

Creoles at the Intersection of Variable Processes:
(TD)-Deletion and Past-Marking in the Jamaican Mesolect

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The topic is explored in more detail in chapters 5 and 7 of Peter L. Patrick, 1999,
Urban Jamaican Creole: Variation in the Mesolect (Amsterdam: John Benjamins).
References to “Patrick (1992)” in the original have been changed to “Patrick
(1999)”, which amplifies and corrects the (substantially identical) 1992 Ph.D.
thesis.

ABSTRACT

(TD)-deletion is a well-known variable phonological process subject to the influence of both external social factors and internal structural constraints, including phonetic environmental and morphosyntactic effects. Its profile of variation has been widely investigated in American English dialects. However, it interacts with another grammatical process -- the affixation of the regular Past-tense marker, final /-t, -d/ -- that strongly distinguishes these dialects from English-related creoles, where Past-marking by this mechanism is infrequent or non-occurrent. Investigation of (TD)-deletion in mesolectal Jamaican Creole raises important questions about the intersection of variable processes, the generality of

phonetic environmental constraints, and the degree of difference between English-related creoles and metropolitan standard and non-standard Englishes.

Introduction

Studies of consonant-cluster simplification in vernacular English dialects have made (TD)-Deletion a showcase variable for variationist sociolinguists. Such analyses have set standards for detailed quantitative description (Labov, Cohen, Robins & Lewis 1968); investigated the relations of regional, ethnic and social dialects (Wolfram 1969); initiated quantitative cross-dialectal studies (Labov 1975); expanded the range of statistical methods employed in the discipline (Neu 1980); demonstrated which elements may unify and which divide a speech community (Guy 1980); tested general models of the propagation of linguistic changes over time (Romaine 1984); illuminated the acquisition of variable constraints by young children (Labov 1989), and their continuing development in adult speakers (Guy & Boyd 1990); and grounded explanations for variable processes in other theoretical frameworks (Guy 1991a, Santa Ana 1991).

Though dialects vary considerably in the sheer overall level of (TD)-Deletion, and slightly in constraint ordering, the major phonetic and grammatical constraints show a remarkable uniformity of patterning among all the U.S. dialects studied-- educated and vernacular urban African-American and European-American varieties, Appalachian English, Puerto Rican and Chicano Englishes. This investigation asks whether the pattern extends to Jamaican Creole mesolectal speech.

Urban mesolectal Jamaican Creole (JC) is comprised of a wide range of speech behaviors and practices intermediate between the relatively standard acrolect and the primarily rural folk speech of the basilect. The extent to which such mesolects incorporate structural features of their superstrates-- for JC, metropolitan English-- and constitute autonomous varieties is a subject of controversy among creolists, who have until recently focussed more attention on those basilectal features which differ greatly from standard Englishes. The thesis of this article (see also Patrick 1999) is that quantitative investigation shows mesolectal JC to be a coherent, consistent variety that incorporates both undeniable creole characteristics and significant elements of English structure in its variable grammar. Particular points to be investigated here include:

- whether the underlying form of lexical items matches English in containing final consonant clusters in /-Ct#, -Cd#/;
- whether the process of (TD)-Deletion occurs at all and, if so, is subject to the familiar constraints;
- and what effect creole patterns of Past-Marking have upon it.

The Variable

"(TD)-Deletion" here refers to a phonological process resulting in the absence of a word-final apical stop which, when underlyingly present, is the last member of a consonant cluster. "(TD)-Absence" denotes this absence without implying its cause. Post-vocalic /r/ has been excluded as a possible cluster member following the common practice since Fasold (1972); Wells (1973:17) describes JC as non-rhotic in this /V_C environment. Thus (TD)-Deletion could

operate to neutralize the distinction between the words *Ben/bend/bent*, *Bill/build/built* or *base/baste/based*, while *bird* is excluded from consideration. Other excluded cases are the words *and* and *just*, frequent lexical items which show almost categorical absence of apical stops in JC; and tokens with following homorganic stops, where the variable is neutralized.

While some studies have automatically excluded all final /nt#/ and /nd#/ sequences from consideration (Labov et al. 1968), due to possible application of the rule forming nasal flaps, others have excluded only those cases before a following vowel (Labov 1989). The decision is complicated by the fact that the majority of phonetic /nt#/ clusters are produced by the negative contraction rule: this *-n't* morpheme itself heavily favors phonological deletion (Labov 1989). Still others have excluded /nt#/ (and /lt#/) clusters only, because they are hetero-voiced (Wolfram 1969). The present analysis initially explored all of these: nasal flap formation apparently does not occur in JC, making it similar to Chicano English (Santa Ana 1991: 85). Since the class of preceding-nasal tokens is a very frequent one, its inclusion may have significant repercussions, as in the Chicano case.

The Speakers and Data

This report on an urban community of Jamaican Creole speakers-- all residents of Veeton, a pseudonymous mixed-class neighborhood of Kingston-- examines 15 hours of data recorded from ten individuals, who cover a wide range of the creole continuum. They vary in age from 14 to 82; in education from less than 4 years of primary school to the post-secondary level; in occupation from head-nurse at a major public hospital, to accounting secretary, to domestic servant, to unemployed youth; and in residence, within an acknowledged single neighborhood, from a modern 3-bedroom detached house with garden, to a room in a shared housing situation known in Jamaica as a "yard", situated in a strip labeled by its own residents a "ghetto". Within the limits of a small sample, which was drawn from a total of 60 people, the ten are balanced for age, sex and social class (further details in Patrick, 1999).

