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Relativizer Omission in Anglophone Caribbean Creoles, Appalachian, and African American Vernacular English [AAVE], and Its Theoretical Implications

John R. Rickford

Preface

It is a pleasure, first of all, to contribute this paper to a volume honoring my friend and colleague Tom Wasow. Tom and I have been faculty colleagues in the Linguistics Department at Stanford since 1980, and neighbors in Barron Park, Palo Alto (our fences touch at one corner) since 1982. More than that, I have collaborated with him on several different morphosyntactic variables, resulting in four publications so far (Rickford, Wasow, Mendoza-Denton, & Espinoza, 1995; Sells, Rickford, & Wasow, 1996; Rickford, Wasow, Zwicky, & Buchstaller, 2007; Buchstaller, Rickford, Traugott, Wasow, & Zwicky, to appear), and in every case I have found his contributions to be richly illuminating. Indeed, Tom and I practice what some might call socio-syntax, and at the summer meeting of the Linguistic Society of America at Ohio State University in 2008, we presented a paper on the value of this kind of collaboration across Linguistics subfields.[1]

[1] "Collaborations: *As far as* different subfields, we're *all*, "*Aint* no reason ∅ we shouldn't work together." Invited plenary talk, July 2008.

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Emily M. Bender and Jennifer Arnold, Editors

Tom has also been an invaluable consultant on my three-year National Science Foundation project on Grammatical Variation and Change, and it is out of this research that the present paper grows. I am delighted that one of its first published results should appear in a volume dedicated to him.

1 Introduction

The primary focus of this paper is the empirical question of how (how **often**, and with what linguistic **conditioning**) creole and vernacular English speakers in Guyana, Jamaica, Appalachia and African America omit *that*, *who*, *what* (i.e. have zero instead of an overt relative pronoun or relativizer) in relative clauses like:

(1) I saw the boy that/*who(m)*/*what*/*Ø* you like.

From quantitative studies of the past twenty years (e.g. Kikai, Schleppegrell, & Tagliamonte, 1987; Adamson, 1992; Guy & Bayley, 1995; Tottie & Rey, 1997; Wasow, Jaeger, & Orr, 2004; Tagliamonte, Smith, & Lawrence, 2005), we know a **lot** about this in British and American varieties, but **nothing** about this in Caribbean Creole English, Appalachian or modern African American Vernacular English [AAVE].

In attempting to answer this first question, I'll consider a second: Can the patterns of relativizer omission in these vernacular/creole varieties contribute any new insights to the old debate about the creole vs English origins of AAVE? If 'Black' AAVE patterns like Caribbean Creole Englishes (speakers of which were well-represented in the founding populations of Black English speakers in the American colonies; see Rickford, 1997), while 'White' Appalachian behaves more like English in Ulster and other 'Northern' British areas from which the ancestors of today's Appalachians came (see Montgomery, 2001), we might conclude that the creolists are right and that this case confirms Labov's more general claim (1980:xvii) that "quantitative patterns can apparently preserve linguistic history over several centuries and several continents."

A third, related question arises as well: Are the variable patterns for relativizer omission specific enough to particular dialects or regions that they can be used reliably to reconstruct historical relations from cross-variety comparisons, or do they reflect broad processing constraints that might be found in all Englishes, if not universally (Wasow et al., 2004; Jaeger & Wasow, 2007)?

To answer these questions, I'll look at data on relativizer omission in Guyanese and Jamaican Creole English, Appalachian English, and

AAVE, but I should note that the research reported on in this paper is part of a larger project including Barbadian English, and two other variables, plural marking and question formation. The goals of the project are to increase understanding of quantitative linguistic variation in these varieties, provide better data for the AAVE creole origins debate, and contribute to the question of whether variable constraint patterns can be reliably used for dialect-specific historical reconstruction, as previously assumed (e.g. Poplack, 2000).[2]

One question that some readers may already have is how relativizer omission is relevant to the debate over the creole origins of AAVE. The answer is that relativizer omission has, over the past decade (Tottie & Rey, 1997; Tottie & Harvie, 2000), been added to the evidence of copula absence and other variables in the debate over the creole origins of AAVE. In particular, Tottie and Harvie (2000), considering relativizer omission data from "Early African American English" [EAAE] including recordings of US ex-slaves, and descendants of African Americans who went to Nova Scotia (Canada), and Samaná (Dominican Republic) in the early 19th century, conclude (p. 225) that these varieties descend from English rather than creole stock, since they seem to have constraints similar to those of English dialects.

But although Tottie and Harvie (2000) was a welcome, pioneering study, it was limited in three major respects:

a. The **absence of quantitative studies** of relativizer omission in Anglophone (or any other) creoles to which the "Early" AAE findings could be compared. This absence was not their fault, but without quantitative creole data on this variable, one could not reliably conclude that relativizer omission in EAAE patterned more like English than Creole.
b. The corpora that Tottie and Harvie used for EAAE (e.g. the Ex-Slave Recordings) yielded **very few tokens** of restrictive relative clauses. Again, this was not the authors' fault, but the resulting quantitative distributions were weak, with only five of their eighteen tables achieving statistical significance. (See Rickford, 2006 for further discussion.)
c. As a result of (b), the authors **did not have enough tokens for Variable Rule (Varbrul)** multivariate analysis, which simultaneously controls for the effect of different factors, long considered the gold standard in variationist studies.

