## LEXICOSTATISTICS IN GENETIC LINGUISTICS

Proceedings of the Yale Conference
Yale University, April 3-4, 1971

Edited by

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1973
MOUTON
THE HAGUE · PARIS

## THE LEXICOSTATISTICAL CLASSIFICATION OF THE FRENCH-BASED CREOLE LANGUAGES

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- O French-based Creoles developed in two regions geographically remote from each other. One group of dialects is to be found in and around the Caribbean area (Goodman 1964), another group, the Mascarene Creoles, on various islands of the Indian Ocean (Wittmann 1971). The close genetic relationship of the dialects constituting the Caribbean group is no longer questioned. This is also true in the case of the Mascarene group. However, the same may not be said about the cross-relationship between the Caribbean Creoles on one hand and the Mascarene on the other. The present study is a first attempt to determine their relationship lexicostatistically.<sup>1</sup>
- 1 If the necessary data were available for every single dialect in both groups, an extensive survey in the vein of Dyen (1965) could be carried out. In the meantime, Haitian has been taken here to be representative of the Caribbean, and Mauritian of the Mascarene Creoles. Both Haiti and Mauritius have not been under the political control of France since 1804 and 1810 respectively. Consequently, their Creoles have been only minimally subjected to regallicizing influences. The semantic test-list employed was the 200-item one constructed by Swadesh (1952). The number of lists used was three, including one for contemporary French. These lists are given in the Appendix, as compiled by the author from native informants. The percentages of homosemantic cognates<sup>2</sup> were calculated for the following pairs of lists: Mauritian/Haitian, Mauritian/French, and Haitian/French. The results are presented in Table I.
- 2 We regard two languages A and B as genetically more similar to each other if A and B show significantly more homosemantic cognates than either does with any third language. The percentages of Table I reveal the Mauritian/Haitian pair of lists as having the lowest one. Mauritian and Haitian also have the lowest proportion of uniquely shared cognates (Table I). None of them is of non-French origin, and all

<sup>&</sup>lt;sup>1</sup> I would like to thank David Sankoff for his comments on some mathematical aspects of this paper.

<sup>&</sup>lt;sup>2</sup> Homosemantic cognation is equivalent to what has been called in (1969b: 3 and fn. 5) perfect cognation, i.e. cognation with coinciding deep and surface structures.

TABLE I
Cognate-Pair Percentages

	homosemantic cognates	uniquely shared cognates	phonologically convergent cognates
Mauritian/Haitian	80.5	2	25
Mauritian/French	86	7	31
Haitian/French	87	8.5	44.5

four of them may be reasonably well explained as non-specific derivations from French. The same is true for the percentage of phonologically convergent cognates (Table I). The proportion of minimally differentiated shapes is much lower for the Mauritian/Haitian pair of lists than for any of the other two. In all these three instances, the Creoles seem to be closer to French than to each other. There is therefore no lexicostatistical evidence to prove that Mauritian and Haitian are immediately related. Their genetic relationship must thus be thought of as indirect, with both Creoles representing separate developments from French.

- 3 The following theory may be understood as questioning the validity of genetic lexicostatistics in respect to Creole languages. Indeed, it has been claimed that the historical relationship of Creoles is not that which underlies the genetic relationship of non-Creole languages, but that it involves a totally different process, that of 'relexification'. The fifteenth-century Pidgin Portuguese of West Africa is suggested as the ultimate origin of all modern Creole languages, including the French ones. Subsequent relexification is said to have replaced the Portuguese Pidgin morphemes with Dutch, English, French, or Spanish ones, leaving the grammatical structure untouched. The idea behind 'relexification' goes back to Sylvain's (1936) notion of "parenté syntaxique", whereas the hypothesis of a Portuguese Pidgin-based origin for all Creoles is founded on observations made by Whinnom (1956), which in turn were taken up by Taylor (1960, 1961, 1963) and Thompson (1961) and popularized by Stewart (1962:46-47).4 The evidence of a direct relationship for the various French Creoles is thought to have been furnished by Goodman (1964), though the latter supposes their common origin to be an unattested Afro-French pre-Creole from West Africa for which Taylor in his Review (1965) would substitute the attested Afro-Portuguese lingua franca referred to in his other publications.
- 4 Unfortunately, the hypothesis under review is by no means fool-proof, at least as far as the common origin of all French-based Creoles from a Pidgin Portuguese is