The data are taken from sociolinguistic interviews conducted over 12 months of community-based research, in which 150 hours of speech were recorded in a variety of contexts. All the interviews were conducted in mesolectal JC by the author, a bilingual native speaker of Jamaican Creole. Transcriptions are given in a modified version of Cassidy's (1961) phonemic notation. Data were extracted and coded separately, though from the same sections of tape, for Past-Marking and (TD)-Deletion tokens (N= 2,121 and 2,323 respectively); these data-bases overlapped by approximately 25%.

Major Constraints on (TD)-Deletion

The three most frequently-examined structural constraints are the grammatical status of the segment, its preceding phonetic environment, and its following phonetic environment. Grammatical status and following environment are regularly found to be the primary influences in American dialects, with dialects closer to the European-American standard being most influenced by the former (Neu 1980), and the latter being primary for African-American, Puerto

Rican, Chicano, and Appalachian Englishes (cf. Labov et al. 1968, Wolfram 1973, Santa Ana 1991, and Wolfram & Christian 1976, respectively).

The phonetic environmental constraints are generally measured by dividing the segments into phonologically natural classes. The strongest of all such effects is the simplest: final (TD) is less likely to be deleted before a following vowel than before a following consonant. This distinction suggests an interpretation in terms of relative sonority, and most studies since Labov (1975) have more finely divided the following environment into vowels, glides, liquids and consonants, sometimes including pause (which, as silence, has no sonority interpretation).

The preceding segment has been treated more variously, though most recent studies have distinguished the obstruents into sibilants, stops, and fricatives, and the sonorants into nasals and liquids (often just /l/, since /r/ is generally excluded). Since only consonants are relevant here, due to the definition of consonant clusters, sonority differences are less striking and might be expected to have less explanatory power. Santa Ana (1991) tests the empirical results of his Chicano English study against a number of phonological sonority hierarchies and concludes that sonority indeed governs this factor, which is moreover statistically significant and a first-order constraint: more sonorous preceding environments favor (TD)-Deletion. Both of the surrounding environments' effects suggest, therefore, that there may be articulatory grounds for the striking uniformity of order found in earlier studies.

The grammatical status of the final /-t/ or /-d/ is however quite different, since it involves more abstract morphosyntactic processes. The basic opposition is between mono-morphemic forms (e.g., *bold*), in which the final segment is part of the stem and has no grammatical significance, and bi-morphemic forms. The most numerous of these are regular non-syllabic past-tense forms (as in “The doctor *billed* her patient”). All studies of English native speakers to date agree in showing less deletion in these past-marked cases than in mono-morphemes, and this has been described as a pan-dialectal, even Pan-English constraint (Labov 1989, Santa Ana 1991).

(1) Major constraints on (TD)-Deletion:¹

<i>Following Segment:</i>	consonant	> liquid	> glide	> vowel	> pause
<i>Preceding Segment:</i>	sibilant	> stop	> nasal	> fricative	> liquid
<i>Grammatical Status:</i>	-n't final	> monomorpheme final	> doubly-marked verb suffix	> devoicing verb final	> regular past-tense suffix

Several other categories are distinguished. Doubly-marked verbs (sometimes labeled semi-weak or ambiguous), which indicate the past by both suffixation and ablaut (e.g., *told*), normally fall between regular Past verbs and Mono-morphemes in deletion rate (Guy 1980); while a handful of Devoicing verbs possess a stem-final /-d/ and mark the past tense with /-t/ (e.g., *built*). These classes are so infrequent in the JC data that they will not be explored here. Some researchers distinguish derived passives and past participles from the regular Past suffix;

here all are included together. Finally there is the *-n't* morpheme produced by negative contraction. For example:

(2) <i>Negative Contraction -n't:</i>	does / does-n'T
<i>Mono-Morphemes:</i>	bolD, belT
<i>Doubly-Marked Verbs:</i>	tell / tol-D
<i>Devoicing Verbs:</i>	builD / builT
<i>Past-Marking Suffix:</i>	poll-ED, bill-ED

The Problem

The raw data for (TD)-Deletion by Grammatical Status demonstrate that Jamaican clearly does not fit the usual Pan-English pattern, in which Mono-morphemes show a higher rate of deletion or absence than Past verbs (see Table 1):

Grammatical Status	% Absence	Tokens
Negative <i>-n't</i>	87%	525
Mono-morpheme	71%	1,358
Doubly-marked	59%	44
Devoicing past	38%	26
Past suffix	<u>79%</u>	<u>370</u>
<i>Total</i>	75%	2,323

Table 1: Percentage (TD)-Absence by Grammatical Status

As is generally true, the negative suffix is the most favorable environment for (TD)-absence; while there are too few tokens of the Doubly-marked and Devoicing types to analyze in detail. But it is the high rate of (TD) absence in the Past category that is most unexpected, if (TD)-Deletion operates on JC in a straightforward way. Why should mesolectal Jamaican speech differ from all native varieties of English studied to date? To cast the problem in functional terms, why should a phonological deletion process appear, on the surface, to apply *More* often when it wipes out crucial grammatical information (ie, Past) than when it does not (ie, Mono-morpheme)?²