[2]The three variables chosen for this larger project (funded by NSF grant #BCS-0545424) were among the nine examined by contributors to Poplack, 2000. See Rickford, 2006 for a review article on this book.

Hence the need for this study.

2 Relativizers: Some Preliminaries

English restrictive relative clauses [enclosed in square brackets below], "restrict the denotation" (Huddleston, Pullum, & Bauer, 2002) of an antecedent NP (underlined below), and may be introduced in one of three ways:

- By a [+/- human] *wh* pronoun (*who*(*m*), *which*), as in:
  (1a) I saw the boy [*who*(*m*) you like]
  (1b) I saw the ball [*which* you like]
- By *that,* in:
  (1c) I saw the boy/ball [*that* you like]
- By *zero*, as in:
  (1d) I saw the boy/ball [*Ø* you like]

Excluded from this variation are non-restrictive relative clauses, where the antecedent is already uniquely denoted. These often have "comma pronunciation" and can be introduced only by *wh* pronouns:

(2) I saw Mary, *who*(*m*)/**that*/**Ø* you like.

Following Schachter (1985) and many recent works on this variable, we'll refer to *who/which, that, Ø* as *relativizers* and include in this category too the Creole and English dialect variant *what*∼*wa*∼*wi,* which occurs with both human and non-human antecedents.

At least since the 1960s (Bailey, 1966, 110ff) and 1970s (Quirk & Greenbaum, 1973, 380ff), descriptive and generative linguists have noted the variation between these relativizers and made informal observations about the factors that seem to favor the zero variant. An early generalization is that Standard or Mainstream English allows relativizer omission (the zero variant) with OBJECT relatives (the object of the verb in the relative clause) as in (1) above, but not with SUBJECT relatives (the subject of the verb in the relative clause), as in (3):

(3) I saw the boy [who/**Ø* likes you]

But a number of English dialects (e.g. AAVE, some Scottish, Irish and English varieties) do allow omission of subject relativizers, as in (4):

(4) "...there were a boy in Ballyclare [*Ø* told me this]"
(Tagliamonte et al., 2005, p. 76)

However, even in these vernacular varieties, subject relativizer omission is less common than object relativizer omission, and its constraint patterns (what favors or disfavors omission) are somewhat different.

Quantitative studies of relativizer variation and omission in English (revealing constraints that **non**-quantitative studies often missed) have been available since the 1980s (Romaine, 1982; Kikai et al., 1987). But they've become more common since the 1990s, and in recent years, have attracted generativists as well as sociolinguists, scholars interested in purely syntactic and/or processing constraints on this variation (e.g. Lehmann, 2001; Wasow et al., 2004; Wiechmann, 2008).

3 Data and Methodology

The **Guyanese** data to be considered in this paper come primarily from informal spoken interviews made by myself (a native speaker) with cane-cutters, weeding-gang women, shop-owners and others from Cane Walk and elsewhere in Demerara and Berbice between 1975 and 1982,[3] supplemented by two recordings made for Don Winford by University of Guyana students in Mahaicony in 1991.[4]

The **Jamaican** data come from two sources: (a) Informal spoken recordings, made between 1991 and 2006. Some of these are sociolinguistic interviews (most conducted by native speakers, although a few were conducted by myself); others include arguments in public or on the air recorded by Kathryn Shields-Brodber of the University of West Indies, Mona, Jamaica, and her students.[5] (b) Extracts from *Lionheart Gal* (Sisteren with Ford-Smith 2005), a collection of oral narratives from Jamaican women first linguistically analyzed by Patrick,

[3]Cane Walk is a pseudonym for a rural village on the East Coast, Demerara, less than half an hour outside the capital city of Georgetown.

[4]I am grateful to Don Winford for sharing these materials with us, and to the following faculty members and students from the University of Guyana who helped with the transcription and coding of the Cane Walk and other Guyanese recordings: Andrea Ally, Kencil Banwarie, Alim Hosein, S. Hussein, and Daizal Samad, among others. Mackenzie Price, graduate student at UC Davis, also helped with the coding and variable rule analysis of the Guyanese data.

[5]I am grateful to Kathryn Shields-Brodber for making these recordings available to us. The following students and faculty members (most from the University of the West Indies, Mona), also helped to record, digitize, transcribe or code samples of Jamaican speech: Lisa Monique Barker, Annife Campbell, Dahlia Thompson, Tasheney Francis, Audene Henry, Trecel Messam, Velma Pollard, Angela E. Rickford, Jodian A. Scott, Andre Sherriah, Kadian Walters and Kedisha Williams.