<sup>&</sup>lt;sup>3</sup> Sylvain (1936: 178): "Nous sommes en présence d'un français coulé dans le moule de la syntaxe africaine ou, comme on classe généralement les langues d'après leur parenté syntaxique, d'une langue éwé à vocabulaire français".

<sup>&</sup>lt;sup>4</sup> Cf. also Whinnom (1965), Hall (1966: 120-25), and contributions in Hymes (1971).

concerned. This hypothesis may in turn be questioned from three angles: external history (4.1), internal history (4.2), and language typology (4.3).<sup>5</sup>

- 4.1 Historically, the Mascarene Creoles descend from a French-based contact vernacular which had developed in Fort-Dauphin (Madagascar) between the European settlers and their Malagasy wives, children, and slaves from 1642 to 1680. Loans from this pre-Creole into the Malagasy language, attested in the seventeenth century from Arabico-Malagasy and Romanized documents, possess the same characteristics as later samples of Mascarene Creoles (agglutination of the French definite article, pre-nasalization of consonants, vowel u for French o or  $\tilde{o}$ , anaptyctic use of the reduced vowels, etc.). Towards the end of the seventeenth century, this vernacular was transplanted into Réunion Island and later into Mauritius. The introduction of African slaves dates from only 1735 onward, but even after this, female slaves were mostly of Malagasy origin. The identifications of West-African elements in Mauritian by Goodman (1964) are either far-fetched or due to untidy documentation.<sup>6</sup> All significant 'substratum' questions in Mascarene (such as plural formation, use of unproductive derivational prefixes, absence of an equivalent for the French class of adverbs in  $-m\tilde{a}$ , phonological particularities, etc.) can be adequately explained as deriving from Malagasy. Thus wherever an African source seems likely for a feature of Mascarene, an equally convincing Malagasy or French source is also available, but not vice versa.
- 4.2 With regard to linguistic diachrony, the phylogenetic aspects of the relexification hypothesis has no ontogenetic basis. The idea of a relexification, which leaves the grammatical structures of the relexified language intact, is superficial and naive. The systematic borrowing of morphemes without accepting any of their morphosyntactic features is inconceivable, especially where grammatical morphemes from the closed lists are concerned. The wholesale replacement of lexical items during the life-span of a single individual would generate restructuring problems which the average adult would be unable to cope with (Halle 1962:64). Any restructuring beyond the addition of a limited number of extension or conversion rules would go against the principles underlying the law of least effort. Indeed, when the relative relexification of the mother tongue does not yield satisfactory results for the needs of communication, then the individual speaker simply changes his approach by attempting to learn the dominant language. Circumstantial bilingualism of this kind usually gives rise to the spontaneous development of a "fractured" version of the target language (cf. McNeill 1966). The necessity to go through a fractured version is due to deteriora-

<sup>5</sup> All arguments put forth here are abstracted from Wittmann (1971), unless otherwise stated.

