LAGS WORKING PAPERS, THIRD SERIES (1985)

INTRODUCTION

A Matrix for Word Geography

Lee Pederson

INTRODUCTION: A MATRIX FOR WORD GEOGRAPHY

Lee Pederson

These seven papers contribute to a matrix for word study, a formal approach to conventional linguistic geography. They frame the central editorial problems and summarize a descriptive method that extends from writing to mapping. From those perspectives, the papers restate familiar goals in the context of present-day technology. Without violation to the aims of Aasen, Wenker, Gilliéron, Jaberg, Jud, and Kurath, the LAGS Project introduced the tape recorder, camera, and computer as essential tools of its research and used them in classical linguistic geography.

These papers extend the implications of those mechanical resources to a public data base--the field records that the protocols index in the Basic Materials (1981). Published with the LAGS concordance, these papers offer a bridge between the basic and descriptive materials of the atlas. As the concordance records an exhaustive conversion of protocol data, from narrow phonetics to conventional orthographics, these essays explain the form and function of writing systems and the composition of computer mapping through a graphic plotter grid. These editorial issues put the descriptive work in focus and suggest the appropriate domain of traditional linguistic geography.

Although never explicitly stated by the pioneers of this discipline, their work invariably functioned with effectiveness at the level of the phonological word. Gilliéron's method requires direct interviewing, without which the investigation could not reach illiterate folk speakers. But the field worker, asking the questions and recording responses on the spot, could elicit and transcribe little information beyond the practical limits of the

phonological word. Experienced American atlas field workers, for example, recognize the difficulties while investigating the usage of these dependent clauses:

he's the man) who/that/what/Ø (owns the orchard;

he's the boy) whose/that's/what's/Ø (father is rich.

Such items suggest the problem of gathering systematically contrastive syntactic information with that method. And, for those reasons, traditional atlas study has always focused on the words. In all of the American projects, phonology, morphology, and lexical interpretations begin and end with the phonological word. No one has yet produced a convincing regional or social isogloss based on syntactic data gathered through conventional atlas research.

During the past several decades, however, other American linguists have demonstrated ways to investigate syntax from tape-recorded texts. As suggested elsewhere, the newfound resource brings with it large editorial responsibilities and introduces philological problems that sociolinguists tend to overlook. Because the LAGS program is a transitional atlas, one that seeks traditional goals with the tools of modern technology, its method accepts the limitations of classical atlas research and takes the phonological word as its maximum unit of systematic analysis.

That restriction makes possible a descriptive chain that extends from the systematic (deductive) phonetics of distinctive features analysis through several phonic levels to conventional orthographics. Although other writing systems are occasionally used in LAGS description, the primary codes are these: systematic phonetics (S), impressionistic phonetics (I), unitary phonemics (U), automatics (A), and orthographics (O). In this research, these are understood as links in a bilateral, interdependent, descriptive chain:

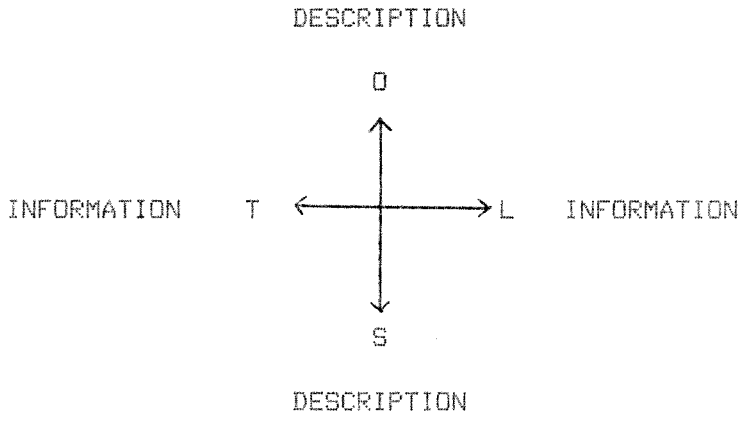
O × A × U × I × S

Working Papers #1-2 explain the interrelationships and implications of these five codes.

As a tool of analysis, that descriptive chain overlays an informational chain to form a matrix for word study. The data base extends from the tape/text (T), through the protocols (P), into the concordance (C), and finally to the maps (M) and legendry (L):

T > P > C > M > L

This figure suggests the relationships of study implicit in these chains:



Working Papers #3-4 explain the composition and uses of the graphic plotter grid. This tool provides a technique for mapping every item recorded in files in any combination that might prove useful in the investigation of regional and social patterns. As an extension of the box grid of the Dialect Survey of Rural Georgia, the programs for the graphic plotter grid offer onscreen or printed maps, and these help to chart the course of the editorial work. Upon completion of LAGS research, the core materials will be reproduced on a set of diskettes. A single packet of 10 double-sided, double-density, 40 track, soft-sectored diskettes will accommodate all necessary personal data files, 225 linguistic files, and an operations disk. As an electronic atlas in microform, the tool has the capacity to produce hundreds of thousands of different maps in a simple and inexpensive program.

Working Papers #5-6 explain microcomputer programs for phonology and vocabulary in terms of legendry composition. The phonological evidence proceeds from the survey in deductive phonetics, where distinctive features are identified and where phonological units are classified according to those features. The description terminates in the contrastive orthography of the Automatic Book Code (ABC), where unitary phonemics are realized intuitively (automatically) in a code suitable for legendry (book) composition and where the conventional orthographics of that book are linked with phonic writing. The lexical evidence extends the generalizations of Working Paper #1 to the composition of legendry entries. As suggested in the discussion of ABC, the principal resource of the alphabet is its application to word geography. The code gives a phonological dimension to word geography and helps to distinguish social and regional distribution of a common lexical form, as, for example, in *French harp*, the incidence of <i> and <e> in the first element and of <a(r)>, <ar>, and <or> in the second.

Working Paper #7 summarizes the applications of the microcomputer in the LAGS editorial work. The composition of files, maps, and indexes suggests the range of the work. These include phonological, grammatical, and lexical features drawn from the protocols, the concordance, and the survey in deductive phonetics. Taken together, the examples illustrate the self-imposed limits of a research program that aims at complete, consistent, and simple description on its own terms.

LAGS WORKING PAPERS, THIRD SERIES (1985)

WORKING PAPER NUMBER TWO

A Survey in Deductive Phonetics

Lee Pederson

A SURVEY IN DEDUCTIVE PHONETICS

Lee Pederson

As the first step toward synthesis or the final step in analysis, phonetics lays foundations for accurate language description. Dialect study ordinarily proceeds inductively from the segmental units of the text toward abstract classes of meaning, form, and sound because its data base is a corpus of narrow phonetic notation. But, encoded as phonetic features, that notation can also lead deductively from segments to the elements of speech. This adjustment gives linguistic geography a resource necessary in the solution of problems, the complementary functions of analysis and synthesis.[1]

To make those functions operational, description needs a context, a specific explanation of how those approaches to problem solving interact. This requires a bidirectional system that recognizes the steps of study as links in a descriptive chain. As a process of study, the chain suggests recursive operations of analysis, synthesis, further analysis, and resynthesis, continued until the descriptive problem has been solved. And dialect study needs a tool of this kind to carry out complicated tasks of diagnosis, analysis, and inventory.

With freedom to advance in either direction, analysis can move from phone to feature, from phoneme to phone, or from feature to phone within those three links of a descriptive chain. Extended to word level, the process could distinguish synonyms on the basis of form, as, for example, a deleted syllable, or on the basis of pronunciation. Thus these three pronunciations of *wheelbarrow* [hwilbæro ~ wilbæro ~ hwilbar] offer three variants for word study, and these are as justifiable as the traditional attention to *spigot* and

spicket. A descriptive chain accommodates the full range of analytic and synthetic issues in a single process.

As printed, systematic phonetics is a tool for the inventory of segmental units.[2] But, as realized in a survey of stressed vowels, it provides a terminal link in the descriptive chain. The code classifies phonetic features of consonants and vowels recorded in LAGS protocols, rewriting narrow phonetic notation in simple alphabetic strings, usually in triads, such as ABC. In this way, systematic phonetics adds a fifth analogue to the LAGS tape/text and demonstrates a computer-assisted application of deductive phonetics.[3]

This report summarizes four details in the first extended test of the code: 1) a survey of 15 stressed vowels in five phonetic environments that include systematically contrastive pronunciations from the complete sample of LAGS informants, 1,121 native speakers from the eight-state region; 2) the results of a computer-assisted inventory, illustrated here with the dominant Gulf States pronunciations of vowels summarized in 74 positions; 3) the implications of the survey and the code in the context of a descriptive chain of writing systems; and 4) the expectations of deductive phonetics, lessons to be learned and tasks to be completed before retirement to the status of a final situation.

1. THE SURVEY. During the spring and summer of 1984, shortly after the essay "Systematic Phonetics" was accepted for publication, Nancy-Laurel Pettersen and I converted the stressed vowels of 1,121 LAGS idiolect synopses, following the prescribed code. Figure 1 illustrates a synopsis and shows five positions for 15 stressed vowels, classified according to the unitary phonemic analysis of American atlas projects.[4] The data recorded in those first 15 lines of each synopsis yielded approximately 80,000 stressed vowels.

FIGURE 1

LINGUISTIC ATLAS OF THE GULF STATES
IDIOLECT SYNOPSIS

548

FLY 69 1A
MB/78:LP/79

UM DREW
DM 348.01

/ɪ/	hwʊːᵊp	kr̥ɪ·ᵊb	t'ɪ̃·n	hɪ·ᵊɸz	* ɪ·ɤ
/ɛ/	nɛ·ᵊk	lɛ·ᵊgz	* t'ɛ̃ːn	nɛ́·ᵊɭɛ̆	mɜ́·rɛ̆
/æ/	glæ·ᵉs	bæ·ᵉg	hæ̃·ᵉmɤ̆	p'ǽ·ᵉɭɛ̆t	* mǽ·rɛ̆d
/ʊ/	p'ʊ·ʃ	wʊ́ːᵊd rɤ̀·ᵉk	* wʊ́·ᵊmn̩̆	* p'ʊːɭ	* ʃʊᵊ
/ʌ/	ʃʌ·ᵊt	* hʌ́·ᵊzbn̩̆	sʌ́·nʌ̀·ᵊp	bɣːᵊɸb	
/ɑ/	kraˑᵊp	grɤ́·ᵉn faˑᵊɤ̆	dʒɑ́·nɛ̆	k'ɑ́·ɭɛ̆dʒ	* k'ɑ·ɤ
/i/	ʔi·st	* θr̥iːi·	* biːi·nz	fi·ᵊɸ	bʲɪ·ɤd
/e/	ʔeɛt	meːɛ	ʂtreˑɛn	reˑɛɸ	mɛ́·rɛ̆·
/u/	t'ʉ̯ʉθ	bɤ́·ᵉtᵊn̩̆/rʉ̯ʉ̃ʒ̥	wʉ̯ʉ̃nᵈ	mʃʊʉɸz	* p'o·ɤ
/o/	k'o·ʊt	ə̆gó·ʊ	ho·ʊm	k'o·ʊɸ	hɔ·ᵊs
/ɔ/	dɔ̯ːɔ·t̬ɤ̆	* dɔ·ɔ̯ːg	* gɔ̃·ɔn	* sɔ·ɔ·ɸt	* hɔ·ᵊs
/ɔ/	ᵊ tʃɤ·tʃ	θɤːd	ɤ·θwɤ̀mz	gɤ·ᵊɸz	wɜ́·ᵊrɛ̆
/aɪ/	raˑᵉt	raˑᵉd	naˑᵉn	maˑᵉɸz	wɑ·ɤ
/aʊ/	* naˑᵊs	* k'aˑᵊz	* daˑᵊn	* aːʊɸ	* flɑ́·wɤ̆z
/ɔɪ/	ɔ·ɛ́stə̆z	* p'ɔ·ə́zn̩̆	dʒɔ·ə·nts	* ɔ·ᵊɸ	—
PL	p'o·ʊ́stɛ̆s	p'æːʊndz	srɪ̃·ᵊmp	wɒ·ᵊst	dɛ́·ᵊskᵉz
FW	mɪ̃·nɛ̆ts tɛ̆ɸ	* tə̆wɔ́·ɤdz	ɪ́·ntʉ̀	ɛ̆t ɪ̀·ᵊz stɪ̃·ᵊmɛ̆k	—

raˑᵉz / rɪˑᵊz / rɪ́·ᵊzə̃	draˑᵉv / — / droˑʊv
drɤˑᵉg / — / —	iˑt / iˑt ~ ɛːᵊt / —
drɛˑɣk / drɤ̃·ᵉɣk / —	hɛˑᵊp ~ ᵊhɛːp ~ hɛˑᵊp / — / —
daˑᵉv / daˑᵉv / doˑʊv	klaˑᵉm / kɭaˑᵉmd / kɭaˑᵉmd

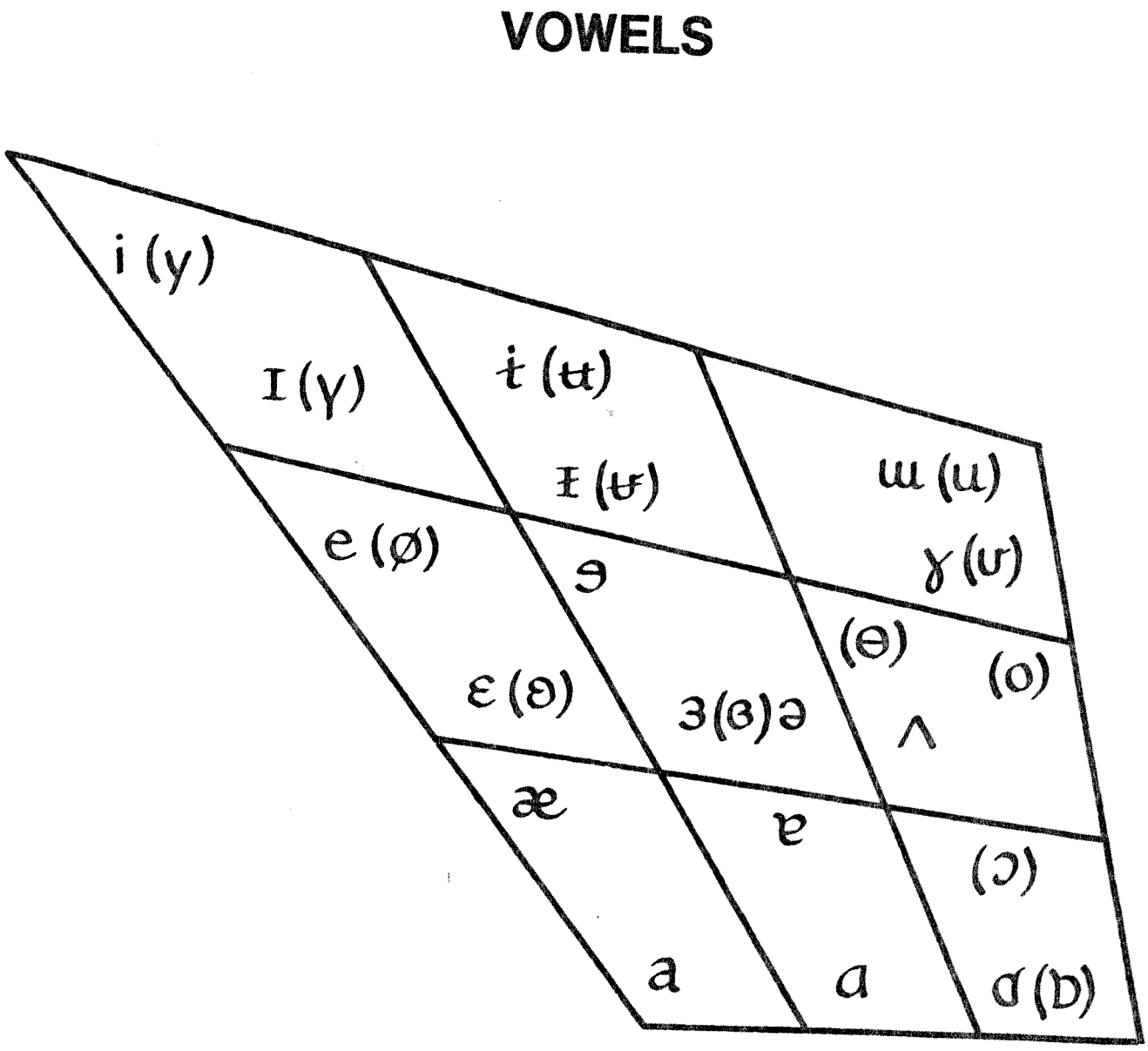
faɛ́·ɤ dɔ̯·ɔ·gz	mɤ̃ɛ̃ᵉn ɭ̆	k'ɑ̂ːʉ̯ p'ɪ̃·ᵊn	—
* p'ɛ́·ɛpɤ̆ sɤ̀·ᵉk	* kroˑʊkɤ̆ sɤ̀·ᵉk	hɤ̀mɑ̃·ᵊnɛ̆ koˑʊ	siːi· sɔ̯·ᵊ
* bɑ́·t'ɸ wɪ̀·ᵊk	* flɤ́·ᵉt boˑʊts	p'ʊ́·ɭɛ̆ boˑʊn	* bɤ́·ᵉt̬ə̆ keˑɛks
saːʊz	kɑ́·ɭɛ̆dʒ / tʃi·z	mʌːᵊʃ	—
klɛ́·ɤ siːi·d	* gʉ̯ʉbɤ̆z	t'ɑ́·mɛ̆ toˑʊz	gri·n biˑnz
* p'ɛ́·ɤ̆wʊ̀·ᵊd	* rɛ́·ᵊdwɤ̀mz	* k'ʊʉ́t̬ə̆	krɔ·ɔ́·fɪ̀ʃ
* skiˑtə̆ hɒ·ᵊk	rɛ́·ᵊd bʌ·ᵊgz	sɤ́·ɛ̆neˑɛd	ə̆lɛ·ᵊt̬ɸ̆ bɪ̀·t ɛ́·kstri

Entered on disks with IBM Personal Computers, the collection was sorted, inventoried, and printed by programs written by William H. McDaniel and Susan Leas McDaniel. All of the machine operations, including proofreading and correcting the full corpus, were done by Susan Leas McDaniel. The inventory includes 74 files, one for each phonetic position, and each file is indexed with a summary. Although the materials are suitable for publication in their present forms--on disks or in print--their disposition will be determined by the LAGS publication schedule.

Because the survey covered only stressed vowels, the following summary identifies only the syllabic code, but the consonant code reports the same kinds of information--all distinctive phonetic features systematically observed by LAGS scribes. Both codes abstract and illustrate the focus of phonetic notation as developed by eight LAGS scribes over a 13 year period.[5]

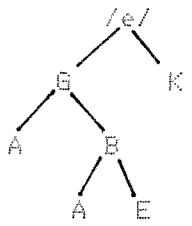
Concentrating on essential elements of notation--a record that identifies all systematic contrasts in the protocols--the syllabic code includes primary, secondary, and tertiary components, ordered to reflect a hierarchy of phonological signals and designed to resolve itself into ultimate units through mechanical deduction. Among stressed vowels, for example, primary (positional) features include 20 components, each of which represents a discrete position on the LAGS vowel quadrant, Figure 2. Each of those primary features is a complex, implying vocalization and indicating lingual and mandible actions. Secondary (conditional) features include six more considerations: unmarked, tense, long, nasal, retroflex, and round, with the last five of these listed in all possible combinations within the code. All secondary features are phonologically, geographically, or socially contrastive within the LAGS collection. Finally, tertiary (modificational) features include the narrowest markings of LAGS phonetic notation, indicating vowels in

FIGURE 2: LAGS VOWEL QUADRANT



raised, lowered, retracted, or advanced positions from the norms established on the quadrant, vowels weakly realized in articulation (transcribed above the base line in protocol and synopsis notation), and vowels distinguished by glottalization. Like secondary features, these are also coded in all possible combinations.[6]

Figure 3 outlines the code for stressed vowels. With those letters, augmented by numbers in the secondary and tertiary sets, syllabics are coded in three-character strings. For example, the monophthong [e˃] is rewritten GBE to indicate a higher mid-front position (G), tense condition (B), and retracted (lingual) modification (E). Sorted and indexed alphabetically in the computer program, the string yields an analysis that deduces specific details, from class modificational features:



Class

I

II

III

In that succession, [e] (G) is distinguished from the other common variant [ɛ] (K) in the class /e/ at the level of primary feature. At the secondary level, its tenseness (B) contrasts with unmarked forms (A), and at the tertiary level, its retracted articulation (E) contrasts with unmarked forms (A) at that level.

Diphthongs and triphthongs are rewritten with successions of sets in the same order as that of the monophthong form: the nuclear, core, or most prominent element of a syllabic complex appears in uppercase letters; the non-nuclear, peripheral, or glide element appears in lowercase letters, whether an onglide or an offglide. Thus, the string efa-BJA rewrites one syllable [ʊʁ] (a diphthong marked by a peripheral onset or ongliding feature) and another as

FIGURE 3: SYSTEMATIC PHONETICS, VOWEL CODE

I. PRIMARY FEATURES (POSITIONAL):

A. i		B. ɨ		C. ɯ
D. ɪ		E. ɘ		F. ʏ
G. e	H. ɵ		I. o̞	J. o
K. ɛ	L. ɜ	M. ə	N. ʌ	
O. æ		P. ɐ		Q. ɔ
R. a		S. ɑ		T. ɒ

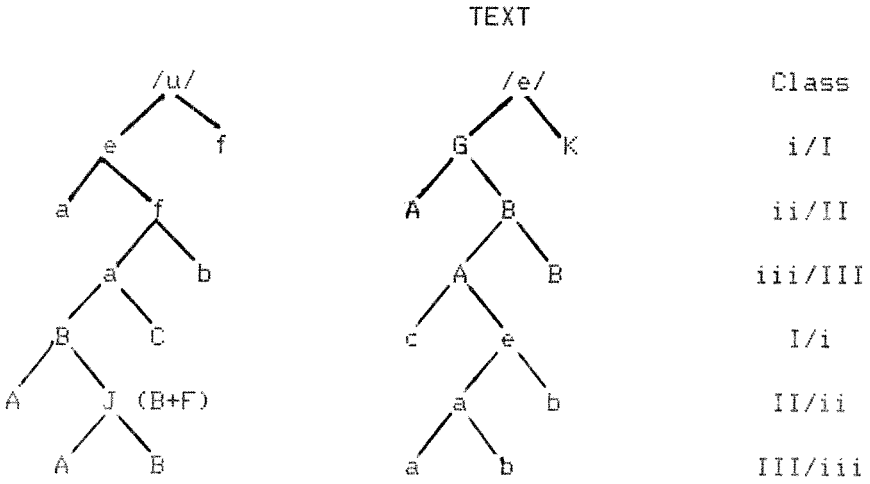
II. SECONDARY FEATURES (CONDITIONAL):

A. Unmarked	I. B + E	Q. B + C + D	Y. C + E + F
B. Tense	J. B + F	R. B + C + E	Z. D + E + F
C. Long	K. C + D	S. B + C + F	1. B + C + D + E
D. Nasal	L. C + E	T. B + D + E	2. B + C + D + F
E. Retroflex	M. C + F	U. B + D + F	3. B + C + E + F
F. Round	N. D + E	V. B + E + F	4. B + D + E + F
G. B + C	O. D + F	W. C + D + E	5. C + D + E + F
H. B + D	P. E + F	X. C + D + F	6. B + C + D + E + F

III. TERTIARY FEATURES (MODIFICATIONAL):

A. Unmarked	J. Weak	S. Glottal	2. S + J
B. Raised	K. J + B	T. S + B	3. S + K
C. Lowered	L. J + C	U. S + C	4. S + L
D. Advanced	M. J + D	V. S + D	5. S + M
E. Retracted	N. J + E	W. S + E	6. S + N
F. B + D	O. J + F	X. S + F	7. S + O
G. B + E	P. J + G	Y. S + G	8. S + P
H. C + D	Q. J + H	Z. S + H	9. S + Q
I. C + E	R. J + I	1. S + I	0. S + R

GBE-eaa [e›ɪ] (a diphthong marked by a peripheral offset or offgliding feature). Although these vowels, appearing in Synopsis 548 in the notations of *mules* and *strain*, respectively, are entered in separate files,[7] their respective specifications can be compared according to the analysis of the index:



In that way, the code and program record a deductive analysis of the phonetic features that can be extended to radicals by parsing primary features according to mandible (high/mid/low) and lingual (front/central/back) and designating voice (+/−).[8]

Figure 4 codes the 73 stressed vowel texts of Synopsis 548. In the five columns of data, from left to right, syllabics are ordered in these environments: 1) before a voiceless obstruent, 2) before a voiced obstruent or open juncture (/+/), 3) before a nasal resonant, 4) before a lateral resonant, and 5) before the historical reflex of a retroflex resonant.[9]

2. FINDINGS. The entry, sorting, and printing programs yielded four applications of the systematic phonetics code. Figure 5 reproduces the Mississippi file for the vowel of *crop*, components of the class /a/ before a voiceless obstruent. The file illustrates 1) the deductive analysis realized in the sorting program, 2) the composition of variants, 3) the regional

FIGURE 4: SYNOPSIS 548, STRESSED VOWELS

ORTHOGRAPHIC TEXTS AND SYSTEMATIC CODES

/ɪ/	whip	FFH-maj	crib	DCB-maj	tin	DDB	hills	BAB-maj	ear	DAB-mea
/ɛ/	neck	KAB-maj	legs	KAB-eaj	ten	KDF	Nelly	KAC-maj	merry	LAB
/æ/	glass	OAB-kaj	bag	OAB-kak	hammer	ODB-kdj	pallet	OAB-kbj	married	OAB
/ʊ/	push	EFB	wood rack	FFF-maj	woman	FFD-maj	pull	FFF	sure	EFA-maj
/ʌ/	shut	NAD-maj	husband	NAD-maj	sunup	NAD	bulb	FAH-maj	----	
/ɑ/	crop	SAE-maj	grandfather	SAE	Johnny	SCE	college	SCA	car	SCE-mea
/i/	yeast	AGW	three	abi-ABE	beans	abi-ABE	field	ABE-maj	beard	DCB-mea
/e/	eight	GBS-eaa	May	GBI-eaa	strain	GBE-eaa	rail	GBE-eaa	Mary	KCB
/u/	tooth	eaa-BJA	Baton Rouge	eda-BUA	wound	eda-BUA	mules	efa-BJA	poor	JJC-mea
/o/	coat	LMA-efa	ago	JJD-efa	home	JJD-efa	coal	JJD-efa	hoarse	QMB-maj
/ɔ/	daughter	QAH-qfb	dog	QFC-qaf	gone	QOC-qoa	salt	QFC-qfb	horse	QFB-maa
/ɜ/	church	MIA	third	MEH	earthworms	MEA	girls	MLA-maj	worry	LCA-maj
/aɪ/	right	RCE-kaj	ride	RAE-kaj	nine	RAE-kaj	miles	RAE-kaj	wire	TAD-mea
/aʊ/	house	RCB-maa	cows	RAB-maa	down	RAB-mfa	owl	RCF-efa	flowers	RCB
/ɔɪ/	oysters	QFB-eaa	poison	QMB-maa	joints	QFB-mab	oil	QMB-mab	----	

