to allow sympathetic forms with both [st] and [s] (whatever the status of the appendix turns out to be). Second, the only post-vocalic *s*-initial complex sequences permitted in sympathetic candidates is an [st] sequence; no [sp] or [sk] post-vocalic clusters are attested. In other words, only homorganic coronals appear in sympathetic candidates.

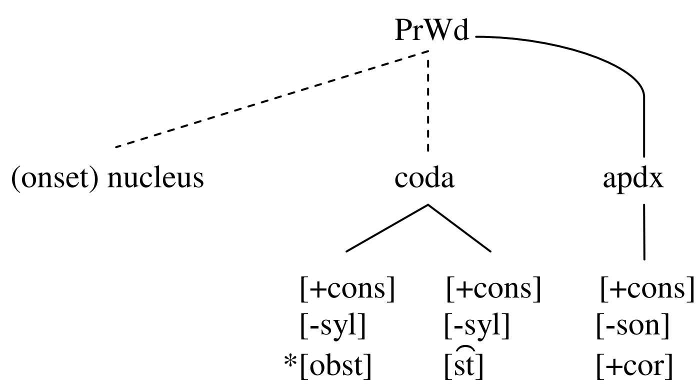
The exceptional behavior of post-vocalic [st] sequences in English has been observed by many previous researchers including Fudge (1969), Halle and Vergnaud (1980), Selkirk (1982), Davis (1984), Borowsky (1989), Kenstowicz (1994), and Hammond (1999). The basic approaches by these (and others) fall into two different camps: the *single-segment approach* and the *discrete-segment approach*. The single-segment approach considers "*s*-plus-obstruent clusters to form a unit that may occupy a

[31] The input for both possible output forms is identical in these cases.

single obstruent slot, wherever that slot may appear in the syllable. In the coda ... *s*-plus-obstruent clusters may appear where otherwise only a single obstruent would be allowed," (Selkirk 1982: 347). Under the single-segment approach, when an *s*-plus-obstruent cluster occurs word-finally, it fills the available single coda slot (and the appendix is empty). Alternatively, the discrete-segment approach says "*s*-plus-obstruent clusters do not obey the same constraints as an obstruent," (Davis 1984: 49), and, consequently, segments are discrete whether they occur in complex sequences or not. Under the discrete-segment approach, when an *s*-cluster occurs word-finally, the first segment must be in the coda and the second segment must analyzed as the appendix.[32]

The current analysis takes the basic premise of the discrete-segment approach that segments are analyzable into discrete segments, with one exception: [st] sequences can behave like single segments (but no other *s*-plus-obstruent sequences).[33] That is, all complex obstruent sequences *except /st/* must be analyzed as a sequence of consecutive distinct segments, the first of which occurs in the coda, the second in the appendix; only [s͡t] (indicated by the ligature over the segments) may occupy the coda position without occupying the appendix.[34] The effect of these generalizations with regard to *s*-plus-obstruent clusters is that when [sp] or [sk] occur, the final obstruent must fill the appendix slot, but [s͡t] may be fully contained within the coda leaving the appendix empty. The structural representation from (10) is repeated below in (17) with the addition of permitting [s͡t] in the second coda position. As will be discussed below, (17) is not intended to replace (10) in the sense that all [st] sequences *must* be interpreted as [s͡t] contained only within the coda. Rather, (17) should be interpreted that [s͡t] *may* occur as fully contained in the coda, but an [st] sequence where [t] occurs in the appendix also satisfies the representation.

(17)



[32] Not all researchers recognize the appendix. Nonetheless, the current analysis is simplified by assuming the appendix as above.

[33] As noted by a reviewer, if one regards [st] as an affricate, other affricates in English such as [tʃ] and [dʒ] might be expected to behave similarly. However, notice that [st] is a fricative-stop sequence while the other affricates mentioned are stop-fricative sequences.

[34] Rather than permit [s͡t] in the final position, another option is to remove the restriction against obstruents in the first coda position. This would allow for [st] sequences still within the coda, but has no way of distinguishing among occurring [st] sequence and unattested [sp] and [sk] sequences. Additionally, permitting two obstruents in the coda would incur critical SONSEQ violations (in sympathetic candidates).