<sup>&</sup>lt;sup>6</sup> For a review of Goodman's hypothesis on the position of the Mascarene Creoles among the French-based Creole languages, see Wittmann (1971). Goodman's knowledge of the history of the Indian Ocean Creoles does not apparently include the 1642-1735 period. His information about the situation in Mauritius towards the end of the eighteenth century is entirely based on Milbert (1812).

tion or loss in the adult of the "faculté linguistique" to construct optimal grammars on the basis of a restricted corpus of examples (Halle). In any case, the very nature of language contact implies a confrontation between the individual's mother tongue as the source language and a second language as the target. The proponents of the Pidgin Portuguese hypothesis would have us believe otherwise. The West-African immigrants to Mauritius are considered to have gone about acquiring a Pidgin French against all principles of observable linguistic ontogeny. A second language is supposed to have taken the place of the African mother tongue as the source language. This second language could have been learned at the most a few months prior to embarkation, unless we assume the operation of Berlitz-Schools on the slave-ships. This second language as the source is said to have been a true pidgin, thus a jargon without any stabilized grammar. Once comfortably settled under the palm-trees, the slaves insisted upon keeping intact the grammatical framework of their beloved Pidgin Portuguese, no matter how unstable, though stuffing it completely with seasoned French words. In other words, language contact is conceived here as the confrontation of two second languages, without any linguistic interference from the mother tongue. Propositions of this kind are difficult to take seriously.

4.3 In general, proponents of the Pidgin Portuguese hypothesis are fascinated with impressionistic appreciations of the converging degrees of morpho-syntactic complexity for all modern Creole languages. The Greenberg (1960) index-scoring method constitutes a tool to produce quantitative profiles of individual languages, profiles which may be ranked relative to each other. A comparison of profiles for Mauritian and Haitian (Table II) as well as a cursory count for Sranan indicate that the morphosyntactic indices of modern Creoles probably all converge into a unique type. However, this convergence can be shown to be attributable to factors independent of any Pidgin Portuguese hypothesis. Indeed, the ranking of various Indo-European languages produces interesting results. The linguistic bases of the various Creoles, Ibero-Romance, French, English, and probably Dutch, constitute a unique category. The evolutionary pattern of the Indo-European languages for the last two millennia show directional tendencies: a synthesis fall on one hand and an agglutination rise

<sup>7</sup> This confrontation leads to bilingual situations of two kinds: (1) The mother tongue undergoes the domination of the second language, but remains the working language of the community. The result will be the hybridization of the mother tongue in the form of relexification with items from the target language, but the original mother tongue will be ultimately preserved. (2) The mother tongue not only undergoes the domination of the second language, but does not also remain the working language of the community. In this case, a version of the target language, creolized or not, will ultimately become the new mother tongue. As can be seen, relexification does not properly intervene in the formation of a Creole.

We limit ourselves here to the first two indices, since they are found to be most useful by Greenberg himself. The first index is a measure of synthesis (ratio of morphemes to word), the second parameter is called the index of agglutination (ratio of agglutinative constructions to morph juncture). The counts tabulated are taken from Greenberg (1960: 193), Cowgill (1963: 124, 140), Wittmann (1969a: 267, 268). Unpublished ones were calculated by the author.

TABLE II

Greenberg Indices

Languages		I	II	
0.	Swahili	2.55	.67	
1.	Classical Sanskrit	2.59	.09	
1.	Greek (New Testament)	2.45	.12	
1.	Gothic	2.31	.19	
1.	Classical Latin	2.27	.18	
2a.	Old Church Slavonic	2.29	.20	
2a.	Old English	2.12	.11	
3.	Literary French	1.99	.24	
3a.	Modern German	1.92	.49	
3a.	Bengali	1.90	.46	
3a.	Modern Greek	1.82	.40	
2b.	Old French	1.84	.26	
2b.	Med. Latin (Peregrinatio)	1.82		
3b.	Popular French	1.69	.26	
3b.	Modern English	1.68	.30	
3b.	Spanish	1.52		
4b.	Haitian Creole	1.39	.24	
4b.	Mauritian Creole	1.26	.25	
0.	Annamese	1.06		

Index II was found incalculable for Annamese by Greenberg (1960: 186, 193) and omitted for Spanish and the Peregrinatio by Contreras (ap. Cowgill, 1963: 140). For the aberrant position of Literary French, see fn. 9.