FIGURE 5

voicless.sp

Vowel	Book	Protocol	Sx	Cl	Rc	Age	Ed	Spch	City (County)	St	Sc	
PAA --- ---	529	DJ 334.01	M	M	Y	81	3	cult	Marks (Quitman)	UM	LD	1
	542	DL 346.01	M	I	Y	65	1	folk	Oxford (Lafayette)	UM	LD	2
	555	DN 352.03	M	L	X	68	1	folk	Brooksville (Noxubee)	UM	LD	3
	583	DT 377.01	M	L	Y	77	2	comm	Trenton (Smith)	LM	LD	4
PCA --- ---	537	DK 340.02	M	M	X	77	2	comm	Pontotoc (Pontotoc)	UM	LD	1
	577	DS 372.02	F	M	X	77	1	folk	Vicksburg (Warren)	LM	LD	2
	600	DW 387.05	M	L	X	84	1	folk	Soso (Jones)	LM	GR	3
RCA --- ---	611	DZ 399.04	F	U	X	75	3	cult	Woodville (Wilkinson)	LM	GR	1
SAA --- ---	584	DT 377.02	F	M	Y	65	3	cult	Wicker (Smith)	LM	PE	1
	603	DX 388.01	M	I	Y	72	1	folk	Baxterville (Lamar)	LM	LP	2
SAA maj ---	552	DN 351.03	F	L	X	66	2	folk	Columbus (Lowndes)	UM	LP	1
SAB --- ---	523	DH 328.01	F	M	X	18	2	comm	Ripley (Tippah)	UM	SL	1
	532	DK 338.02	M	M	X	73	1	folk	Houston (Chickasaw)	UM	SL	2
	547	DL 347.01	M	M	X	30	3	cult	Crowder (Panola)	UM	SL	3
	556	DN 352.01	M	M	Y	77	2	comm	Macon (Noxubee)	UM	PE	4
	574	DR 371.01	F	M	Y	63	1	folk	Pleasant Hill (Yazoo)	LM	LD	5
	605	DX 392.01	F	M	Y	85	1	folk	Weathersby (Simpson)	LM	SL	6
	627	EB 406.02	M	L	X	79	1	folk	Carriere (Pearl River)	GM	PE	7
SAD --- ---	614	DZ 400.04	M	M	X	58	3	cult	Natchez (Adams)	LM	SL	1
SAE --- ---	522	DH 327.01	F	M	Y	15	2	comm	Corinth (Alcorn)	UM	GR	1
	524	DH 328.02	F	M	Y	18	2	comm	Ripley (Tippah)	UM	GB	2
	526	DI 330.01	F	A	Y	75	3	cult	Holly Springs (Marshall)	UM	LP	3
	527	DI 332.01	F	U	Y	85	2	cult	Hernando (De Soto)	UM	MB	4
	530	DJ 335.01	M	L	X	74	1	folk	Sherard (Coahoma)	UM	PE	5
	531	DJ 335.02	M	U	Y	85	2	comm	Friars Point (Coahoma)	UM	SL	6
	533	DK 338.01	M	M	Y	25	3	cult	Houston (Chickasaw)	UM	SL	7
	536	DK 340.01	M	M	Y	86	1	folk	Toxish (Pontotoc)	UM	PE	8
	541	DL 345.01	F	M	Y	18	2	cult	Charleston (Tallahatchie)	UM	MB	9
	545	DL 346.04	F	M	X	63	3	cult	Oxford (Lafayette)	UM	PE	10
	546	DL 346.05	M	U	Y	80	3	cult	Burgess (Lafayette)	UM	SL	11
	549	DM 349.01	M	U	Y	81	3	cult	Benoit (Bolivar)	UM	MB	12
	550	DM 350.01	F	L	X	63	1	folk	Leland (Washington)	UM	SL	13
	551	DM 350.02	M	U	Y	51	3	cult	Greenville (Washington)	UM	MB	14
	553	DN 351.01	M	U	Y	47	3	cult	Columbus (Lowndes)	UM	SL	15
	557	DN 354.01	F	M	Y	81	2	comm	Starkville (Oktibbeha)	UM	SL	16
	559	DO 356.01	M	M	Y	83	2	comm	Chester (Choctaw)	UM	SL	17
	561	DO 359.01	M	L	Y	58	1	folk	Kosciusko (Attala)	UM	LP	18
	565	DP 361.01	F	L	Y	80	1	folk	Jefferson (Carroll)	UM	GB	19
	566	DP 361.02	F	L	X	31	2	folk	Vaiden (Carroll)	UM	SL	20
	568	DP 363.01	M	M	Y	56	2	comm	Greenwood (Leflore)	UM	LP	21
	570	DQ 365.01	F	M	Y	75	1	folk	Lockhart (Lauderdale)	LM	SL	22
	572	DQ 367.01	M	M	Y	44	2	comm	Bogue Chitto (Neshoba)	LM	SL	23
	576	DR 371.02	M	U	Y	42	1	comm	Pleasant Hill (Yazoo)	LM	PE	24
	578	DS 372.03	F	L	Y	68	1	folk	Redwood (Warren)	LM	PE	25
	580	DS 374.02	M	L	X	78	1	folk	Mayersville (Issaquena)	LM	SL	26
	581	DS 374.01	F	U	Y	77	3	cult	Mayersville (Issaquena)	LM	MP	27
	587	DU 397.02	M	M	X	77	1	folk	Edwards (Hinds)	LM	GB	28

FIGURE 5 (Continued)

SAE --- ---	588	DU 379.05	M	M	Y	78	1	folk	Raymond (Hinds)	LM SL	29
	589	DU 379.07	F	M	X	13	2	comm	Jackson (Hinds)	LM SL	30
	594	DV 381.02	M	L	Y	68	2	comm	Lorman (Jefferson)	LM LP	31
	595	DV 381.03	F	L	Y	50	1	folk	Lorman (Jefferson)	LM LP	32
	598	DW 386.01	F	M	X	81	3	cult	Hattiesburg (Forrest)	LM MP	33
	599	DW 386.02	F	M	Y	19	3	cult	Hattiesburg (Forrest)	LM MB	34
	602	DW 387.04	F	L	X	40	3	comm	Soso (Jones)	LM SL	35
	608	DY 396.03	F	M	Y	72	2	comm	Brookhaven (Lincoln)	LM MB	36
	612	DZ 400.01	F	I	X	70	1	folk	Sibley (Adams)	LM SL	37
	616	EA 401.03	M	U	Y	75	2	comm	Vancleave (Jackson)	GM GB	38
	618	EA 401.01	M	A	Y	83	2	cult	Moss Point (Jackson)	GM MP	39
	619	EA 402.02	M	L	Y	85	1	folk	Biloxi (Harrison)	GM LP	40
	620	EA 402.04	M	M	X	87	1	folk	Biloxi (Harrison)	GM MP	41
	623	EA 402.01	F	M	Y	66	2	comm	Saucier (Harrison)	GM SL	42
	624	EA 404.01	F	M	X	33	3	cult	Red Creek (Stone)	GM MB	43
	625	EB 405.01	M	L	Y	84	2	comm	Kiln (Hancock)	GM MB	44
SAE maj ---	520	DH 325.01	M	L	Y	72	2	folk	Iuka (Tishomingo)	UM LP	1
	528	DJ 333.01	M	U	Y	87	1	comm	Tunica (Tunica)	UM LP	2
	534	DK 339.02	M	M	Y	69	1	folk	Saltillo (Lee)	UM MP	3
	539	DL 343.01	M	M	Y	64	3	comm	Holcomb (Grenada)	UM LP	4
	540	DL 345.02	M	M	Y	70	1	folk	Enid (Tallahatchie)	UM LP	5
	548	DM 348.01	F	L	Y	69	1	folk	Drew (Sunflower)	UM LP	6
	562	DO 359.04	F	M	Y	85	2	comm	McCool (Attala)	UM LP	7
	569	DQ 364.01	M	M	X	73	2	comm	Klondike (Kemper)	LM SL	8
	575	DR 371.04	F	U	Y	80	3	cult	Freerun (Yazoo)	LM LP	9
	582	DT 375.01	M	M	Y	76	1	folk	Quitman (Clarke)	LM LP	10
	592	DU 379.01	F	M	Y	70	3	cult	Jackson (Hinds)	LM MB	11
	604	DX 388.02	F	M	Y	78	2	comm	Lumberton (Lamar)	LM LP	12
	607	DY 396.02	M	M	Y	85	2	comm	Bogue Chitto (Lincoln)	LM LP	13
	609	DZ 399.02	M	L	X	85	1	folk	Lessley (Wilkinson)	LM SL	14
	613	DZ 400.02	M	M	Y	52	2	comm	Natchez (Adams)	LM LP	15
	621	EA 402.03	M	L	Y	53	2	comm	Biloxi (Harrison)	GM LP	16
	622	EA 402.06	F	M	X	17	2	comm	Gulfport (Harrison)	GM MB	17
SAG --- ---	544	DL 346.03	F	M	Y	75	3	cult	Taylor (Lafayette)	UM PE	1
	554	DN 352.02	F	L	Y	99	1	folk	Mashulaville (Noxubee)	UM SL	2
	560	DO 356.02	M	M	Y	69	2	comm	Ackerman (Choctaw)	UM SL	3
	573	DR 371.03	M	L	X	87	1	folk	Eden (Yazoo)	LM SL	4
	596	DV 382.01	M	M	X	78	1	folk	Little Springs (Franklin)	LM SL	5
	606	DY 394.01	M	M	Y	95	1	folk	Holmesville (Pike)	LM SL	6
	610	DZ 399.03	M	L	X	73	2	comm	Woodville (Wilkinson)	LM SL	7
SCA --- ---	543	DL 346.02	M	L	X	64	1	folk	Lafayette Sprg. (Lafayette)	UM LP	1
	567	DP 363.02	M	U	Y	86	2	comm	Greenwood (Leflore)	UM GR	2
SCA maj ---	563	DO 359.05	F	M	Y	46	2	comm	Kosciusko (Attala)	UM LP	1
	564	DO 359.06	M	M	X	37	3	cult	Kosciusko (Attala)	UM LP	2
	593	DV 381.01	M	L	X	74	1	folk	Lorman (Jefferson)	LM LP	3
SCB maj ---	617	EA 401.02	M	L	Y	51	2	comm	Pascagoula (Jackson)	GM GR	1
SCD --- ---	535	DK 339.01	F	M	Y	67	2	comm	Tupelo (Lee)	UM GR	1
	615	DZ 400.03	F	A	Y	79	3	cult	Natchez (Adams)	LM PE	2

FIGURE 5 (Continued)

SCE	---	---	521	DH 325.02	F	M	Y	80	3 cult	Iuka (Tishomingo)	UM LP 1
			629	EB 406.03	M	M	Y	27	3 cult	Picayune (Pearl River)	GM SL 2
SCE maj	---		538	DK 340.03	F	M	Y	81	2 comm	Pontotoc (Pontotoc)	UM LP 1
			571	DQ 367.02	F	L	X	24	2 comm	Philadelphia (Neshoba)	LM MP 2
			585	DT 378.01	M	L	X	52	1 folk	Pulaski (Scott)	LM LP 3
			590	DU 379.03	F	M	X	66	3 cult	Jackson (Hinds)	LM LP 4
TAA	---	---	558	DN 354.03	F	L	X	22	3 comm	Starkville (Oktibbeha)	UM SL 1
			579	DS 372.01	M	A	Y	87	3 cult	Vicksburg (Warren)	LM RM 2
TAD	---	---	525	DI 330.02	M	M	X	82	1 folk	Holly Springs (Marshall)	UM PE 1
			586	DU 379.04	M	L	X	88	2 folk	Edwards (Hinds)	LM SL 2
			591	DU 379.06	M	M	Y	19	3 cult	Jackson (Hinds)	LM SL 3
			597	DW 384.01	M	M	Y	78	2 comm	Leakesville (Greene)	LM SL 4
			626	EB 405.02	M	U	Y	70	2 comm	Kiln (Hancock)	GM LP 5
TCB	---	---	601	DW 387.03	F	L	Y	69	2 comm	Soso (Jones)	LM PE 1
TFD	---	---	628	EB 406.01	F	L	Y	73	1 folk	White Chapel (Pearl River)	GM PE 1

distribution of these subsets, and 4) the social distribution of the strings that comprise the subsets. With each entry listed alphabetically (under *voic(e)less.sp/Vowel*), the printout reports these facts:

Book: Primary Informant Number, corresponding to the 1121 books that form the LAGS concordance;

Protocol: the Grid Unit, County, and Serial codes;

S(e)x: F (female); M (male);

Cl(ass): Social Class: A (aristocratic); U (upper to upper-middle); M (middle); L (lower-middle to lower); I (indigent) classes;

R(a)c(ial Caste): X (Black); Y (White);

Age: at the time of the interview;

Ed(ucation): 1 (elementary-school education); 2 (secondary-school education); 3 (college education);

Sp(ee)ch (Type): cult(ured); comm(on); folk;

City (County);

St(ate Sector): UM (Upper Mississippi); LM (Lower Mississippi); GM (Gulf Mississippi);

Sc(ribe): GB (Guy H. Bailey, III), MB (Marvin W. Bassett); LD (Louise A. DeVere); PE (Polly R. Edmundson); SL (Susan Leas McDaniel); RM (Raven I. McDavid, Jr.); LP (Lee Pederson); MP (Michael Pendergrass); GR (Gail Richardson).

The final column gives a running count of incidence within each subset. Those subsets combine in an index for each file, and these are printed as components of the primary class, the phoneme. Figure 6 reproduces the index for the five files under class S.p, (/a/) for primary informants.

These summaries mark the probable terminal strings of LAGS phonological description. Unless analysis requires a reduction to phonetic radicals--the

FIGURE 6

Totals from Vowel Files

voicless.sp

PAA	---	---	4
PCA	---	---	3
RCA	---	---	1
SAA	---	---	2
SAA	maj	---	1
SAB	---	---	7
SAD	---	---	1
SAE	---	---	44
SAE	maj	---	17
SAG	---	---	7
SCA	---	---	2
SCA	maj	---	3
SCB	maj	---	1
SCD	---	---	2
SCE	---	---	2
SCE	maj	---	4
TAA	---	---	2
TAD	---	---	5
TCB	---	---	1
TFD	---	---	1

voiced.sp

PCA	---	---	2
PCC	---	---	2
SAA	---	---	1
SAB	---	---	5
SAB	maj	---	3
SAD	---	---	1
SAE	---	---	25
SAE	maj	---	10
SAE	mak	---	1
SAE	tfa	---	1
SAF	---	---	2
SAG	---	---	8
SCA	---	---	5
SCB	---	---	3
SCB	maj	---	1
SCD	---	---	1
SCE	---	---	6
SCE	maj	---	11
SKE	---	---	1
SME	---	---	1
SME	tfa	---	1
TAA	---	---	1
TAA	tfb	---	1
TAD	---	---	5
TAD	maj	---	1
TCA	---	---	2

voiced.sp

TCD	---	---	1
TCD	maj	---	3
TFA	---	---	1
TFB	---	---	2
TFF	maa	---	1
TMA	maj	---	1

nasal.sp

PAC	---	---	2
PCA	---	---	1
PKC	---	---	1
SAA	---	---	1
SAE	---	---	10
SAE	maj	---	15
SAG	---	---	6
SAG	maj	---	4
SCA	---	---	2
SCA	maj	---	1
SCB	maj	---	1
SCD	---	---	1
SCE	---	---	15
SCE	maj	---	13
SCE	mak	---	1
SCG	---	---	2
SCG	maj	---	1
SCG	mfj	---	1
SCG	qfj	---	1
SDA	---	---	1
SDB	---	---	1
SDE	---	---	1
SDE	mdj	---	1
SDG	---	---	2
SKA	---	---	2
SKA	mdj	---	1
SKB	---	---	1
SKB	mdj	---	2
SKE	---	---	2
SKE	mdj	---	5
TAB	qfj	---	1
TAD	maj	---	1
TCB	maj	---	1
TCD	---	---	1
TCD	maj	---	2
TCF	maj	---	1
TKA	---	---	1
TMA	maj	---	2
TMF	maj	---	1
TXB	mdj	---	1

lateral.sp

PAA	---	---	4
PAC	---	---	1
PCA	---	---	1
PCC	---	---	1
RCA	---	---	1
RCE	---	---	1
SAA	---	---	3
SAB	---	---	4
SAD	---	---	2
SAE	---	---	38
SAE	maj	---	6
SAF	---	---	2
SAG	---	---	4
SAG	maj	---	1
SCA	---	---	12
SCB	---	---	1
SCB	maj	---	1
SCE	---	---	8
SCE	maj	---	4
SCF	---	---	1
SCG	maj	---	1
SFE	---	---	2
TAA	---	---	1
TAB	---	---	1
TAD	---	---	3
TCD	---	---	1
TFD	---	---	1
TMD	maj	---	1
xxx	xxx	xxx	3

retroflx.sp

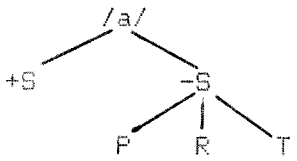
PAA	maa	---	1
PCA	maa	---	1
PKA	---	---	1
QMC	maj	---	1
SAA	mej	---	1
SAB	---	---	1
SAB	maj	---	3
SAB	mea	---	1
SAE	---	---	1
SAE	maa	---	1
SAE	maj	---	3
SAE	mea	---	16
SAE	mej	---	2
SAE	taa	---	1
SAG	---	---	1
SAG	maj	---	1
SAG	mea	---	2

retroflx.sp

SCA	mea	---	2
SCB	maa	---	1
SCB	maj	---	2
SCD	mea	---	1
SCE	---	---	2
SCE	maa	---	2
SCE	maj	---	3
SCE	mea	---	13
SFE	maa	---	1
SFE	mea	---	1
SKE	mna	---	1
SMG	mea	---	1
SOE	---	---	1
TAA	mea	---	1
TAD	maj	---	5
TAD	mea	---	3
TAD	pan	mea	1
TCA	---	---	1
TCA	maa	---	1
TCA	maj	---	3
TCA	mea	---	2
TCB	maa	---	1
TCD	---	---	2
TCD	maa	---	3
TCD	maj	---	8
TCD	mea	---	3
TCF	maa	---	1
TCG	maa	---	1
TFB	maj	---	1
TFD	maj	---	1
TMA	maj	---	1
TMA	mea	---	1
TMF	---	---	1

problem mentioned in note 7--these files record the final link in the descriptive chain. They do not, however, signal the end of the analysis. The strings ordered in Figure 5, and vowel of *crop*, (S.p/voic(e)less), for example, project several kinds of diagnostic information that recommends comparative study at the features level and then at successive articulations of phonetic, phonemic, morphemic, and lexical analysis.

Including 20 different strings and four different primary features (P, R, S, and T), the file yields immediate geographical and social correspondences at the very first analytical division:



Class

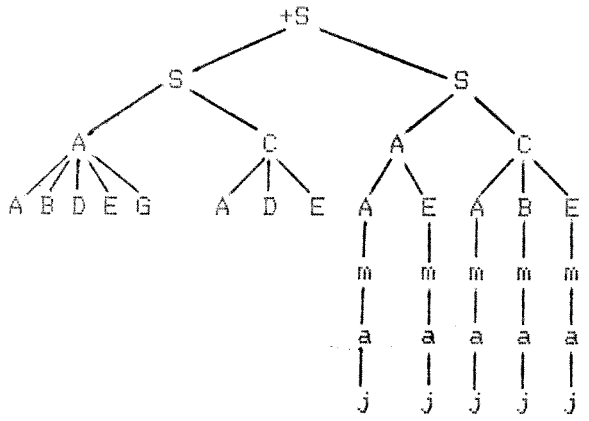
I

Including 17 strings (P, R, T), the recessive set (-S) has seven subsets, all of which are monophthongal: PAA (4), PCA (3), RCA (1), TAA (2), TAD (5), TCB (1), and TFD (1). These divide evenly in two distinctive sets:

-T (P, R) +T

The first (-T) has an even number of informants from Upper and Lower Mississippi, but all eight are at least age 65, with a black majority (5 of 8).[10] The second (+T) includes younger well-educated informants and a smaller proportion of blacks (3 of 9), but seven of these nine strings were recorded in Lower or Gulf Mississippi.

Within the dominant set (+S), two basic patterns emerge, contrasting monophthongal and diphthongal strings:



Set

I

II

III

i

ii

iii

Here, the analysis provided by the inventory establishes the kinds of distinctions and illustrations usually restricted to syntactic parsing. In the process, the factored subsets show contrastive patterns. For example, the monophthongs (S) have five variants proceeding from unmarked secondary features, SA + A, B, D, E, G, but those monophthongs marked for length, SC, have only three variants, + A, D, E. Among the diphthongs, however, the patterns proceeding from unmarked and lengthened secondary features are quite similar, and all show identical glides.

Laid out in this way, the phones can be compared structurally before the sociolinguistic, historical, and geographical considerations enter the analysis. When that happens, one tends to seek generalizations, and these may be less interesting, especially at this level, than the phonic composition of the forms. In the chain (+S), 13 subsets comprise the small system, and they show this incidence:

S (67)	S (26)
SAA (2)	SAA-maj (1)
SAB (7)	SAE-maj (17)
SAD (1)	SCA-maj (3)
SAE (44)	SCB-maj (1)
SAG (7)	SCE-maj (4)

SCA (2)

SCD (2)

SCE (2)

Combined with the 17 strings of the recessive set (-S), these 93 strings complete the inventory of 110 primary informants in Mississippi. Although an exhaustive listing of social characteristics here will show a higher proportion of blacks, older, and less educated members of lower social classes among the (+S) set and a higher proportion of younger and better-educated members of all social classes, as well as a racial balance reflecting the composition of the Mississippi sample, within the (S) set, those contrasting diphthongal and monophthongal sets are less important here than the descriptive resource that defines them.

One need only reconvert these short alphabetic strings into narrow phonetic notation, place them in columns, and read them in order to recall the complexity of conventional notation. As suggested in Note 8, the International Phonetic Alphabet (IPA) was organized to reproduce speech sounds in writing. It was not designed for efficient technical reading--scanning, registering, and reproducing targeted data with the resources of a microcomputer. As a result, American atlas projects have been unable to exploit the full informational range of their enormous data bases, recorded in narrow phonetic notation.

As a single set of examples, the tables in Figure 7 report more explicit information about allophonic variation than one will find in any of the earlier American projects. Reflecting nothing but a technological advancement, the availability of a simple features code and microcomputers, indexes of this kind establish a baseline in deductive phonetics. And, if such findings prove useful, the evidence of the classic American works can be

FIGURE 7: STRESSED VOWELS IN THE GULF STATES

	/Voiceless		/Voiced		/Nasal		/Lateral		/Retroflex	
/ɪ/	DAE	(283)	DAE-maj	(225)	DAE	(135)	DAB-maj	(220)	DAB-mea	(201)
/ɛ/	KAA	(166)	KAB-eaj	(134)	KAB	(96)	KAE	(264)	KAE-mea	(222)
/æ/	OAA-kaj	(219)	OCA-kaj	(214)	OAA-kaj	(195)	OAA-kaj	(239)	OCA-mea	(123)
/ʊ/	FFD	(321)	FFD	(333)	FFD	(81)	FFD	(334)	FFD-mea	(177)
/ɑ/	NAD	(467)	NAD	(248)	NAD	(547)	NAD-maj	(164)	------	
/ʌ/	SAE	(335)	SAE	(216)	SAE	(145)	SAE	(311)	SCE-mea	(148)
/i/	AGE	(200)	ABE	(397)	AGE	(258)	AGE-maj	(332)	DAB-mea	(125)
/e/	GBE-eaa	(251)	GBE-eaa	(250)	GBE-eaa	(298)	GGE-maj	(138)	KAE-mea	(94)
/u/	efa-BJA	(558)	efa-BJA	(540)	efa-BJA	(159)	efa-BJA	(249)	FFD-mea	(90)
/o/	JJD-efa	(298)	JJD-efa	(451)	JJD-efa	(237)	JJD-efa	(346)	JSC-mea	(118)
/ɔ/	QFC-qfb	(353)	QFC-qfb	(262)	QFC-qfb	(166)	QFC-qfb	(306)	QFB-mea	(208)
/ɜ/	MEA	(324)	MEA	(264)	MEA	(251)	MEA	(117)	MEA	(252)
/aɪ/	RAE-eaj	(220)	RAE-kaj	(97)	RAE-kaj	(82)	RAE-kaj	(118)	RAE-mea	(75)
/aʊ/	RAB-efa	(107)	RAB-efa	(87)	RAB-efa	(160)	OCA-jjd	(94)	RCB	(62)
/ɔɪ/	QFB-eaa	(155)	QFB-eaa	(195)	QFB-eaa	(142)	QFB-mab	(86)	QFC-qfb	(39)

ALLOPHONES OF /ɑ/ ELABORATED

1.	SAE	(355)	SAE	(216)	SAE	(145)	SAE	(311)	SCE-mea	(148)
2.	SAE-maj	(132)	SCE	(152)	SCE-maj	(121)	SCE	(108)	SAE-mea	(129)
3.	SAG	(73)	SCA	(80)	SCE	(117)	SCA	(101)	TAD-mea	(41)
4.	SCE	(69)	SAE-maj	(77)	SAE-maj	(93)	SAB	(54)	TCD-mea	(38)
5.	SAB	(68)	SCE-maj	(77)	SCA	(47)	SCE-maj	(50)	SCE-maj	(37)

converted into this code and analyzed as conveniently as was done by three people in a few months for the LAGS Project.

Those summaries of dominant forms in Figure 7 list first the preeminent allophone (with incidence in parens) in the five environments. The second summary elaborates the incidence of a single phoneme, recording the five leading allophones of that class, as recorded across the Gulf States. Information of this kind can be easily indexed for individual states, communities, or informants of particular social characteristics. And, in the form presented in Figure 7, the index suggests the deviation of any idiolect from the unity reported in the dominant form. For example, a comparison of the strings recorded in Figure 4 and Figure 7 can help a reader understand how far removed the folk speaker from Drew, Mississippi, is from the dominant patterns listed in the index.

3. IMPLICATIONS OF SYSTEMATIC PHONETICS. At the heart of this approach is basic deduction, but experimental work needs the flexibility of a bidirectional process of analysis. Dialect study will invariably proceed from general to specifics, but then return to earlier synthesis to reform them on the basis of newfound information. For those reasons, deduction cannot be construed as a mechanical procedure without recourse to judgment or the application of an unpredictable number of recursive operations.

Such study implies the interaction of five writing systems--conventional orthography (C), unitary phonemics (U), broad phonics (B), narrow phonetics (N), and systematic phonetics (S):

C × U × B × N × S.

These indicate the operations of bidirectional analysis in a chain linked by recursive rules, (>): proceed toward greater specificity (analyze); (<):

proceed toward greater generalization (synthesize). Those are the tasks of linguistic geography when it aims at systematic description.

Although the chain is imperfect and needs an additional link between conventional writing and unitary phonemic segmenting, the system suggests the way descriptive dialect study must work. Unless a plan is organized along these or similar lines--the tactics themselves are less important than is a basic commitment to an explicit set of principles--the work will likely meander about and never do justice to the rigorous fieldwork that brought the data in. Systematic phonetics offers a descriptive discipline that matches the orderly requirements of adequate fieldwork.

By establishing a terminal link in the chain with systematic phonetics, one recognizes limitations as well as resources, and this is surely the most useful lesson that proceeded directly from the survey of stressed vowels. With a single addition, the chain extends from features to the written word and outlines an operational descriptive system. Nothing in the work recommends extending the analysis beyond the level of the word, and all systematic study in American linguistic geography begins with the word and moves toward the phoneme.[11]

For that reason, LAGS marks the limits of analysis, the end links of its descriptive chain, at the phonological word and the phonetic feature. In this project, the appropriate domain of linguistic geography is deductive word geography. Exclusive only in terms of direction and description, the tactic simplifies the tasks, adding clarity and promising greater precision. Thousands of phrases, sentences, and longer phonetic strings are recorded in the protocols, but these are permuted at word level in the concordance. From fieldwork to the proposed legendry organized in the format of a dictionary, every operation in LAGS has unconsciously moved on the analysis and

description of the word. If this limitation is recognized in the research design, the work can focus on microanalysis of small-scale facts and produce a description for general use. As organized, LAGS data will be readable by any student of language who takes his subject to be a class of classes, whether the approach be structural, transformational, or glossematic.

4. EXPECTATIONS. As mechanical routines of obligatory description, the operations of systematic phonetics would have only statistical value in linguistic geography, but the tool was not organized to add a further burden to complicated work. Instead, the graphically simple analysis of deductive phonetics raises the expectations of ordinary dialect study. As a deliberate extension of traditional aims and methods (note 11), deductive word geography should produce results comparable with those of the pioneering research of earlier American atlas projects.

The expectations of this approach include improved consistency, comprehensiveness, and simplicity, all of which reflect the economical design of deductive phonetics. Without adding labor to autonomous word geography, verb study, and phonology, the single bidirectional descriptive chain links the components of dialect study and makes possible several kinds of analysis and explanation at any juncture of the operation. By requiring phonological considerations in the discussion of every word, whether the focus is formal or semantic, deductive word geography promises delicacy and efficiency. Whereas autonomous essays in linguistic geography provide no explanation of the relationships among semantic, formal, and phonological patterns, the proposed chain addresses all three in every operation.

With each word in the study recognized as a conceptual missile--a text of phonological, grammatical, semantic, geographical, historical, and cultural

information--the work should proceed with the efficiency of systematic phonetics. In that way, a mechanical progress that moves from simple to complex matters, from written word to phonetic features, necessarily covers all the problems within its descriptive domain.

Specifically, the word in conventional orthography yields basic graphic symbols; realized in phonemics, the symbol is recast as a sequence of segments, linguistic signs, that offer further information concerning the tactics of the segments through addition, deletion, or rearrangement. At the formal, morphological, level the phonemic code identifies distinctive products through clipping, derivation, and inflection. As phonemic units, the segments mark the phonotactic, segmental, and suprasegmental patterns that characterize the word. These are further refined in broad phonic notation, where all secondary features, as, for example, tenseness, length, nasality, retroflex, and lip-rounding combine with the basic segmental units of phonetics. Narrow phonetics adds an exhaustive inventory of recorded features, refined for reading in systematic phonetics to complete the statement and structure of the descriptive chain.

With these abbreviations, word (W), morphology (M), and phonology (P), the interdependence of descriptive responsibilities is realized at these positions, with respect to the five writing systems listed earlier:

C (W) >< U (W/M/P) >< B (W/M/P) >< N (W/M/P) >< S (P).

Apart from the ends of the chain, the abstract symbolic word at one end and the concrete signal, the phonetic element, at the other, all interior links address symbol, substance, and sign--word, morph, and sound. And this chain enlarges expectation further with interdependent explanations in a bidirectional circuit.

For example, the phonetic features patterns in the file *S.p voic(e)less*,

the vowel of *crop*, offer sets of strings that suggest geographical, historical, and social correspondences. If the observation proved useful, it could engage any other word in the text--from symbol to its signs--as a source of additional relationships. In that way, the apparently terminal function of systematic, deductive phonetics becomes an initial tool, a preliminary step in diagnostic research.

For all those reasons, deductive phonetics in the LAGS Project is the bedrock, the foundation of its word geography. Read as a recursive process, terminated only when descriptive needs have been satisfied within the context of this research design, the method gives the LAGS Project a generative resource for the atomization of phonetic signs. In the process, strings are patterned and any of these sets may prove diagnostically useful in defining the relationships of language and culture in the Gulf States. As they point to formerly unrecognized patterns, the strings demonstrate an application of deductive study, illustrating data that can be developed in no other way. And, whether the subsets within the classes of consonants and vowels offer or fail to offer close correspondences of speech and social forms, the work improves the explanation of the form and substance of these phonological classes and components and in that way contributes to the formal classification of the phonological system.