Three possible causes for this result are considered. The first is that the aggregated figures in Table 1 misrepresent the case by merging distinct, and perhaps opposing, patterns held by different individuals or subgroups of speakers-- only some of whom have an English-like grammar. The second is that there *is* no deletion process in JC, but rather an insertion process which is governed by different constraints than (TD)-Deletion in English dialects. The third, argued for here, is that the variable phonological process of (TD)-Deletion generally operates in JC as in metropolitan Englishes, but is being selectively bled by the variable morphological process of Past-Marking in just the environment which appears aberrant.³

The Group vs. the Individual

The first possibility is essentially the charge brought by Derek Bickerton (1971) against variationist work two decades ago: that group patterns of variable speech behavior are simply artifacts of the process of averaging together distinct, and categorical, individual patterns. This was refuted by Gregory Guy's (1980) earlier work on (TD)-Deletion-- though not for a creole continuum situation, where one might very well expect widely different patterns and norms to exist within a single speech community, as Guy notes. The relevant variant of this problem would be to claim that mesolectal group patterns unfairly average the essentially English-like behavior of people nearer the standard end of the continuum together with the essentially creole-like behavior of people nearer the basilectal end.

	Mono-Morphemic		Past	Total
Roxy, Rose, & Olive	48%	<	60%	51%
<i>N</i> =	298		104	402
Noel, Matty, Opal & Tamas	74%	<	82%	76%
<i>N</i> =	744		196	940
Bigga, Mina, & Dinah	87%	<	100%	89%
<i>N</i> =	316		70	386
All Speakers	71%		79%	75%
<i>N</i> =	1,358		370	1,728

Table 2: (TD)-Deletion by Speaker Subgroup and Grammatical Status

Due to the small number of Past cases per person, we will examine small subgroups with similar profiles of variation. Table 2 groups together those individuals with relatively low, medium and high levels of (TD)-Absence respectively (this was done both by matching percentages of use, and by running the Varbrul-2S multivariate analysis program with individual

speaker identity as a factor group; the two methods agreed). Not coincidentally, the speakers grouped together share many other characteristics too, since their (TD)-Absence level correlates well with the incidence of other linguistic and social variables.

English-like behavior, in this case, consists of the pattern we will abbreviate here as $M > P$ (higher rates of (TD)-Absence in Past suffix than in Mono-morpheme tokens). There is indeed one speaker of the ten who clearly shows this Pan-English pattern:

(3) (TD)-Deletion by Grammatical Status for Roxy:

	Mono-Morphemic		Past	Total
	52%	>	37%	49%
<i>N</i> =	79		19	98

Roxy is in many respects the most standard of the speakers, and arguably should be assigned to the acrolect. However, she is alone at the top: as Table 2 shows, the group closest to the acrolect (even including Roxy) matches the others in showing the pattern $M < P$. Thus, the reverse of the expected Pan-English pattern occurs right across the mesolect, a point which-- though it confirms the consistency of this variety-- remains in need of explanation.

Insertion Vs. Deletion

A second possible explanation of this pattern of (TD)-Absence is that it does not result from the usual phonological deletion process. Considering that (TD) is present well under half the time, it could be the result of an insertion process, implying that those phonetic (TD) clusters which do occur were never present in underlying representations. There would then be no reason to expect replication of the Pan-English grammatical pattern, which itself results from the systematic interaction of morphological and phonological levels.

The choice between insertion and deletion has figured in discussion of several variable processes. Labov (1984: 136) explores six conditions which distinguish the two modes, taking (TD) as “a clear case of regular phonological deletion, where all six of these properties occur”. Insertion, by contrast, is negatively characterized, primarily by the absence of phonological conditioning and the occurrence of hypercorrect instances. While the occurrence of hypercorrect clusters in word-initial position (e.g., *Stangerine*) is a well-known stereotype of basilectal JC, only a single instance of hypercorrect final /-t, -d/ has been found in 15 hours of data.

An insertion analysis would be consonant with the usual creolist position, in claiming that similar (TD)-less surface realizations in English and JC arise from distinct underlying representations-- one with clusters (English), one without (JC). The absence of hypercorrection, however, would further require creole speakers to know, in addition to their own lexical entries,

the English phonological representations for those nearly 600 tokens which show (TD) occurring in appropriate environments.

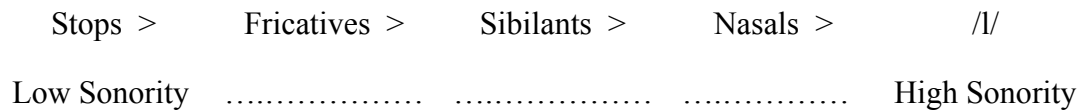
A consideration of phonological conditioning factors adds a decisive test, for it would strain credibility to claim that speakers insert (TD) in ways that precisely match the phonetic patterning found in American Englishes, where it has been established beyond doubt that deletion processes are at work. The crucial point for creolists is that such an insertion analysis necessitates that JC speakers have separate lexicons with parallel entries for JC and English, and a native-like command of variable phonetic constraints in both. The plausibility of the latter declines as one descends the continuum towards the basilect-- although the speakers one encounters still produce occasional final /-t/'s and /-d/'s with no hypercorrection.

The price of an insertion analysis, then, is phonetic arbitrariness, which can be easily tested. Indeed, it is the null hypothesis in considering the constraints of preceding and following phonological environment: if (TD) is randomly inserted, there should be no significant pattern of distribution according to phonetic environments.