on the other. Following the diachronic ranking 1- 2a- 3a, we observe a continuous but slow synthesis fall and a sharp rise in agglutination; following 1- 2b- 3b- 4b, we observe an accelerated rate of asynthesis and a fairly stationary evolution for agglutination. For example, Old French (2b) prematurely attains, by one millennium, a level of synthesis comparable to a modern Indo-European language of the type 3a. The acceleration of the asynthesis characterizing the development of Gallo-Romance and Ibero-Romance from Latin reflects the creolizing effect inherent in language transplants. The same trend may be found in English. Geographical contact has caused this language to coalesce with Gallo-Romance, i.e. to become typologically Romance while remaining genetically Germanic. The same may be true of Dutch. We

The position of Literary French is necessarily aberrant, since its restructuring potential has been literally smothered. The same would be true for Neo-Melanesian, Modern Hebrew, or any other artificial language.

<sup>10</sup> Hall (1966: 3) does not believe that any creolized Neo-Latin language arose from Pidgins spoken in the Roman Empire. However, it seems clear that the Gauls did not speak Latin before the arrival of the Romans. Gallo-Romance should therefore be either a relexified Gaulish or a creolized Latin, unless we wish to assume that the legionaries arrived in sufficient numbers in order to give audiovisual Latin courses individually to every single inhabitant of Gaul.

have here the coalescence of distantly related languages into one Atlantic Sprachbund, <sup>11</sup> whose speakers not only shared their transatlantic aims, but also happened to monopolize the slave-trade. All modern Creoles are derived from languages of the Atlantic Sprachbund, with their typological convergence accentuated to form in turn a Sprachbund. The divergence of this Creole Sprachbund with Swahili and typologically similar languages (such as most African languages and Malagasy) is increasing, whereas its deviation from Atlantic continues to exploit the evolutionary tendencies already latent in Latin.

5 Both lexicostatistic and non-lexicostatistic evidence coincide remarkably in showing that the Indian Ocean Creoles are more closely related to French than to the American Creoles. Ultimately, subgrouping techniques in the context of lexicostatistics are revealed to be as applicable to Creole languages as to non-Creole languages. Consequently, the Creoles will have to offer an essential contribution to the exploration of another problem area in lexicostatistics, the development of more adequate stochastic process models of change in word-meaning relationships over time. Even if the replacement rates (as well as other parameters) were found to be significantly different where creolization-decreolization intervenes, this would only limit the range of validity of particular models and provide all the more reason for developing a model able to handle this aspect of linguistic evolution (Sankoff 1970:18).

APPENDIX

Lexicostatistical Comparison of Mauritian, Haitian, and French

	<u>-</u>	Mauritian	M/H	Haitian	H/F	French	F/M
1.	all	tu	+	tu	-	tout	+
2.	and	ek	_	é, épi	+	et	
3.	animal	zanimo		bèt	_	animal	+
4.	ashes	lasan	+	sân	+	cendres	+
5.	at	Ø		a	+	à	
6.	back	ledo	+	dó	+	dos	+
7.	bad	move	+	móvé	+	mauvais	+
8.	bark	lekors	+	<b>é</b> kòs	+	écorce	+
9.	because	akoz		paské	+	parce que	_
10.	belly	vât	+	vât	+	ventre	+
11.	big	gro, grâ, bel	+	gró, grâ	+-	gros, grand	+
12.	bird	zozo	+	zwézó	+	oiseau	+
13.	to bite	mord-e	+	mòdé	÷	mordre	+

The term is Trubetzkoy's, presented for the first time by R. Jakobson at the Premier Congrès International des Linguistes in the Hague (1928). He wanted to distinguish between language clusters (Sprachbünde) on one hand and language families (Sprachfamilien) on the other. "Atlantique", because we deal here, according to Prague terminology, with a regional Sprachbund. The notion of an 'Atlantic Sprachbund' probably coincides minimally with Whorf's SAE. Cf. also Weinreich (1958).