Those great expectations comprise a large order and place a heavy burden on a small code. But, in following the example of that code, deductive word geography will probably record a larger number of facts and make a smaller number of errors. That is the greatest expectation of any deliberate study.

Notes

1. That approach seems consistent with the conclusions of Z. Harris, whose statements on the "Description of Language Structure" come down to these sentences: "The work of analysis leads right up to statements that enable anyone to synthesize or predict utterances in the language. These statements form a deductive system with axiomatically defined initial elements and with theorems concerning the relations among them. The final theorems would indicate the structure of the utterances of the language in terms of the preceding parts of the system." *Methods in Structural Linguistics* (Chicago: University of Chicago Press, 1950), 372-3.

In those lines, Harris recasts his classic essay in synthetic (inductive) linguistics into analytic (deductive) terms that parallel L. Hjelmslev's comments on metasemiology: "Metasemiological analysis will have to be carried out on the basis of the functions and according to the already indicated procedure, until the analysis is exhausted and until we have reached, here also, the ultimate variants in the face of which the point of view of cohesion is no longer fruitful and where the sought-for clarification by reason and causes must give way to a purely statistical description as the only possible one: the final situation of physics and deductive phonetics." *Prolegomena to a Theory of Language*, F. J. Whitfield, trans. (Madison: University of Wisconsin Press, 1961), 124-5.

2. L. Pederson, "Systematic Phonetics," *Journal of English Linguistics* 18 (1985), 14-24.

3. L. Pederson, "Tape/Text and Analogues," *American Speech* 49 (1974), 5-23. That report describes the relationships among four LAGS graphic systems: conventional orthography, unitary phonemics, broad phonics, and narrow phonetic notation. For an illustration of broad phonic notation sustained through an extended set of examples, see L. Pederson, "Grassroots Grammar in the Gulf States," *James B. McMillan: Essays in Linguistics by His Friends and Colleagues*, I. W. Russell and J. Raymond, eds. (University, Ala.: University of Alabama Press, 1977), 91-112.

4. Unitary phonemics admits no incidence of /ʌ/ before /r/ because, like the succession /ər/, the pattern is subsumed under /ɜ/. Thus, the synopses report a maximum of 74 contrastive phonetic texts. And most, like Synopsis 548, lack examples of /ɔɪ/ + /r/ because *lawyer* and *sawyer* were not systematically investigated in the fieldwork.

The coded information beneath the title and above the matrix includes: F *female*; L *lower class*; Y *Caucasian*; 69 *age*; 1 *elementary-school education*; A *insular perspective*; MB *initials of fieldworker*; LP *initials of scribe*; 1978/1979 *dates of respective tasks*; UM *Upper Mississippi*; DM *grid unit* (Yazoo-Mississippi Delta); 348 *Sunflower County*; 01 *the first subject interviewed in Sunflower County*.

5. For a summary of scribal training in the project, see L. Pederson, "The Linguistic Atlas of the Gulf States: Interim Report Two," *American Speech* 49 (1974), 216-223; *A Compositional Guide to the LAGS Project*, 2nd ed., in *The Linguistic Atlas of the Gulf States: The Basic Materials* (Ann Arbor: University Microfilms International, 1981), Fiche 1183-4.

6. Other features were excluded because their restricted incidence recommended an indexing of fourth, fifth, and sixth classes of forms within the framework of the aforementioned hierarchy. Those features include voiceless, ingressive, and smeared pronunciations of vowels, as well as several paralinguistic signals of pharyngeal and laryngeal rasping and tonal modifications. Like denture whistle, all those features were marked by scribes, but none of them deserves indexing as a basic characteristic of Southern speech.

7. These include five subsets under each of the full classes and four subsets under the short set (/ʌ/), as explained in note 4.

8. At present, such analysis is beyond the descriptive needs of the project, but the distinction is important, if only as an epistemological consideration. Unlike the elements of chemistry, phonetics has no radicals realized as speech sounds. Each sound is a compound, and the elements of phonetics, invariably combined in the shorthand of phonetic notation, are rarely noted beyond the context of distinctive features analysis.

For that reason, the work of acoustic engineering offers the most useful guidance in deductive phonetics. Although the present work is concerned with classification and description of a corpus of phonetic notation and not the correspondences between sound waves and orthographic symbols, the essays of Gunnar Fant gathered in *Speech Sounds and Features* (Cambridge, Mass.: MIT Press, 1973) have offered the most valuable instruction in organizing this work.

9. More properly a part of the results of that survey, two strings in Synopsis 548 illustrate the only ambiguous products that appeared in rewriting the 80,000 vowels. The offglide in *eight*, *strain*, and similar words [ɪ̈] and the onset in *tooth* [ʉ̞] are both coded *eaa* (to represent unrounded, lax, high-central vowels), but, as the phonetics indicate, the former is unrounded and the latter, derounded. As written, the system fails to make that distinction.

The problem is interesting because it raises a larger question about the accuracy of the phonetic notation, more important than the adequacy of the code. The latter can be easily adjusted; the former makes suspect the recognition of derounded vowels, as opposed to unrounded vowels, in a scribal operation that depended exclusively upon auditory signals with no visual reference to labial action in the articulation of such vowels. Adjustment in reading the code requires nothing more than a statement of the fact and a recognition that minimal pairs, such as [saɪ̈] in *sigh* and [saʉ̞] in *sow* (female hog), have not yet turned up in the LAGS collection.

10. Although the statistics are at best suggestive, to serve that function they must be read in the context of the Mississippi sample, summarized here according to sector (SEC), sex, mean age (AGE), caste, and formal education, according to the descriptors in the first paragraph of this section:

SEC	SEX	AGE	BLACK: EDUCATION TYPE			WHITE: EDUCATION TYPE		
	F/M		1	2	3	1	2	3
UM	21/28	63	6	5	3	7	14	14
LM	22/25	67	10	5	4	11	9	8
GM	4/10	64	2	1	1	2	6	2

11. Both the *Linguistic Atlas of New England* and the *Linguistic Atlas of the Upper Midwest* began description with word geography. Kurath combined LANE findings with those from the Middle and South Atlantic States in his first

volume, *A Word Geography of the Eastern United States* (Ann Arbor: University of Michigan Press, 1949). In Allen's first volume, *The Linguistic Atlas of the Upper Midwest*, Vol. 1: *The Project and the Lexicon* (Minneapolis: University of Minnesota Press, 1973), he combined the handbook and word geography of the survey. Both word studies began with texts in conventional orthography without explanation of how the phonetic notation, from which the orthographics came, was converted.

Their approach was not only acceptable, it was the only sensible way to get right to the information. But the work involved intuitive processes that should have been recognized and related to an explicit set of descriptive procedures. Instead, the autonomous word geographies were followed by autonomous verb morphologies, with autonomous phonologies concluding the respective works. The only integrated description in this approach appears in composite isoglosses, but those are geographical, not systematic linguistic, statements.

For that reason, the implication of deductive phonetics points toward improving standard procedures, not condemning them. The older methods were developed carefully over a century of trial and error. When a new method or a revised old method, as is the case here, becomes operational, pioneers and newcomers deserve the resources the work has produced, whether those tools concern analysis, description, technology, or a combination of all three.

LAGS WORKING PAPERS, THIRD SERIES (1985)

WORKING PAPER NUMBER THREE

A Graphic Plotter Grid

Lee Pederson

A GRAPHIC PLOTTER GRID

Lee Pederson

Raven I. McDavid, Jr., believed in total accountability and realized that principle in his own work through communication.[1] He was a classical linguistic geographer who approached the subject of language variation from many perspectives and transmitted geographical, historical, and social findings effectively through maps. He demonstrated the fact that an atlas is more than an emblem of linguistic geography, that the maps of a linguistic atlas give the work a powerful descriptive reference through graphic projection. This report pays homage to a great friend by rehearsing some of his main concerns about the study of language in its cultural context through the introduction of a practical tool for traditional research, a functional map for general communication, a graphic plotter grid.

For several years, the Linguistic Atlas of the Gulf States (LAGS) Project has needed a working map. The research calls for an analytical chart of the eight-state region that will unite the inventorial collection of the basic materials and the descriptive volumes that will complete the atlas. With the data base published (1981) and its contents ordered in a concordance (1984; forthcoming), the project needs an effective map and method to carry the investigation forward--toward explanation through the analysis of recorded forms. Outlined here, the form and functions of a graphic plotter grid suggest a deliberate approach to matrix mapping. This experimental solution extends the methods of earlier mapping within the project. It combines the lessons of past experience, the influence of current research by others in computational dialect study, and the requisites for the work at hand. Simply

put, the graphic plotter grid is the clearest expression to date of the growing dependence upon microcomputers in the organization and transmission of LAGS data.[2]

To explain these developments, this report outlines the uses of mapping in the LAGS Project since 1968, first in the preliminary work in Georgia, later in the composition of the territorial grid, and finally in the interpretation of findings. In the second part, the report describes the graphic plotter grid. This simple matrix map finds its resolution in the position of informants on a grid and plots findings electronically from files drawn from the data base. Without elaborating the probable causes for the present-day drift away from a geographical (spatial) context in regional studies and the concomitant disregard for the principle of accountability, this report aims only to identify some applications of the graphic plotter grid. In the LAGS Project, these include attention to accountability in the inventorial, analytical, and descriptive work and the return of the map to its appropriate central position in recording the evidence and explaining the facts of linguistic geography in the Gulf States.

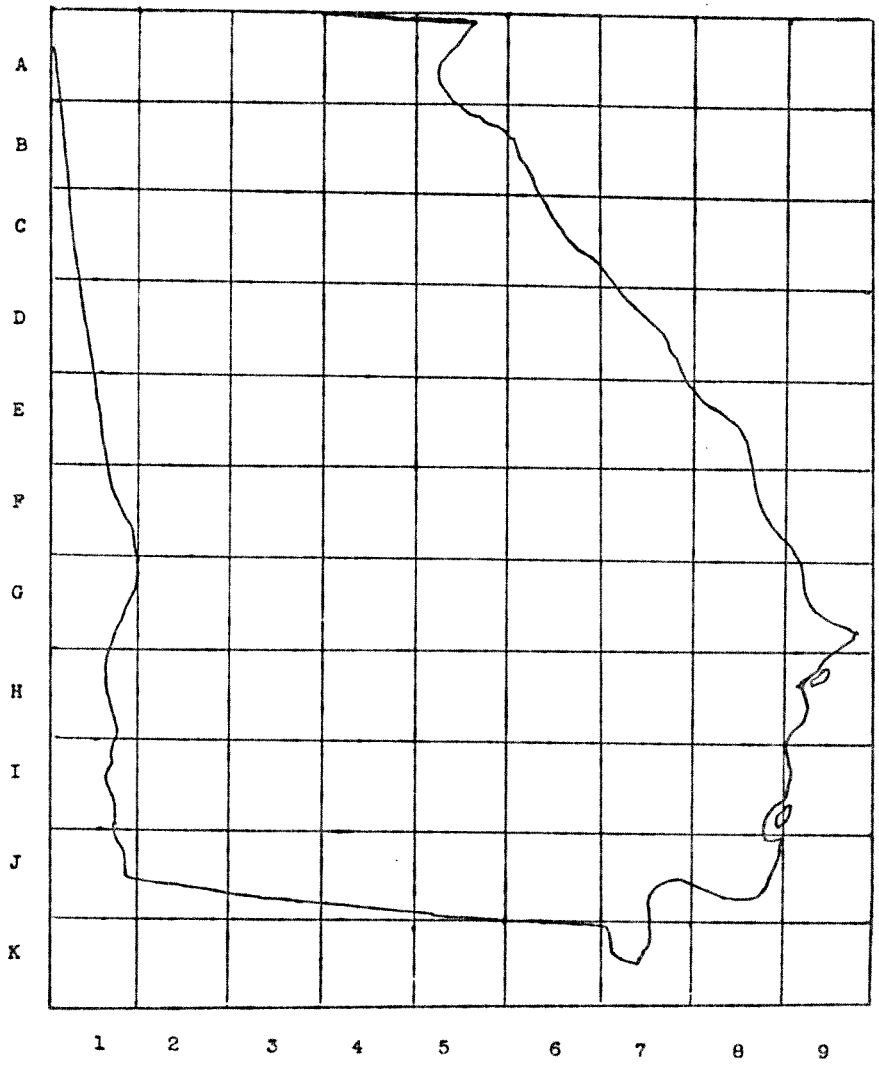
I.

In February, 1968, A Dialect Study of Rural Georgia (DSRG) was organized to give students field experience and to make a pilot study for the LAGS Project that began work in May of the same year. The survey aimed to gather systematically contrastive data and to resolve tactical problems for the larger study. One of the central issues concerned adequate representation of black speech across the Gulf States. To focus on that question, DSRG confined investigation to an even number of informants from each racial caste, all native Georgians, over age 65, and lifelong residents of rural places (with populations under 2,500 in the Federal census projections of 1965).

The requirements of the work and the available resources recommended a sample of approximately 300 subjects, each to be interviewed in a tape-recorded conversational situation that would not exceed two hours in duration. With the items for the questionnaire drawn from familiar sources (1975a), a grid of 30-mile units was imposed on a map of the state, Figure 1, "Grid Map of Georgia" (1975b: 43). The grid marked 78 zones for the selection of target communities (1975b: 40-2). In each of those places, four informants were interviewed, lesser- and better-educated representatives of both racial castes.

Upon completion of the North Georgia sample in 1969, 100 records for 25 communities (coordinates A-D/1-7) offered evidence for two preliminary reports. These *Festschrift* essays for McDavid (1972) and Kurath (1973) show the beginning of matrix mapping in the LAGS Project. They demonstrate the convenience of positional charting, the graphic resource, and the economical projections that require accountability and that proceed directly from those simple forms.

FIGURE 1, GRID MAP OF GEORGIA



Both, however, show a redundant use of symbols and an imperfect understanding of the possibilities of the tool. Throughout the synopses of the Loganville data (1972: 127-9), the charts repeat superfluous markings of the informant types, all of which hold constant positions throughout the 46 patterns recorded there. Including phonological (phonetic and phonemic), morphological, and lexical incidence in the speech of four Loganville informants (C/4 on the grid map), these patterns show lesser-educated black (BI), lesser-educated white (WI), better-educated black (BII), and better-educated white (WII) in fixed positions. And, as indicated in Figure 2, "Loganville Phonetic Patterns," the designations are unnecessary and distracting.

With a brief gloss describing the linguistic information and the informant positions marked as

B1 W1
B2 W2

the patterns of Figure 2 could have been projected more effectively in this form:

1) +−
   ++

2) ++
   +−

3) ++ (or) −−
   −− ++

Adding not only clarity and economy, that projection would have aligned the work immediately with the resources of graphic plotting.

In the second essay (1973), the method of positional marking was extended to include the 25 North Georgia communities. Figure 3, "The Nucleus of *Bird* as [ɜɪ]," (202) shows another form of redundancy in the early plotting. Here, distinctive symbols are used to distinguish black (x) and white (o)

FIGURE 2, LOGANVILLE PHONETIC PATTERNS

1) BI, BII, and WII

/ɛ/ in bread			/au/ in cloud			/ɜ/ in bird		
BI	[ɛ$^{\ominus}$]	[ɛ$^{\mp}$] WI	BI	[au]	[æo] WI	BI	[ɜ$\mp$]	[ɚ] WI
BII	[ɛ$^{\ominus}$]	[ɛ$^{\ominus}$] WII	BII	[au]	[au] WII	BII	[ɜ$\mp$]	[ɜ$\mp$] WII

2) BI, BII, and WI

/ʌ/ in mush			/æ/ in pancakes			/l/ in bullfrog		
BI	[ɣ]	[ɣ] WI	BI	[$\tilde{æ}$]	[$\tilde{æ}$] WI	BI	[ɯ]	[ɯ] WI
BII	[ɣ]	[ʌ] WII	BII	[$\tilde{æ}$]	[æ] WII	BII	[ɯ]	[ɪ] WII

3) BI and WI (or) BII and WII

/i/ in field			/ɪ/ in wrist			/ai/ in nineteen		
BI	[i$^{\ominus}$]	[i$^{\ominus}$] WI	BI	[ɪ$^{\ominus}$]	[ɪ$^{\ominus}$] WI	BI	[a]	[a] WI
BII	[i$_{\downarrow}$i]	[i$_{\downarrow}$i] WII	BII	[ɪ]	[i] WII	BII	[aɪ]	[aɪ] WII

FIGURE 3, THE NUCLEUS OF BIRD AS [ɜ˞]

x [ɜ˞] in black speech

o [ɜ˞] in white speech

- a different response

	1	2	3	4	5	6	7
A	x-	--	x-	--	--		
	--	x-	x-	--	--		
B	xo	x-	--	--	x-	xo	
	--	xo	--	-o	x-	xo	
C	x-	x-	--	x-	xo	xo	xo
	x-	xo	--	xo	xo	xo	xo
D	xo	x-	xo	xo	xo	x-	xo
	xo	xo	x-	xo	xo	xo	xo

informants. But in this instance, a more complicated mapping problem may have justified the use of two symbols. More important, the primary function of matrix mapping can be recognized even in this partial map of the state of Georgia: the positions of the informant on the grid outline the physical geography.

That fact is illustrated in Figure 4, "*Pulley Bone/Wishbone.*" This grid plots the incidence of two synonyms for the clavicle of a chicken across the entire state. With a single mark at each of the 312 positions, the grid identifies the incidence of those forms, of multiple responses, of different responses (as, for example, *breast bone, love bone,* and *boy bone*), and of no response. In the process, the grid offers a readable form that suggests the approximate location of informants in relation to one another as well as in relation to the political boundaries of the state.

In those ways, the grid met the empirical requisites of self-consistency, completeness, and simplicity within the context of the survey. The fixed positions assured coherence. The obligatory registration of informants on all maps gave the form comprehensiveness. And the use of single marks for all responses in every projection provided the simplest possible format, an economical feature that offered means for the reproduction of many maps of many kinds on a small graphic matrix.

FIGURE 4, DSRG GRID, PULLEY BONE/WISHBONE

X pulley bone + another response

O wishbone - no response

Ø both terms

	1	2	3	4	5	6	7	8	9
A	OX	+X	+X	X+	XX				
	XØ	XO	XX	X+	+X				
B	XX	XX	OO	XX	XX	OX			
	XX	XX	XX	OX	ØX	X+			
C	XX	++	XX	XX	XX	+X	XO		
	XX	XØ	XX	XO	OØ	+X	OX		
D	XX	XX	XX	XØ	-X	XO	X+		
	XX	XX	XX	OX	X+	XX	XX		
E	OX	XX	XX	XX	XX	OX	OØ	XX	
	OX	-O	+X	XO	XO	XX	+X	OO	
F	X+	XX	OX	OO	+X	XX	-X	XX	OX
	OX	+X	XX	OX	XX	XO	XO	XX	XØ
G	OO	XX	-X	-X	OX	XX	+X	X)	OO
	OX	XX	OO	OX	XX	+X	XX	XO	XO
H	-X	XX	XX	--	XX	XX	XX	XO	-X
	OX	XX	OX	XX	+X	OØ	+X	-O	OO
J	XX	-X	XX	XX	XX	+X	OO	+O	
	XX	XX	O-	XX	XX	XO	OO	OO	
K							OO		
							OO		

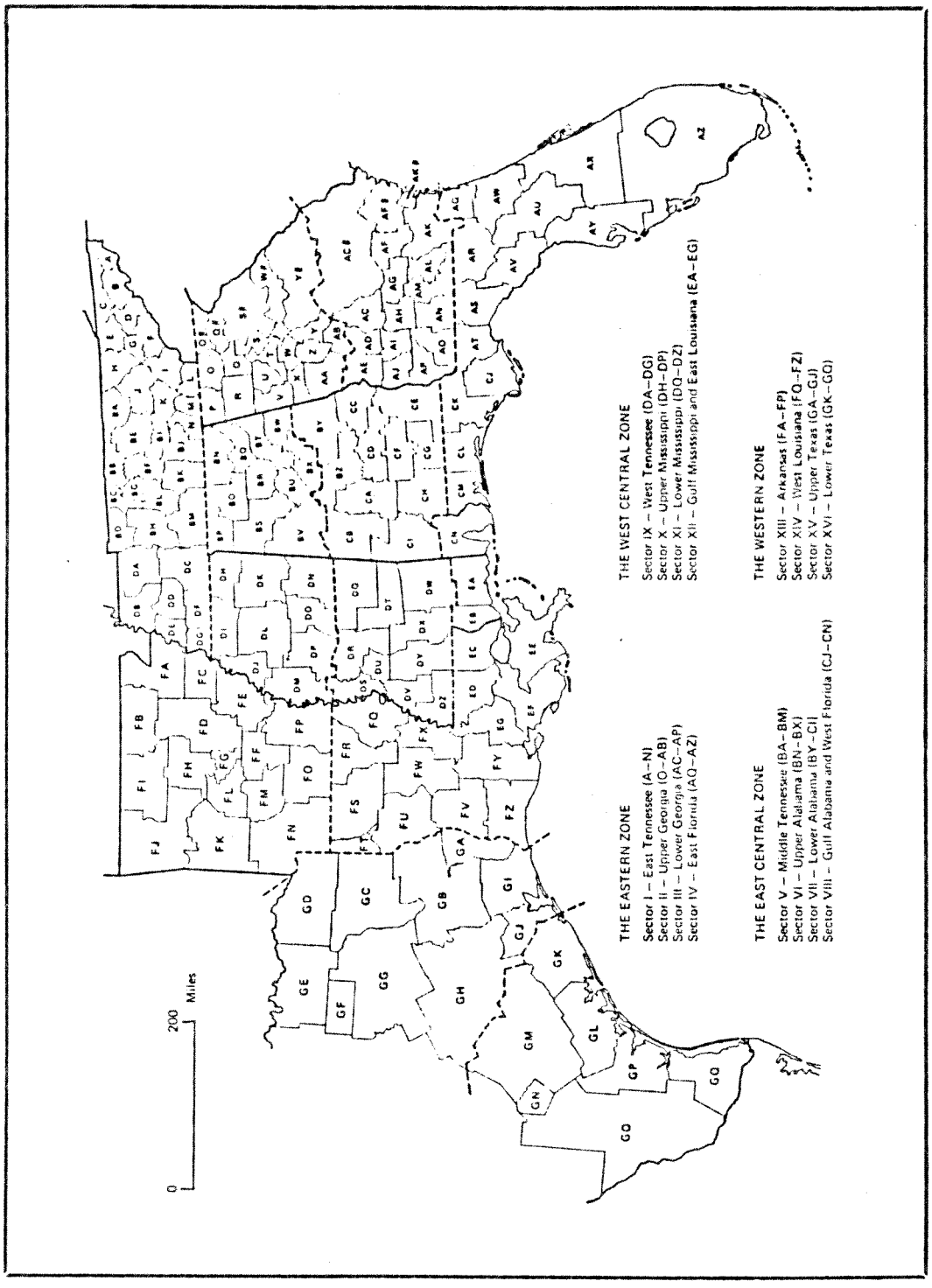
II.

Although the aims and methods of the LAGS survey are different from those of DSRG, the matrix of the pilot study influenced planning in the larger project. Figure 5, "The LAGS Grid," identifies the general positions of target communities according to the historical, cultural, and geographical characteristics of the counties and parishes of the territory. The social complexity of the required sample, the variety of communities, and the irregularities of the landform of more than 450,000 square miles precluded an unmodified reapplication of the DSRG matrix, but its prescriptive design offered a model to follow.

The division of the LAGS region into four zones at the outset of the work offered an editorial convenience for the direction of field and scribal work during the data-gathering phase. Later, it helped order the materials for publication with a serial identification code for the registration of all informants in the basic materials and the concordance. Finally, it simplified the composition of a graphic plotter grid. Each zone includes four major subdivisions, as marked in Figure 5, with the interior Gulf Coast sectors of the East Central and West Central zones including further analysis that corresponds with state boundaries. The 16 principal divisions gave a framework for the organization of a matrix. Through a step-by-step progression, it was possible to resolve problems first within each grid unit, then within each sector, state, and zone, and finally across the eight-state territory.

To make use of the matrix concept in LAGS mapping, the plan required primary attention to the concentrations of informants and their relative positions, one to another, rather than to a prescribed grid of predetermined

FIGURE 5, THE LAGS GRID



composition. The form of the LAGS grid took shape by establishing informant positions as closely as possible to the relative points on a descriptive map that marks the locations of their communities. Each of 914 primary informants was thus represented by a fixed point on the grid.

Figure 6, "The West Central Zone," illustrates the principle of placement as it applies to the locations of 193 primary informants. Marked according to the grid unit designations of Figure 5, West Tennessee informants are listed A-G (DA-DG); Upper Mississippi informants, h-p (DH-DP); Lower Mississippi informants Q-Z (DQ-DZ); Gulf Mississippi, a-b (EA-EB); and East Louisiana, c-g (EC-EG). Although the positions of informants from urban communities, as, for example, Memphis (DG), Jackson (DU), and New Orleans (EE), extend beyond corresponding geographical, if not focal, domains, none of these positions overlap zone, state, or sector boundaries. Each position is fixed as closely as possible to the location of the community.

Figure 7, "Mississippi Box Grid A, Demographics," abstracts the matrix configuration for the state of Mississippi from the West Central Zone, expands each informant position to include six slots, and records social characteristics of the 110 primary informants. This reference map shows the possibility of elaborating any part of the grid to include as many slots as needed to carry a coherent set of data. The form can be used independently to suggest the composition and regional distribution of a social sample, to project the linguistic information along the lines of the Loganville chart (Figure 2), or in conjunction with another map, as, for example, a linguistic table, to identify and combine features of language and society.

Figure 8, "Mississippi Box Grid B, Reflexes of Postvocalic /r/," is a linguistic data map. This form identifies the grid units as coded in Figure 6 (h-p; Q-Z; a-b) and lists historical reflexes of postvocalic /r/ in five

FIGURE 6, THE WEST CENTRAL ZONE

A-G (DA-DG) West Tennessee h-p (DH-DP) Upper Mississippi

Q-Z (DQ-DZ) Lower Mississippi a-b (EA-EB) Gulf Mississippi

c-g (EC-EG) East Louisiana

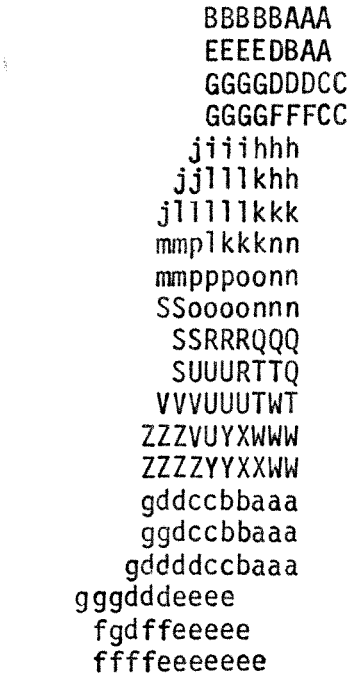


FIGURE 7, MISSISSIPPI BOX GRID A

DEMOGRAPHICS

1. R(ural)/U(rban)
2. B(lack)/W(hite)
3. F(emale)/M(ale)
4. Age Groups in Ten-Year Intervals 1-9 (13-99)
4. Social Class
   + (Upper)
   ± (Middle)
   - (Lower)
6. Education
   + (College)
   ± (High School)
   - (No High School)

	1	2	3	4	5	6	7	8	8	10
A				RWM	RWF	RWF	RBM	RWF	RWM	RWF
				8+-	8+±	7++	8±-	1±±	7-±	8±+
B			RWM	RMW	RMB	RMW	RMB	RMB	RFW	RFB
			8+±	8±+	3±+	6--	6--	7±±	1±±	1±±
C		RBM	RWF	RWM	RWM	RWF	RBF	RWF	RWM	RWF
		7--	1±±	7±-	8++	7±+	6±+	8±±	6±-	6±±
D		RWM	RWF	RWM	RWM	RBM	RWM	RWM	RWF	UBF
		8++	6--	8+±	6±+	7±-	2±+	8±-	8±±	6-±
E		UWM	RBF	RWM	RWF	RBF	RWM	RWM	RBF	UWM
		5++	6--	5±±	8--	3-±	8±±	6±±	2-+	4++
F		RBM	RWF	RWM	RBM	RWF	RWF	RWF	RWM	RBM
		7--	7++	5--	3±+	4±±	8±±	9--	7±±	6--
G			RWM	RWF	RWF	RBM	RWM	RBF	RWM	RBM
			8++	6--	6±-	8--	4+-	2-±	4±±	7±±
H			RBF	UBM	UBF	UBF	RWF	RWF	RBM	RWF
			7--	8--	6±+	1±±	8++	6±+	5--	7±-
I		RBM	RWM	RWF	UBM	UWM	UWF	RWM	RBM	RWM
		7--	6-±	5--	7±-	1±+	7±+	7-+	8--	7±-
J	RBF	RWM	RBM	RBM	RWM	RWF	RWF	RBF	RWF	UWF
	7--	5±±	5±+	7±-	7±-	7±±	8±-	4-+	6-±	1±+
K	RBM	RBM	RBF	RWF	RWM	RWM	RWM	RWF	UBF	RWM
	8--	7-±	7++	7++	8±±	9±-	7--	7±±	8±+	7±±
L						RBM	RWF	RBF	UWM	RWM
						7--	7--	3±+	5-±	7+±
M						RWM	RWM	RWF	UWM	RWM
						2±+	8-±	6±±	8--	8+±
N							RWM	UBF	UBM	UWM
							7+±	1±±	8±-	5-±

FIGURE 8, MISSISSIPPI BOX GRID B

REFLEXES OF POSTVOCALIC /r/

Grid Unit Code: h-p/Q-Z/a-b/ for DH-DP/DQ-DZ/EA-EB

Phonic Referents: +/- for retroflex/vocalized postvocalic unit

1. Grid Unit
2. After /ɪ/ as in ear
3. After /ʊ~ɔ/ as in poor
4. After /a/ as in car
5. After /o/ as in hoarse
6. After /ai/ as in wire

	1	2	3	4	5	6	7	8	9	10
A				j--	i++	i--	i++	h++	h++	h--
				-+-	+++	---	---	+++	+++	---
B			j--	j--	l++	l+-	l--	k--	h++	h+-
			---	---	+++	++-	---	---	+++	---
C		j-+	l++	l--	l--	l++	l--	k--	k++	k++
		+++	+++	---	+--	+++	-+-	---	+-+	+++
D		m++	m+-	p-+	l+-	k--	k++	k++	n++	n--
		+++	+-+	-+-	-+-	---	+++	+++	---	---
E		m++	m--	p-+	p++	p+-	o++	o--	n++	n--
		+++	---	--+	+++	---	++-	-+-	++-	---
F		S--	S--	o--	o--	o--	o++	n--	n--	n--
		---	---	---	---	-++	+-+	---	---	---
G			S--	S++	R-+	R--	R++	Q--	Q+-	Q--
			+-+	-++	---	---	+++	+--	-+-	---
H			S--	U--	U--	U--	R+-	T++	T--	Q--
			---	---	-+-	---	---	+++	---	-+-
I		V--	V--	V++	U--	U++	U++	T+-	W-+	T+-
		---	--+	+++	---	+++	+++	+-+	-+-	+++
J	Z--	Z--	Z--	V--	U--	Y++	X++	W+-	W++	W++
	---	--+	---	-+-	+--	+++	+++	+-+	+++	+++
K	Z--	Z--	Z--	Z++	Y++	Y--	X++	X++	W--	W+-
	---	---	++-	---	-++	+++	+++	+++	+--	+++
L						b--	b++	a++	a+-	a++
						---	+++	+++	+++	+++
M						b++	b++	a++	a--	a--
						+++	+++	+++	---	---
N							b-+	a++	a--	a--
							--+	+-+	-+-	--+

different phonological environments. A map of this kind is well-suited for subregional studies and for the transmission of information in journals and other forms of conventional publication. Figure 8, for example, makes a convenient statement concerning divided usage that can be interpreted in a geographical (regional), historical (chronological), or social (caste, class, or educational) context. Tactically, the form is most useful in demonstrating the virtually inexhaustible resources of matrix mapping. For the LAGS Project, the ultimate application of the grid is the electronic atlas (Note 2). Proposed in a base form of 250 items, that register suggests a matrix of 238,500 slots (914 x 250) with single item projections on a graphic plotter grid.