Carranza, and Kendall (1993).[6] The relativizer omission patterns in these two subsets were similar.[7]

The **Appalachian** data come from two sources: (a) West Virginia recordings made in the 1970s by Walt Wolfram, Donna Christian and their associates; (b) recordings with older speakers in Beech Bottom, North Carolina, made by Christine Mallinson, Becky Childs, Daniel Schreier and others in 2001. We are grateful to these researchers and to Clare Dannenberg and Tyler Kendall for making these materials in the North Carolina Sociolinguistic Archive and Analysis (NCSLAAP) project available to us.[8]

The **AAVE** data are primarily from informal sociolinguistic interviews with working-class speakers in East Palo Alto, California, conducted by community insiders like Faye McNair-Knox and her daughter Rashida Knox (but some also by my students at Stanford and myself) between 1986 and 2008.[9]

Every occurrence of a restrictive relative clause we could find in these data sets was extracted,[10] and coded for relativizer variant (*that, who/which, what/wa/wi, Ø),* relativizer type (subject/non-subject), and the following additional constraints, most of which sociolinguists and syntacticians have found relevant to this variable:

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[6]The following participants in the "Language Variation" course I taught at the 2008 Caribbean Linguistics and Language Institute (held at the University of the West Indies, Mona, Jamaica) helped to extract and code relativizers from the narratives in *Lionheart Gal*: Kencil Banwarie, Gregory Carter, Lars Hinrichs, Nicole Hohn, Sonia Marville-Carter, Anderlene Mohan-Ragbir, Andrea Moll, Marguerite Murray, Ferne Regis, Daidrah Smith, Jessica Spencer and Adrienne Washington. Laura Smith also played a critical role in the coding and analysis of the Jamaican data.

[7]This is reassuring, since the two Jamaican data sets are more different in genre than the other cases where I combined data sets (e.g. Appalachia, where I combined the transcripts from two different sociolinguistic projects). The *Lionheart Gal* texts differ from the usual transcripts of sociolinguistic interviews insofar as they are published records of "testimonies" collected and edited by Honor Ford-Smith, a member of the Sisteren collective whose story also appears in the volume. Ms. Ford-Smith has told me that the published texts are essentially faithful to what was originally said, but we don't have access to the original records.

[8]I am grateful to Michael Montgomery for sharing with me his transcripts of some of the West Virginia recordings, and to Patrick Callier, Pauline Cristy, Rebecca Greene, Cole Paulson, andDoug Kenter for helping to transcribe and code some of the Appalachian recordings.

[9]In transcribing and coding the AAVE data, I was ably assisted by Rachel Cristy, Catherine Howard, Lauren Hall-Lew, Monique King, Mackenzie Price and Lisa Young, among others.

[10]Excluded were adverbial relatives (*when, where*), incomplete relative clauses, and other tokens excluded by Tottie and Harvie (2000) and Tagliamonte et al. (2005).

- Structure of matrix sentence (existential, cleft, possessive, other)
- Adjacency of antecedent NP (adjacent, non-adjacent)
- Length of relative clause (3 words or fewer, more than 3 words)
- Definiteness of antecedent NP (definite, indefinite)
- Humanness of antecedent NP (human, non-human)
- Plurality of antecedent NP (singular, plural)

For example, the following [bracketed] subject relative clause from Raj, a Guyanese cane-cutter:

(5) Me ga' wan brudda [Ø live a' Enmore] "I have a brother who lives at Enmore"

was coded as follows:

- Zero (relativizer variant)
- Subject (relativizer type)
- Possessive (sentence structure)
- Adjacent (adjacency to antecedent NP)
- Short (length of relative clause)
- Indefinite (definiteness of antecedent NP)
- Human (humanness of antecedent NP)
- Singular (plurality of antecedent NP)

And the following [bracketed] non-subject relative clause from Jack, a Jamaican farmer:

(6) Dierz nothing a uman kyan du [wich a man kyaan du] "There's nothing a woman can do which a man can't do."

was coded as follows:

- *Which* (relativizer variant)
- Non-Subject (relativizer type)
- Existential (sentence structure)
- Non-Adjacent (adjacency to antecedent NP)
- Long (length of relative clause)
- Indefinite (definiteness of antecedent NP)
- Non-human (humanness of antecedent NP)
- Singular (plurality of antecedent NP)

The coded data were analyzed by Goldvarb, and the results compared to quantitative studies of other varieties (e.g. the spoken corpus analyzed by Kautzsch, 2002, including WPA, Hoodoo and other samples of Earlier African American English recorded between the 1930s

and 1970s) and the "Northern" British (Irish, Scottish and English) varieties analyzed by Tagliamonte et al. (2005). Goldvarb is a widely used version of Varbrul, a computer program that uses logistic regression to calculate the significance or insignificance of factor groups (groups of constraints or conditioning factors) on the application of a variable rule, and which also estimates, within each factor group, the probability or weight of each factor towards rule application (see Sankoff, 1987; Bayley, 2002; Tagliamonte, 2007). Factor weights than greater than .5 favor rule application, those lower than .5 disfavor it and those at or around .5 have no effect in either direction.