		Mauritian	M/H	Haitian	H/F	French	F/M
14.	black	noar	+	nwa	+	noir	+
15.	blood	disâ	+	sâ	+	sang	+
16.	to blow	sufle	+	suflé	+	souffler	+
17.	bone	lezo	+	zó	+	os	+
18.	to breathe	respir-e	_	suflé		respirer	+
19.	to burn	bril-e	+	bulé, brilé	+	brûler	+
20.	child	zâfâ		pitit, ti-mun		enfant	<u>.</u>
21.	cloud	nyaz	+	nwaž	+	nuage	+
22.	cold	fre	_	fwèt	+	froid	<u>.</u>
23.	to come	vin-i	+	vin(i)	+	venir	+
24.	to count	kôt-e	+	kôté	÷	compter	+
25.	to cut	kup-e	+	kupé	+	couper	+
26.	day	li-zur	+	žu, lažûnê	+	jour	+
27.	to die	mor	+	muri	÷	mourir	+
28.	to dig	fuy-e	+	fuyé	+	fouiller, creuser	+
29.	dirty	sal, malañ	÷	sal, króté	+	sale	+
30.	dog	lisyê	+	šê	÷	chien	+
31.	to drink	boar	÷	bwè	<u>.</u>	boire	+
32.	dry	sek	+	šèš	· +	sec	+
33.	dull (knife)	pa kup byê	<u>.</u>	pa filé		émoussé	<b>T</b>
34.	dust	lapusyer	+	pusiè	+	poussière	+
35.	ear	zorey	÷	zórèy	+	oreille	+
36.	earth	later	+	(la)tè	+	terre	+
37.	to eat	mâz-e	<u>;</u>	mâžé	+	manger	+
38.	egg	dizef	+	zé	+	œuf	+
39.	eye	lizye	÷	žé	+	œil	+
40.	to fall	tôb-e	÷	tôbé	÷	tomber	+
41.	far	luê	+	lwê	+	loin	+
42.	fat-grease	lagres	÷	grès	+	graisse	+
43.	father	papa	÷	papa	+	papa, père	+
44.	to fear	per	+	pè	+	avoir peur (de)	+
45.	feather	plim	+	plim	+	plume	+
46.	few	pa buku, tigin	<u>.</u>	pa âpil, kèk	•	peu de	_
47.	to fight	lager		gumê	_	lutter, se battre	_
48.	fire	dife	+	difé	+	feu	_
40. 49.	fish	posô	+	pwésô	+	poisson	+
50.	five	sêk	+	sêk	+	cinq	+
51.	to float	flot-e	+	flóté	-	flotter	+
51. 52.	to flow	kul-e	+	kulé	+	couler	+
52. 53.		fler	+	flè	+	fleur	+
	flower	âvol-e	<del>-</del>	vólé	+	voler	+
54.	to fly		+	bruya	+	brouillard	_
<b>5</b> 5.	fog foot	bruyar	+	pié	+		+
<b>56.</b>		lipye			+	pied	+
57.	four	kat	+	kat(r)	+	quatre	+
58.	to freeze	gê fre, kôzele		žélé fwi	+	geler	
59.	fruit	fri	+		+	fruit	+
60.	to give	don-e		ba(y) bô		donner	+
61.	good	bô larb	+		+	bon	+
62.	grass	lerb	+	zèb	+	herbe	+
63.	green	ver	+	vèt	+	vert	+
64.	guts	trip	+	trip	+	tripes, intestins	+
65.	hair	seve	+	šivé, pwèl	+	cheveu(x), poil(s)	+