The forms in (18) below show the forms first presented in (15c) and (16). Since these are the only forms that contain a post-vocalic [st] sequence, they are the only forms that fall under the scope of the syllable structure in (17). Each name is presented twice, one which retains the entire [st] sequence, the other retaining only the [s].

(18)

full form	**hypocoristic**	**sympathetic candidate**
Kristin	Krist-i	Krist
Kristin	Kriss-i	Kris
Tristan	Trist-i	Trist
Tristan	Triss-i	Tris
Justine	Just-i	Just
Justine	Juss-i	Jus

With the structure in (17) available, how is the data in (18) interpreted in OT terms? How does a single input produce different outputs? For example, the full form *Kristen* has two occurring outputs *Kriss-i* and *Krist-i*. In the former, the hypocoristic form surfaces with only one post-vocalic consonant but in the latter both post-vocalic consonants surface.

The solution lies in the analysis of the sequence [st] in the selection of the sympathetic candidate. When the sympathetic candidate retains only [s] from a post-vocalic [st] sequence, then [t] must be interpreted as an appendix in the sympathetic candidate; when the sympathetic candidate retains the entire [st] sequence, then [s͡t] must be fully contained in the coda position. Consider first the sympathy selection of [.kris.] in Tableau 7 below. The interaction of constraints uniquely selects the sympathy candidate [.kris.] from the input /kristen + i/. Importantly, the candidates considered in Tableau 7 assumes a strict discrete-segment analysis of syllable shape (without the exceptional behavior of [s͡t] sequences described in (17)). Candidate (b) incurs the fewest violation of MAX-IO and is declared the winning sympathetic candidate.

Tableau 7: sympathy selection of [st] sequence analyzed as coda + appendix *Kriss-i*

/ kristen + i /	SonSeq	NonFinality	Align-σ-R	Max-IO	All-σ-Left-❀
a. .kris.(t)		*	*!	eni	
b.❀ .kris.		*		teni	
c. .kri.		*		s ! teni	
d. .kr.		*		i ! steni	
e. .k.		*		r ! isteni	
f. .kris.te.				ni	σ
g. .kris.ten.				i	σ
h. .kris.t-i.				en	σ
i. .kri.s-i.				ten	σ
j. .kr-i.		*		i ! sten	
k. .k-i.		*		r ! isten	
l. .kris.te-i.				n	σ
m. .kris.te.-i.				n	σ σ
n. .kris.te.n-i.					σ σ

Tableau 8 shows the selection of the sympathetic candidate [.kris͡t.] from the same input as in Tableau 7. In contrast to Tableau 7, Tableau 8 assumes the syllable structure in (17) where the [s͡t] is interpreted as a single segment. Notice that the candidate with an appendix, candidate (a), is still eliminated because of a violation of Align-σ-R. The winning sympathetic candidate (b) is declared the winner because it incurs the fewest violations of Max-IO (compared to the candidates that respect the selector constraint All-σ-Left-❀).

Tableau 8: sympathy selection of [s͡t] analyzed as coda (no appendix) *Krist-i*

/ kristen + i /	SonSeq	NonFinality	Align-σ-R	Max-IO	All-σ-Left-❀
a. .kris.(t)		*	*!	eni	
b.❀ .kris͡t.		*		eni	
c. .kris.		*		t ! eni	
d. .kri.		*		s ! teni	
e. .kr.		*		i ! steni	
f. .k.		*		r ! isteni	
g. .kris.te.				ni	σ
h. .kris.ten.				i	σ
i. .kris.t-i.				en	σ
j. .kri.s-i.				ten	σ
k. .kr-i.		*		i ! sten	
l. .k-i.		*		r ! isten	
m. .kris.te-i.				n	σ
n. .kris.te.-i.				n	σ σ
o. .kris.te.n-i.					σ σ

In summary, two distinct obstruent segments may not co-occur in the same coda. Respecting this generalization, post-vocalic [sp] and [sk] sequences occupy the coda position and the appendix position. Sympathetic candidates do not occur with appendices, so when a post-vocalic [sp] or [sk] sequence occurs only [s] surfaces in the hypocoristic form. [st] may behave as a single segment and occupy the coda slot not available to [sp] or [sk] sequences. Since [st] is not strictly required to behave as a single segment, [t] may be interpreted as an appendix resulting in forms such as *Kriss-i, Triss-i,* and *Juss-i*. On the other hand, [st] may be interpreted as a single segment resulting in forms such as *Krist-i, Trist-i,* and *Just-i*.