4 Results

Let us begin the discussion of results by looking just at the Jamaican data, and considering how frequently the major relativizer variants occur in subject and object position. Although the relatively high frequency of the zero variant in subject position (25%) is striking, the Jamaican subject relativizers are pretty evenly divided among the four variants, with *who/which* (28%) slightly more common than the others. By contrast, among the non-subject relativizers, zero accounts for more than half of the tokens (56%), and the *wa/wi* creole variant for nearly a third (29%), with *that/da*t (13%) and English *who/which* (2%) trailing far behind.[11]

TABLE 1 Distribution of relativizers in Jamaican data by variant and type

Relativizer variant	Subject	Non-Subject
null/zero (Ø)	25% (61)	**56% (224)**
that/dat	22% (53)	13% (52)
who/which	**28% (70)**	2% (10)
wa/wi	25% (62)	29% (117)
TOTAL	100% (246)	100% (403)

Table 2[12] shows the distribution of subject variants more generally, both in our data and in data from Earlier African American English

[11]The creole *wa/wi* variant, unlike its historical source forms *what* and *which*, is not restricted to [-human] referents, and can be used with humans, non-human animates, and inanimates.

[12]Notes (Tables 2 & 3): Bold numbers = most common relativizer variant in each variety. *Source: Kautzsch, 2002, Table 144, p. 244, spoken corpus (Ex-Slave recordings and Hoodoo texts. **Source: Tagliamonte et al., 2005, Table 4, which excludes tokens of *which* (Scotland 9, England 7, Ireland 3) and *what* (Scotland 1, England 3, Ireland 3) reported in their Table 3 (subject + non-subject tokens combined).

[AAE] and northern British varieties (Lowland Scotland, Northwest England, Northern Ireland) examined by other researchers (Kautzsch, 2002 and Tagliamonte et al., 2005 respectively). Zero subject relatives are even more frequent in Guyanese (42%) than Jamaican, but by contrast with Standard or Mainstream English, where this is a minimal or non-existent option, the other varieties show relatively high percentages of zero too (from 11% in Modern AAVE to 30% in Appalachian). And for all varieties except Guyanese and Jamaican, *that*∼*dat* is the primary subject variant, with relative frequencies ranging from 57% in Earlier AAE to 76% in modern AAVE).

Table 3 shows the distribution of non-subject relativizers in all the varieties. Zero is the majority variant (50% or more) in all varieties except Northwest England, Northern Ireland, and AAVE, where *that/dat* is the majority variant. In all the varieties in which zero is the main variant, *that/dat* is the secondary variant, and *who/which* a trivial or non-existent option. The striking exceptions to this are the creole varieties Jamaican and Guyanese, where *wa/wi* is the secondary option (29% and 26%). It is of potential interest for the creole hypothesis that the only other variety in which *wa/wi* is an option is Earlier AAE, where it accounts for 9% of the non-subject relativizers.

TABLE 2 Distribution of Subject relativizer variants, all varieties

Variety	Null (Ø)	*That dat*	*Who/Which*	*Wa wi (no +/- human distinction)*	TOTAL
Jamaican	25% (61)	22% (53)	**28% (70)**	25% (62)	100% (246)
Guyanese	**42% (74)**	8.5% (15)	31% (55)	17.6% (31)	100% (175)
Earlier AAE*	18% (155)	**57% (493)**	14% (119)	11% (94)	100% (861)
AAVE (modern, Calif)	11% (43)	**76% (298)**	12.5% (49)	0% (0)	100% (390)
Appalachian	30% (66)	**68.6% (151)**	1% (3)	0%	100% (220)
Lowland Scotland**	15% (75)	**73% (353)**	10% (48)	n.d.	98% (484)**
Northwest England**	20% (96)	**64% (299)**	14% (65)	n.d.	98% (467)**
Northern Ireland**	20% (67)	**74% (242)**	5% (17)	n.d.	99% (328)**

TABLE 3 Distribution of Non-Subject relativizer variants, all varieties

Variety	Null (Ø)	*That dat*	*Who/Which*	*Wa wi (no +/- human distinction)*	TOTAL
Jamaican	**56% (224)**	13% (52)	2% (10)	29% (117)	100% (403)
Guyanese	**62% (177)**	7% (21)	2% (7)	26% (74)	100% (285)
Earlier AAE*	**57% (578)**	32% (329)	2% (17)	9% (95)	100% (1019)
AAVE (modern, Calif)	41% (207)	**56% (281)**	2% (11)	0% (0)	100% (500)
Appalachian	**70.7% (181)**	47% (74)	3% (1)	0% (0)	100% (256)
Lowland Scotland**	**53% (139)**	45% (119)	0% (0)	n.d.	98% (262)
Northwest England**	47% (115)	**50% (124)**	0% (0)	n.d.	97% (247)
Northern Ireland**	27% (36)	**69% (93)**	0% (1)	n.d.	96% (134)

Let us turn now to the Goldvarb/Varbrul results, which reveal the factor groups that have a significant effect on relativizer omission, and the factors within those that favor or disfavor zero.[13] Table 4 shows the results for subject relativizers, and in relation to this we may make the following observations:

- With respect to **Sentence Structure**, we may be dealing with variety-independent processing constraints (cf. Wasow et al., 2004; Jaeger & Wasow, 2007), since existentials favor zero in all varieties, clefts and possessives in most, and "other" disfavors zero in all varieties.
- **Length** is significant in all the "White" varieties (British and Appalachian), but in none of the "Black" varieties (Guyana, Jamaican, AAVE) for which data are available.
- **Antecedent Type** is significant in two of the "Black" varieties, and non-significant in only one of the "White" varieties (Lowland Scotland). But while an indefinite NP favors zero in Lowland Scotland,