		Mauritian	M/H	Haitian	H/F	French	F/M
66.	hand	lamê	+	mê	+	main	+
67.	he	li	+	li	+	lui	+
68.	head	latet	+	tèt	+	tête	+
69.	to hear	tâd-e	+	tâdé	+	entendre	+
70.	heart	leker	+	kè, čè	+	cœur	+
71.	heavy	lurd	+	lu	+	lourd	+
72.	here	isi	+	isit	+	ici	+
73.	to hit	bat-e		frapé, tapé	+	frapper	_
74.	to hold	tini		kêbé		tenir	+
75.	how	kumâ, ki manyer	+	kômâ	+	comment	÷
76.	to hunt	lasas, pus-e	_	šasé	+	chasser	<u>.</u>
77.	husband	mari, bonom	+	mari	+	mari	+
78.	I	mo-a	+	mwê	+	moi	<u>.</u>
79.	ice	laglas	+	glas	+	glace	+
80.	if	si	+	si	+	si	÷
81.	in	dâ	<u>.</u>	nâ, lâ	·	dans	+
82.	to kill	tuy-e	+	tuyé	+	tuer	+
83.	to know	kon-e	+	kôn(ê)	+	connaître	+
84.	lake	reservoar	<u>.</u>	(l)étâ	<u>.</u>	lac	•
85.	to laugh	rir	+	ri	+	rire	+
86.	leaf	fey	+	fèy	+	feuille	+
87.	left (side)	gos	+	gòš	+	gauche	
88.	leg	lazam	+	žâm	+	jambe	+
89.	to lie	alôz-e	<del>-</del>		+	être couché	+
	to live	viv	+	kušé, layé	+		-
90.		lefoa		viv		vivre foio	+
91.	liver	lon	+	fwa	+	foie	+
92.	long		+	lô(g)	+	long	+
93.	louse	lipu	+	pu	+	pou	+
94.	man-male	zom	+	nòm, nèg	+	homme	÷
95.	many	buku	-	âpil		beaucoup	+
96.	meat-flesh	lavian	+	viân	+	viande	+
97.	mother	mama	+	<b>m</b> âmâ	+	maman, mère	+
98.	mountain	môtây	_	mòn	_	montagne	+
99.	mouth	labus	+	buš, jòl	+	bouche	+
100.	name	nô	+	nô	+	nom	+
101.	narrow	sere, ti	_	étwat	+	étroit	_
102.	near	pre, pa luê	+	pré	+	près	+
<b>10</b> 3.	neck	liku	+	ku	+	cou	+
104.	new	nef	+	nèf, nuvó	+	neuf	+
105.	night	lanuit	+	(la)nwit	+	<b>n</b> uit	+
106.	nose	nene	+	né	+	nez	+
107.	not	(na)pa	+	pa ·	+	(ne) pas	+
108.	old	vye	+	vié	+ .	vieux	+
1 <b>0</b> 9.	one	en	+	yun	+	un	+
110.	other	lot/lezot	+	lòt/zòt	+	autre	+
111.	person	dimun	+	mun		personne	
112.	to play	zue	+	žwé	+	jouer	+
113.	to pull	ris-e	_	tiré, ralé	+	tirer	
114.	to push	pus-e	+	pusé	+	pousser	 + +
115.	rain	lapli	+	(la)pli	+	pluie	+
	red	ruz	+	ruž	+	rouge	+
116.	Icu	A				10ugu	