The Preceding Phonetic Environment

The factors involved here were listed in (1). Santa Ana (1991: 93-6), reviewing a half-dozen theoretical studies, finds close agreement on the consonantal sonority hierarchy in (4):

(4) Theoretical Sonority Hierarchies:



The handful of variationist studies which distinguish similar categories of preceding segment have generally found a slightly different picture, which Labov (1989: 90) has summarized as in (5):

(5) Empirical (TD)-Deletion Findings, 1968-1980:



Labov et al. (1968) first suggested that a separate rule governs deletion of (TD) after /s/, which may account for the high place of sibilants in (5) (there may be two rules with an additive effect). If true, there is a good case for holding that low sonority of the preceding segment favors

(TD)-Deletion, though the low place of fricatives remains a mystery (see Santa Ana 1991, however, for the opposite conclusion in Chicano English). Let us consider the mesolectal Jamaican data according to this scheme. Table 3 provides the raw percentages, token numbers, and probability results from a Varbrul-2S multivariate analysis, conducted independently for each of the three speaker subgroups and for the sample as a whole (Devoicing verbs and Negative *-n't* tokens were also excluded from this analysis for reasons of comparability, and because the latter always contain a preceding nasal):

	Sibilant	Stop	Fricative	Nasal	Lateral	Total
Roxy, Rose, & Olive	68%	58%	61%	42%	41%	51%
	0.65	0.56	0.57	0.43	0.40	0.52 a
<i>N</i> =	108	38	23	183	64	= 416
Noel, Matty, Opal & Tamas	88%	83%	74%	69%	65%	75%
	0.70	0.60	0.50	0.41	0.35	0.78 b
<i>N</i> =	245	92	34	528	68	= 967
Bigga Mina & Dinah	96%	100%	100%	84%	83%	89%
	[_____ 0.77 _____]			0.30	0.34	0.94 c
<i>N</i> =	109	32	16	196	36	= 389
Overall Percent	85%	80%	75%	67%	58%	72%
Overall Probability	0.67	0.60	0.56	0.42	0.35	0.76
<i>Overall N</i> =	463	162	73	927	173	= 1,722

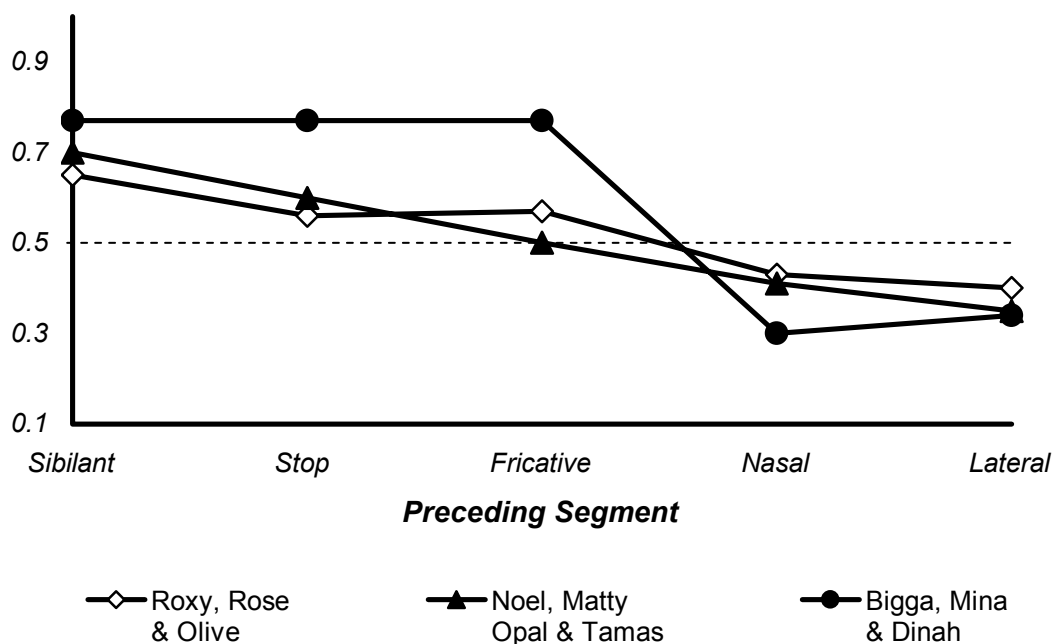
Table 3: (TD)-Deletion by Speaker Subgroup and Preceding Environment

(χ^2 /cell: a = 0.86; b = 1.07; c = 0.97; Overall = 1.09, p < .05)

Table 3 shows a regular and significant effect of preceding environment on deletion rates, for all speaker subgroups. It closely matches the phonetic conditioning pattern of American English in (5); the sole deviation, for fricatives, actually conforms more closely to the predictions of the theoretical sonority hierarchy in (4) than the American data do. This is strong confirmation that (TD)-Deletion is at work in the Jamaican Creole continuum, and is governed

by sonority. Note that in every case obstruents favor the absence of (TD) (i.e., have values over 0.50) while sonorants disfavor it, even for those speakers closest to the basilect (Bigga, Mina, & Dinah) who might be expected to respond differently. This is graphically evident in Figure 1.