[13]In response to a concern expressed by Hal Tily (one of the reviewers of this paper) that Varbrul (Goldvarb) analysis does not provide for multilevel, mixed effects modelling (see Johnson, 2009), I submitted my non-subject relativizer omission data for AAVE to Daniel Ezra Johnson, who kindly ran it through a regular Goldvarb analysis and his new Rbul program that provides for mixed effects modelling. He reported that the results from both runs were nearly identical.

it disfavors zero both in Earlier AAE and Jamaican. We don't have data on superlative or unique NP subjects (e.g. *the best book, the only girl*) for the data from Kautzsch or Tagliamonte et al, but given the recent results from Jaeger and Wasow (2007) that prompted us to consider this factor in the first place, we would not be surprised if superlative and unique NP subjects turned out to significantly favor zero in all varieties.[14]

- **Adjacency of Antecedent** is non-significant in all varieties, except for Earlier AAE, where it is very significant (p =.007). However, it is important to remember that the Earlier AAE data have only been subject to relative frequency analysis, not to more reliable multivariate variable rule analysis. This is indicated by the presence of percentages in the Earlier AAE column rather than probabilities (factor weights).
- **Humanness of Antecedent**: This is significant only in Earlier AAE, but note the qualification made in relation to Adjacency, and the absence of data for the British varieties.

Overall, apart from the shared effect of Sentence Structure, the differences between the Black and White varieties are striking, with regard to Length, Antecedent Type and Adjacency. Modern AAVE shows no significant constraints, and is in this respect different from both the Black and the White varieties, but Earlier AAE is definitely more Black than White, at least with respect to subject relativizer omission.

Table 5 shows the results for **non**-subject relativizers, in relation to which the following observations may be made:

- With respect to **Sentence Structure**, Jamaican looks most similar to Lowland Scots and Northwest England, with a shared favoring effect of clefts, although existentials also favor omission in the two British varieties but not in Jamaican. In all the other varieties except earlier AAE (for which we have no data), this factor group is non-significant.
- **Length** is significant in all the British varieties and none of the others (Jamaican, Guyanese, AAVE, Appalachian) for which we have data.
- **Antecedent Type** is **non**-significant for all the British Varieties, but significant for all the Black ones, and Appalachian English, with superlative NP most favorable for all four varieties with data on this factor.

[14]Sali Tagliamonte (p.c.) is planning to recode her Northern British data to check for the effect of this factor.

TABLE 4 Constraints on Subject Relativizer Omission, all varieties (Goldvarb/Varbrul results)

		"BLACK" varieties				"WHITE" varieties			
Factor groups		***Guyanese***	***Jamaican***	***AAVE (E.Palo Alto, Calif.)***	***Earlier AAE* (% data only)***	Appalachian	Lowland Scotland**	Northwest England**	Northern Ireland**
Input Prob		.362	.19	.113	18%	.262	.031	.058	.115
N		164	332	390	861	219	484	467	328
Sentence Structure	Existential	***.723***	***.737***	[.716]	n.d.	***.780***	***.99***	***.98***	***.95***
	Possessive	***.709***	*.260*	[.602]	n.d.	***.675***	***.83***	***.85***	*.50*
	Cleft	[k]***100%***	***.962***	[.522]	n.d.	*.260*	***.64***	***.65***	***.76***
	Other	*.388*	*.340*	[.459]	n.d.	*.317*	*.20*	*.16*	*.28*
Length of RC	Short, Simple	[.541]	[.494]	[.511]	n.d.	***.565***	***.73***	***.73***	***.72***
	Long, Simple	[.468]	[.498]	[.476]	n.d.	*.397*	*.37*	*.31*	*.37*
	Long, Complex	[.685]	[.926]	[.714]	n.d.	***.793***	*.48*	***.54***	***.54***
Type of Antecedent	Indef NP	[.552]	*.448*	[.435]	***22%***	[.565]	***.64***	[.56]	[.58]
	Def. NP	[.399]	*.425*	[.511]	*13%*	[.359]	*.33*	[.46]	[.48]
	Superl. NP	[.602]	***.673***	[.807]	*n.d.*	[.706]	*n.d.*	n.d.	n.d.
	Def. Pro.	[.563]	***.868***	[.423]	*16%*	[.533]	*n.d.*	n.d.	n.d.
	Indef. Pro.		***.587***	[.618]		[.375]	***.81***	[.39]	[.32]
Adjacency of antecedent	Adjacent	***.557***	[.492]	[.486]	*17%*	[.524]	n.s/d	n.s/d	n.s/d
	Non-Adj	*.162*	[.562]	[.558]	***29%***	[.404]	n.s/d	n.s/d	n.s/d
Humanness of antecedent	Human	[.480]	[.480]	[.499]	*50%*	[.475]	n.d.	n.d.	n.d.
	Non-hum.	[.575]	[.555]	[.505]	***58%***	[.557]	n.d.	n.d.	n.d.