		Mauritian	M/H	Haitian	H/F	French	F/M
118.	right (side)	droat	+	dwat	+	droit	+
119.	river	larivyer	+	lariviè	+	rivière	+
120.	road	simê	+	šémê, rut	+	chemin	+
121.	root	rasin	+	rasin	+	racine	+
122.	rope	lakord	+	kòd	+	corde	+
123.	rotten	puri, gate	+	puri	+	pourri	+
124.	to rub	frot-e	+	fróté	+	frotter	+
125.	salt	disel	+	sèl	+	sel	+
126.	sand	<b>d</b> isab	+	sab	+	sable	+
127.	to say	dir	+	di	+	dire	+
128.	to scratch	grat-e	+	graté	+	gratter	+
129.	sea	lamer	+	lâmè	+	mer	+
130.	to see	truv-e	_	wè	+	voir	_
131.	seed	lagren	+	grên	+	graine	+
132.	to sew	kud	+	kud	+	coudre	+
133.	sharp	fite	_	filé	_	tranchant	_
134.	short	kurt	+	kut	+	court	+
135.	to sing	sât-e	+	šâté	+	chanter	+
136.	to sit	asiz-e		šita.	_	être assis	+
137.	skin	lapo	+	pó	+	peau	+
138.	sky	lesyel	+	lésièl	+	ciel	+
139.	to sleep	dormi	+	<b>d</b> òmi	+	dormir	+
140.	small	ti	+	piti	+	petit	+
141.	to smell	sâti	+	sâti	+	sentir	+
142.	smoke	lafime	+	lafimê	+	fumée	+
143.	smooth	lis	+	lis, dus	+	lisse	+
144.	snake	serpâ		kulèv, sèpâ	_	serpent	+
145.	snow	lanez	+	lanèž	+	neige	+
146.	some	de-troa	_	kèk	+	quelques	_
147.	to spit	kras-e	+	krašé	+	cracher	+
148.	to split	fan	+	fân	+	fendre	+
149.	to squeeze	ser-e	+	séré	+	serrer	+
150.	to stab	pôyard-e	_	fut yun ku-d-kutó	_	poignarder	+
151.	to stand	dibut-e		kâpé	_	être debout	+
152.	star	zetual	+	zétwal	+	étoile	+
153.	stick	batô	+	batô, makak	+	bâton	+
154.	stone	ros		piè, róš	+	pierre	
155.	straight	droat	+	dwat	+	droit	+
156.	to suck	sus-e	+	susé	+	sucer	+
157.	sun	soley	+	sólèy	+	soleil	+
158.	to swell	âfle	+	âflé	+	s'enfler	+
159.	to swim	naz-e	+	nažé	+	nager	+
160.	tail	lake	+	ké, tyé	+	queue	+
161.	that	sa.	+	sila.	+	ça/cela	+
162.	there	laba	+	la-ba, la	+	là-bas	+
163.	they	zot		yó 'n f	+	eux	
164.	thick	epe	+	épé	+	épais	+
165.	thin	mês, meg	+	mês, mèg	+	mince, maigre	+
166.	to think	mazin-e	_ _	pâsé	+	penser	_
167.	this	sa to a	+	sa	_	ceci	_
168.	thou	to-a		u twa(z)		toi	+
169.	three	troa	+	(Wa(L)	+	trois	+

		Mauritian	M/H	Haitian	H/F	French	F/M
170.	to throw	zet-e	+	žété	+	jeter	+
171.	to tie	atas-e, amar-e	_	marê		attacher	+
172.	tongue	lalañ	+	lâg	+	langue	+
173.	tooth	ledâ	+	dâ	+	dent	+
174.	tree	pye	+	pié (bwa)		arbre	
175.	to turn	turn-e, vir-e	+	tûnê, viré	+	tourner, virer	+
176.	two	de	+	dé(z)	+	deux	+
177.	to vomit	vomi	+	vómi	+	vomir	+
178.	to walk	mars-e	+	mašé ·	+	marcher	+
179.	warm	SO	+	šó	+	chaud	+
180.	to wash	lav-e	+	lavé	+	laver	÷
181.	water	dilo	+	dl(y)ó	+	eau	+
182.	we	nu	+	nu	+	nous	+
183.	wet	muye	+	muyé	+	mouillé	+
184.	what	ki	+	ki, ki sa	_	que, quoi	<u>.</u>
185.	when	kâ, ki ler	+	kâ	+	quand	+
186.	where	(a)kot, ki kote	_	ki kóté		οù	
187.	white	blâ	+	blâš	+	blanc	+
188.	who	ki sa'n la		ki, ki mun	+	qui	<u>.</u>
189.	wide	larz	+	laž	+	large	+
190.	wife	fam, bonfam		madâm		femme, épouse	+
191.	wind	divâ	+	vâ	+	vent	+
192.	wing	lezel	+	zèl	+	aile	+
193.	to wipe	suy-e	+	siyé, suyé	+	essuyer	+
194.	with	ar/av, ek	+	ak, avè(k)	+	avec	+
195.	woman	fam	+	fâm, nègès	+	femme	+
196.	woods	boa	+	bwa	+	bois, forêt	+
197.	worm	lever	+	vè	+	ver	++
198.	ye	zot	<u>.</u>	nu, u, zòt		vous	
199.	year	-â, -ane, banane	+	â, ané	+	an, année	+
200.	yellow	zon	+	žôn	+	jaune	+