Figure 5.1: Probability of (TD)-absence by preceding segment



The Following Phonetic Environment

Even stronger results are found when we consider the following phonetic environment. The factors here, listed in (1) above, have consistently returned the following ordering in variationist studies of American Englishes:

(7) Empirical (TD)-Deletion Findings, 1968-1980:

Following Segment:	Consonant >>	Liquid, Glide >>	Vowel
Deletion Rule:	Most Favored	Least Favored

This ordering has a straightforward interpretation in terms of sonority: less sonorous following environments favor deletion. Following pause, which lies outside the system of

sonority and thus is essentially arbitrary, is treated differently by speakers in different speech communities, e.g. it promotes deletion in New York City but disfavors it in Philadelphia (Guy 1980:27). Again, the null hypothesis for the Jamaican data is congruent with the claim that (TD) is randomly inserted. Table 4 provides the raw percentages, token numbers, and the probability results from a Varbrul-2S multivariate analysis, conducted independently for each of the three speaker subgroups and for the sample as a whole (Devoicing verbs were again left out, but *-n't* tokens included this time).

	Consonant	/r/	Glide	Vowel	Pause	Total
Roxy, Rose, & Olive	80%	90%	50%	38%	44%	60%
	0.69	0.75	0.36	0.29	0.38	0.64 a
<i>N</i> =	262	21	48	196	57	= 584
Noel, Matty, Opal & Tamas	88%	89%	79%	67%	76%	78%
	0.65	0.65	0.49	0.36	0.45	0.81 b
<i>N</i> =	456	19	130	449	140	= 1,194
Bigga Mina & Dinah	95%	47%	81%	86%	85%	89%
	0.70	0.10	0.33	0.33	0.41	0.93 c
<i>N</i> =	242	15	59	148	55	= 519
Overall Percent	88%	78%	74%	63%	71%	76%
Overall Probability	0.66	0.43	0.45	0.34	0.43	0.79
<i>Overall N</i> =	960	55	237	793	252	= 2,297

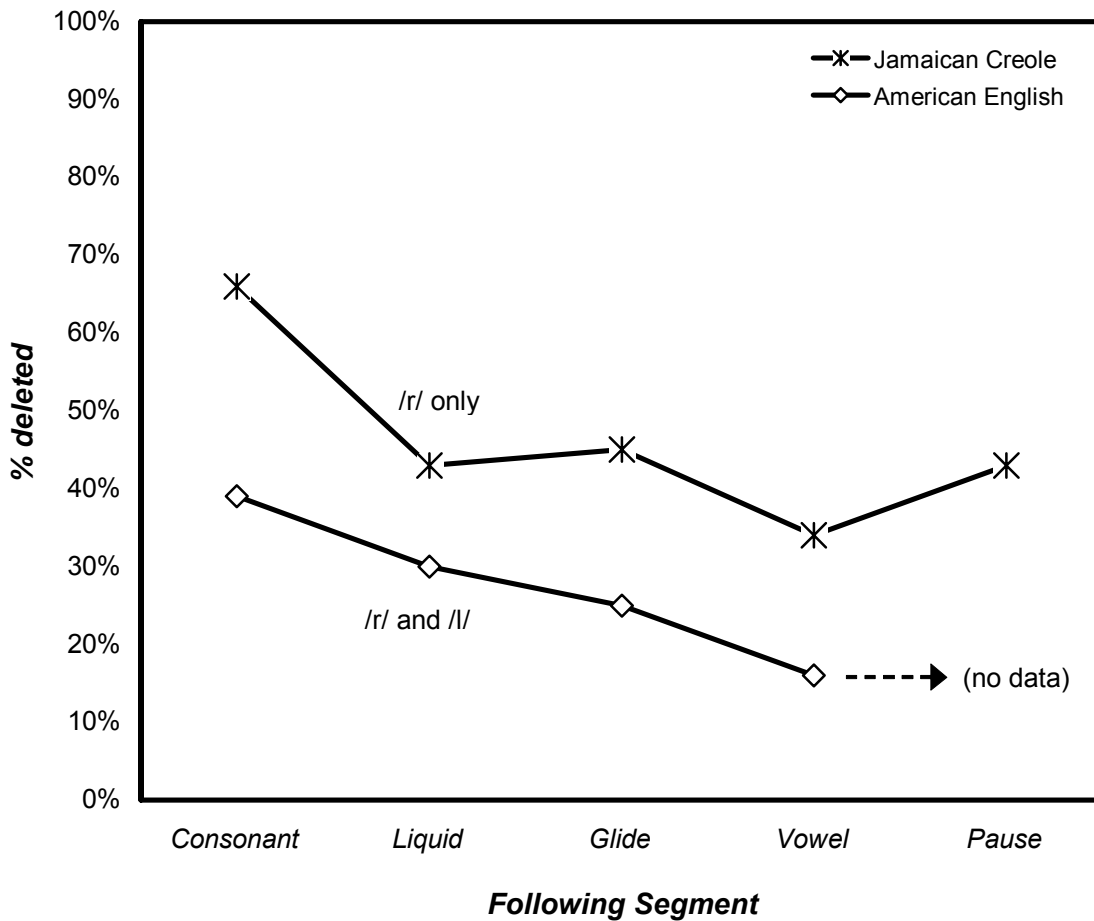
Table 4: (TD)-Deletion by Speaker Subgroup and Following Environment

(χ^2 /cell: a = 0.88; b = 1.23; c = 1.22; Overall = 1.16, $p < .05$)

The data in Table 4 soundly refute the null hypothesis: mesolectal Jamaican Creole clearly patterns with American English dialects. Despite a notable difference in the rate of (TD)-Absence, all three speaker subgroups behave alike, except for fluctuation in the least frequent environment (following /r/). The effect of sonority is again evident: the more vowel-like the following segment is, the less likely (TD)-Deletion is to occur. In other words, there is no statistical warrant for the claim of insertion; the parallel phonetic constraints establish the existence of underlying final /-t/'s and /-d/'s, deleted by rule.