[Cells with square brackets] = non-significant factor groups (numbers from first step-down Goldvarb run), groups that had no appreciable effect; *italicized* cells = significant factor groups; within those, **bold** numbers = factors that *favor* zero variant; regular (non-bold) numbers in significant factor groups represent factors that *disfavor* zero variant or are neutral; n.d.= no data; n.s/d = reported as non-significant from Goldvarb run, but no data provided. [k]**100%** in the Guyanese columns represents a 'knockout' factor that *always* favors zero and had to be removed for Varbrul to run; *Earlier AAE data source: Kautzsch, 2002, Table 144, p. 244, spoken corpus (Ex-Slave recordings and Hoodoo texts; **Scotland, England and Ireland data source: Tagliamonte et al., 2005, Table 4, which excludes tokens of *which* (Scotland 9, England 7, Ireland 3) and *what* (Scotland 1, England 3, Ireland 3) reported in their Table 3 (Subject + Nonsubject).

- **Adjacency of Antecedent** is **non**-significant for all the White varieties, but it's significant for two of the Black ones (Jamaican, AAVE).
- **Humanness** of Antecedent is significant only in the North American varieties (AAVE, Earlier AAE, and Appalachian).

Overall, apart from a shared sentence structure constraint (somewhat like what we saw for subject relativizers, but in a more limited way), the British varieties are off by themselves. When it comes to constraints on non-subject relativizer omission, both AAVE and Earlier AAE are quite different from them, and much more similar to each other and to Guyanese and Jamaican. This is particularly the case for Antecedent Type and Adjacency.

Let us return now to the three general questions posed at the beginning of this paper.

The answer to question 1, about how relativizer omission patterns in Guyanese, Jamaican, AAVE and Appalachian, lies in the details of Tables 1–5 and the discussion we have already provided about which relativizers occur most often in the different varieties, and which factor groups and factors significantly favor or disfavor zero.

The similarities and differences in these patterns, especially those between the "Black" and "White" varieties, do suggest some answers to question 2, about the history of AAVE. There is certainly no evidence for a British origin of AAVE here, and AAVE differs even from Appalachian, with which it shares continental space. There are tantalizing resemblances between AAVE and the other "Black" varieties, especially Jamaican. Together, these differences from the "White" varieties and similarities with the "Black" varieties provide more support for the creole origins of AAVE hypothesis, and less for the Anglicist or English dialects origins hypothesis, at least as far as relativizer omission is concerned. Of course the data from this variable would have to be balanced against the data from other variables and other kinds of evidence before any definitive conclusions on the Creole/Anglicist origins hypothesis could be reached.

What of question 3? Tagliamonte et al. (2005, p. 101–106) commendably raised the question of whether specific constraints on relativizer omission might be dialect specific, or might represent potentially "universal" cognitive processing constraints. But their preliminary answers, while entirely plausible, are not supported by our data. For instance, they felt (p. 105) that "length effects might be expected to be universal, as these are dependent on cognitive processing constraints, which are presumably shared by all speakers (Fodor, 1998)." However, length of

TABLE 5 Non-Subject Relativizer Omission Results

		"BLACK" varieties				**"WHITE" varieties**			
Factor groups	Factors	***Guyanese***	***Jamaican***	***AAVE (E.Palo Alto, Calif.)***	***Earlier AAE* (% data only)***	Appalachian	Lowland Scotland**	Northwest England**	Northern Ireland**
Input Prob		.618	.629	.408	57%	.739	.546	.462	.238
N		285	510	500	578	256	261	247	133
Sentence Structure	Existential	[.318]	*.431*	[.545]	n.d.	[.549]	***.55***	***.77***	[.66]
	Possessive	[.463]	*.330*	[.604]	n.d.	[.359]	*.11*	*.17*	[.44]
	Cleft	[.786]	***.909***	[.360]	n.d.	[.615]	***.69***	***.57***	[.41]
	Other	[.480]	*.432*	[.497]	n.d.	[.502]	*.45*	*.50*	[.50]
Length of RC	Short, Simple	[.485]	[.527]	[.531]	n.d.	[.537]	***.79***	***.80***	***.67***
	Long, Simple	[.517]	[.478]	[.490]	n.d.	[.463]	*.29*	*.38*	*.42*
	Long, Complex	[.540]	n.d.	[.340]	n.d.	[.296]	*.47*	*.39*	*.45*
Type of Antecedent	Indef NP	***.555***	*.294*	*.422*	*47%*	*.293*	[.57]	[.42]	[.35]
	Def. NP	*.282*	*.353*	*.468*	***52%***	*.286*	[.48]	[.54]	[.55]
	Superl. NP	***.919***	***.959***	***.873***	n.d.	***.745***	n.d.	n.d.	n.d.
	Def. Pro	***.597***	***.679***	*.452*	***72%***	*.262*	n.d.	n.d.	n.d.
	Indef. Pro.	*.379*	***.649***	***.508***		***.605***	[.46]	[.49]	[.67]
Adjacency of antecedent	Adjacent	[.508]	***.521***	***.534***	[57%]	[.510]	[n.s/d]	[n.s/d]	[n.s/d]
	Non-Adj	[.382]	*.238*	*.263*	[51%]	[.399]	[n.s/d]	[n.s/d]	[n.s/d]
Humanness of antecedent	Human	[.426]	[.419]	*.364*	*50%*	[.446]	n.d.	n.d.	n.d.
	Non-hum.	[.514]	[.518]	***.557***	***58%***	[.505]	n.d.	n.d.	n.d.