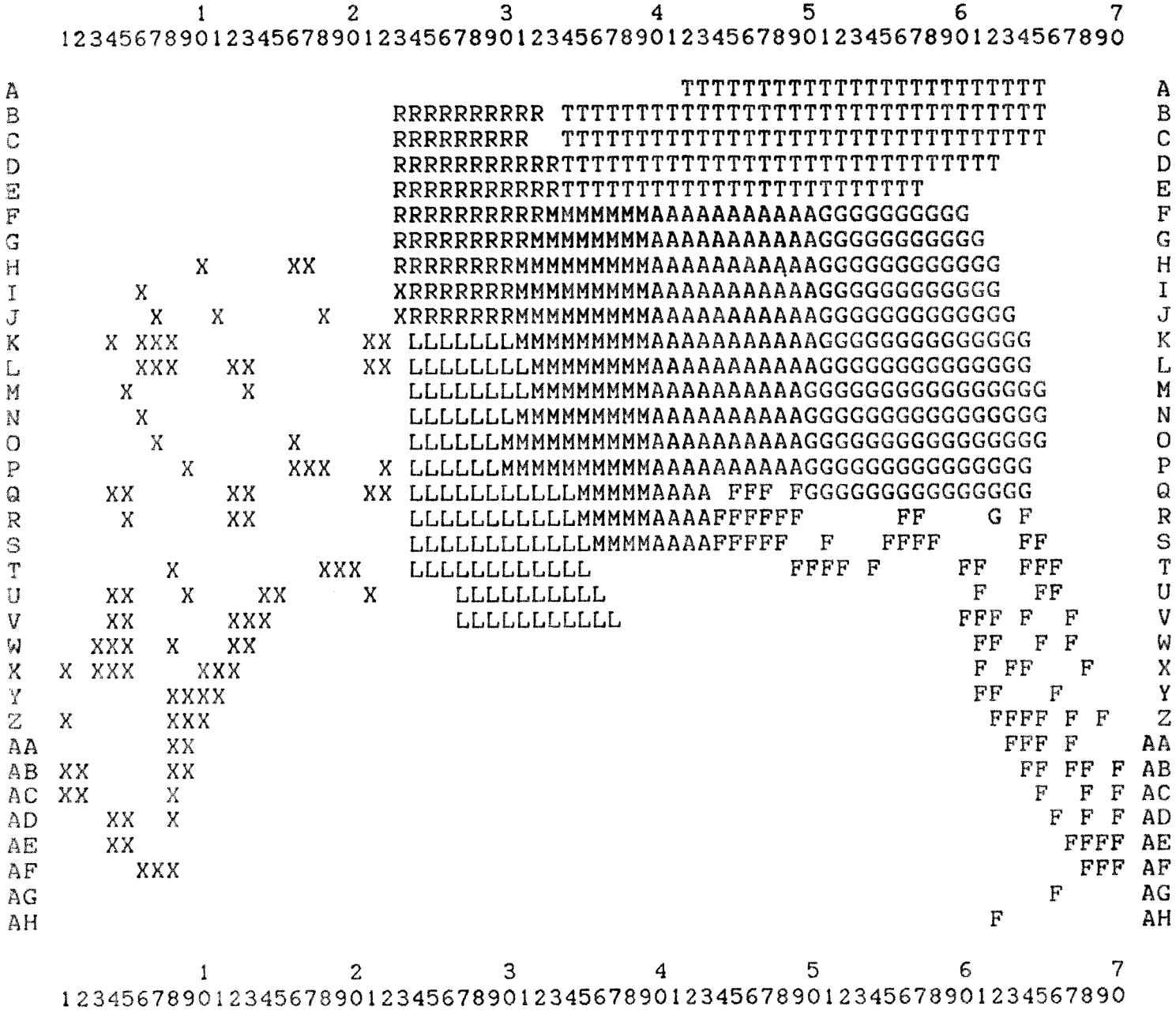
Figure 9, "Graphic Plotter Grid: LAGS Primary Informants," marks the positions of 914 subjects, according to the eight states of the territory. For six states--Tennessee, Arkansas, Georgia, Alabama, Mississippi, and Louisiana--all contiguous space is filled within the political boundaries of a descriptive map. In mapping informant positions in Florida and Texas, the grid arranged slots discontinuously over subregions of light coverage in the sampling, areas that reflect sparse populations, recent settlement, or Spanish-speaking enclaves.

Three LAGS projections illustrate forms produced with the mapping program. As the initial composition for this work (Pederson and McDaniel, forthcoming), the program maps one, two, or three variants in all recorded combinations and with all instances of a different form, including *no response*, marked by a point (.). Although the program could be rewritten to plot as many variants as single characters might represent on the grid, as, for example, the 94 letters and symbols on the keyboard of the IBM PC, such a configuration would be useful only for machine reading. That form might be

FIGURE 9

Graphic Plotter Grid: LAGS Primary Informants

T = Tennessee
G = Georgia
F = Florida
A = Alabama
M = Mississippi
R = Arkansas
L = Louisiana
X = Texas



reserved for inventorial purposes, base maps, but the ordinary projections for unassisted reading and conventional publication rarely offer useful patterns with three variants.

Figure 10, "*Snake Feeder/Snake Doctor/Mosquito Hawk*," is an exception. Here, three well-established historical patterns mark subregions of almost mutually exclusive incidence of these synonyms of *dragonfly*. The South Midland form *snake feeder* shows concentrated occurrence only in East Tennessee. The Piedmont form *snake doctor* records two patterns, a direct western extension across the Georgia Upcountry and a northern progression up the Mississippi Valley, a reflex of the Virginia/Louisiana slave-trade connection. The Coastal form *mosquito hawk* outlines the Atlantic/Gulf regions and demonstrates the powerful influence of the New Orleans focal area, as it projects that Low Country form across much of the territory covered by the five delta subsystems, as, for example, up the Red River Basin to Texas and Arkansas.

Figure 11, "*Mosquito Hawk* and *Skeeter Hawk*," shows a more striking configuration by combining the Coastal form with instances of a clipped reflex that had been excluded from Figure 10. In contrast, Figure 12, "*French harp*," plots a single synonym of *reed harmonica*. This hallmark of South Midland usage offers a useful illustration of the most effective application of the graphic plotter grid. Designed primarily for onscreen reading, the form can quickly display all possible patterns of distribution of single features. Later, these can be combined, manually or with another program, for other kinds of projections, as, for example, electronic analogues of the Wenzel grid.

These applications of the graphic plotter grid seem to meet the needs of the work. They satisfy the empirical requirements of coherence, completeness,

FIGURE 10

snake feeder/snake doctor/mosquito hawk

A = snake feeder
B = snake doctor
C = mosquito hawk
+ = snake feeder + snake doctor
# = snake feeder + mosquito hawk
& = snake doctor + mosquito hawk
* = snake feeder + snake doctor + mosquito hawk

FIGURE 11

mosquito hawk/skeeter hawk

A = mosquito hawk
B = (mo)squito hawk
+ = mosquito hawk + (mo)squito hawk

FIGURE 12

French harp

A = French harp

and simplicity. With an obligatory reference to each informant in every projection, the form offers an uncommon resource in mapping dialect features that responds to the requisite of accountability. The grid might also improve communication by recording regional patterns economically and transmitting them efficiently in hard copy: without substantial reduction, the map will stand between the margins of a journal page. In returning the investigation to those primary concerns of traditional linguistic geography, the graphic plotter grid keeps the McDavid legacy intact within the LAGS Project, reporting maximum information with minimal interference, the signature characteristics that gave authority to his work.

NOTES

1. For example, McDavid (1942) concluded his first essay in general linguistics with these remarks: "All dialect students should investigate thoroughly, define accurately, and carefully verify their evidence. When this is done, they should publish promptly. Too many excellent studies have been lost because the authors did not take the trouble to have them published. However, when doubt exists, the student should publish: a poor article published will be forgotten sooner or later; a good article, unpublished, can never be regained." During the next four decades, he documented his conviction with a publication record that outlined the discipline of linguistic geography with consummate accuracy.

2. This work owes a large debt to four people: John J. Nitti of the Seminary of Medieval Spanish Studies, University of Wisconsin, who brought both mainframe and microcomputer applications to the LAGS Project; William H. McDaniel, a Southern Bell engineer, and Susan L. McDaniel, who have written all microcomputer programs for the work in progress; and Allen R. Thomas, whose book (1980) gave immediate direction to the plans outlined here. His *Plotter Grid*, Figure 1b among his unnumbered map pages, serves functions beyond the range of LAGS plans, but its composition encouraged experimental work with the graphic plotter grid. Although the LAGS map uses neither computer graphics nor plotter, it plots a facsimile of the Gulf States territory with electronic signals.

As suggested below, the graphic plotter grid points toward the production of an electronic atlas (Pederson forthcoming). In the format of a single packet of 10 5.25 diskettes, double-sided, double density, 40 track, and soft-

sectored, this format will carry 250-300 LAGS files. These will include the principal sets of phonological, morphological, and lexical items from the basic materials, as, for example, the allophones of the stressed vowel of *norms*, the phonemic alternants of the intervocalic fricative in *greasy*, the principal parts of *drag*, and the synonyms of *andirons*. Whereas a conventional folio atlas includes 500-1000 maps with descriptive volumes of word geography, verb morphology, and pronunciation adding a few hundred more static features maps, an electronic atlas can produce hundred of thousands of maps for onscreen reading or printing. Including the programs for sorting, mapping, and printing, the atlas will form a research tool. With the assistance of an IBM Personal Computer, a reader should be able to plot contrastive features in a single file or combinations of features from several files to determine patterns of regional and social distribution. For a summary of these programs and illustrations of their output, see Pederson and McDaniel (forthcoming).

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LAGS WORKING PAPERS, THIRD SERIES (1985)

WORKING PAPER NUMBER FOUR

An Electronic Atlas in Microform

Lee Pederson

AN ELECTRONIC ATLAS IN MICROFORM

Lee Pederson

During the first century of development in European and American dialectology, the form and function of the linguistic atlas have changed considerably. The massive folio productions of Gilliéron, Wenker and Wrede, Jaberg and Jud, and Kurath have given way to more efficient and simplified formats. Whereas the great pioneer atlases transmitted data bases and linguistic contrasts on a single plane, later efforts of Orton (England), McDavid (Middle and South Atlantic States, USA), and Allen (Upper Midwest, USA) introduced list manuscript publication and base-map overprinting to improve the referential value of the work and to reduce publication costs. Current research in the Linguistic Atlas of the Gulf States (LAGS) Project reflects the influence of all those European and American works and draws heavily upon the resources of present-day technology in the composition of its informational chain.[1]

The LAGS *Basic Materials* (1981) and the concordance (forthcoming) record and index the full protocol collection of the survey in fewer than 2,000 fiche.[2] Those tools offer more nearly coherent and comprehensive representations of the data that forms a linguistic atlas than any gathering of maps or list manuscripts can possibly provide. This report outlines a plan for an electronic atlas in microform (EAM) that suggests a further application of computer technology in dialect study. Although a mainframe schedule can easily be developed from this plan, the microcomputer format aims to serve a larger number of users than those with direct or network access to a major system.

EAM will include a set of programs and files capable of projecting

hundreds of thousands of dialect maps on the monitor screen of a microcomputer, and, when needed, the maps can be printed for hard copy reproduction. The method combines data already stored on diskettes ("floppy disks," hereafter *disks*) with a regional electronic grid map, a graphic plotter grid.[3] The programs merge the files and produce maps in response to a simple set of commands. As a research tool, this forms the final application of the computer in the survey and the most abstract projection of findings in the informational chain.[4]

Because EAM is one of several descriptive formats used in the project, the files selected for computer mapping must be representative of the full texts published in microform, the basic materials and their exhaustive concordance. Like those collections, this abstraction aims primarily to provide research needs as a reference instrument. In that respect, EAM closely follows the design of the pioneer atlas publications in the production of charts that lay out information for analysis by the reader, without the prescriptive limitations of interpretative conclusions prior to a full disclosure of the facts.

To illustrate the resources of EAM, this report extends the discussion from earlier working papers[5] and depends on them in documenting some of the procedures mentioned here in cursory remarks. Here, the outline aims to show the kinds of files, maps, and information transmitted on a set of 10 disks, including an operations disk and nine data disks that store 250 linguistic files. The programs of the operations disk will produce lists and maps of data in the files in several kinds of linguistic, social, and geographical configurations. The first part of this report explains the composition of linguistic files, forms that function independently as list-manuscript data and collectively with the graphic plotter grid as microcomputer maps.

The Files

With the form and contents of the operations disk explained elsewhere (Pederson and McDaniel, *forthcoming*), the linguistic files are most conveniently recognized as summaries reduced to an alphabetic code and merged with data files to produce specific lexical, morphological, or phonological registers. These instruments can be produced independently as lists for onscreen or hard-copy printing. They underlie the four projections of LAGS material in EAM: the onscreen and printed versions of lists and maps.

Linguistic files will include 250 items, 100 lexical, 50 morphological, 50 phonemic, and 50 phonetic sets. Although final selections will be drawn from a much larger gathering of files, the essential format can be suggested in these terms:

1. Lexical Files: including most of the items in Kurath (1949) with additions from Atwood (1962), such as *chigger/red bug*, *lagniappe/pilon*, and *shivaree*, and the LAGS work sheets (1972/1974/1981), such as *tommyto* ("small tomato"), *gopher* ("burrowing land turtle"), and *moonshine/white lightning/shinny* ("unlicensed potable alcoholic blends");[6]
2. Morphological Files: including function words and inflectional forms recorded in Atwood (1953) with additions from the LAGS work sheets, as, for example, principal parts of all plotted verb forms and *zero* patterns of inflection (number and tense), function words (articles, prepositions, verb auxiliaries), and linking verbs (the deleted copula);[7]
3. Phonemic Files: including the incidence of consonants and vowels recorded in Kurath and McDavid (1961), this set presents the most

orthodox gathering of forms in EAM. The authoritative selection, analysis, and description of unitary phonemes in PEAS offers a guide that requires no immediate modification in the Gulf States;[8]

4. Phonetic Files: including the realization of consonant and vowel phonemes as strings of phonetic features, this set extrapolates findings from Pederson (1985) and the aforementioned survey in deductive phonetics. Although most of these files are drawn from the idiolect synopses (*Basic Materials*: Fiche 6-16), some report evidence directly from the protocols (*op cit.*: Fiche 17-1134).[9]

Each set of files will be open to all kinds of geographical, historical, and social analysis controlled by the operations disk.

A summary of the contents of a lexical file identifies the code, a synopsis of incidence, and the register for a synonym within the set. Figure 1, "MANTEL: Code and Count," combines two files, the code and combinations file and the totals file. These identify the 32 synonyms coded A-Z/aa-af, the 46 patterns of combinations in which the synonyms occur, two inappropriate responses excluded from the list, and a summary of incidence in parens for all synonyms.[10]

The forms were elicited with this item from work sheet eight:

4. The lamp is on the) mantel *mantelshelf, *mantelpiece, *tussock, *clock shelf, *fireboard, *mantel board, *manteltree

L[owman]: Up above the fireplace to set vases on.

M[cDavid]: What would you call the place above the fireplace where you might put an ornament or picture or something like that?[11]

Although the general form *mantel* and the dominant Lower Southern form *mantelpiece* are too numerous to list in a short report, the files including *fireboard* (Figure 2) and *mantel board* (Figure 3) are suggestive of EAM data in

FIGURE 1

MANTEL: Code and Count

A = mantel (567)
B = mantelpiece (242)
C = fireboard (72)
D = chimney shelf (2)
E = shelf (62)
F = stone mantel (1)
G = mantel board (54)
H = chimneypiece (1)
I = manteltree (1)
J = mantelshelf (36)
K = fire shelf (2)
L = whatnot shelf (2)
M = board (6)
N = shelf over the fireplace (1)
O = clock shelf (1)
P = manteling (1)
Q = mantel place (1)
R = fire mantel (2)
S = shelf mantel (2)
T = oak (1)
U = chimney (1)
V = fireplace shelf (3)
W = wooden mantel (1)
X = arch (1)
Y = arch rock (1)
Z = mantel log (1)
aa = la corniche (1)
ab = medicine shelf (1)
ac = fireplace mantel (1)
ad = ledge (1)
ae = chimney breast (1)
af = chimenea (1)

Combinations

A+B (66)
A+B+E (2)
A+B+G (1)
A+B+J (1)
A+B+ae (1)
A+B+C+G (1)

A+C (43)
A+C+E (2)
A+C+H (1)
A+C+W (1)
A+C+G+J (1)
A+C+G+O (1)

A+D (1)
A+D+K (1)

A+E (17)
A+E+J (2)
A+E+R (1)
A+E+J+V (1)

A+G (6)
A+G+Z (1)

A+J (5)
A+M (2)
A+R (1)
A+S (1)
A+X+Y (1)
A+ac (1)

B+C (7)
B+E (11)
B+G (7)
B+G+I (1)
B+J (2)
B+M (1)
B+N (1)
B+Q (1)
B+U (1)

C+G (2)
C+M (1)
C+ab (1)

E+J (2)
E+L (1)
E+M (1)
E+V (1)
E+aa (1)
E+ad (1)

J+T (1)

Substitute/Inappropriate Responses

banister
fireplace

FIGURE 2

Book	Protocol	Sx	Cl	Rc	Age	Ed	Speech	Locality (Community)	Sec	FW	Sc	
** Lexical File: mantel -- C -- fireboard **												
001	A 001.04	F	L	Y	99	1	folk	Neva (Johnson)	ET	LP	LP	1
002	A 001.01	M	L	Y	82	1	folk	Laurel Bloomery (Johnson)	ET	LP	LP	2
003	A 001.03	M	M	Y	79	1	common	Shady Valley (Johnson)	ET	LP	LP	3
004	A 001.05	F	L	Y	38	2	common	Laurel Bloomery (Johnson)	ET	MMc	LP	4
005	A 001.02	F	M	Y	78	3	cultured	Laurel Bloomery (Johnson)	ET	LP	LP	5
008	A 002.01	M	L	Y	67	1	common	Carter (Carter)	ET	DAC	LP	6
011	B 005.01	M	L	Y	66	1	folk	Jackson Chapel (Greene)	ET	LP	LP	7
012	C 006.01	F	L	Y	73	1	folk	Big Creek (Sullivan)	ET	LP	LP	8
017	C 007.01	M	M	Y	84	1	folk	St. Clair (Hawkins)	ET	LP	LP	9
018	D 009.01	F	I	Y	43	1	folk	Rankin (Cocke)	ET	LP	LP	10
019	D 009.02	M	M	Y	76	2	common	Bat Harbor (Cocke)	ET	LP	LP	11
020	D 009.03	M	M	Y	72	3	cultured	Cosby (Cocke)	ET	LP	LP	12
021	D 010.01	M	M	Y	81	1	folk	Talbott (Jefferson)	ET	LP	LP	13
023	E 014.01	M	M	Y	80	1	folk	Little Sycamore (Claiborne)	ET	LP	LP	14
025	F 015.01	M	M	Y	76	1	folk	Wear Valley (Sevier)	ET	LP	LP	15
036	H 019.02	M	L	Y	80	1	folk	Jacksboro (Campbell)	ET	LP	LP	16
042	J 024.01	M	L	Y	89	2	folk	Kingston (Roane)	ET	LP	LP	17
044	J 026.01	F	L	Y	86	1	folk	Sequatchie Valley (Cumberland)	ET	BR	LP	18
047	K 028.03	M	L	Y	78	1	folk	Spring City (Rhea)	ET	SL	SL	19
061	O 036.01	M	L	Y	81	1	folk	Ellijay (Gilmer)	UG	MMc	RIN	20
064	O# 001.01	F	M	Y	86	1	folk	Blairsville (Union)	UG	EH-2	LP	21
069	Q 043.01	F	L	Y	63	1	folk	Jasper (Pickens)	UG	KED	MP	22
072	Q# 004.01	M	L	Y	80	1	folk	Dahlonega (Lumpkin)	UG	LP	LP	23
073	Q# 005.01	F	M	Y	64	3	cultured	Cleveland (White)	UG	AM	SL	24
079	R 047.01	F	U	Y	68	3	cultured	Rome (Floyd)	UG	CWU	LP	25
080	R 048.01	M	M	Y	76	2	common	Menlo (Chattooga)	UG	JMF	LP	26
084	S 051.01	M	L	X	69	1	folk	Conyers (Rockdale)	UG	BR	LP	27
088	S# 009.01	F	M	Y	74	1	folk	Toccoa (Stephens)	UG	IR	SL	28
092	S# 014.01	F	M	Y	63	2	common	Hartwell (Hart)	UG	LD-1	LP	29
095	T 052.04	F	M	Y	78	2	folk	Lithonia (De Kalb)	UG	EWB	GR	30
116	X 063.02	M	L	X	80	1	folk	Newnan (Coweta)	UG	SB-1	LP	31
136	Z 070.01	M	L	Y	70	1	folk	Thomaston (Upson)	UG	AB	SL	32
152	AC# 042.02	F	L	Y	70	2	common	Swainsboro (Emanuel)	LG	BR	PE	33
184	AG 098.02	M	M	Y	60	2	common	Ocilla (Irwin)	LG	SMH	SL	34
186	AH 100.01	F	M	Y	55	2	common	Tifton (Tift)	LG	MB	LP	35
210	AM 118.01	M	M	X	74	1	folk	Ray City (Berrien)	LG	AB	GB	36
290	BA 185.01	F	L	Y	65	1	folk	Forbus (Fentress)	MT	BR	LP	37
315	BH 206.01	F	L	Y	81	1	folk	Waverly (Humphreys)	MT	RP	LD	38
317	BH 207.01	F	L	Y	81	2	folk	Only (Hickman)	MT	BR	LD	39
318	BH 207.02	M	M	Y	72	2	common	Whitehouse (Hickman)	MT	BR	LP	40
321	BI 209.01	M	M	Y	81	3	common	Spencer (Van Buren)	MT	BR	LD	41
338	BN 225.04	F	M	Y	64	2	common	Stevenson (Jackson)	UA	MB	LP	42
348	BO 229.01	F	M	Y	50	2	common	Town Creek (Lawrence)	UA	AW	MB	43
350	BP 230.01	M	L	Y	64	2	common	Lexington (Lauderdale)	UA	AB-1	MP	44
355	BR 234.01	F	M	Y	69	1	folk	Blountsville (Blount)	UA	JH-1	LP	45
359	BS 237.01	M	M	Y	78	2	common	Haleyville (Winston)	UA	SL	SL	46
363	BS 238.01	M	M	X	42	2	common	Bexar (Marion)	UA	EC-2	MB	47
365	BS 239.02	F	M	Y	45	2	common	Belgreen (Franklin)	UA	CWF	LP	48
376	BV 244.06	M	M	Y	80	1	folk	Duncanville (Tuscaloosa)	UA	GB	PE	49
388	BX 251.03	M	L	Y	78	1	folk	Shelby (Shelby)	UA	AMF	SL	50

FIGURE 2 (Continued)

420	CD 273.02	M	L	Y	74	1	folk	Macedonia (Lowndes)	LA	GB	MP	51
435	CF 279.03	M	M	Y	73	2	common	Troy (Pike)	LA	GB	GB	52
438	CF 281.01	M	L	X	73	1	folk	Greenville (Butler)	LA	GB	LP	53
440	CF 281.02	F	M	Y	55	2	common	Greenville (Butler)	LA	GB	MB	54
450	CI 288.02	M	L	Y	78	2	common	Leroy (Washington)	LA	BR	MP	55
465	CL 299.02	F	I	Y	72	1	folk	Laurel Hill (Okaloosa)	WF	BR	PE	56
520	DH 325.01	M	L	Y	72	2	folk	Iuka (Tishomingo)	UM	EC	LP	57
600	DW 387.05	M	L	X	84	1	folk	Soso (Jones)	LM	BR	GR	58
674	FA 432.01	M	M	Y	82	1	folk	Piggott (Clay)	AR	MMc	LP	59
681	FB 439.01	M	L	Y	65	1	folk	Cave City (Sharp)	AR	GM	MP	60
684	FB 439.02	M	M	Y	62	2	common	Evening Shade (Sharp)	AR	GM	LP	61
689	FC 444.02	F	L	Y	82	2	folk	Forrest City (St. Francis)	AR	MMc	PE	62
694	FD 450.02	M	M	Y	70	1	folk	Des Arc (Prairie)	AR	MMc	LP	63
713	FH 459.01	F	M	Y	86	2	common	Greenbrier (Faulkner)	AR	MMc	PE	64
715	FH 462.01	F	L	Y	77	1	folk	Pee Dee (Van Buren)	AR	MMc	LP	65
716	FI 463.01	M	M	Y	84	1	folk	Mountain Home (Baxter)	AR	MMc	LD	66
717	FI 465.01	F	M	Y	71	1	folk	Hilltop (Searcy)	AR	MMc	PE	67
726	FJ 473.01	F	L	Y	86	1	folk	Mulberry (Crawford)	AR	MMc	GR	68
733	FK 480.01	M	M	Y	70	1	folk	Gate (Scott)	AR	EC	SL	69
786	FU 526.03	M	L	Y	67	1	folk	Provencal (Natchitoches)	WL	BR	GB	70
823	GB 558.02	M	L	Y	37	2	common	Harmony (Nacogdoches)	UT	BR	PE	71
838	GE 582.01	M	M	Y	93	1	folk	Denison (Grayson)	UT	MB	MP	72