4.3. Residual data and orthographic faithfulness. Post-vocalic obstruent sequences not including *s* as well as *s*-initial obstruent sequences are described above. Of the logically possible obstruent-obstruent sequences remaining (from (14) above), *s*-final obstruent sequences have yet to be considered. Monomorphemic English words containing obstruent-plus-*s* sequences are given in (19) below.

(19)	a.	[ts]	*blitz, ritz, Schlitz, quartz, chintz,* etc.
	b.	[ks]	*axe, fax, fox, hoax*, etc.
	c.	[ps]	*lapse, traipse, corpse,* etc.

According to the above analysis of possible syllable shape, [s] must be considered a constituent of the appendix (not a constituent of the syllable's coda).

English names that occur with post-vocalic obstruent-plus-*s* sequences are given with fully syllabified transcriptions in (20) below. Notice that only the post-vocalic sequence [ks] is represented[35].

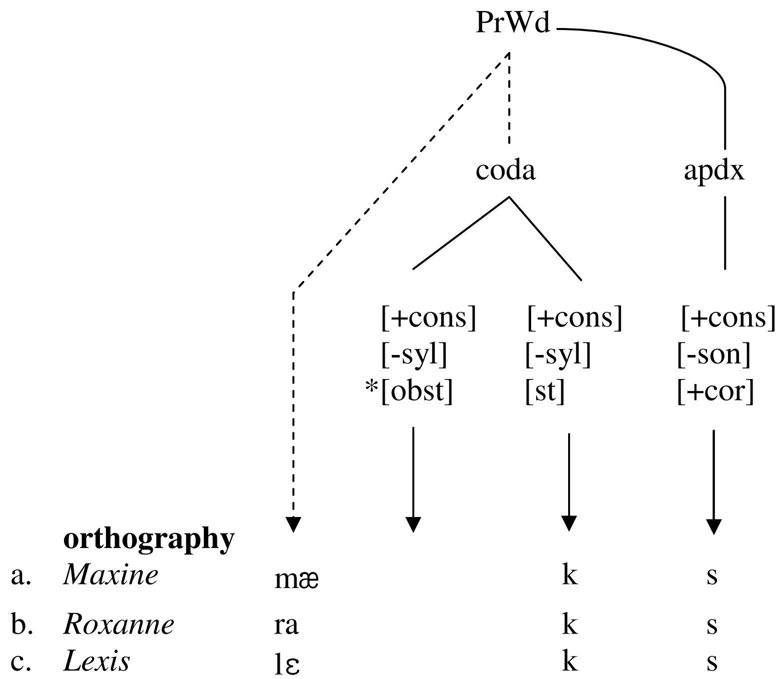
(20)

full form	
Maxine	[.mæk.sin.]
Roxanne	[.rak.sæn.]
Lexis (*alt.* Alexis)	[.lɛk.sɪs.]

[35] Weeda (1992) gives no examples of English names with either [ts] or [ps] after the first vowel.

According to the above analysis, the maximal stand alone syllable from the left of the full form analyzes the final obstruent, [s], as an appendix as in (21).

(21)



Since appendices do not occur in the sympathetic candidate, we expect the sympathetic forms to be *Mak, Rok,* and *Lek* and the subsequent hypocoristic forms to be *Mak-i, Rok-i,* and *Lek-i* respectively. However, the actual hypocoristic forms surface as *Max-i* [mæksi], *Rox-i* [raksi], and *Lex-i* [lɛksi].

Although these are apparently exceptions to the syllable generalizations above, notice that the forms in (19b) and (20) all share the orthographic character <x>[36]. I propose that forms such as *Max-i, Rox-i*, and *Lex-i* surface because of the influence of orthographic <x>, not because of phonological processes. That is, there is an *orthographic faithfulness*, that influences the output[37]. In other words, forms like *Ma<x>, Ro<x>,* and *Le<x>* act as though they are sympathetic candidates.