## **BIBLIOGRAPHY**

Cowgill, W.

1963 A Search for Universals in Indo-European Diachronic Morphology, in *Universals of Language*, ed. J. H. Greenberg, 114-41 (Cambridge, Mass.).

Dyen, I.

1965 "A Lexicostatistical Classification of the Austronesian Languages", IJAL Supplement to 31.1.

Goodman, M. F.

1964 A Comparative Study of Creole French Dialects (The Hague).

Greenberg, J. H.

1960 "A Quantitative Approach to the Morphological Typology of Language", *IJAL* 26: 178-94 (First published in 1954).

Hall, R. A.

1966 Pidgin and Creole Languages (Ithaca).

Halle, M.

1962 "Phonology in Generative Grammar", Word 18: 54-72.

Hymes, D., ed.

1971 Pidginization and Creolization of Languages: Proceedings of a Conference Held at the University of the West Indies 1968 (Cambridge, Eng.).

McNeill, D.

1966 "Developmental Psycholinguistics", in *The Genesis of Language*, ed. F. Smith and G. A. Miller, 15-84 (Cambridge, Mass.).

Milbert, M. J.

1812 Voyage pittoresque à l'Île de France, au Cap de Bonne Espérance et à l'Île Ténériffe, 2 vols. (Paris).

Sankoff, D.

1970 Mathematical Developments in Lexicostatistic Theory (unpublished manuscript).

Stewart, W. A.

"Creole Languages in the Caribbean", in Study of the Role of Second Languages in Asia, Africa, and Latin America, ed. F. A. Rice, 34-53 (Washington, D. C.).

Swadesh, M.

1952 "Lexico-statistic Dating of Prehistoric Ethnic Contacts", Proceedings of the American Philosophical Society 96: 452-63.

Sylvain, S.

1936 Le créole haîtien, morphologie et syntaxe (Port-au-Prince).

Taylor, D.

1960 "Language Shift or Changing Relationship?", IJAL 26: 155-61.

1961 "New Languages for Old in the West-Indies", Comparative Studies in Sociology and History 3: 277-88.

1963 "The Origin of West Indian Creole Languages: Evidence from Grammatical Categories", American Anthropologist 65: 800-13.

1965 Review of Goodman (1964), International Journal of American Linguistics 31: 363-70. Thompson, R. W.

1961 "A Note on Some Possible Affinities Between the Creole Dialects of the Old World and those of the New", Creole Language Studies 2: 107-13.

Weinreich, U.

1958 "On the Compatibility of Genetic Relationship and Convergent Development", Word 14: 374-79.

Whinnom, K.

1956 Spanish Contact Vernaculars in the Philippine Islands (Hong Kong).

1965 "The Origin of the European-based Creoles and Pidgins", Orbis 14: 509-27.

Wittmann, H.

1969a "The Indo-European Drift and the Position of Hittite", IJAL 35: 266-68.

1969b "A Lexico-statistical Inquiry into the Diachrony of Hittite", *Indogermanische Forschungen* 74: 1-10.

1971 Les parlers créoles des Mascareignes (to appear).