[Cells with square brackets] = non-significant factor groups (numbers from first step-down Goldvarb run), groups that had no appreciable effect; *italicized* cells = significant factor groups; within those, **bold** numbers = factors that *favor* zero variant; regular (non-bold) numbers in significant factor groups represent factors that *disfavor* zero variant or are neutral; n.d.= no data; n.s/d = reported as non-significant from Goldvarb run, but no data provided. *Earlier AAE data source: Kautzsch, 2002, Table 144, p. 244, spoken corpus (Ex-Slave recordings and Hoodoo texts; **Scotland, England and Ireland data source: Tagliamonte et al., 2005, Table 4, which excludes tokens of *which* (Scotland 9, England 7, Ireland 3) and *what* (Scotland 1, England 3, Ireland 3) reported in their Table 3 (Subject + Nonsubject).

the relative clause is irrelevant in all of the "Black" varieties in Tables 4 and 5 and in Appalachian as well in Table 5, so it's less likely to be a universal or even an Angloversal (cf. Mair, 2003; Szmrecsanyi & Kortmann, 2009). At the same time, Tagliamonte et al. (2005) suggested that "tendencies of *that* or zero for clefts and/or existentials might be dialect specific. If so, their ranking vis-à-vis other construcions for relative marker use may prove to be valuable diagnostics or origins and/or interdialectical relationships." However, our data show that existentials and clefts favor relativizer omission quite generally, especially with subject relatives. And the work of Wasow and his associates (with non-subject relativizers) suggests that the favoring effect of existentials on zero might be characteristic of English in general or, more broadly, attributable to a universal processing constraint. In the next section, I'll summarize Wasow et al's hypotheses and data, under the heading of the Predictability Hypothesis, and comment more specifically on how our findings support theirs.

5 The Predictability Hypothesis

Using a parsed Switchboard Corpus—650 telephone conversations between strangers in the US, yielding 3,701 Non-Subject Relative Clauses (NSRCs), 43% with *that*, and 57% with zero—Wasow et al. (2004) examined which factors "correlate with relativizer occurrence in NSRCs" and formulated the **Predictability Hypothesis:** "... determiners, adjectives and nouns that increase the likelihood of a following NSRC decrease the likelihood that the NSRCs following them will begin with relativizers." This has been restated more recently (Jaeger & Wasow, 2007) as: "The more predictable an NSRC is, the less likely it is to begin with *that*." The *more* likely it is that a noun phrase with certain characteristics is going to be followed by a relative clause, the *less* likely you are to need a relativizer like *that* (or for that matter, *who, which* or *wa*) to mark the onset of that relative clause.

Jaeger and Wasow (2007) report that they were led to their insight in part by Fox and Thompson (2007), who observed that the following sentence sounds incomplete without a relative clause, and also strongly disfavors *that* (i.e. it tends to favor zero, or relativizer omission).

(7) That was the ugliest pair of shoes (that) I ever saw.

Following up on this observation, Wasow et al. (2004) found that there was a strong correlation between the occurrence of certain kinds of adjectives in the head NP (e.g. superlative or unique adjectives like *best, only, first, last,* which commonly co-ocurred with relative clauses), and the likelihood that the relative clauses would occur with a zero

relativizer. Note how strongly superlative NPs favor zero in our Table 5 (and to a lesser extent Table 4) in all the cells for which we have relevant data.

Interestingly enough, Wiechmann (2008) also reported that unique adjectives were one of three elements that constituted Type 1 relative clause constructions, the type that most commonly occurred with zero relativizers in his "Entrenchment model." Type 1 relative clause constructions like these become highly automized with zero, and are easier to process.

More recently, inspired by the evidence in Tagliamonte et al. (2005) that existentials in their Northern British varieties (see Tables 4 and 5 above) favor relativizer omission,[15] Jaeger and Wasow (2007) argued that there are good processing explanations for this and that their predictability hypothesis could account for it. They first noted that noun phrases in existential clauses and those that are objects of *have* tend to occur with NSRC relative clauses more often than than other noun phrases, as Table 6 shows:

TABLE 6 NPs in existentials and objects of *have* occur in NSRC RCs more often than others

% of Noun Phrases in existentials that occur with relative clauses	23.1% (461/1998)
% of Noun Phrases that are objects of *have* that occur with relative clauses	9.2% (583/6316)
% of all other Noun Phrases that occur with relative clauses	2.1% (6274/297,234)

By the predictability hypothesis, these higher frequency relative clauses (those modifying the noun phrases in existentials and the ones that are objects of *have*) should also occur more often without overt relativizers, which is exactly what Table 7 shows.

TABLE 7 Relative clauses modifying NPs in existentials and objects of *have* occur more often without *that*

% of relative clauses without *that* following Noun Phrases in existentials	85% (79/93)
% of relative clauses without *that* following Noun Phrase objects of *have*	87% (53/61)
% of relative clauses without *that* following all other Noun Phrases	55% (1968/3547)

[15]This point was also noted by Martin and Wolfram (1998) for AAVE and Henry (1995) for Belfast English.