[36] Notice also that the forms representing monomorphemic, word-final [ts] sequences in (19a) are orthographically represented with <tz> and, according to Fudge (1969: 278), the phonetic sequence "[ts] ... occurs finally only with morph boundary (except in borrowings like *blitz, ritz*)"; other borrowings include *ersatz, waltz, chintz, quartz, hertz, kibbutz,* and *adz*. This is further evidence that obstruent-plus-*s* sequences can be influenced by orthography.

[37] The notion of *orthographic faithfulness* should be viewed as extra-linguistic. It is not clear whether or how it should be incorporated into a formal OT analysis or the OT framework as a whole.

Finally, consider the forms in (22) below which contain a tri-consonantal post-vocalic [kst] obstruent sequence.

(22)

full form		hypocoristic	sympathetic candidate
Huxtable	[.hʌk.stə.bəl.]	Hux-i	Hux
Dexter	[.dɛk.stər.]	Dex-i	Dex
Baxter	[.bæk.stər.]	Bax-i	Bax

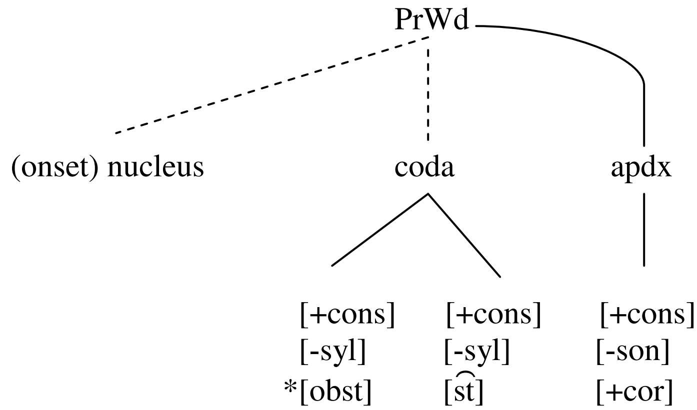
Similar to the hypocoristic forms in (20), each of the full forms in (22) contains an orthographic <x>, but in addition they also contain [t] following <x>. The sympathetic candidates and the surface hypocoristics occur with a faithful representation of <x>, but in every case the [t] does not surface. There are two relevant observations to explain this data. First, <x> is orthographically faithfully just as the forms in (20) without a following [t]. Second, and more importantly, the ability of the (phonetic) [st] sequence to be realized as divisible components [s] and [t] lends support to the analysis that obstruent-plus-obstruent sequences are individually recognized and need not *necessarily* be treated as single segments. As shown above, it is necessary to allow [st] to pattern as a single segment in some circumstances. The data in (22) shows that [st] must be divisible in other circumstances. That is, although [st] is able to pattern as a single segment, it cannot be considered *only* as a single segment but must still be divisible in certain circumstances in hypocoristic formation.

5.0. Conclusion and future work. English hypocoristic formations are analyzed in an OT framework with special reference to correspondences governed by Sympathy Theory. Sympathy Theory is shown to be indispensable in influencing the actual output hypocoristic despite the fact that the sympathetic candidates never surface (in correspondence with the full form or the hypocoristic form). The onset and nucleus of the sympathetic candidate are always fully faithful to the full form and consequently surface in the hypocoristic form. With regard to post-vocalic segments of the full form, two types of sympathetic candidates emerge: those that take the maximum number of post-vocalic segments and those that take fewer than the maximum.

All the sympathetic candidates that maximize post-vocalic segments from the full form respect SONSEQ requirements. Of those that survive SONSEQ, the candidate most faithful to the input (the candidate that best satisfies MAX-IO) surfaces in the hypocoristic output form. The non-maximized sympathetic candidates also respect SONSEQ. If post-vocalic segments in a candidate do not respect SONSEQ, that candidate will not occur as the sympathetic candidate, but of those that do, the most harmonious with respect to MAX-IO surfaces in the hypocoristic output.

However, SONSEQ and MAX-IO do not do all the work in determining the sympathetic candidate when two obstruents occur in the post-vocalic position of the full form. It is demonstrated that the English syllable's coda contains one obstruent slot, but the prosodic word contains an additional slot, the appendix. Syllable structure is summarized in (23) below.