The comparison with American Englishes is even more striking when we consider Figure 2, which compares these mesolectal Jamaican data with Neu’s (1980: 48) cross-dialectal study of 15 college-educated, middle-class white speakers from across the U.S.

Figure 2: -t, -d deletion by following environment.
Comparison of JC data with Neu (1980:48)



With respect to the phonological constraints, then, Jamaican Creole shows little difference from non-creole varieties of English. Moreover, these results confirm us in asserting the relative uniformity of the urban mesolectal speech community. To the extent that the variation is governed by a sonority hierarchy grounded in phonetic universals, this is unsurprising and might seem to say little about the closeness of JC and metropolitan English. But as Santa Ana’s (1991) discussion makes clear, it is the integration of the sonority hierarchy, the phonological structure of English words, and the operation of sonority across the syllable (however this is formulated; see, e.g., Selkirk 1984) that underlie a theoretical explanation for the variation observed. Viewed in this light, it is clear that mesolectal JC shares with English not

merely universal phonetic features, but also higher-level phonological principles, and similar underlying representations at the lexical level.

Intersection With Past-Marking

Mesolectal Jamaican Creole, then, shares with American English both the process of (TD)-Deletion and its most important phonetic constraints. Yet Jamaican speakers appear not to respect the Pan-English grammatical constraint according to which more deletion occurs in Mono-morpheme than in Past contexts ($M > P$). To explain why, we must turn to the third possibility outlined above: that the variable phonological process of (TD)-Deletion in Jamaican Creole is bled by the variable morphological process of Past-Marking. Together, the two variable processes create more unmarked tokens in the Past category than (TD)-Deletion alone (thus the result $M < P$ in Table 1).

Previous studies of adult native English speakers have assumed no interference from the grammatical subsystem of regular past tense-marking with (TD). All the varieties mentioned-- vernacular and educated European-American and African-American English, Appalachian, Puerto Rican and Chicano Englishes-- are apparently presumed to categorically mark past tense, at the level of syntax. This is conspicuously not the case for many creoles, where both regular and irregular verbs often appear in unmistakably past contexts without being inflected for Past, as in the following JC examples:⁴

- (7)a. fərs mach a plee... in sonlait... a plee it agens jaajiz.
The first match I playED.. in Sunlight.. I playED it against George's.
 (Bigga, JC-U40A-115)
- b. im waz a baaba yu nuo, im chrim an im sel ais kriim an du evriting.
He was a barber y'know, he trimmED & he SOLD ice-cream & DID everything.
 (Dinah, JC-U45A-375)
- c. di liedi ova dier we yuustu priich, wi kaal ar mada wait.. shi ded nou..
The lady over there who used to preach, we callED her Mother White.. She (is) dead now.
 (Dinah, JC-U45A-385)

Characterizations of basilectal Jamaican Creole (an idealized variety, maximally distant from metropolitan English, which shows the highest proportion of African substrate features), such as Bailey (1966), describe it as indicating past time-reference with pre-verbal particles such as *ben + V*, and without any use of verb inflection on the English model. Mesolectal speech, such as the present data, is well known to alternate between the use of such particles, zero-marking, and some inflection.⁵ This must give a peculiarly creole flavor to the overall distribution of (TD) since-- in addition to the phonological reason for (TD)-absence, namely the deletion process-- we must now consider a grammatical reason as well.

It is often argued by creolists that mesolectal speech-- which is, in the urban environment of Kingston, the variety produced by most of the speakers most of the time-- is only code-mixing of two essentially distinct grammars, basilectal and acrolectal (see e.g. Winford's(1985)

treatment of creoles in terms of diglossia), and not an autonomous variety. Such a perspective is well suited to qualitative description of the basilect, and resonates strongly with the native speaker's intuition that the “patwa” (JC) and “English” are distinct entities. Yet any investigation of urban Jamaican speech must confront mesolectal variation head-on, search for the structure in it, and be prepared to conclude that the mesolect has a linguistic validity and coherence of its own.

The figures in Table 5 below show that the inflectional devices of metropolitan English play an undeniably large role in Past-marking for the speakers studied. So, however, does zero-marking, and the variation between these is elsewhere shown to reflect characteristic creole patterns of, e.g., stativity (Patrick 1999). The pre-verbal aspectual markers discussed by Bailey (1966) and others-- *ben* and *did*-- formed less than 5% (102 out of 2,121) of all Past clauses collected. They are, in any case, incompatible with Past inflection, and thus presently excluded as irrelevant to a study of how the latter intersects with (TD)-Deletion.