Total: 72

FIGURE 3

** Lexical File: mantel -- G -- mantel board **

063	O 037.02	M	L	Y	86	1	folk	Chatsworth (Murray)	UG	JMF	LP	1
098	T 053.11	M	L	X	70	1	folk	Atlanta (Fulton)	UG	MNT	GR	2
187	AH 101.01	M	L	Y	82	1	folk	Sumner (Worth)	LG	AB	SL	3
193	AJ 107.01	M	M	Y	70	2	common	Georgetown (Quitman)	LG	GM	MB	4
212	AN 121.01	F	M	Y	74	1	folk	Moultrie (Colquitt)	LG	GM	PE	5
216	AO 123.03	F	M	Y	70	3	common	Camilla (Mitchell)	LG	LY	GB	6
225	AP 129.01	M	L	Y	83	1	common	Donalsonville (Seminole)	LG	BR	LP	7
236	AR 134.04	M	M	Y	46	2	common	Hopeful Church (Columbia)	EF	BR	PE	8
239	AT 141.01	F	M	Y	52	2	common	Tallahassee (Leon)	EF	MB	SL	9
301	BE 198.01	F	I	Y	82	1	folk	Gainesboro (Jackson)	MT	BR	LD	10
318	BH 207.02	M	M	Y	72	2	common	Whitehouse (Hickman)	MT	BR	LP	11
402	CA 261.01	M	M	Y	68	2	common	Sprott (Perry)	LA	GB	LP	12
411	CC 268.04	M	M	Y	45	2	common	Opelika (Lee)	LA	DS	MP	13
415	CD 271.01	M	M	Y	71	2	common	Union Springs (Bullock)	LA	MB	MB	14
431	CE 278.01	M	M	Y	84	1	folk	Geneva (Geneva)	LA	MB	PE	15
438	CF 281.01	M	L	X	73	1	folk	Greenville (Butler)	LA	GB	LP	16
439	CF 281.03	M	M	Y	68	1	folk	Shacklesville (Butler)	LA	BSS	SL	17
440	CF 281.02	F	M	Y	55	2	common	Greenville (Butler)	LA	GB	MB	18
442	CG 282.02	M	M	Y	77	2	common	New Brockton (Coffee)	LA	MB	GR	19
444	CG 283.01	M	M	Y	76	1	folk	Gantt (Covington)	LA	GB	LP	20
446	CH 284.01	F	L	Y	59	2	common	Damascus (Escambia)	LA	EH-1	LP	21
451	CI 289.01	M	L	Y	85	1	folk	Needham (Choctaw)	LA	MB	LP	22
460	CK 296.01	F	L	Y	87	1	folk	Rock Hill (Washington)	WF	BR	LD	23
465	CL 299.02	F	I	Y	72	1	folk	Laurel Hill (Okaloosa)	WF	BR	PE	24
467	CM 300.01	F	M	Y	77	1	folk	Jay (Santa Rosa)	WF	GB	LP	25
472	CN 302.03	M	L	Y	74	1	folk	Stockton (Baldwin)	GA	MB	SL	26
505	DE 320.02	F	M	X	65	1	folk	Covington (Tipton)	WT	MB	LP	27
525	DI 330.02	M	M	X	82	1	folk	Holly Springs (Marshall)	UM	EC	PE	28
530	DJ 335.01	M	L	X	74	1	folk	Sherard (Coahoma)	UM	GM	PE	29
534	DK 339.02	M	M	Y	69	1	folk	Saltillo (Lee)	UM	MB	MP	30
536	DK 340.01	M	M	Y	86	1	folk	Toxish (Pontotoc)	UM	EC	PE	31
559	DO 356.01	M	M	Y	83	2	common	Chester (Choctaw)	UM	EC	SL	32
580	DS 374.02	M	L	X	78	1	folk	Mayersville (Issaquena)	LM	GM	SL	33
582	DT 375.01	M	M	Y	76	1	folk	Quitman (Clarke)	LM	MB	LP	34
583	DT 377.01	M	L	Y	77	2	common	Trenton (Smith)	LM	BR	LD	35
584	DT 377.02	F	M	Y	65	3	cultured	Wicker (Smith)	LM	BR	PE	36
600	DW 387.05	M	L	X	84	1	folk	Soso (Jones)	LM	BR	GR	37
605	DX 392.01	F	M	Y	85	1	folk	Weathersby (Simpson)	LM	MB	SL	38
697	FE 453.01	F	M	X	84	1	folk	Helena (Phillips)	AR	MMc	PE	39
740	FM 488.01	F	M	Y	77	1	folk	Hearn (Clark)	AR	MMc	LP	40
744	FN 494.02	M	M	Y	86	1	folk	Texarkana (Miller)	AR	EC	SL	41
750	FO 501.04	F	M	Y	62	2	common	Strong (Union)	AR	MB	LP	42
758	FQ 508.01	F	L	Y	83	2	folk	Oak Grove (W. Carroll)	WL	MB	SL	43
763	FR 514.03	M	L	Y	92	1	folk	Spearsville (Union)	WL	BR	LP	44
772	FS 518.02	M	M	Y	73	1	folk	Antioch (Lincoln)	WL	GM	MP	45
773	FS 521.01	M	M	Y	77	1	folk	Germantown (Webster)	WL	GM	LP	46
774	FT 523.06	M	I	X	82	1	folk	Shreveport (Caddo)	WL	BR	LP	47
782	FU 525.01	M	L	Y	80	1	folk	Coushatta (Red River)	WL	MB	SL	48
791	FV 528.03	M	M	Y	51	2	common	Hawthorne (Vernon)	WL	GM	GB	49
795	FW 532.01	M	M	Y	85	2	common	Colfax (Grant)	WL	MB	SL	50
800	FX 536.02	M	M	Y	76	1	folk	Enterprise (Catahoula)	WL	BR	SL	51

FIGURE 3 (Continued)

837	GE 579.01	F	M	Y	86	3	common	Greenville (Hunt)	UT	MB	PE	52
840	GE 584.01	F	L	Y	79	1	folk	Denton (Denton)	UT	SF	SL	53
856	GH 611.06	M	L	Y	88	1	folk	Huntsville (Walker)	UT	JNR	SL	54

Total: 54

tabular form. Each list records informant data in 13 fields. For example, the first entry under *fireboard* reports this information:

1) 001: the Book Number, the number assigned all primary informants, 001-914 in the listing of protocols in the *Basic Materials* and all other analogues, as, for example, the idiolect synopses and the concordance. Each of those 914 numbers has a position on the graphic plotter grid.[12]

2) A 001.04: the Protocol Number, the number assigned each field record and protocol during the composition of the sample. This number appears on every protocol page in the *Basic Materials.* The letter *A* identifies a set of counties with common geographical terrain and social history, here, the East Tennessee counties of Johnson and Carter; see Figure 4, "The LAGS Grid." The number 001 identifies Johnson County, Tennessee, the first of 665 counties and parishes indexed for the LAGS survey. The complemental number .04 indicates that this is the fourth interview conducted in Johnson County.[13]

3) F: the gender code, F(emale)/M(ale).

4) L: the social class code, A(ristocratic)/U(pper Middle)/M(iddle)/L(ower)/I(ndigent). These are simplified to U(pper: A+U)/M(iddle)/L(ower: L+I) in EAM projections.[14]

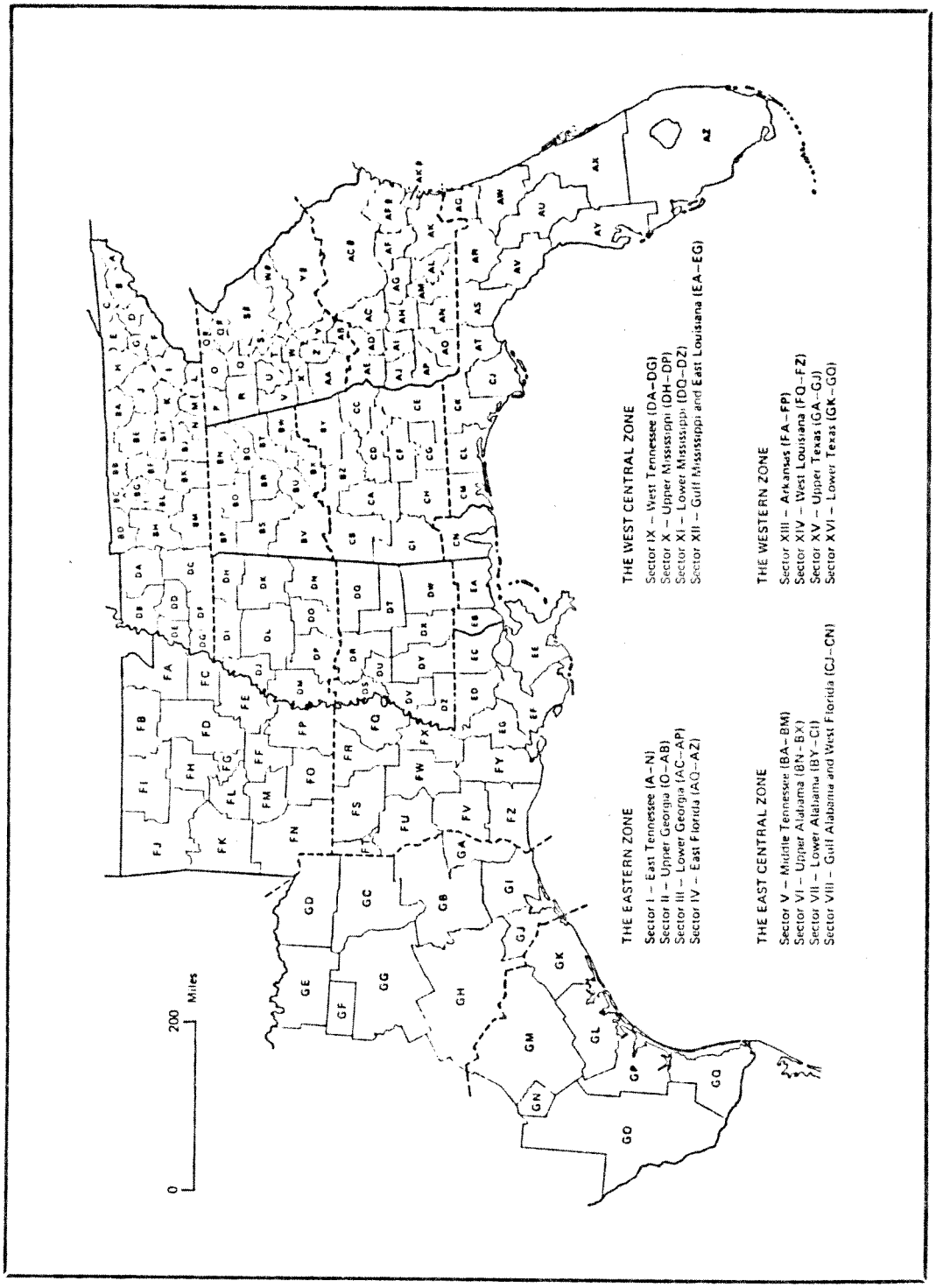
5) Y: the racial caste code, X(black)/Y(white).

6) 99: the age of the informant in years.

7) 1: the educational code, 1(elementary school)/2(high school)/3(college).

8) folk: the speech type, as suggested by comments of field workers and scribes. Although these descriptors tend to be circular, they are sometimes useful in correlating LAGS data with findings of other

FIGURE 4: THE LAGS GRID



American atlas projects, where informants are classified I(folk)/ II(common)/III(cultured).

9) Neva (Johnson): the locality, i.e., town (community, i.e., county or parish) represented by the informant. Virtually all LAGS primary informants are natives and lifelong residents of the places designated in this field.

10) ET: the sector code, here E(ast) T(ennessee) as outlined in Figure 4, grid units A-N.

11) LP: initials of field worker, here, Lee Pederson.

12) LP: initials of scribe, here, Lee Pederson.

13) 1: number in running count of incidence within a list, useful in cursory assessments of subregional distribution.

This information can be printed as shown in Figures 1-3 or projected on the matrix of the graphic plotter grid. In tabular form, the lists are most useful in comparing social factors, but they are also suggestive in approximating subregional distribution.

For example, Figure 2, "Fireboard," includes 72 instances of the form. Nineteen of these occur among the 60 informants of East Tennessee, with 13 more in Upper Georgia, 14 more in Middle Tennessee and Upper Alabama, and 11 in Arkansas. Those five of 18 sectoral subdivisions (Figure 4) comprise 57 of 72 instances of the term. Most of that territory is north of the Piedmont and well within the domain of the historical South Midland dialect area, suggesting that the term is a solid regional marker.

The incidence of *mantel board* (Figure 3) suggests a historical extension of the pattern of relic *fireboard*. Perhaps a blend of *mantel* or *mantelpiece* and *fireboard*, *mantel board* occupies much of the South Midland territory outlined in Figure 2, but it also shows heavy occurrence in the Pine Woods

areas of Georgia, Lower Alabama, West Florida, and Lower and Gulf Mississippi. In those places, a vestige of the relic form may remain, and, with it, the pattern leaves a reminder of the cultural origin of those Pinelanders, who migrated westward across the lower reaches of the territory. They moved out of the Carolina Pine Barrens, the birthplace of Andrew Jackson, and moved south and west, settling in those unproductive lands now called the Wire Grass in Georgia, the Sand Hills in Alabama, and the Pine Woods (or Piney Woods) in Florida, Mississippi, and Louisiana. And they carried with them those old-fashioned Southern forms, still distinguishable from the plantation varieties of regional speech.

The Maps

The lists are suggestive of regional patterns, but they are not easily committed to or sustained in memory without graphic assistance. Linguistic geography has always exploited the map as its singularly powerful descriptive tool. As stated above, without the inventorial responsibilities of the pioneer atlases, modern mapping has been limited mainly to interpretative studies, essays that follow the publication of a linguistic atlas. Because such works require long periods of time to complete, few maps accompany interim reports because they are difficult to compose and expensive to reproduce. The maps of EAM produced on the matrix of a graphic plotter grid are composed automatically with simple programs and reproduced at the same cost for the printing of a single page of type from a microcomputer.[15]

As explained in the working paper on the subject, the graphic plotter grid is a minimal matrix, a map that aims at representation of the Gulf States territory on a plane of 914 uninterrupted points. The goal was realized in

six of the eight states, but, in Florida and Texas, land mass and settlement history complicated the problem that required additional space for solution.[16] The base form map for EAM includes 914 points within the state boundaries outlined in Figure 5, "Informant Positions on the LAGS Graphic Plotter Grid."

This format accommodates a large quantity of data in small space. For example, Figure 6, "mantel/mantelpiece," plots the incidence of the two most common terms recorded in the survey, including more than 800 instances of the synonyms. That combination of the most common term, *mantel*, and the most frequently elicited regionalism, *mantelpiece*, covers the territory quite evenly. But the much higher incidence of *mantel* in the South Midland territory of Tennessee and the New Southern territory of urban Florida does not suggest a common dialect area. In the north, the pattern signals the probable presence of a different regional term; in Florida, the absence of a regional term among urban speakers, especially younger ones.

Conversely, the terms *fireboard* and *mantel board* show much more distinctive patterns of distribution. Figure 7, "fireboard," outlines the historical South that lay beyond the influence of the great plantation cultures of the coast and the interior plains. Figure 8, "mantel board," shows an extension of that domain into subregions of the Old South, but mainly following the settlement pattern of the migrants from the Pine Barrens. Figure 9, "fireboard/mantel board," illustrates the general pattern mentioned earlier, a regional subculture that stands apart from the old plantation areas marked by *mantelpiece*.

Because the programs offer a tool for geographical and social listing and plotting of forms, each of the data maps (figures 6-9) could be reformed to show distribution according to sex, social class, racial caste, age (as, for example, in three groups: under 50, 50-69, and over 69), education, and speech

FIGURE 5

INFORMANT POSITIONS ON THE LAGS GRAPHIC PLOTTER GRID

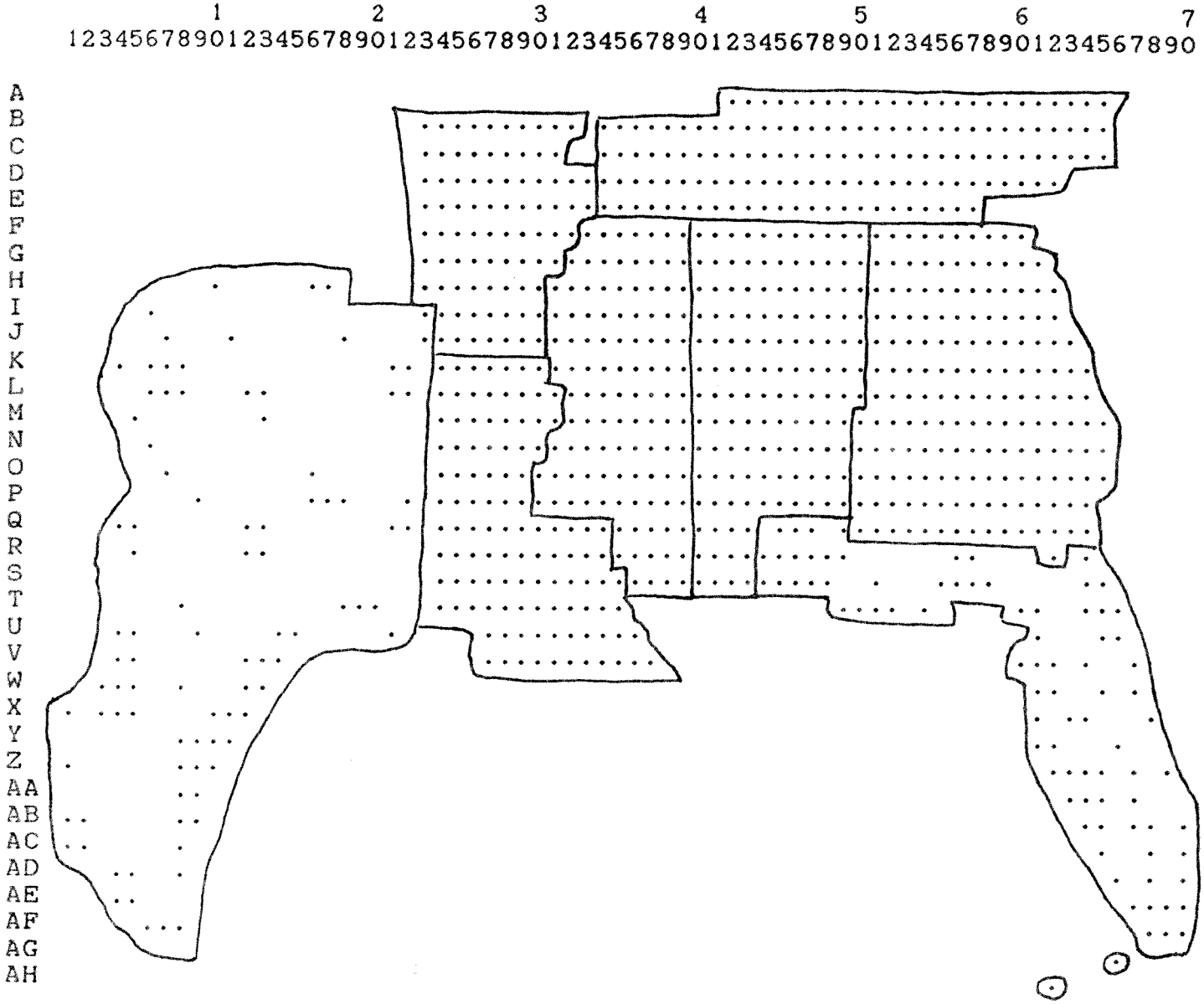


FIGURE 6

mantel/mantelpiece

A = mantel
B = mantelpiece
+ = mantel + mantelpiece

FIGURE 7

fireboard

A = fireboard

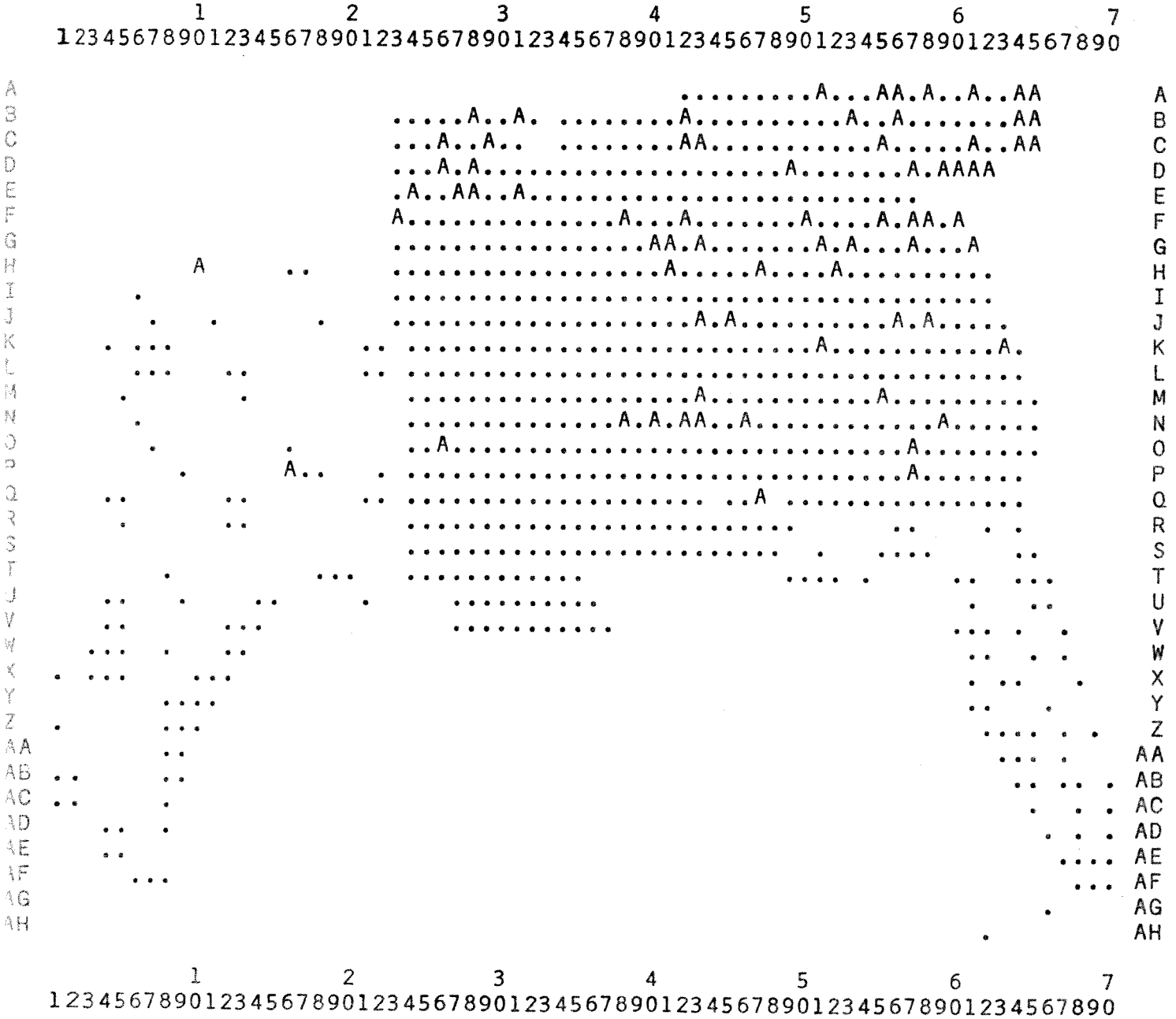


FIGURE 8

mantel board

A = mantel board

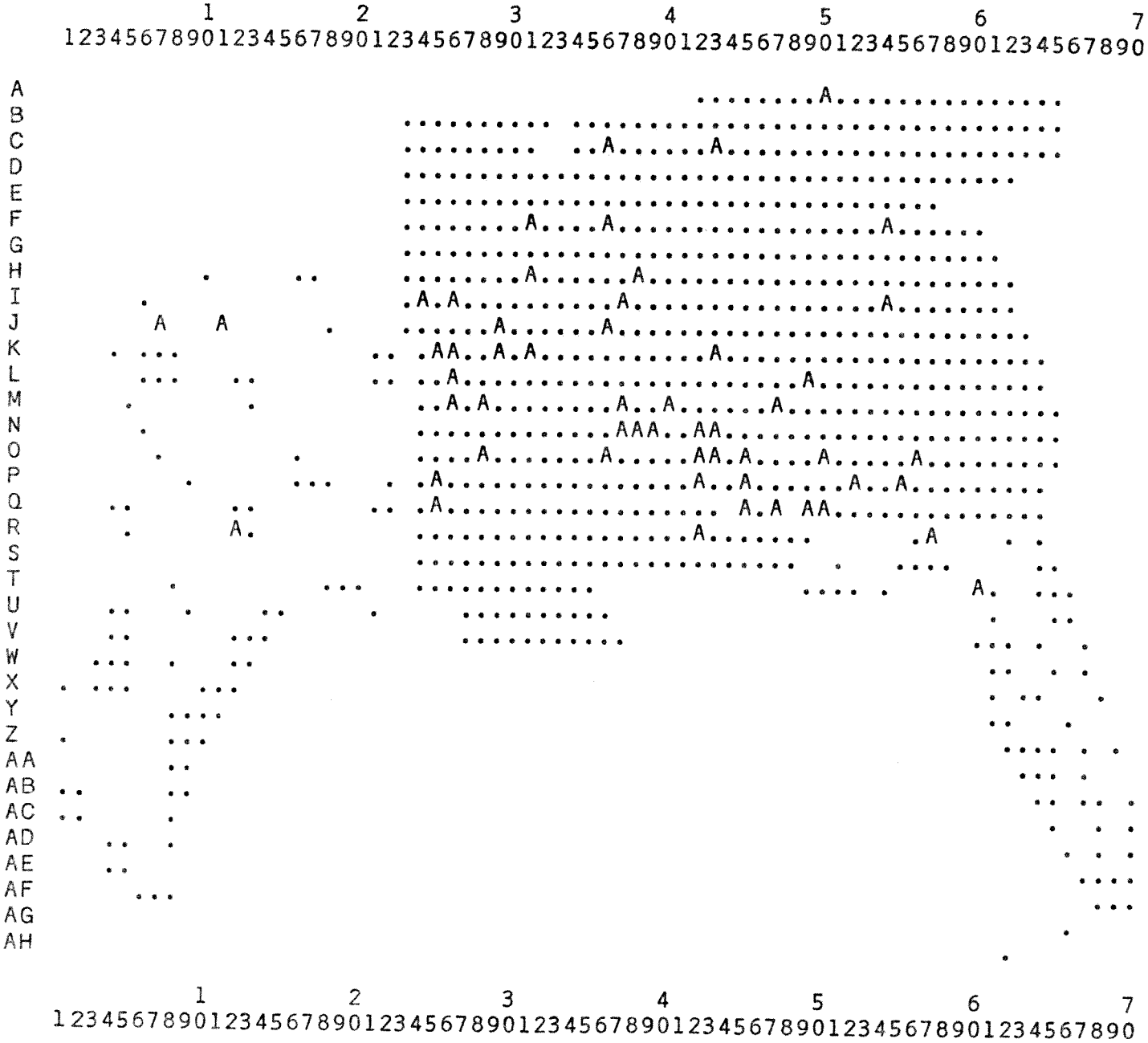


FIGURE 9

fireboard/mantel board

A = fireboard
B = mantel board
+ = fireboard + mantel board

type. With the resources of geographical and social lists and maps, EAM will provide an ultimate descriptive statement. Its capacities make possible the identification of patterns that may escape the attention of editors in the composition of the hard copy maps and their legends, the materials of the legendry, but the evidence will be available for readers to produce a virtually inexhaustible variety of configurations.

Those applications, however, are beyond the range of the LAGS survey. As a research tools project for the National Endowment for the Humanities, the present work aims only to put the materials in order for students of general dialectology and of American English. EAM will advance the current editorial program by organizing the data for hard copy publication. Upon completion of the map and legendry volumes, LAGS will be finished, but those texts and, especially, the electronic atlas in microform, will reaffirm the assertion of Jaberg and Jud that linguistic geography in its radical form is a research instrument.[17]

NOTES

1. In "A Matrix for Word Geography" (Pederson *forthcoming*), the tools of research in linguistic geography are distinguished as data (the components of an informational chain) and codes (the components of a descriptive chain). Combined, they form an expressive matrix that outlines the domain of American linguistic geography.

2. L. Pederson, C. E. Billiard, G. H. Bailey, M. W. Bassett, and S. E. Leas, eds., *Linguistic Atlas of the Gulf States: The Basic Materials* (Ann Arbor: University Microfilms International, 1981); L. Pederson, S. L. McDaniel, and M. W. Bassett, "The LAGS Concordance," *American Speech* (59: 1984), 332-39; Linguistic Atlas of the Gulf States: Concordance of the Basic Materials (*forthcoming*).

3. Pederson, "A Graphic Plotter Grid" (*forthcoming*).

4. The format described here can easily be transferred to tape for mainframe application that would greatly improve the speed and efficiency of the tool. Here, the microform format is presented because it is the most accessible and least expensive means of electronic sorting and mapping.

5. In addition to the essays mentioned in earlier notes, these published and forthcoming reports explain the use of the microcomputer in the LAGS Project: "Systematic Phonetics," *Journal of English Linguistics* (18: 1985), 14-24; "An English Technical Alphabet," (*forthcoming*); "A Survey in Deductive Phonetics," (*forthcoming*); "Microcomputing: Files and Maps for the LAGS Project," (with S.

L. McDaniel *forthcoming*).

All microcomputer programs used in the conduct of those projects were written by W. H. McDaniel and S. L. McDaniel, as are those in the organization of EAM.

6. LAGS description departs from H. Kurath, *A Word Geography of the Eastern United States* (Ann Arbor: University of Michigan Press, 1949), and E. B. Atwood, *The Regional Vocabulary of Texas* (Austin: University of Texas Press, 1962) in these ways. First, it excludes animal calls because they fall beyond the range of a definition of language as interpersonal communication. Second, it interprets function words, as, for example, the prepositions of *a quarter to, a quarter till*, or *a quarter of the hour*, as morphological, not lexical, features. And, finally, it recognizes a phonological dimension in word geography, as in the retroflex or vocalized reflexes of historical /r/ in *andirons, dog irons*, and *fire dogs*.

7. E. B. Atwood, *A Survey of Verb Forms in the Eastern United States* (Ann Arbor: University of Michigan Press, 1953). For files and maps of zero forms, see Pederson and McDaniel (*forthcoming*).

8. H. Kurath and R. I. McDavid, Jr., *The Pronunciation of English in the Atlantic States* (Ann Arbor: University of Michigan Press, 1961).

9. The survey, with list, sort, and summary, of 74 stressed vowels for all 1,121 informants (primary and secondary), is summarized in "A Survey in Deductive Phonetics" (*forthcoming*).

10. Although the files of synonyms do not tabulate inappropriate forms or instances of no response, both can be retrieved with programs on the operations disk. For example, full description of the 72 informants who offered no response to the *mantel* item is listed with the cue (-), the symbol for "no response" in all linguistic files.