(23)



The appendix position shown above in (23) is not available to the sympathy candidate. That is, no sympathy candidate may occur with the appendix slot filled. Since the appendix is unassociated with any syllable (but more broadly with the prosodic word), ALIGN-σ-R eliminates any candidate that contains an appendix in the sympathy candidate.

However, because of names such as *Krist-i* and *Trist-i*, sympathetic candidates must be permitted to contain post-vocalic [s͡t]. This presents us with the problem of forcing two segments /s/ and /t/ into a single slot (the second coda position) that is otherwise only available to a single segment. By assuming that [s͡t] (and no other complex phonological sequence) may be permitted to behave like a single segment, all the data can be captured in a unified way. But [st] sequences in the full form surface in two ways: fully maximized as in *Krist-i* and *Trist-i*, and without [t] as in *Kriss-i* and *Triss-i*. To account for both output forms, speakers have the ability to analyze the /st/ sequence either as a single segment, [s͡t], or as two discrete segments, [s] and [t]. When /st/ is analyzed as a single segment it fills the coda slot (with an unoccupied appendix) and surfaces as [s͡t]; when /st/ is analyzed as two discrete segments, [t] must occur in the appendix and is eliminated on account of ALIGN-σ-R; in the latter case, only [s] surfaces.

A small number of apparent exceptions are explained on account of orthographic faithfulness to <x>. Sympathetic forms such as *Ma<x>, Ro<x>,* and *Le<x>*, (not *Ma[ks], Ro[ks],* and *Le[ks]* respectively) exert influence on the surface forms *Maxine, Roxanne,* and *Lexis* through orthography rather than through the phonology.

Finally, there are several outstanding issues. First, the most serious weakness of the syllable-structure presented in the present paper is its apparent inability to account for a relatively small (but by no means closed) class of monomorphemic counterexamples such as *husk, bask, risk, ask, asterisk, lisp, hasp, wasp, clasp,* etc. The current paper analyzes syllable structure as in (23) above to permit two post-vocalic obstruents if and only if the second one is a coronal segment occurring in the appendix. In each of the counter-examples mentioned above, however, the second post-vocalic obstruent is not coronal, but rather velar or labial. In short, the syllable structure in (23) wrongly predicts that words such as *husk, bask,* etc. will not occur. A revision of the syllable geometry summarized in (23) is undesirable on account of the conclusions reached previously in this paper. A solution allowing for /sk/ and /sp/ to behave as single segments (similar to the account of /st/ given above) would account for the monomorphemic exceptions given immediately above, but at the same time would wrongly predict that forms such as *Oskar* and *Caspar* would have hypocoristic alternants such as *Osk-i* and *Casp-i*. Alternatively, these forms could potentially be accounted for by high-ranking faithfulness constraints (ranked, at least, above the syllable-geometric constraints just discussed). It is unclear if this poses analytic problems outside of hypocoristic formations.

Second, a complete analysis of hypocoristics in English would include names with post-vocalic nasal segments both as simplex segments and as constituents in various types of clusters. A careful analysis of nasal forms would complete the description of hypocoristic formation as well as test the syllable theory in OT terms put forth above.

Third, a broader range of hypocoristic formations could be considered. The range considered in the present paper includes *i*-suffixed names in which the sympathetic candidate is always in correspondence with the left edge of the full form. Other hypocoristic forms to consider include (a) those with suffixes other than /i/ such as *–ers, -er, -o, -ly,* etc., (b) simple unaffixed forms such at *Pat, Tim, Matt*, (c) hypocoristic forms not in correspondence with the left edge of the full form such as *Tricia* < *Patricia, Sandy* < *Cassandra, Rissy* < *Marissa*, and (d) combinations of forms not considered in this paper such as post-vocalic nasals with non-*i* suffixation.

Fourth, hypocoristic (diminutive?) formations in American English have a somewhat restricted, often pejorative, distribution (*copp-er, baldy,* etc.). It is not clear that all varieties of English share the same semantic constraints. Simpson (2002) has a rich database of Australian English hypocoristic forms not considered in detail in the present account.

If all these factors are considered, a more complete picture of English hypocoristics could be given. I expect the current analysis not only to provide a starting point for that research, but also to be confirmed through further investigation into this fertile topic.

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