The following five morphological categories were used to distinguish all past-reference verbs (the high-frequency irregular lexical items *Be*, *Go*, *Do*, *Have*, *Say* and the class of Devoicing verbs are here excluded):

(8) Morphological Categories for Past-marking Verbs:

- (-ED) Syllabic Regular verbs, whose stems end in /-t/ or /-d/, and which take the syllabic affix /-Id/: e.g., *Want/Want-ed*
- (V-D) Non-syllabic Regular verbs, whose stems end in a Vowel and take the normal /-d/ affix: e.g., *Die/Die-d*
- (C-D) Non-syllabic Regular verbs, whose stems end in a Consonant and take the /-t/ or /-d/ affix: e.g., *Pass/Pass-ed*
- (DM) Doubly-Marked verbs, with both /-t, -d/ affixation and ablaut of the stem vowel: e.g., *Leave/Lef-t*
- (IRR) Irregular verbs, with various forms of ablaut: e.g., *Give/Gave*

The first three categories in (8) are all regular verbs, which differ from each other only by the phonological shape of their stem-final segment. It is assumed that such low-level distinctions do not differentiate these verbs at the morphosyntactic level of Past-marking. Regular verbs might plausibly be expected to show more frequent Past-Marking than the Irregular category, which is a mixed bag of more complex patterns, and Table 5 shows that this is generally the case:

Morphological Category	% Marked	Prob.	N
(-ED) Syllabic Regular	48%	0.75	170
(V-D) Vowel-final Regular	50%	0.64	148
(C-D) Consonant-final Regular	20%	0.18	405
(DM) Doubly-Marked	43%	0.74	104
(IRR) Irregular	30%	0.59	647
<i>All Verbs</i>	32%	<i>Input: 0.27</i>	1,474

Table 5: Past-Marking for Major Morphological Categories

(N= 1,474; Log -638.741, $\chi^2/\text{cell} = 1.20$, $p < .015$)

The striking departure from this expectation is for the (C-D) Consonant-final regular verbs, which show the least past-marking of any category; indeed, (C-D) is the only category to disfavor Past-marking in the probabilities, and it does so heavily. Evidently something distinguishes its behavior from that of the other regular verbs.

Consider that (C-D) is the only category of regular verb to which both variable Past-marking and the phonological rule of (TD)-Deletion can apply, with the effect of wiping out all trace of the Past-marking process, since Syllabic (-ED) and Vowel-final (V-D) verbs never end in clusters. Barring the existence of a rule deleting final /-d#/ after vowels (as in Puerto Rican English, Wolfram 1973, and BEV, Fasold 1972), for which the data give no evidence, we conclude that the surface rates in Table 5 for (-ED) and (V-D) regular verbs reflect only the operation of the variable Past-marking process, while the value for (C-D) verbs is further lowered by (TD)-Deletion.

The Irregular ablaut verbs, such as *Give/Gave*, are similarly immune to the deletion process; consequently they must be subject to a lower rate of Past-marking than regular verbs. This seems plausible in view of the fact that they are less easily learnable and comprise a number of diverse patterns, though it must be remarked that JC speakers differ on this point from the African-American speakers of Fasold's (1972) Washington study, who marked irregular verbs at a near-categorical rate.⁶ The Doubly-Marked (DM) verbs, finally, are subject to (TD)-Deletion, but the marking of Past by means of ablaut survives the loss of the final stop. They show an unexpectedly high rate of (TD)-retention here.

Past-Marking in English as a Second Language

Since quantitative investigations of Past-marking in second-language acquisition (SLA) studies use many of the same English morphological categories, and have previously pinpointed the problem of intersecting phonological and morpho-syntactic variable processes (Wolfram & Hatfield 1984, Bayley 1991), they invite comparison to the results in Table 5. Detailed consideration is beyond the scope of this article (though see Patrick 1999, which also comments on creolists' tendency to analogize decreolization and SLA studies). Given that learners do not exhibit the near-categorical marking of regular and irregular verbs that native English speakers do, and also show variable absence of (TD), it is clear that they too are subject to intersecting variable processes.

Thus it is not surprising that the regular Consonant-final (C-D) verbs exhibit a very low rate of Past-Marking in studies of Vietnamese (Wolfram & Hatfield 1984) and Chinese (Bayley 1991) learners of English. Table 6 below shows that in the former case, (C-D) is the least-often marked category, while in the latter, it is the second lowest. However, the resemblances to mesolectal JC end there. In both studies, Irregular verbs are far more frequently marked than any regular categories (despite the fact that the data separate *Be, Do, Go, Have*), a finding that agrees with Schumann's (1978) results for a native-Spanish learner, Alberto-- but not at all with Jamaican:⁷

	IRR	-ED	V-D	C-D	Total
Vietnamese	55%	31%	20%	12%	<i>N</i> = 1,320
English	701	58	125	436	
Chinese	56%	22%	38%	32%	<i>N</i> = 1,999
English	885	259	208	647	

Table 6: Past-Marking by Morphological Category in Non-native English

Moreover, Bayley's data showing Syllabic (-ED) verbs as the least-often marked, though obviously statistically reliable, represent a serious difference from the creole pattern in Table 5. Finally, the potential comparability problems between the experiences of learners who voluntarily engage in the formal study of standard English as a foreign language, and creole speakers who believe it to be part of their native linguistic competence-- combined with the complete absence of final /-Ct#/ and /-Cd#/ clusters in Vietnamese and Chinese-- caution us against accepting superficial resemblances too quickly.