11. Work sheet 8 appears at page 109 in all three editions of the LAGS Manual.

12. For criteria used in 1980 for the classification of primary and secondary informants, see L. Pederson, S. L. McDaniel, G. Bailey, and M. Bassett, "Chapter 1, Methods," Linguistic Atlas of the Gulf States, Vol. 1, Handbook for the Linguistic Atlas of the Gulf States (University of Georgia Press, *forthcoming*).

13. The sequential listing of informants with counties and parishes (in Louisiana) is a cue that is sometimes useful in dating a form within the data base.

14. For criteria used in social classification, see "Methods" in the forthcoming handbook.

15. It is useful to recognize that the graphic plotter grid makes no use of graphics in the technical sense of the term, that is, as it is applied in the vocabulary of computer technology. No special software--such as a "graphics package," is needed to produce these simple linear maps. That fact contributes substantially to their ease, speed, and economy of reproduction. The graphic plotter grid is graphic in that it aims at a graphic

representation, a reasonable facsimile of the Gulf States territory, formed by the position of 914 points on a matrix. The phrase *plotter grid* reflects the influence of A. R. Thomas, whose *Areal Analysis of Dialect Data by Computer: A Welsh Example* (Cardiff: University of Wales Press, 1980), offered inspiration and instruction for the LAGS graphic plotter grid. As explained in the forthcoming essay, "A Graphic Plotter Grid," it is necessary to understand that, at this time, LAGS research makes no promise to match the elegance of Thomas's work.

16. For an elaboration of these factors, see "The Geography of the Gulf States" in the forthcoming handbook. For an immediate application of those factors, see the forthcoming "A Graphic Plotter Grid."

17. K. Jaberg and J. Jud, *Der Sprachatlas als Forschungsinstrument: kritische Grundlegung und Einführung in den Sprach- und Sachatlas Italiens und der Südschweiz* (Halle: M. Niemeyer, 1928).

LAGS WORKING PAPERS, THIRD SERIES (1985)

WORKING PAPER NUMBER FIVE

Mapping Phonetics in the Gulf States

Lee Pederson and Susan Leas McDaniel

MAPPING PHONETICS IN THE GULF STATES

Lee Pederson and Susan Leas McDaniel

Descriptive phonetics orders linguistic variety in prescribed terms. Before any survey gets underway, observers--whether field workers, scribes, or technicians--have a fairly clear notion of the range of speech forms that will receive systematic attention. Those targets are made explicit at the outset of phonetic study in the Linguistic Atlas of the Gulf States (LAGS) Project and direct the phonological description of native speech in the eight-state region.[1]

Generally, this work recognizes the resources and limitations of conventional linguistic geography. By addressing its data base as a rich collection of word-level phonology, the investigation aims to contribute to the understanding of Southern speech. Specifically, it outlines a sound pattern in an alphabetic code and reduces the analysis of phonetic elements to a deductive procedure. The code makes possible a phonological index of dominant and recessive forms and suggests the implications of the scribal habits in terms of predetermined phonetic features. As the only large-scale inventorial survey of small-scale phonetic facts, linguistic atlas research has a responsibility to general linguistics and an opportunity to refine its own methods. Without reaching beyond the goals outlined by Gilliéron, Jaberg, and Kurath, students today can get useful results through the application of new tools to old problems.

The present report includes four considerations that relate to mapping phonetics in the Gulf States: 1) the published evidence is related to the tape/text and the aims of the survey; 2) a review of the phonetic code

summarizes the features identified in vowel notation; 3) those features illustrate a set of phonetic forms in the LAGS inventory; 4) a subset of those forms is mapped across the territory (Figure 1) from microcomputer files.

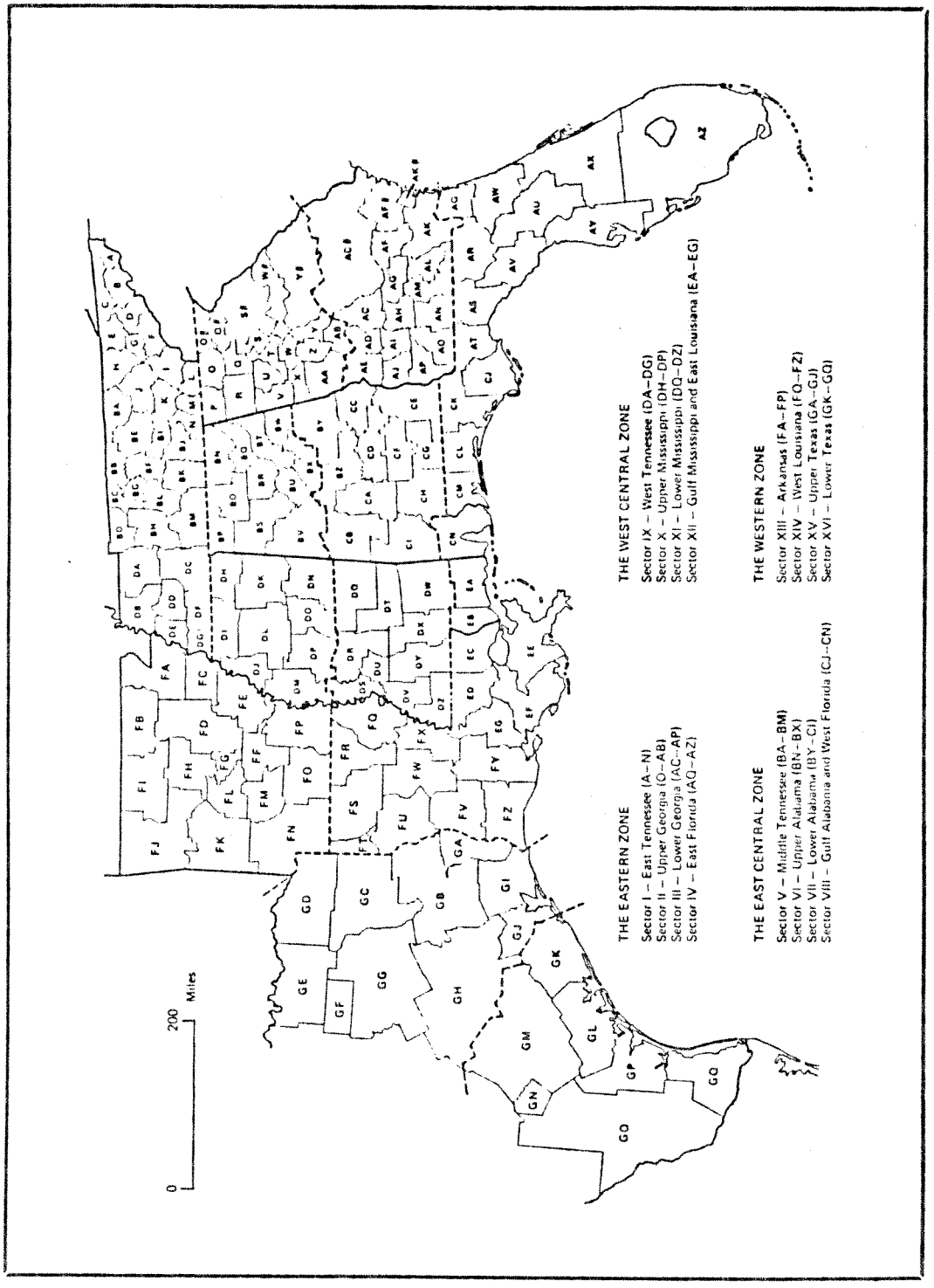
1. THE LAGS DATA BASE

Recording the usage of 1,121 natives of Tennessee, Georgia, Florida, Alabama, Mississippi, Louisiana, Arkansas, and East Texas, the LAGS data base preserves its primary information in 5,200 hours of conversational speech. The initial phonetic notations of this collection form the core of the *Basic Materials* (1981), described in the *Handbook* (Forthcoming) and indexed in the *Concordance* (Forthcoming).[2]

Each LAGS protocol includes 108 pages of phonetic notation with an additional 27 pages added in 164 urban interviews. Figure 2, protocol page 71, shows responses to questions that aim primarily to illustrate pronunciation features. As the marginal code indicates, the sheet records the usage of a male (M), lower class (L), Caucasian (Y), age 85, with an elementary-school education (1), and an insular perspective (A). This retired farmer, logger, and sawmill worker from Needham, Alabama, is a native of Choctaw County (289) of grid unit CI (Figure 1). The suffixed numeral (.01) indicates this was the earliest LAGS record made in Choctaw County, Alabama.

In addition to the 1,121 protocols of the *Basic Materials*, that collection also includes a set of idiolect synopses, abstracts of the phonological, morphological, and lexical characteristics of each informant. Figure 3 illustrates the contents of the Needham synopsis, identifying the record as Book 451, the field worker as Marvin Bassett (MB), and the scribe as Lee Pederson (LP), with the years (19)78/79, indicating the dates the respective tasks were completed.

FIGURE 1: THE LAGS GRID



MLY 85 1A

71

LA NEEDHAM
CI 289.01

FIGURE 2

1

hi>·pə t'ə>ᵋmz — 2A.1-2

1) vɛ>rɛ̃ ɔ^əfn̩ — 3B.7

2

1) i>·ə̂ə wn<ən əvəm — 1A.10

< 3B.3

3

1) fa>·ərɛ̃d — 2B.5

fa>ɔ^rɛ̃d

4

hx^ɛx — text 22.2 / 3A.1

hx^xk'n<t

qɒ<·ətj>·

bʲɪ^xd

5

lɛ>ftɛ^x

ra>ᵋtɛ^x

1) mə lɛ>ətt ən — 1A.3

(my left one, i.e. eye)

(see also 56.2)

6

ma^ʉ θ — text 11.1 / 2A.1

1) ma^ʉ^v θ — 2A.10

7

θ^ o<ʉt — (see also 20.8 m,)

nɛ^ək

hwɪ>skɛ bu>tɛ̃ (called 76.3

qɛʉzɛ̃ — Adam's apple tries,

x·ɛdmz x^ɛpɛ̃ — when he was a boy)

8

t(j>·θ (pl.)

t'ʉʉθ (sing.)

9

qnɛ^əmz

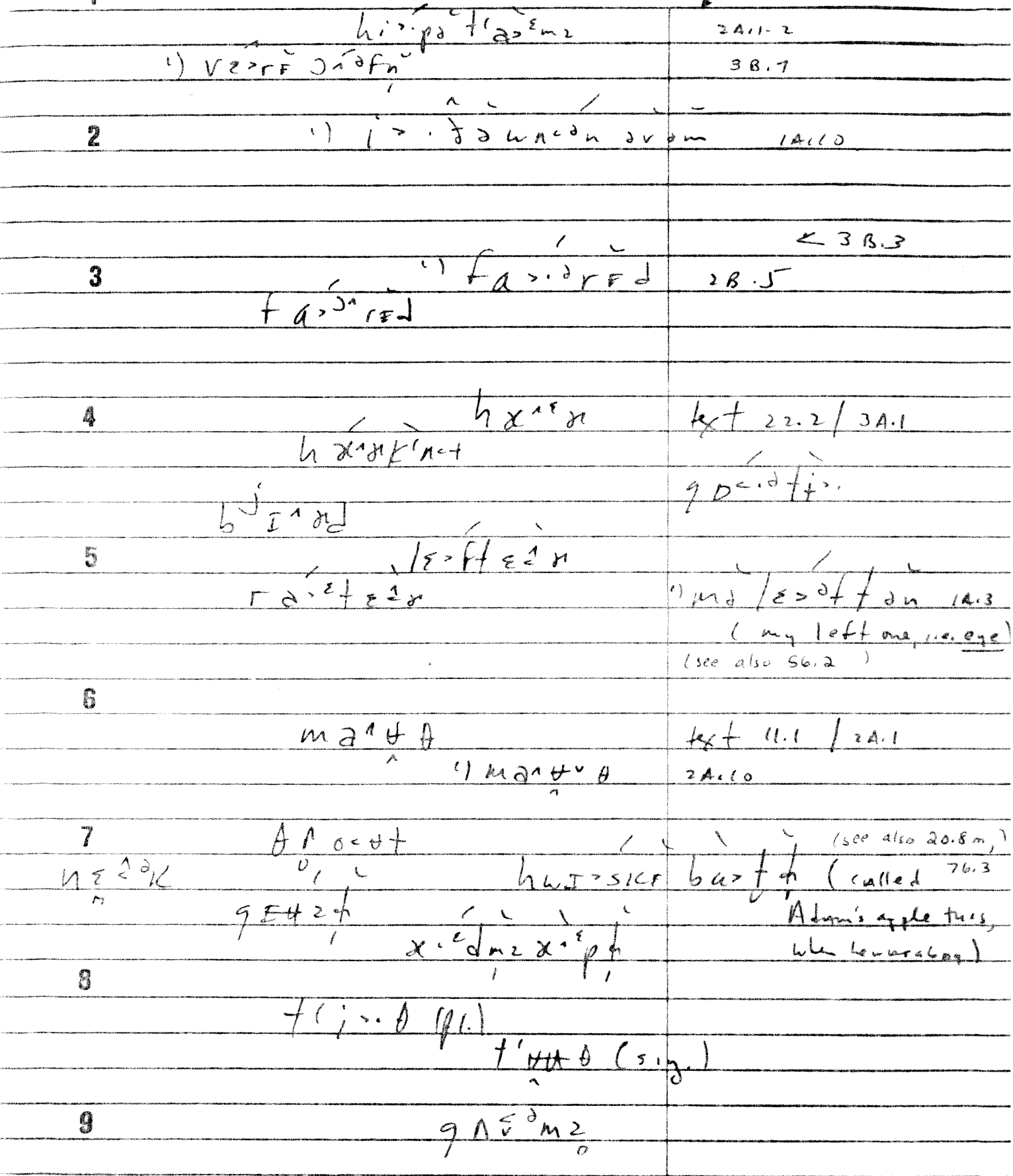


FIGURE 3

LINGUISTIC ATLAS OF THE GULF STATES
IDIOLECT SYNOPSIS
451

MLY 85 IA
MD/78:LP/79

IA NEEDHAM
CI 289.01

/ɪ/	* hwɪp	kr̥ɪˑᵊbz	pʻĩˑn	hɛˑˑᵊt	* ɪˑrz
/ɛ/	nɛ̰ ɛᵊk	lɛˑᵋg	* tʻɛ̃n	nɛ́ˑʃɛ̆	mɛ̂ˑʳtʻ̆ kr̥ɪˑᵊsmə̃s
/æ/	grɛ̰́ˑᵋ̰s haˑpr̃z	bæˑᵋ̰g	klɒ̃ˑᵊhæ̀ˑˡmr̃	vǽˑˑˡʃɛ̆	* mǽˑˑrɛ̃d
/ʊ/	* pʻʊˑʃt	wʊˑᵊd	wʊ̀ˑmñ̥	* pʻʊˑt	* ʃʊr
/ʌ/	* ʃʌˑt	* hʌ́ˑᵊz bñ̥	sʌˑnʌˑp	bg̰ˑˑᵊtb	
/ɑ/	krɑˑˑᵊp	fɑ́ˑᵊəə̆	dʒɑˑn	kʻɑ́ˑˑlɛ̆dʒ	* kʻɑˑˑr
/i/	ʃɪˑiˑst	* θr̥iˑ	* biˑˑn	hwiˑˑᵊtbɪˑrə̃	bʲɪˑrd
/e/	eˑɪt	meˑɛ	reˑɛnz	reˑɛt	mɛ̂ˑ́rɛ̆ˑ
/u/	tʻu̯ θ	bǽˑᵋtʻñ̥ / rʊ́ʊ̃ʒ	wu̯ʊˑn	mjʊ̯ʊt	* pʻʊr
/o/	kʻoˑʊt	ə̃gó̰ˑʊ	* hoˑʊm	kʻoˑʊtd	hoˑˑrs
/ɔ/	dɔˑɔ̰ˑt̰r̃z	* dɔˑɔˑgz	* strɔˑᵒˑŋ	* sɒᵊˑtt	* hɔ́ˑˑrsɛ̃z
/ɜ/	* tʃɹˑtʃ	t̰rd	* wrrmz	* gɹˑt	wʌ́ˑᵊrɛ̃ˑ
/aɪ/	rɑˑˡt̰	rɑˑˡd	nɑˑˡn	* maˑˡt (pl.)	* wɑˑᵊr
/aʊ/	* haˑᵊs	* kʻɑːɔz	* dɑˑən	* æˑʊt	flɑˑʊ̰ñ̥z
/ɔɪ/	ɔ́zˑstə̰̃z	* pʻɔ́ˑᵊzñ̥	dʒɔˑɔˑnt	* ɔˑˑᵊt	—
PL	pʻoˑʊst	pʻɹːˑn̰nz	ʃ̰rɪ̃ˑᵊmp	—	dɛˑᵊsk
FW	fɪˑᵊftiˑ́n / tʻɛ̀ˑt	* tə̃wʊ́ᵊrdz	* ɪ̃ˑ́ntə̃	zɪ̂n ɪˑz stɑˑ́mɛ̃ˑk	fɔˑ́ɪn ɹɛ̃

— / — / rɪˑz	draˑˑˡv ~ draˑˑˡv / — / —
—	iˑˑt / iˑˑt ~ eˑɛt / iˑˑt ~ iˑˑtʻñ̥
drɛ̃ˑŋk (n.) / — / * drɛˑˑᵋŋk ~ drɛˑŋkt	hɛˑᵊp ~ hɛ̰ˑˑᵊp / — / —
* daˑᵋv / doˑʊv / doˑʊv	klaˑˑᵋᵊm / klɛᵋm ~ klɛˑᵊm / klɛˑᵊm

* fɑ́ˑˑə dɔ̀ʊˑgz	mǽˑˑᵋnɛ̰ˑᵊt̰ boˑˑrd	kʻɑˑˑ̰ laˑt	rɑ́ˑˑᵊk / fɛ́nts
bæˑˑ́g	* kr̥oˑˑʊkr̃ s̰ɛ̀ˑˡk	frɛ̃ˑntʃ hɑˑrp	—
* tʻoˑˑrtʃ	skɛˑˑ́ᵊf / boˑˑʊt	* pʻʊˑʃɛ̆ boˑˑn	* flɪ̰ˑᵊʃr̃z
* sɑːɪ̰s	* kʻɑˑtʻɛdʒ / tʃiˑˑz	mʌˑᵊʃ	prɛ́ˑᵊs / pʻiˑˑ́tʃ
klɛːr sɪ̀ˑˑd	* pʻɪ́ndr̃z	* tʻɑɪˑmə̃toˑˑʊz	strɪtˑˑ̰ biːnz
* ɪɔ́ᵊˑd/gɑ́ˑdz	* rˑˑθwrrmz	* goˑˑʊfr̃	kr̥ɔˑɔ̰fɪˑˑʃ
skɪˑˑ́t̰r̃ hɔˑˑˑk	rɛ́ˑᵊd bɪ̰ːg	* sr̃ɛ̃nɛɔ̀ɛd (n.)	—

The first fifteen lines of the synopsis record stressed vowels in five phonological environments: A) before a voiceless stop or fricative, B) before a voiced stop or open (+) juncture, C) before a nasal consonant, D) before a lateral consonant, and E) before a retroflex vocalic unit. Figure 3 includes these texts:

	A	B	C	D	E
/ɪ/	whip	cribs	pin	hill	ears
/ɛ/	neck	leg	ten	Nelly	Merry Christmas
/æ/	grasshoppers	bag	hammer	valley	married
/ʊ/	pushed	wood	woman	pull	sure
/ʌ/	shut	husband	sunup	bulb	---
/ɑ/	crop	father	John	college	car
/i/	yeast	three	beans	wheelbarrow	beard
/e/	eight	May	reins	rail	Mary
/u/	tooth	Baton Rouge	wound	mule	poor
/o/	coat	ago	home	cold	hoarse
/ɔ/	daughters	dogs	strong	salt	horses
/ɜ/	church	third	worms	girl	worry
/aɪ/	right	ride	nine	mile	wire
/aʊ/	house	cows	down	owl	flowers
/ɔɪ/	oysters	poison	joints	oil	---

Whereas the synopsis identifies a small set of data in narrow phonetic notation, the *Concordance* offers an exhaustive listing in conventional orthography. Explicit conversion rules and the spelling authority of *Webster's Third New International Dictionary* yielded writing systems for both concordance entries and the pronunciation glosses of the descriptive texts that follow them.

As an index, the concordance reports every phonetic string transcribed in the protocols with all its permutations, as, for example:

> with all its permutations
> all its permutations, with
> its permutations, with all
> permutations, with all its.

This format recovers phrasal contexts for pronunciation, morphological, and grammatical study. It also gives immediate access to the members of

complicated lexical sets. Here, for example are 46 *pine* forms, elicited as synonyms for *lightwood*, abstracted from the concordance:

pine
pine chips
pine, dead
pine fat
pine, fat
pine, fat lighterd
pine, fatwood
pine, heart of the
pine, heart of
pine hearts
pine kindling
pine, kindling
pine kindling, fine
pine knots
pine knots, black
pine knots, rich-
pine, knotty
pine lighter
pine, lighter
pine lighterd
pine, lighterd
pine, little chips of
pine, little pieces of
pine, pitch
pine, pure rich-
pine resin
pine, resin
pine, rich-
pine richerd
pine, rich lighterd
pine, rich piece of
pine, rich resin
pine shavings
pine, slits of
pine, soft
pine splinters
pine splinters, fat
pine splinters, rich
pine sticks
pine tar
pinewood
pinewood, fat
pinewood, fat lighterd
pinewood, rich
pinewood, splinters of
pinewood, white

2. SYSTEMATIC PHONETICS

To incorporate the sorting and mapping capacities of ordinary microcomputers, as, for example, the IBM PC, the survey introduces a code for the conversion of narrow phonetic notation into simple alphabetic strings, sets of three characters. This approach identifies primary, secondary, and tertiary features for all consonants and vowels, records them in files, and prints the information in registers or mappings with commands from several operations programs.

Within the project, the work aims to develop appropriate data for LAGS maps and their legends; for general application, the system of registration and mapping may have broader interest in finding ways to chart complicated patterns of pronunciation in a format that can be easily composed, reproduced,

and read.

Although the principles of phonetic mapping are converted routinely to comparable interpretations of morphological and lexical materials in the project, the primary resource is the code "systematic phonetics" that puts complicated phonetic notation into a simple alphabetic string. Vowels, for example, are characterized as primary (positional), secondary (conditional), and tertiary (modificational) features.

A systematic phonetics classification aims to inventory phonology in an exhaustive way. With that completed, even for a small fraction of the full corpus, analysis can move ahead more comfortably with broad phonic designations. The code distinguishes all phones, consonants and vowels, in terms of positional, conditional, and modificational features. The consonant code requires two sets of positional descriptors because different articulators and points of articulation are involved. The vowels are simpler because lingual, and mandible actions are implicit in the respective positional distinctions, front/central/back (for the tongue) and high/mid/low (for the jaw). Other characters of vowel articulation are conveniently summarized in terms of conditional and modificational features with little ambiguity.

The vowel code includes these positional features:

	Front	Advanced Central	Central	Advanced Back	Back
High	i		ɨ		u
Lower High	ɪ		ɨ̞		ʊ
Mid	e	ɵ		ɵ̞	o
Lower Mid	ɛ	ɜ	ə	ʌ	
Higher Low	æ		ɐ		ɔ
Low	a		ɑ		ɒ

Those include all vowel symbols used by LAGS scribes and underlie the code of 20 primary features:

A. High Front
B. High Central
C. High Back
D. Lower High Front
E. Lower High Central
F. Lower High Back
G. Mid Front
H. Mid Advanced Central
I. Mid Advanced Back
J. Mid Back
K. Lower Mid Front
L. Lower Mid Advanced Central
M. Lower Mid Central
N. Lower Mid Advanced Back
O. Higher Low Front
P. Higher Low Central
Q. Higher Low Back
R. Low Front
S. Low Central
T. Low Back

These conditional features provide secondary characteristics:

A. Unmarked	I. B + E	Q. B + C + D	Y. C + E + F
B. Tense	J. B + F	R. B + C + E	Z. D + E + F
C. Long	K. C + D	S. B + C + F	1. B + C + D + E
D. Nasalized	L. C + E	T. B + D + E	2. B + C + D + F
E. Retroflex	M. C + F	U. B + D + F	3. B + C + E + F
F. Rounded	N. D + E	V. B + E + F	4. B + D + E + F
G. B + C	O. D + F	W. C + D + E	5. C + D + E + F
H. B + D	P. E + F	X. C + D + F	6. B + C + D + E + F

The third set includes these modificational features:

A. Unmarked	G. B + E	M. J + D	S. Glottal	Y. S + G	5. S + M
B. Raised	H. C + D	N. J + E	T. S + B	Z. S + H	6. S + N
C. Lowered	I. C + E	O. J + F	U. S + C	1. S + I	7. S + O
D. Advanced	J. Weak	P. J + G	V. S + D	2. S + J	8. S + P
E. Retracted	K. J + B	Q. J + H	W. S + E	3. S + K	9. S + Q
F. B + D	L. J + C	R. J + I	X. S + F	4. S + L	0. S + R

These modificational features cover glottalized vowels and two peculiarities of American atlas notation. In the tradition of Kurath, Lowman, and McDavid, LAGS scribes routinely marked vowels that seemed raised [o˄], lowered [o˅], advanced [o˂], or retracted [o˃] in relation to the norms observed in this atlas.

The notation also combines these designations as, for example, raised and retracted [o˃˄] or lowered and advanced [o˂˅]. The second set of modificational features marks vowels that are weakly realized and transcribed as superscripts. These are almost always the final elements in diphthongs or triphthongs. Weakly realized elements are less frequently marked with shift signs, but some scribes did so routinely, so the feature was essential in the

description.

Here are the coded forms of the 71 stressed vowels illustrated in the first 15 lines of the Needham synopsis (Figure 3):

	A	B	C	D	E
/ɪ/	EAA	DAB-maj	DDE	DCB-maj	DAB-mea
/ɛ/	KBF-maj	KAB-eaj	KDA	KAB	KCA
/æ/	OBB-kbj	OCA-kbj	OBA-kaj	OCB-kaj	KCB
/ʊ/	FFF	FFD-maj	FFD	FFB	EFA-mea
/ɑ/	NAD	NAE-maj	NAD	NJD-maj	---
/ʌ/	SCE-maj	SAE-maj	SAE	SCE	SCE-maj
/i/	dae-ABE	ABE	AGE	AGE-maj	DAB-mea
/e/	GBE-eaa	GBE-eaa	GBE-eaa	GBE-eaa	KKB
/u/	eaa-BJA	efa-BJA	eaa-BSA	efa-BJA	EFA-mea
/o/	JJD-efa	JJD-efa	JJD-efa	JJD-efa	JSC-mea
/ɔ/	QFC-qfb	QFC-qfb	QFB-jjc	TCA-qfb	QMB-mea
/ɜ/	MLA	MEA	MEA	MLA	NAH-maj
/aɪ/	RAE-kaj	RAE-kaj	RAE-kaj	RAE-kaj	RCE-maj-mea
/aʊ/	RAG-maj	RAF-maa	RAB-maa	OAC-efa	RAB-efa
/ɔɪ/	QFF-mab	QFB-mab	QFB-mab	QMB-maj	---

3. THE COMPUTER INVENTORY

To test the usefulness of the systematic phonetic code, in 1984, the LAGS staff entered 80,000 stressed vowels on diskettes for index and analysis. A microcomputer program ordered the evidence in subsets and, in the process, produced a mechanical register of deductive phonetics. Following the alphabetic code, the program recorded forms in a sequence that reflects the deductive process of ordinary analysis. The phonetic sort yields a simple index of phonetic features, combined as consonants and vowels.

In two parts, this file includes an exhaustive listing of all recorded responses with informant characteristics presented in this way:

Book	Protocol	S	Cl	Rc	Age	Ed	Speech	Locality (Community)	SEC	Sc
001	A 001.04	F	L	Y	99	1	Folk	Neva (Johnson)	ET	LP

according to the phonetic sort of consonant or vowel features. The second basic sort lists the incidence of all recorded allophones (or members) of a

phoneme (or contrastive set). Here, for example, is a register of 1,121 vowels recorded in the context *R/voiceless*, the syllabic nucleus in *right* and similar words:

PAH eaa	1	RAE eal	6	RCA eaj	77	RCE maa	1
PCA ea2	1	RAE eaq	1	RCA eal	1	RCE maj	3
PCA eaa	2	RAE kab	1	RCA eam	1	RCE mak	1
PCA eaj	2	RAE kaj	45	RCA eas	1	RCE mam	1
RAA	2	RAE kak	10	RCA kaj	18	RCG	1
RAA eaa	16	RAE kal	1	RCA kak	1	RCG daj	2
RAA eab	1	RAE kan	2	RCA kan	2	RCG eaa	8
RAA ead	2	RAE maj	6	RCA kap	1	RCG eaj	32
RAA eaj	32	RAE mak	1	RCA maj	10	RCG maj	1
RAA eak	1	RAE rab daj	1	RCA mak	1	RGA eaa	1
RAA kaj	5	RAF eaj	1	RCB	3	RKA eda	1
RAA rag	1	RAG	27	RCB eaa	5	RKA mdj	1
RAB	8	RAG bbj	1	RCB eaj	20	RKE edj	1
RAB daa	1	RAG daj	1	RCB eak	1	SAB eaj	1
RAB dab	1	RAG eaa	16	RCB kaj	2	SCA daj	1
RAB eaa	6	RAG eaj	92	RCB mak	1	SCA eaj	1
RAB eaj	81	RAG eak	10	RCE	18	SCD eaj	8
RAB kaj	12	RAG eal	1	RCE daa	2	SCE eaa	1
RAB kak	1	RAG kaj	2	RCE daj	1	SCE eaa	1
RAC eaj	1	RAG kak	1	RCE eaa	25	SKA edj	1
RAD eaa	1	RAG maj	1	RCE eab	2	SKD mdj	1
RAE	5	RAG mam	1	RCE eac	1		
RAE daa	2	RCA	22	RCE ead	1		
RAE eaa	48	RCA bbj	1	RCE eaj	65		
RAE eab	4	RCA daa	1	RCE eak	1		
RAE eac	1	RCA daj	2	RCE eal	4		
RAE ead	1	RCA eaa	25	RCE kaj	39		
RAE eaj	220	RCA eab	2	RCE kak	2		
RAE eak	5	RCA eaf	1	RCE kan	1		

The inventory identifies the principal allophones, as, for example, RAE eaj [a$_{>}^{\mp}$] (220), RAG eaj [a$_{\nearrow}^{\mp}$] (92), RAB eaj [a$_{\wedge}^{\mp}$] (81), RCE eaj [a$_{>.}^{\mp}$] (65), RAE eaa [a$_{>}^{\mp}$] (48), RAE kaj [a$_{>}^{\varepsilon}$] (45), RCE kaj [a$_{>.}^{\varepsilon}$] (39), RAA eaj [a$^{\mp}$] (32), RCG eaj [a$_{\nearrow.}^{\mp}$] (32). It also suggests several patterns of distribution, such as monophthongs versus diphthongs, long onsets versus short onsets, long glides versus short glides. In that way, the analysis offers as many insights into the phonetic corpus as allowed by the distinguished features.