Again, note the neat parallel with our Table 4, for subject relativizers, where existentials favor high rates of relativizer omission in Jamaican and Guyanese as well as Appalachian and the British varieties.[16] This holds true for possessives too, except in Jamaican. Curiously enough, for the non-subject relative clause data in Table 5, the kind considered by Jaeger and Wasow, the parallels are not quite as strong. They hold for existentials only in Lowland Scotland and Northern England, two of the four White varieties, and they do not hold for possessives in any of the varieties. But the class of possessives in our data is broader than "objects of *have*," and since we don't have syntactically tagged computer corpora for any of the data sets in Tables 4 or 5, we can't investigate the first half of the predictability hypothesis—whether NPs in existentials or as objects of *have* indeed occur more often with NPs than other NPs do. These are areas that await further research.

6 Summary and Conclusion

Our quantitative study of relativizer omission in Appalachian, modern AAVE and two Caribbean English Creoles has yielded important descriptive information we did not have before. For one thing, the relative frequency of *subject* relativizer omission in these newly studied varieties (see Table 2) is relatively high (11%-25%), but comparable to earlier reports for Early AAE and the Northern British Varieties (15%-26%). Subject relativizer omission is highest of all (42%), however, in Guyanese Creole, in part a reflection of its categorical operation in cleft sentences. Non-subject relativizer omission (see Table 3) is higher than subject relativizer omission in all varieties—ranging from 41% to 71% in the newly studied varieties and from 27% to 57% in the previously studied varieties. The White varieties show more variability with respect to non-subject relativizer omission than the Black ones do, with the highest rate of omission overall (71%) coming from Appalachian.

If we ask not just how *often* relativizer omission occurs in these newly studied varieties, but *how,* in terms of contraint effects, the answers are quite revealing. Like Tagliamonte et al. (2005), we do find that some constraint effects seem to be specific to particular dialects or dialect groups, while others reflect widespread, perhaps universal processing patterns. But the constraints that they found to be general (like length), we found to be very specific (significant in the White or at least

[16]The favoring effect of existentials in the British varieties of Lowland Scotland, Northwest England, and Northern Ireland, as analyzed by Tagliamonte et al (2005) was, as noted, what led Jaeger and Wasow to consider this constraint in the first place.

British varieties, but not in the creole or Black varieties). And the constraints they found to be dialect specific (like sentence structure), we found to be quite general (especially in relation to subject relativizers). With respect to *subject* relativizer omission, AAVE shows no significant constraint effects, and in this respect is neutral in relation to the Black and White patterns. In terms of *non-subject* relativizer omission, AAVE is quite dissimilar to the Northern British varieties, and shares a sensitivity to the Type of Antecedent with all of the other Black varieties. But Appalachian shares this feature too. However modern AAVE shares the effects of Antecedent Adjacency and Antecedent Humanness with at least one other Black variety and with none of the White varieties, and in this sense provides support for the creolist rather than Anglicist hypothesis of AAVE origins.

Perhaps what is more interesting about these newly studied varieties is what they contribute to the larger search for general processing constraints, like the Predictability Hypothesis on which Tom Wasow and his colleagues are focusing. Our data provide some intriguing support for the Predictability Hypothesis, from varieties of English much more non-standard than the American (Switchboard) data sets on which it was formulated. But the support, while very strong for some aspects of the Predictability Hypothesis (e.g. the effect of modification by superlative and unique adjectives) is more mixed with others (e.g. the effect of existentials and possessives), and varies depending on whether we consider subject or non-subject relativizers. (Recall that Wasow and his collaborators considered only non-subject relativizers.) We don't know yet the extent to which relativizer omission in the creoles, AAVE and Appalachian confirms to the Predictability Hypothesis and is affected by data size, and local constraints that don't surface in Switchboard and similar data. And there are alternative models (e.g. Wiechmann's Entrenchment model, just mentioned) that we will have to consider too. Fully testing either of these will require computerized corpora not readily available for creoles and many vernacular Englishes. Furthermore, such corpora would need to be regularized (to account for competing orthographies) and annotated for part of speech and constituency structure, a task which will be hampered by the fact that taggers and parsers developed for, e.g., Standard American English won't necessarily work directly with other varieties.

Overall, despite the challenges involved, the prospects for continued research along these lines is exciting, even if (or perhaps because) it takes us beyond our sectarian squabbles about the origins of AAVE and other varieties. While the findings of this study do support the creole origins hypothesis more than they do the English-origins hypothe-

sis, they also reinforce the suggestion (cf. Schuchardt, 1979, Bickerton, 1984, Kihm, 2008, Siegel, 2008, p. 66-78) that creoles, sometimes ignored by linguists, often disparaged by non-linguists, can contribute to our understanding of language universals. The germ of this idea is more than a hundred years old,[17] but what is new here is the conception of universals in terms of language processing regularities rather than in terms of static/dynamic features assumed to be part of an innate 'faculté de langage', and the kinds of data furnishing the evidence: quantitative variable constraints rather than qualitative forms and structures. New data types, new analytical approaches, and new predictions from recent conferences and publications (like those of Tom Wasow and his colleagues) make the prospects of pursuing universals in this sense better than ever.

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[17] Schuchardt (1979) is a modern translation into English of works originally published in German in the 1880s and 1890s. (See Mühlhäusler, 1986, 114ff.)

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