Conclusion

To summarize: all regular verbs are variably Past-Marked at a rate of approximately 50%, by a grammatical operation which takes account of various syntactic, semantic and discourse constraints (see Patrick 1999), but is ordered before lower-level phonological and phonetic ones. At this higher level, creole elements of the grammar are clearly visible in the non-marking rates and the factors that condition them. Later in the derivation, the variable phonological rule of (TD)-Deletion applies to these verbs and other forms, to give the results in Table 5. At this point we see the influence of the same kinds of phonetic factors which constrain deletion in varieties of American English-- partly universal in nature perhaps, but integrated with rules for syllable sonority and facts about the underlying phonological shape of English words, which hold also for mesolectal Jamaican Creole.

This line of reasoning assumes a model of the grammar in which some morphosyntactic operations-- crucially, regular Past-marking-- are blind to the phonological form of the elements they affect. Given that, as a final step, we can feed back our results to adjust the puzzling $M < P$ picture we saw in Table 1.

We begin in (9) with the 405 (C-D) verbs of Table 5, which show a surface Past-marking rate of 20% with the /-t, -d/ suffix. If the independent morphological process of Past-marking applied to all regular verbs at a rate of 50%, then originally only half (202) of these 405 tokens bore an underlying (TD) suffix. Since only 79 of the 202 retain it on the surface, then 123 (TD)-markers were stripped off by phonological deletion, for a rate of 123/202 or approximately 60%.

(9)	Calculation of (TD)-Deletion rate using Past-marking rate:		
a)	No. of tokens subject to Past-marking in Table 5	=	405
b)	multiplied by the rate of Past-marking	x	50%
c)	No. of underlyingly-marked verbs with (TD)s	=	202
d)	minus the no. of (TD)s remaining on the surface	-	79
e)	No. of (TD)s removed by phonological deletion	=	123
f)	divided by (c) above	÷	202
g)	<i>Rate of Deletion in Past Regular (C-D) Verbs</i>	=	c. 60%

With this adjustment, the (TD)-deletion rate for Past tokens is lower than that for Monomorphemes, just as in the American dialects (though the difference is not significant at $p < 0.05$):

(10) Adjusted results from Table 1:

Grammatical Category	%	Deleted	N
[Past, surface]	[79%]		370
Mono-morpheme	71%		1,358
Past, adjusted	60%		370

(Adjusted $\chi^2/\text{cell} = 3.16$, $p < 0.10$)

Summary

These results confirm previous findings of phonetic environmental constraints on (TD)-Deletion, and support arguments for the influence of the sonority hierarchy on the deletion process. Evidence has been presented that the underlying forms of words in mesolectal JC resemble their English equivalents in having /-t/ and /-d/-final clusters which are subject to the (TD)-Deletion rule. The results for the major grammatical constraint (morphological status of the /-t, -d/ segment) run counter to all previous findings among English native dialects-- until they are adjusted for bleeding by a variable morphological rule.

Simply put, the difference in (TD)-Deletion between mesolectal Jamaican Creole and American dialects is really a difference in Past-Marking-- an important difference, however, with a definite creole flavor. In other respects, the Jamaican mesolect is found to be both closer to metropolitan Englishes than creolists have anticipated, and a distinct, coherent variety with its own structure, worthy of investigation on its own terms. Finally, the urban speech community in Kingston is shown to be unexpectedly uniform in the ordering of constraints across a wide social and linguistic range of speakers.

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Notes

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¹ The devoicing-verb category has apparently never been examined as a separate class before now; all other rankings are from Labov (1989: 90).

² Recent research by Guy (1991a, 1991b) suggests the regular patterning of Past and Monomorpheme categories is due rather to structural considerations, viz. the ordering of derivational levels in the lexicon and postlexical phonology: the Past-marked items, suffixed late, are subject to less deletion. This makes a similar prediction for the JC data, which-- assuming JC has at least two derivational levels in the lexicon-- present it with a similar problem. In fact, on Guy's structural explanation it makes no difference what the /-t, -d/ suffix signifies, as long as it is a suffix: if deletion applies blindly at each level, (TD) should be absent more often in Monomorphemes, i.e. when it is part of the stem.

³ This third problem has been independently explored, to a similar conclusion, by Robert Bayley in his 1991 Stanford Ph.D. thesis on Chinese second-language learners of English, building on work by Wolfram & Hatfield (1984). I would like to thank Bob for generously sharing his data and ideas.

⁴ Each example is followed by the speaker's pseudonym, the tape number and location. The English glosses indicate the past-tense endings in boldface.

⁵ This topic is considered more fully in Chapters 5 and 7 of Patrick (1999), where the influence of the following factors is considered: the surrounding phonetic environments studied above for (TD); four individual lexical items (*Go, Do, Have, Say*) and six morphological classes of verbs; verb stativity and punctuality; clause-type (irrealis, temporal, narrative, anterior); and the gender, age, social class, and individual identity of speakers. The verb *Be* was excluded from the study, as were all progressive and habitual past verbs.

⁶ Fasold included in his total the very frequent irregular verbs which we removed.

⁷ Data in Table 6 are extracted from Wolfram & Hatfield's (1984) Tables 2.2, 2.4, 2.6 and p. 27; and from Bayley's (1991) Table 3.1. Both call the categories which correspond to my Irregular (IRR) "Internal vowel change", and exclude the frequent verbs *Be, Go, Have, Do*. The regular verb categories are directly comparable; I refer to all with my terminology.