As the nine principal allophones indicate, diphthongs with long offglides are dominant. In fact, excluding only RCE kaj, diphthongs with long glides

account for more than half the sample in the eight remaining forms (606 of 1121 instances). That distribution recommends attention to the recessive forms, the monophthongs and the short glides, as potential regional and social markers. Mapping these features also helps to calibrate scribal differences in the registration of forms.

Figure 4 lists 86 informants who use eight different monophthongs in the pronunciation of the diphthong /ai/ before a voiceless obstruent, as in *right*. The patterns show geographical coherence with two thirds of the instances recorded in the South Midland territory of Tennessee (24), Arkansas (5), Upper Georgia (9), Upper Alabama (11), and Texas (7), with substantial additions from the Wire Grass of Lower Georgia (8), as well as the Sand Hills of Lower Alabama and the Pine Woods of Lower Mississippi and East Louisiana.

The members of the eight sets also show a social pattern, including 38 informants ranked in the lower classes (I, indigent, and L, lower or lower-middle), 43 in the middle class, and only four in the upper-middle class, with no aristocratic representatives. And all four of those upper-middle class instances are recorded in the South Midland territories of East Tennessee, Upper Alabama, Arkansas, and Texas, suggesting a useful regional marker exclusive of aristocratic speech.

Figure 5 lists characteristics of 120 informants who share the short glides [a$^{\varepsilon}$ ~ a.$^{\varepsilon}$] in this environment. These responses cover the same geographical and social territory as did the monophthongs, although here two elderly aristocrats are included at Natchez, MS, and Grand Cane, LA. Combined with the incidence of the monophthongs, these short diphthongs outline the South Midland territory in the north and the Wire Grass/Sand Hill/Pine Woods territory to the south, immediately beyond the Coastal Strip.

Figure 6 maps the responses of primary informants on a graphic plotter

FIGURE 4

Book	Protocol		Sx	Cl	Rc	Age	Ed	Speech	Locality (Community)	Sec	Scr
voicless.gsx	RAA	--- ---									
461	CK	296.02	M	M	Y	42	2	common	Wausau (Washington)	WF	PE
857	GH	611.02	F	M	X	71	3	cultured	Huntsville (Walker)	UT	LD
Total: 2											
voicless.gsx	RAB	--- ---									
040	I	021.01	F	M	Y	38	2	common	Sweetwater (Monroe)	ET	SL
078	R	047.02	M	M	Y	52	2	common	Rome (Floyd)	UG	SL
159	AC#	056.02	F	M	Y	74	1	folk	Glennville (Tattnall)	LG	PE
368	BT	241.02	M	M	Y	55	1	common	Gadsden (Etowah)	UA	SL
601	DW	387.03	F	L	Y	69	2	common	Soso (Jones)	LM	PE
650A	EE	417.08	F	M	X	66	2	folk	New Orleans (Orleans)	EL	PE
793	FV	529.02	M	L	Y	67	2	common	De Ridder (Beauregard)	WL	PE
823	GB	558.02	M	L	Y	37	2	common	Harmony (Nacogdoches)	UT	PE
Total: 8											
voicless.gsx	RAE	--- ---									
114	W#	022.02	M	L	Y	79	1	folk	Penfield (Greene)	UG	SL
118A	X	064.01	F	L	X	75	1	folk	Franklin (Heard)	UG	PE
152	AC#	042.02	F	L	Y	70	2	common	Swainsboro (Emanuel)	LG	PE
193A	AJ	107.02	M	L	Y	55	1	folk	Georgetown (Quitman)	LG	MP
497	DC	312.01	F	L	Y	76	1	folk	Dunbar (Decatur)	WT	LD
Total: 5											
voicless.gsx	RAG	--- ---									
038	H	020.03	M	M	Y	70	2	common	Oneida (Scott)	ET	MP
039	H	020.02	F	M	Y	18	2	common	Robbins (Scott)	ET	SL
054A	M	032.09	F	L	Y	52	1	folk	Chattanooga (Hamilton)	ET	SL
062	O	036.02	F	M	Y	61	2	common	East Ellijay (Gilmer)	UG	SL
074A	Q#	006.02	F	M	Y	67	2	common	Cornelia (Habersham)	UG	SL
111A	W	061.01	M	L	X	85	1	folk	Jonesboro (Clayton)	UG	SL
162	AC#	059.02	F	M	X	45	2	common	Savannah (Chatham)	LG	SL
172	AE	089.01	F	L	Y	77	1	folk	Eelbeck (Chattahoochee)	LG	SL
175	AF	093.01	M	M	Y	66	3	cultured	Patterson (Pierce)	LG	SL
184	AG	098.02	M	M	Y	60	2	common	Ocilla (Irwin)	LG	SL
300	BD	196.01	M	M	Y	61	3	cultured	Tennessee Ridge (Houston)	MT	SL
306	BG	204.08	M	M	Y	53	1	folk	Nashville (Davidson)	MT	SL
328	BK	217.01	M	M	Y	68	3	cultured	Normandy (Bedford)	MT	SL
350	BP	230.01	M	L	Y	64	2	common	Lexington (Lauderdale)	UA	MP
353	BQ	233.01	M	L	Y	87	2	folk	Arab (Marshall)	UA	SL
358	BS	236.01	M	U	Y	64	3	cultured	Jasper (Walker)	UA	SL
360	BS	237.02	F	M	Y	49	3	common	Haleyville (Winston)	UA	SL
381	BV	246.01	M	M	Y	69	3	common	Fayette (Fayette)	UA	SL
388	BX	251.03	M	L	Y	78	1	folk	Shelby (Shelby)	UA	SL
433	CE	278.03	F	M	Y	78	2	cultured	Geneva (Geneva)	LA	SL
472	CN	302.03	M	L	Y	74	1	folk	Stockton (Baldwin)	GA	SL
498	DC	314.01	M	M	Y	69	2	common	Selmer (McNairy)	WT	SL
533	DK	338.01	M	M	Y	25	3	cultured	Houston (Chickasaw)	UM	SL
588	DU	379.05	M	M	Y	78	1	folk	Raymond (Hinds)	LM	SL
640	ED	413.03	M	L	X	67	1	folk	Zachary (E. Baton Rouge)	EL	SL
677A	FA	434.02	M	M	Y	39	3	cultured	Blytheville (Mississippi)	AR	SL
876	GL	625.01	F	L	Y	29	3	common	Victoria (Victoria)	LT	SL
Total: 27											

FIGURE 4 (Continued)

```
voicless.gsx  RCA --- ---
009     B  004.02  M  M  Y  82  3  common    Leesburg (Washington)          ET  LP
014     C  006.04  F  M  Y  73  3  common    Bluff City (Sullivan)          ET  LP
017     C  007.01  M  M  Y  84  1  folk      St. Clair (Hawkins)            ET  LP
055A    M  032.10  M  L  Y  20  2  common    Chattanooga (Hawkins)          ET  LP
066     P  038.01  M  L  X  63  1  folk      Rocky Face (Whitfield)         UG  LD
075A    R  045.02  M  M  Y  87  1  folk      Resaca (Gordon)                UG  PE
166    AD  086.03  F  M  Y  82  1  folk      Americus (Sumter)              LG  LD
203A   AL  113.01  F  L  Y  70  1  folk      Axson (Atkinson)               LG  LP
236    AR  134.04  M  M  Y  46  2  common    Hopeful Church (Columbia)      EF  PE
238    AS  139.02  M  L  Y  39  2  folk      Shady Grove (Taylor)           EF  LP
252    AV  150.03  M  M  Y  55  1  common    Cedar Key (Levy)               EF  LP
507    DE  321.02  F  L  X  76  1  folk      Fulton (Lauderdale)            WT  LD
520    DH  325.01  M  L  Y  72  2  folk      Iuka (Tishomingo)              UM  LP
542    DL  346.01  M  I  Y  65  1  folk      Oxford (Lafayette)             UM  LD
600C   DW  387.01  M  M  Y  85  2  folk      Union Line (Jones)             LM  LP
703    FF  456.01  F  M  Y  74  2  folk      White Oak (Cleveland)          AR  LP
717A   FI  465.02  M  I  Y  85  1  folk      Red Hill (Searcy)              AR  LP
728    FK  477.01  M  U  Y  85  2  common    Wing (Yell)                    AR  LD
820    GA  547.01  F  M  Y  42  3  cultured  Wiergate (Newton)             UT  GR
836    GD  576.01  M  L  Y  61  1  folk      Belk (Lamar)                   UT  LD
894    GO  651.03  M  M  Y  74  2  common    Encinal (Webb)                 LT  LP
911    GQ  665.02  M  U  Y  43  3  cultured  Brownsville (Cameron)         LT  LP
Total: 22

voicless.gsx  RCB --- ---
208    AM  117.05  M  L  Y  30  2  common    Valdosta (Lowndes)             LG  PE
212    AN  121.01  F  M  Y  74  1  folk      Moultrie (Colquitt)            LG  PE
362    BS  238.02  M  L  Y  71  1  folk      Winfield (Marion)              UA  PE
Total: 3

voicless.gsx  RCE --- ---
004     A  001.05  F  L  Y  38  2  common    Laurel Bloomery (Johnson)      ET  LP
020     D  009.03  M  M  Y  72  3  cultured  Cosby (Cocke)                 ET  LP
050     L  030.01  F  L  Y  69  1  common    Reliance (Polk)                ET  LP
052     M  032.08  F  L  X  68  1  folk      Ooltewah (Hamilton)            ET  LP
067     P  038.02  F  M  Y  24  2  common    Dalton (Whitfield)             UG  LD
165A   AD  086.01  F  L  X  40  1  folk      Koinonia (Sumter)              LG  LD
235    AR  134.01  F  L  Y  77  1  folk      Mason City (Columbia)          EF  LP
293    BB  191.01  M  M  Y  62  3  common    Portland (Sumner)              MT  LP
298A   BD  195.01  M  L  Y  67  1  folk      Hurricane Creek (Stewart)      MT  LP
301    BE  198.01  F  I  Y  82  1  folk      Gainesboro (Jackson)           MT  LD
302    BE  198.02  M  M  Y  61  1  common    Gainesboro (Jackson)           MT  LP
305    BF  202.02  F  M  Y  56  2  common    Statesville (Wilson)           MT  LP
321    BI  209.01  M  M  Y  81  3  common    Spencer (Van Buren)            MT  LD
337A   BN  225.03  M  L  X  88  1  folk      Hollywood (Jackson)            UA  LD
349    BP  230.03  M  L  Y  81  1  folk      Green Hill (Lauderdale)        UA  LD
367    BT  241.01  F  L  Y  89  1  folk      Altoona (Etowah)               UA  LP
600A   DW  387.07  M  L  Y  87  1  folk      Soso (Jones)                   LM  LP
740    FM  488.01  F  M  Y  77  1  folk      Hearn (Clark)                  AR  LP
Total: 18

voicless.gsx  RCG --- ---
051     L  031.02  M  U  Y  21  3  cultured  Cleveland (Bradley)           ET  SL
Total: 1
```

FIGURE 5

voicless.gsx R00 k00 000

Book	Protocol		Sx	Cl	Rc	Age	Ed	Speech	Locality (Community)	Sec	Scr
001	A	001.04	F	L	Y	99	1	folk	Neva (Johnson)	ET	LP
002	A	001.01	M	L	Y	82	1	folk	Laurel Bloomery (Johnson)	ET	LP
003	A	001.03	M	M	Y	79	1	common	Shady Valley (Johnson)	ET	LP
005	A	001.02	F	M	Y	78	3	cultured	Laurel Bloomery (Johnson)	ET	LP
007	A	002.03	M	M	Y	72	3	common	Shell Creek (Carter)	ET	LP
011	B	005.01	M	L	Y	66	1	folk	Jackson Chapel (Greene)	ET	LP
012	C	006.01	F	L	Y	73	1	folk	Big Creek (Sullivan)	ET	LP
018	D	009.01	F	I	Y	43	1	folk	Rankin (Cocke)	ET	LP
019	D	009.02	M	M	Y	76	2	common	Bat Harbor (Cocke)	ET	LP
023	E	014.01	M	M	Y	80	1	folk	Little Sycamore (Claiborne)	ET	LP
024	E	014.02	F	U	Y	56	3	cultured	Little Sycamore (Claiborne)	ET	LP
025	F	015.01	M	M	Y	76	1	folk	Wear Valley (Sevier)	ET	LP
029	G	017.04	M	L	X	71	1	folk	Knoxville (Knox)	ET	LP
032	G	017.02	M	U	Y	60	3	common	Knoxville (Knox)	ET	LP
033	G	017.08	M	M	Y	17	2	common	Knoxville (Knox)	ET	LP
037	H	019.01	F	M	Y	50	3	cultured	La Follette (Campbell)	ET	LP
044	J	026.01	F	L	Y	86	1	folk	Sequatchie Valley (Cumberland)	ET	LP
049	K	028.01	M	M	Y	17	2	common	Dayton (Rhea)	ET	LP
053	M	032.02	M	L	Y	62	1	folk	Chattanooga (Hamilton)	ET	LP
063	O	037.02	M	L	Y	86	1	folk	Chatsworth (Murray)	UG	LP
064	O#	001.01	F	M	Y	86	1	folk	Blairsville (Union)	UG	LP
068	P	039.01	F	M	Y	69	2	common	Ringgold (Catoosa)	UG	LP
069	Q	043.01	F	L	Y	63	1	folk	Jasper (Pickens)	UG	MP
070	Q	044.01	F	M	Y	75	2	common	Hickory Flat (Cherokee)	UG	LP
072	Q#	004.01	M	L	Y	80	1	folk	Dahlonega (Lumpkin)	UG	LP
080	R	048.01	M	M	Y	76	2	common	Menlo (Chattooga)	UG	LP
084	S	051.01	M	L	X	69	1	folk	Conyers (Rockdale)	UG	LP
092	S#	014.01	F	M	Y	63	2	common	Hartwell (Hart)	UG	LP
120	Y	065.01	F	U	Y	77	3	cultured	Jackson (Butts)	UG	MB
127	Y#	029.01	M	M	Y	62	2	folk	Warrenton (Warren)	UG	LP
149	AC	082.01	M	I	X	72	1	folk	Vienna (Dooly)	LG	LP
153	AC#	044.01	F	M	Y	71	1	folk	Hilltonia (Screven)	LG	LP
174	AF	093.02	M	M	Y	63	2	common	Blackshear (Pierce)	LG	LP
186	AH	100.01	F	M	Y	55	2	common	Tifton (Tift)	LG	LP
190	AI	103.03	M	M	Y	68	2	folk	Albany (Dougherty)	LG	LP
193	AJ	107.01	M	M	Y	70	2	common	Georgetown (Quitman)	LG	MB
197	AK	111.02	F	M	Y	72	1	folk	Folkston (Charlton)	LG	LP
198	AK	111.03	M	M	Y	76	1	common	Moniac (Charlton)	LG	LP
203	AL	114.01	F	L	Y	57	2	common	Homerville (Clinch)	LG	LP
206	AM	117.06	F	L	Y	69	1	folk	Valdosta (Lowndes)	LG	LP
207	AM	117.01	F	L	X	47	1	folk	Valdosta (Lowndes)	LG	MB
216	AO	123.03	F	M	Y	70	3	common	Camilla (Mitchell)	LG	GB
222	AP	127.02	M	M	Y	75	1	folk	Colquitt (Miller)	LG	MP
223	AP	127.03	M	M	Y	59	2	common	Colquitt (Miller)	LG	MB
237	AS	139.01	F	L	Y	78	1	folk	Shady Grove (Taylor)	EF	MB
250	AV	148.01	M	M	Y	66	1	folk	Jena (Dixie)	EF	MB
260	AX	157.01	M	M	Y	70	1	folk	Paola (Seminole)	EF	PE
262	AX	160.02	M	M	Y	87	1	folk	Fort Meade (Polk)	EF	PE
320	BI	209.03	F	L	Y	76	1	folk	Spencer (Van Buren)	MT	LP
335	BM	222.02	M	M	Y	48	2	common	Ramah (Lawrence)	MT	PE
336	BM	224.01	F	M	Y	84	1	folk	Collinwood (Wayne)	MT	MB
338	BN	225.04	F	M	Y	64	2	common	Stevenson (Jackson)	UA	LP
339	BN	225.02	M	M	Y	28	3	cultured	Scottsboro (Jackson)	UA	LP

FIGURE 5 (Continued)

340	BN	226.05	M	L	X	69	1	folk	Toney (Madison)	UA	SL
346	BO	229.02	F	L	X	74	1	folk	Courtland (Lawrence)	UA	MP
348	BO	229.01	F	M	Y	50	2	common	Town Creek (Lawrence)	UA	MB
354	BQ	233.02	M	M	Y	63	1	common	Preston (Marshall)	UA	LP
355	BR	234.01	F	M	Y	69	1	folk	Blountsville (Blount)	UA	LP
356	BR	234.02	F	M	Y	61	1	folk	Oneonta (Blount)	UA	GB
365	BS	239.02	F	M	Y	45	2	common	Belgreen (Franklin)	UA	LP
370	BU	243.03	M	M	Y	72	2	common	Birmingham (Jefferson)	UA	PE
389	BX	251.02	M	M	Y	55	2	common	Montevallo (Shelby)	UA	GB
400	BZ	260.02	F	L	X	72	2	folk	Centreville (Bibb)	LA	GB
420	CD	273.02	M	L	Y	74	1	folk	Macedonia (Lowndes)	LA	MP
425	CE	275.01	M	M	Y	55	3	cultured	Abbeville (Henry)	LA	PE
436	CF	279.08	F	M	X	56	2	common	Troy (Pike)	LA	MB
443	CG	282.03	F	M	Y	19	3	common	Enterprise (Coffee)	LA	MB
446	CH	284.01	F	L	Y	59	2	common	Damascus (Escambia)	LA	LP
448	CH	286.01	F	M	Y	49	2	common	Mexboro (Monroe)	LA	PE
451	CI	289.01	M	L	Y	85	1	folk	Needham (Choctaw)	LA	LP
457	CK	294.02	M	M	X	46	3	cultured	Panama City (Bay)	WF	MB
463	CL	298.02	F	M	X	18	2	common	De Funiak Springs (Walton)	WF	MB
467	CM	300.01	F	M	Y	77	1	folk	Jay (Santa Rosa)	WF	LP
473	CN	302.05	M	M	X	65	1	folk	Marlow (Baldwin)	GA	MB
486	DA	304.01	F	M	Y	80	1	folk	Elkhorn (Henry)	WT	LP
500	DC	316.01	M	L	Y	76	1	folk	Scotts Hill (Henderson)	WT	LP
502	DD	317.01	M	M	Y	36	2	common	Jackson (Madison)	WT	PE
534	DK	339.02	M	M	Y	69	1	folk	Saltillo (Lee)	UM	MP
540	DL	345.02	M	M	Y	70	1	folk	Enid (Tallahatchie)	UM	LP
548	DM	348.01	F	L	Y	69	1	folk	Drew (Sunflower)	UM	LP
565	DP	361.01	F	L	Y	80	1	folk	Jefferson (Carroll)	UM	GB
581	DS	374.01	F	U	Y	77	3	cultured	Mayersville (Issaquena)	LM	MP
582	DT	375.01	M	M	Y	76	1	folk	Quitman (Clarke)	LM	LP
604	DX	388.02	F	M	Y	78	2	common	Lumberton (Lamar)	LM	LP
607	DY	396.02	M	M	Y	85	2	common	Bogue Chitto (Lincoln)	LM	LP
608	DY	396.03	F	M	Y	72	2	common	Brookhaven (Lincoln)	LM	MB
615	DZ	400.03	F	A	Y	79	3	cultured	Natchez (Adams)	LM	PE
620	EA	402.04	M	M	X	87	1	folk	Biloxi (Harrison)	GM	MP
626	EB	405.02	M	U	Y	70	2	common	Kiln (Hancock)	GM	LP
675	FA	432.02	F	M	Y	47	2	common	Piggott (Clay)	AR	GR
681	FB	439.01	M	L	Y	65	1	folk	Cave City (Sharp)	AR	MP
685	FB	440.01	F	U	Y	53	3	cultured	Salem (Fulton)	AR	MP
693	FD	448.01	F	M	Y	48	2	common	Searcy (White)	AR	PE
694	FD	450.02	M	M	Y	70	1	folk	Des Arc (Prairie)	AR	LP
708	FG	458.06	F	M	X	43	2	common	Little Rock (Pulaski)	AR	MP
717	FI	465.01	F	M	Y	71	1	folk	Hilltop (Searcy)	AR	PE
722	FJ	470.01	M	M	Y	75	1	common	Sulphur Springs (Benton)	AR	PE
724	FJ	471.03	F	M	Y	33	2	common	West Fork (Washington)	AR	LP
729	FK	477.02	M	M	Y	42	3	cultured	Danville (Yell)	AR	PE
736	FK	481.01	F	M	Y	56	2	common	Mena (Polk)	AR	PE
739	FL	483.03	F	M	Y	23	3	cultured	Hot Springs (Garland)	AR	LP
741	FM	488.02	F	U	Y	40	3	cultured	Arkadelphia (Clark)	AR	MB
742	FN	491.02	M	M	Y	76	1	folk	De Queen (Sevier)	AR	PE
747	FN	497.01	M	M	Y	75	3	cultured	Cale (Nevada)	AR	LP
749	FO	501.03	F	M	Y	68	2	common	El Dorado (Union)	AR	PE
750	FO	501.04	F	M	Y	62	2	common	Strong (Union)	AR	LP
752	FP	503.02	M	M	Y	31	2	common	Arkansas City (Desha)	AR	LP
756	FQ	507.01	M	L	X	75	1	folk	Lake Providence (East Carroll)	WL	PE
770	FR	515.04	M	U	Y	55	3	cultured	Monroe (Ouachita)	WL	PE

FIGURE 5 (Continued)

772	FS	518.02	M	M	Y	73	1	folk	Antioch (Lincoln)	WL	MP
781	FU	524.01	F	A	Y	88	1	folk	Grand Cane (De Soto)	WL	LP
791	FV	528.03	M	M	Y	51	2	common	Hawthorne (Vernon)	WL	GB
796	FW	533.03	F	L	X	71	1	folk	Pineville (Rapides)	WL	PE
814	FZ	544.02	F	L	Y	87	1	folk	Bell City (Calcasieu)	WL	PE
831	GC	567.02	M	M	Y	32	3	cultured	Marshall (Harrison)	UT	PE
839	GE	583.01	M	L	Y	74	1	folk	Valley View (Cooke)	UT	LP
845	GF	586.01	F	M	Y	16	2	common	Dallas (Dallas)	UT	GB
855	GH	604.01	M	M	Y	74	1	folk	Caldwell (Burleson)	UT	MB
862	GI	616.04	M	M	Y	30	2	common	Port Arthur (Jefferson)	UT	PE
879	GL	629.01	M	M	Y	83	2	common	Goliad (Goliad)	LT	MP

FIGURE 6

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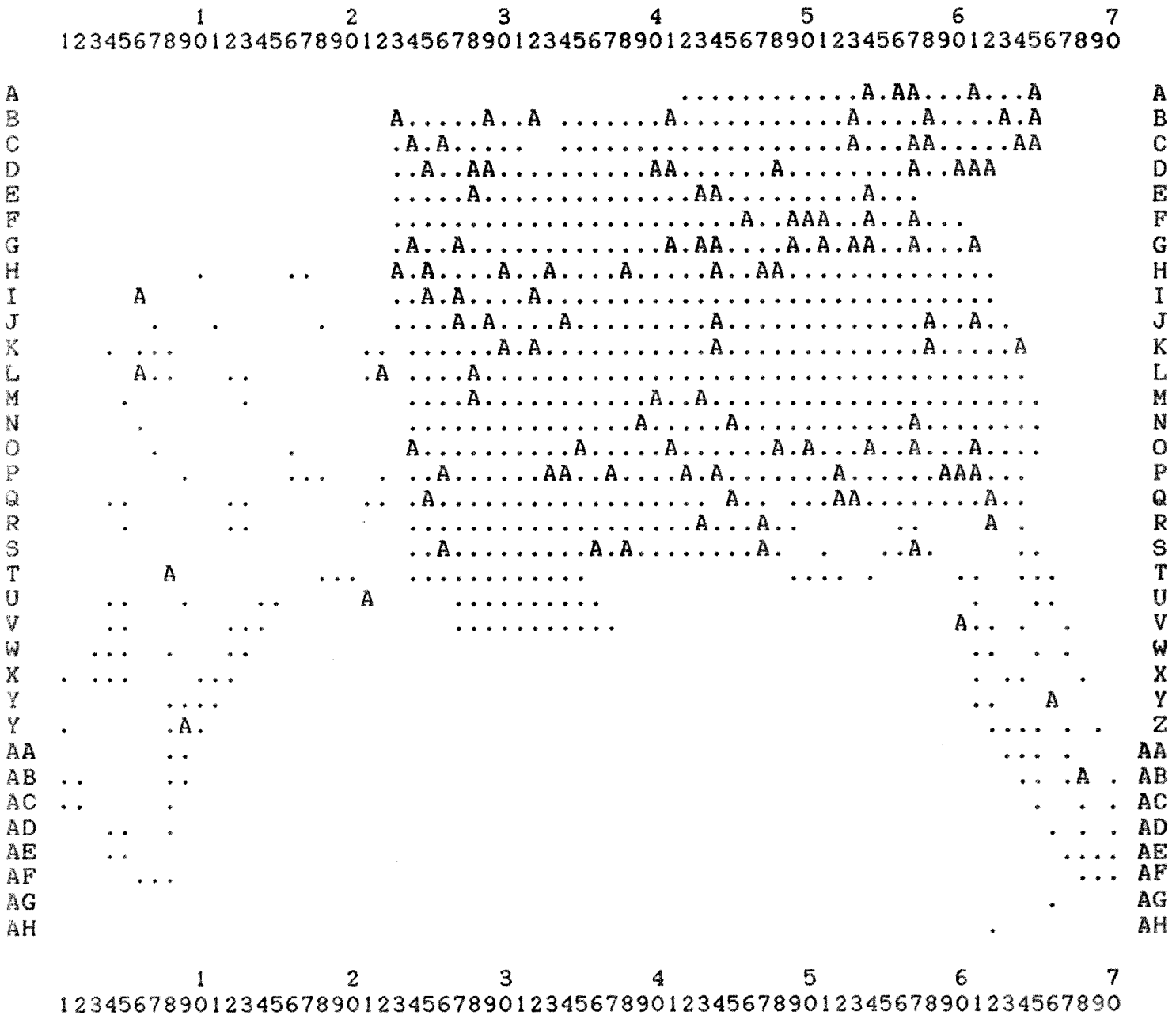
A = [a$^{\varepsilon}$ ~ a.$^{\varepsilon}$]



grid. That form assigns a constant position for each LAGS primary informant, providing an economical reference for computational mapping. The grid complements the list with a graphic representation of distribution, the primary resource of linguistic geography. With the absence of those four forms in the Piedmont and plains of Georgia and Alabama, the deltas of Mississippi, Louisiana, Tennessee, and Arkansas, and the Coastal Plain of Upper Texas, the incidence of these monophthongs and short glides conforms with earlier assumptions about the pronunciation of this vowel in the South. In a voiceless environment the mapped forms recur most frequently outside the plantation divisions of the South, the hill country to the north and the pine barrens to the south.

These charts, however, also show the occurrence of the forms declining in the speech of the upper social classes and the better educated. Even in the hill country strongholds of South Midland speech, as, for example, Knoxville, Chattanooga, Nashville, and Little Rock, the incidence of these monophthongs and short glides is rare and suggestive of a possible rural marker throughout the territory. Evidence of this kind can only be realized through several kinds of interpretation, including indexes, tables, and charts.

Taken together, these registers also call attention to scribal differences and the problems they bring to analysis. As McIntosh pointed out, variation occurs when the work of any scribe is set beside that of another. The LAGS approach aims to focus on the differences and in the process, perhaps, learn more about perceptual differences in the interpretation of speech sounds. For example, scribes SL (Susan Leas McDaniel) and LP (Lee Pederson) show habitual use of two different notations in this context the raised and centered monophthong (RAG) in SL's records and the short upgliding diphthongs (RAA-kaj, RAE-kaj, etc.) in LP's. Noting the positional

similarities suggested by these notations and the shared geographical and social features of the informants reported under those notations, one might conclude that these sets of features mark a common sound. The fact need not be asserted here without spectrographic evidence, but the resources of this approach to phonetic description seem evident. Without suppressing scribal differences or insisting upon an overlap in notation habits, a linguistic atlas can order material with this system and allow readers to draw their own conclusions.

With data mapped in those ways, the work provides better insights into the nature of the research problems, as well as the social and regional distribution of forms. Linguistic geography can never match the delicacy of laboratory phonetics in the description of forms or the analytical rigor of systematic sampling, but it makes other contributions by concentrating on those tasks it does best. Students need to know the implications of a phonetic notation. Failure to bring the facts of an investigation to the surface prevents a reader from understanding the implications of the data base and the substance of the materials from which the generalizations are drawn. To acknowledge that phonetic notation reflects individual differences in perception is appropriate and useful, especially when those varieties can be calibrated in a common pattern. To exclude phonetics from linguistic geography is to ignore the primary responsibility of the work, a close attention to "small-scale facts."

NOTES

1. This interpretation differs from other American work only in its explicit references to the targets and tasks of phonetic mapping. In *The Pronunciation of English in the Atlantic States* (Ann Arbor, 1961), H. Kurath and R. I. McDavid, Jr., describe stressed vowels in the context of a word-level phonology and consistently report conclusions easily transliterated into the vocabulary of phonetic features.

At the same time, this interpretation departs radically from the approach outlined by A. McIntosh in his *Introduction to a Survey of Scottish Dialects* (Edinburgh, 1961). The chapter "The Phonetic Approach" (68-9) concludes with this paragraph:

> Here we must call attention to the fact that the material which a phonetician notes down from an informant is often and quite wrongly described as "raw material," as if he had in some way captured the actual sounds in their entirety. In fact what he returns with in his notebooks has, by the very act of being written down, gone through a stage of processing and is no longer "raw" at all. Just what the nature of that process is will depend partly on the problems inherent in any attempt to express sounds by written symbols and partly on the competence and preoccupations of the phonetician himself. But in any case, if he has had any experience, he will be well aware of all this, and both he and anybody else who is working on the material at a later stage will have to decide what implications it has when any question of analysing the material arises. An impressionistic transcription is essentially an individual and private matter; it is not for the public eye. Some form of synthesis of the material is therefore necessary, and invariably to print the material exactly as it was first written down by

the fieldworker would almost certainly be misleading. In the world of scholarship error can appear in a variety of forms, but one of the most dangerous is that which has a specious appearance of precision.

The LAGS approach recognizes the interpretive framework suggested by McIntosh, but it carries the implications forward to this conclusion: because notations reflect subjective factors, these transcriptions must be plotted closely from their initial forms so a reader can understand their significance and adjust his interpretations accordingly. For that reason, LAGS phonetics aims to make all materials open to public inspection, from the tape/text through each step of the phonological analysis.

Finally, this approach rejects the assumption of some that "impressionistic phonetics" lacks descriptive authority. From the outset of civilization, humans have advanced understanding with the resources of impressionistic phonetics, the resources of understanding that make language possible. To disregard the findings of direct observation is a mistake today, at a time when mechanical devices cannot yet offer the tools needed in linguistic geography. As B. Malmberg concluded in *Phonetics* (New York, 1963), 89, "The phonetician uses several different methods in his work to examine the sounds of language and their combinations. His most important apparatus is his ear, which will remain his most precious instrument in spite of all the technical inventions of our age." LAGS phonetics advances on that assumption with an appreciation of the imperfections shared by linguistic geographers, engineers and philologists.

2. For a description of this reference, its history and format, see L. Pederson, S. L. McDaniel, and M. W. Bassett, "The LAGS Concordance," *American Speech*. See also Pederson (1985 and forthcoming a, b, c).

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LAGS WORKING PAPERS, THIRD SERIES (1985)

WORKING PAPER NUMBER SIX

A Reference Tool for Southern Folklore Study

Lee Pederson and Susan Leas McDaniel

A REFERENCE TOOL FOR SOUTHERN FOLKLORE STUDY

Lee Pederson and Susan Leas McDaniel

The legendry is the central reference of the Linguistic Atlas of the Gulf States (LAGS). A set of alphabetically ordered map legends, the text records data in the format of a historical dictionary. It unites the indexed evidence of the Basic Materials with the interpretative statements of the Descriptive Materials.[1] And, in the process, the legendry operates as the main research tool in the LAGS collection for students of Southern language and culture.[2]

The LAGS coinage *legendry* aims to distinguish the orientation of this book from both the inclusive/diachronic/historical framework of a dialect dictionary, as, for example, the *Dictionary of American Regional English* (DARE), and the exclusive/synchronic/descriptive atlas method of interpretation, as, for example *A Word Geography of the Eastern United States.* Instead, the LAGS text reflects this assumption: if a linguistic atlas is a collection of maps, as the phrase indicates, the complex evidence of those illustrations deserves fully developed explanations. It follows that in a research tool those explanations should be organized in the most accessible form. The most accessible conventional reference medium is the hard-copy book, and the most effective reference format is the dictionary. With an alphabetized word list and obligatory entry styles, the legendry offers a convenient reference without sacrificing the empirical principles of coherence, comprehensiveness, and simplicity. Those are goals not easily realized in a descriptive index of a large corpus, but they are requisites that must be met if the tool is to serve the purposes for which it was

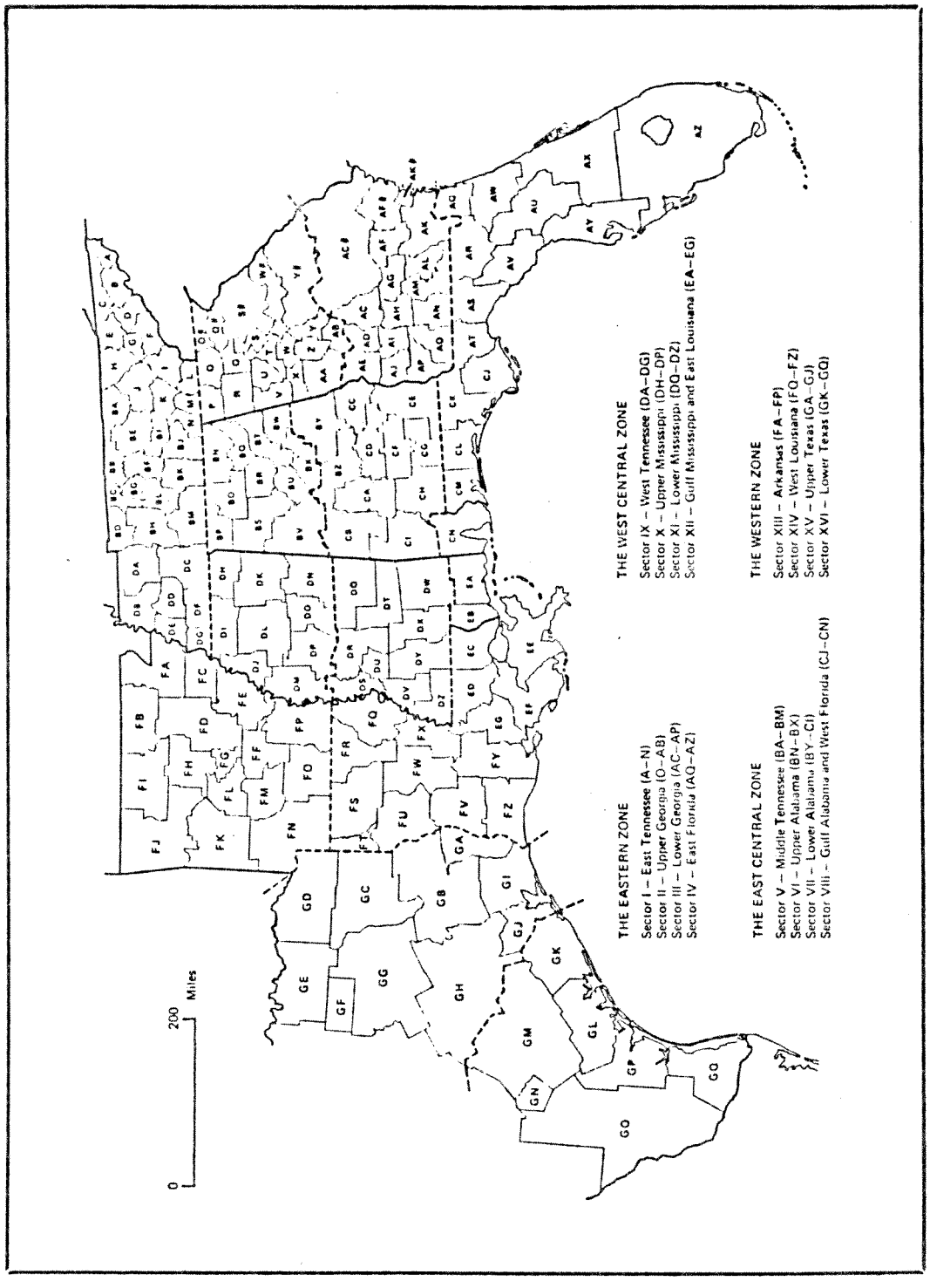
designed.[3]

This report explains resources of the LAGS legendry through the format of its entries. Here, these illustrate information about Southern language and culture recorded under 32 synonyms for "shelf over a fireplace." They include four types of legendry entries: the primary entry, *mantel*; five secondary entries, *mantelpiece, fireboard, shelf, mantel board, mantelshelf*; seven tertiary entries, *board, fireplace shelf, chimney shelf, fire mantel, fire shelf, shelf mantel*, and *whatnot shelf*; and 19 line entries, *arch, arch rock, chimenea, chimney, chimney breast, chimneypiece, clock shelf, corniche, fireplace mantel, ledge, mantel log, mantel place, manteling, manteltree, medicine shelf, oak, shelf over the fireplace, stone mantel*, and *wooden mantel*. All of these, singularly or in combination, were abstracted from the LAGS field record, 5,200 hours of tape-recorded conversational interviews conducted in Tennessee, Georgia, Florida, Alabama, Mississippi, Louisiana, Arkansas, and East Texas during the years 1968-1980. See Figure 1.

Based on a questionnaire (work sheets) of more than one thousand items, the field record was transcribed as a set of phonetic texts, called *protocols*, by eight scribes during those same years. That collection of 129,000 pages was published in microform in 1981.[4] During the years 1981-1984, three editors converted the phonetic text to conventional orthographic writing and, with the help of several assistants, entered the entire corpus on the Emory mainframe to compose the LAGS concordance. The legendry derives its text indirectly from the concordance, the principal reference tool of the Basic Materials.

As described elsewhere, microcomputer programs help to reorganize concordance data in linguistic files for the composition of an electronic atlas in microform (EAM) that serves as research instrument in the preparation

FIGURE 1: THE LAGS GRID



of the legendry while forming an independent reference tool for other applications.[5] For editorial work in the legendry, the programs function in these ways. With a selection of target items, entry begins with a coding of concordance forms that are listed in files on diskettes ("floppy disks"). The programs then read the sequential files containing these lists and informant data, printing the information in three forms: 1) as a list of total occurrences, 2) as a register of the incidence of responses, and 3) as map versions of synonym distribution. For the item *mantel*, Figure 2 shows the totals list, Figure 3 reproduces the file for *fireboard*, and Figure 4, A-D, plots the incidence of (A) *mantel*, (B) *mantelpiece*, (C) *fireboard*, and (D) *mantel board* on a graphic plotter grid.[6]

To illustrate how the legendry combines descriptive and basic evidence, sample entries identify the informational fields and outline the data sources of the primary term *mantel*, of two principal regional synonyms (secondary entries) *mantelpiece* and *fireboard*, and of the 19 unique forms (line entries). The primary entry, *mantel*, serves as the control unit for the item, with all synonyms registered under that form. Each secondary entry includes evidence of distribution, with the essential geographical, historical, and social patterns listed under the dominant regionalism, here, *mantelpiece*. Tertiary entries are similar. Line entries provide several kinds of information in the composition of the legendry. They identify relics, such as *chimneypiece*; isolated instances of loanwords, such as French *corniche*; clipped forms, such as *chimney* (from *chimneypiece*); synecdochic forms, such as *oak* (from *oak -mantel, -shelf*, or *-board*); and improbable synonyms, such as *arch rock* and *manteling*, that require glosses for general understanding. Together, such legendry entries assist the reader of the atlas to recognize the sources and implications of recorded forms. And, as an abstraction of the full LAGS

FIGURE 2

Lexical Totals File: mantel.tot

Symbols	Lexical Form(s)	Totals
A	mantel	567
B	mantelpiece	242
C	fireboard	72
D	chimney shelf	2
E	shelf	62
F	stone mantel	1
G	mantel board	54
H	chimneypiece	1
I	manteltree	1
J	mantelshelf	36
K	fire shelf	2
L	whatnot shelf	2
M	board	6
N	shelf over the fireplace	1
O	clock shelf	1
P	manteling	1
Q	mantel place	1
R	fire mantel	2
S	shelf mantel	2
T	oak	1
U	chimney	1
V	fireplace shelf	3
W	wooden mantel	1
X	arch	1
Y	arch rock	1
Z	mantel log	1
aa	la corniche	1
ab	medicine shelf	1
ac	fireplace mantel	1
ad	ledge	1
ae	chimney breast	1
af	chimenea	1

FIGURE 3

Book	Protocol	Sx	Cl	Rc	Age	Ed	Speech	Locality (Community)	Sec	FW	Sc	
** Lexical File: mantel -- C -- fireboard **												
001	A 001.04	F	L	Y	99	1	folk	Neva (Johnson)	ET	LP	LP	1
002	A 001.01	M	L	Y	82	1	folk	Laurel Bloomery (Johnson)	ET	LP	LP	2
003	A 001.03	M	M	Y	79	1	common	Shady Valley (Johnson)	ET	LP	LP	3
004	A 001.05	F	L	Y	38	2	common	Laurel Bloomery (Johnson)	ET	MMc	LP	4
005	A 001.02	F	M	Y	78	3	cultured	Laurel Bloomery (Johnson)	ET	LP	LP	5
008	A 002.01	M	L	Y	67	1	common	Carter (Carter)	ET	DAC	LP	6
011	B 005.01	M	L	Y	66	1	folk	Jackson Chapel (Greene)	ET	LP	LP	7
012	C 006.01	F	L	Y	73	1	folk	Big Creek (Sullivan)	ET	LP	LP	8
017	C 007.01	M	M	Y	84	1	folk	St. Clair (Hawkins)	ET	LP	LP	9
018	D 009.01	F	I	Y	43	1	folk	Rankin (Cocke)	ET	LP	LP	10
019	D 009.02	M	M	Y	76	2	common	Bat Harbor (Cocke)	ET	LP	LP	11
020	D 009.03	M	M	Y	72	3	cultured	Cosby (Cocke)	ET	LP	LP	12
021	D 010.01	M	M	Y	81	1	folk	Talbott (Jefferson)	ET	LP	LP	13
023	E 014.01	M	M	Y	80	1	folk	Little Sycamore (Claiborne)	ET	LP	LP	14
025	F 015.01	M	M	Y	76	1	folk	Wear Valley (Sevier)	ET	LP	LP	15
036	H 019.02	M	L	Y	80	1	folk	Jacksboro (Campbell)	ET	LP	LP	16
042	J 024.01	M	L	Y	89	2	folk	Kingston (Roane)	ET	LP	LP	17
044	J 026.01	F	L	Y	86	1	folk	Sequatchie Valley (Cumberland)	ET	BR	LP	18
047	K 028.03	M	L	Y	78	1	folk	Spring City (Rhea)	ET	SL	SL	19
061	O 036.01	M	L	Y	81	1	folk	Ellijay (Gilmer)	UG	MMc	RIM	20
064	O# 001.01	F	M	Y	86	1	folk	Blairsville (Union)	UG	EH-2	LP	21
069	Q 043.01	F	L	Y	63	1	folk	Jasper (Pickens)	UG	KED	MP	22
072	Q# 004.01	M	L	Y	80	1	folk	Dahlonega (Lumpkin)	UG	LP	LP	23
073	Q# 005.01	F	M	Y	64	3	cultured	Cleveland (White)	UG	AM	SL	24
079	R 047.01	F	U	Y	68	3	cultured	Rome (Floyd)	UG	CWU	LP	25
080	R 048.01	M	M	Y	76	2	common	Menlo (Chattooga)	UG	JMF	LP	26
084	S 051.01	M	L	X	69	1	folk	Conyers (Rockdale)	UG	BR	LP	27
088	S# 009.01	F	M	Y	74	1	folk	Toccoa (Stephens)	UG	IR	SL	28
092	S# 014.01	F	M	Y	63	2	common	Hartwell (Hart)	UG	LD-1	LP	29
095	T 052.04	F	M	Y	78	2	folk	Lithonia (De Kalb)	UG	EWB	GR	30
116	X 063.02	M	L	X	80	1	folk	Newnan (Coweta)	UG	SB-1	LP	31
136	Z 070.01	M	L	Y	70	1	folk	Thomaston (Upson)	UG	AB	SL	32
152	AC# 042.02	F	L	Y	70	2	common	Swainsboro (Emanuel)	LG	BR	PE	33
184	AG 098.02	M	M	Y	60	2	common	Ocilla (Irwin)	LG	SMH	SL	34
186	AH 100.01	F	M	Y	55	2	common	Tifton (Tift)	LG	MB	LP	35
210	AM 118.01	M	M	X	74	1	folk	Ray City (Berrien)	LG	AB	GB	36
290	BA 185.01	F	L	Y	65	1	folk	Forbus (Fentress)	MT	BR	LP	37
315	BH 206.01	F	L	Y	81	1	folk	Waverly (Humphreys)	MT	RP	LD	38
317	BH 207.01	F	L	Y	81	2	folk	Only (Hickman)	MT	BR	LD	39
318	BH 207.02	M	M	Y	72	2	common	Whitehouse (Hickman)	MT	BR	LP	40
321	BI 209.01	M	M	Y	81	3	common	Spencer (Van Buren)	MT	BR	LD	41
338	BN 225.04	F	M	Y	64	2	common	Stevenson (Jackson)	UA	MB	LP	42
348	BO 229.01	F	M	Y	50	2	common	Town Creek (Lawrence)	UA	AW	MB	43
350	BP 230.01	M	L	Y	64	2	common	Lexington (Lauderdale)	UA	AB-1	MP	44
355	BR 234.01	F	M	Y	69	1	folk	Blountsville (Blount)	UA	JH-1	LP	45
359	BS 237.01	M	M	Y	78	2	common	Haleyville (Winston)	UA	SL	SL	46
363	BS 238.01	M	M	X	42	2	common	Bexar (Marion)	UA	EC-2	MB	47
365	BS 239.02	F	M	Y	45	2	common	Belgreen (Franklin)	UA	CWF	LP	48
376	BV 244.06	M	M	Y	80	1	folk	Duncanville (Tuscaloosa)	UA	GB	PE	49
388	BX 251.03	M	L	Y	78	1	folk	Shelby (Shelby)	UA	AMF	SL	50

FIGURE 3 (Continued)

420	CD 273.02	M	L	Y	74	1	folk	Macedonia (Lowndes)	LA	GB	MP	51
435	CF 279.03	M	M	Y	73	2	common	Troy (Pike)	LA	GB	GB	52
438	CF 281.01	M	L	X	73	1	folk	Greenville (Butler)	LA	GB	LP	53
440	CF 281.02	F	M	Y	55	2	common	Greenville (Butler)	LA	GB	MB	54
450	CI 288.02	M	L	Y	78	2	common	Leroy (Washington)	LA	BR	MP	55
465	CL 299.02	F	I	Y	72	1	folk	Laurel Hill (Okaloosa)	WF	BR	PE	56
520	DH 325.01	M	L	Y	72	2	folk	Iuka (Tishomingo)	UM	EC	LP	57
600	DW 387.05	M	L	X	84	1	folk	Soso (Jones)	LM	BR	GR	58
674	FA 432.01	M	M	Y	82	1	folk	Piggott (Clay)	AR	MMc	LP	59
681	FB 439.01	M	L	Y	65	1	folk	Cave City (Sharp)	AR	GM	MP	60
684	FB 439.02	M	M	Y	62	2	common	Evening Shade (Sharp)	AR	GM	LP	61
689	FC 444.02	F	L	Y	82	2	folk	Forrest City (St. Francis)	AR	MMc	PE	62
694	FD 450.02	M	M	Y	70	1	folk	Des Arc (Prairie)	AR	MMc	LP	63
713	FH 459.01	F	M	Y	86	2	common	Greenbrier (Faulkner)	AR	MMc	PE	64
715	FH 462.01	F	L	Y	77	1	folk	Pee Dee (Van Buren)	AR	MMc	LP	65
716	FI 463.01	M	M	Y	84	1	folk	Mountain Home (Baxter)	AR	MMc	LD	66
717	FI 465.01	F	M	Y	71	1	folk	Hilltop (Searcy)	AR	MMc	PE	67
726	FJ 473.01	F	L	Y	86	1	folk	Mulberry (Crawford)	AR	MMc	GR	68
733	FK 480.01	M	M	Y	70	1	folk	Gate (Scott)	AR	EC	SL	69
786	FU 526.03	M	L	Y	67	1	folk	Provencal (Natchitoches)	WL	BR	GB	70
823	GB 558.02	M	L	Y	37	2	common	Harmony (Nacogdoches)	UT	BR	PE	71
838	GE 582.01	M	M	Y	93	1	folk	Denison (Grayson)	UT	MB	MP	72

Total: 72

FIGURE 4A

MANTEL

A = mantel

FIGURE 4B

MANTELPIECE

A = mantelpiece

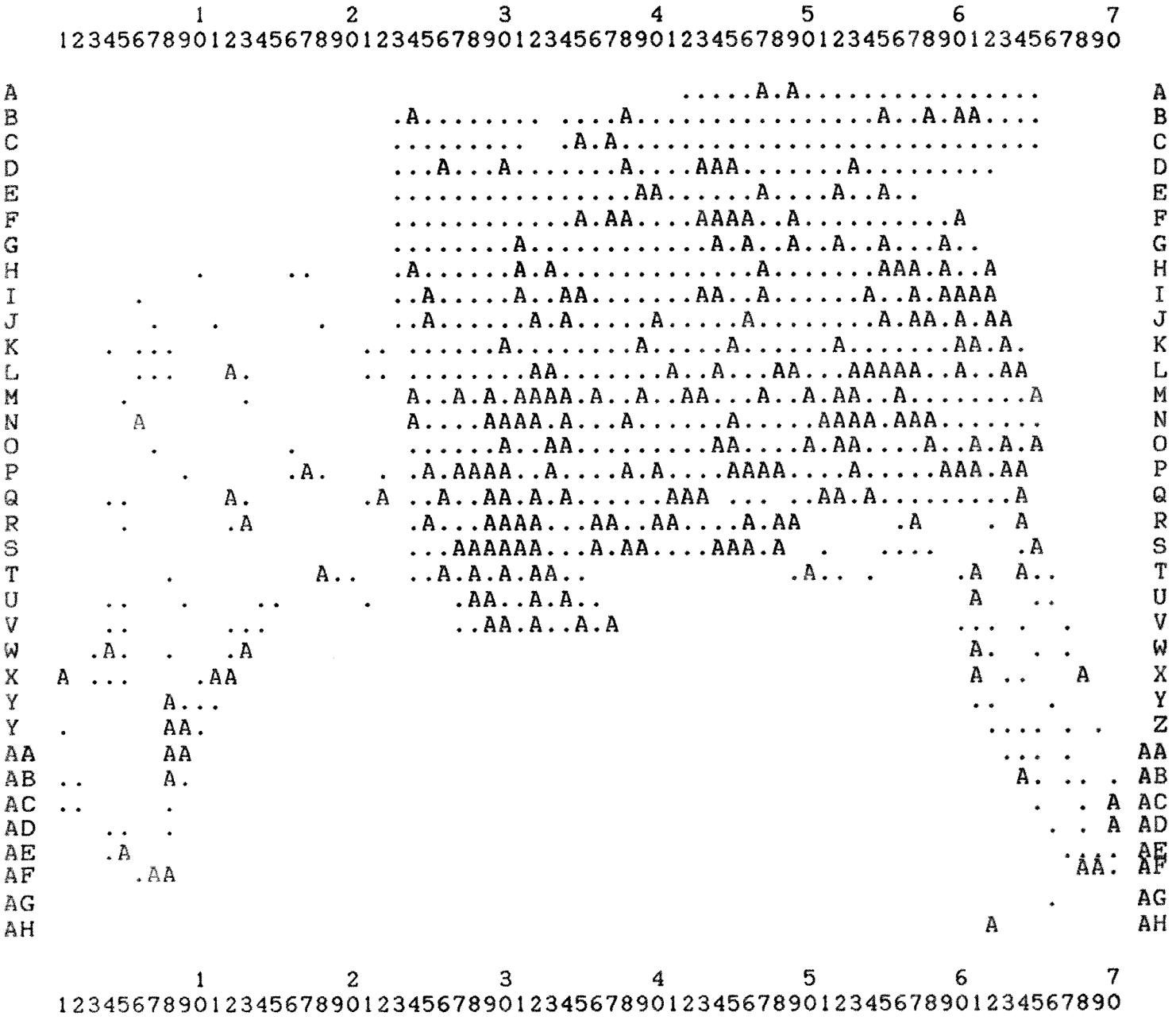


FIGURE 4C

FIREBOARD

A = fireboard

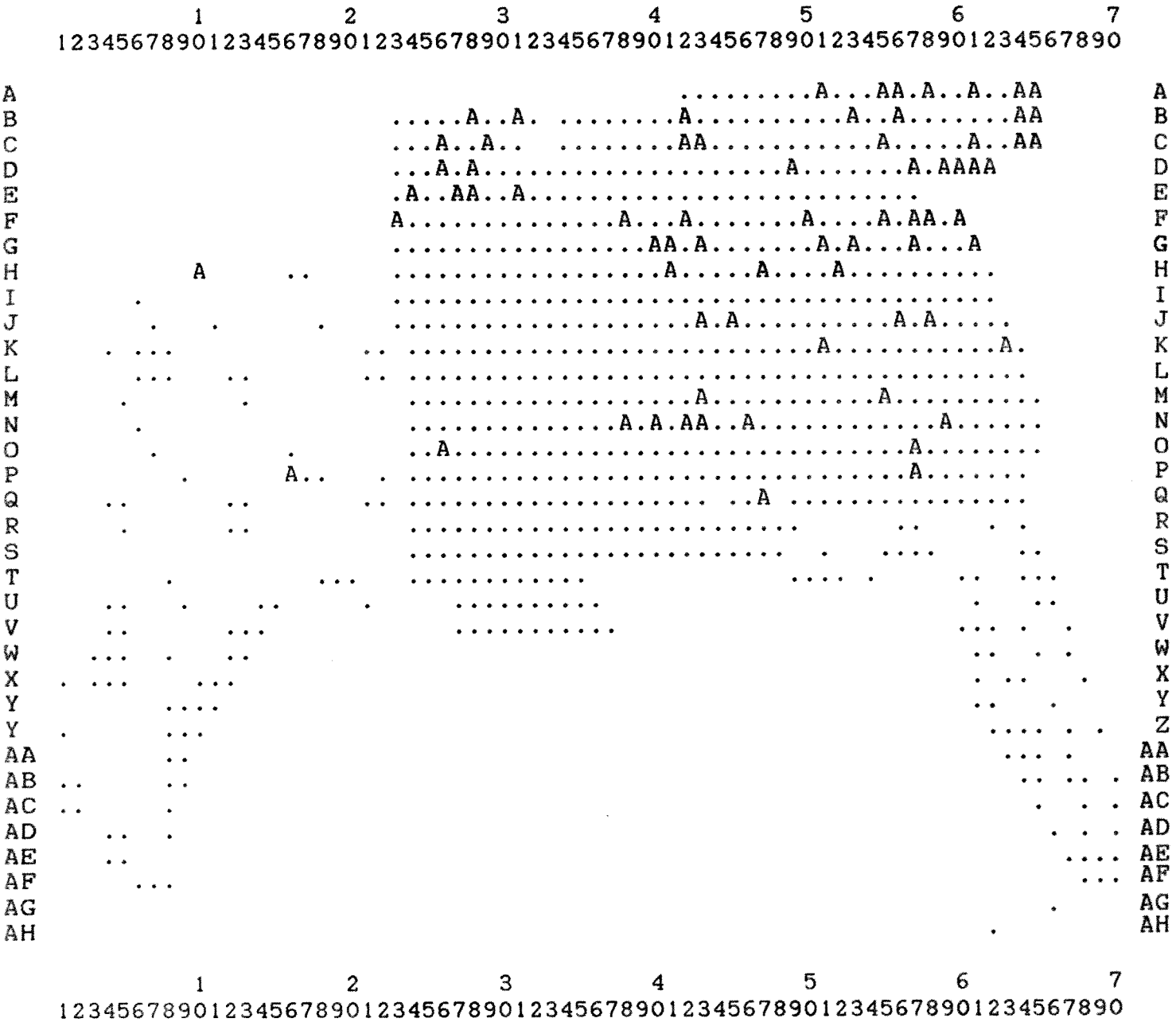
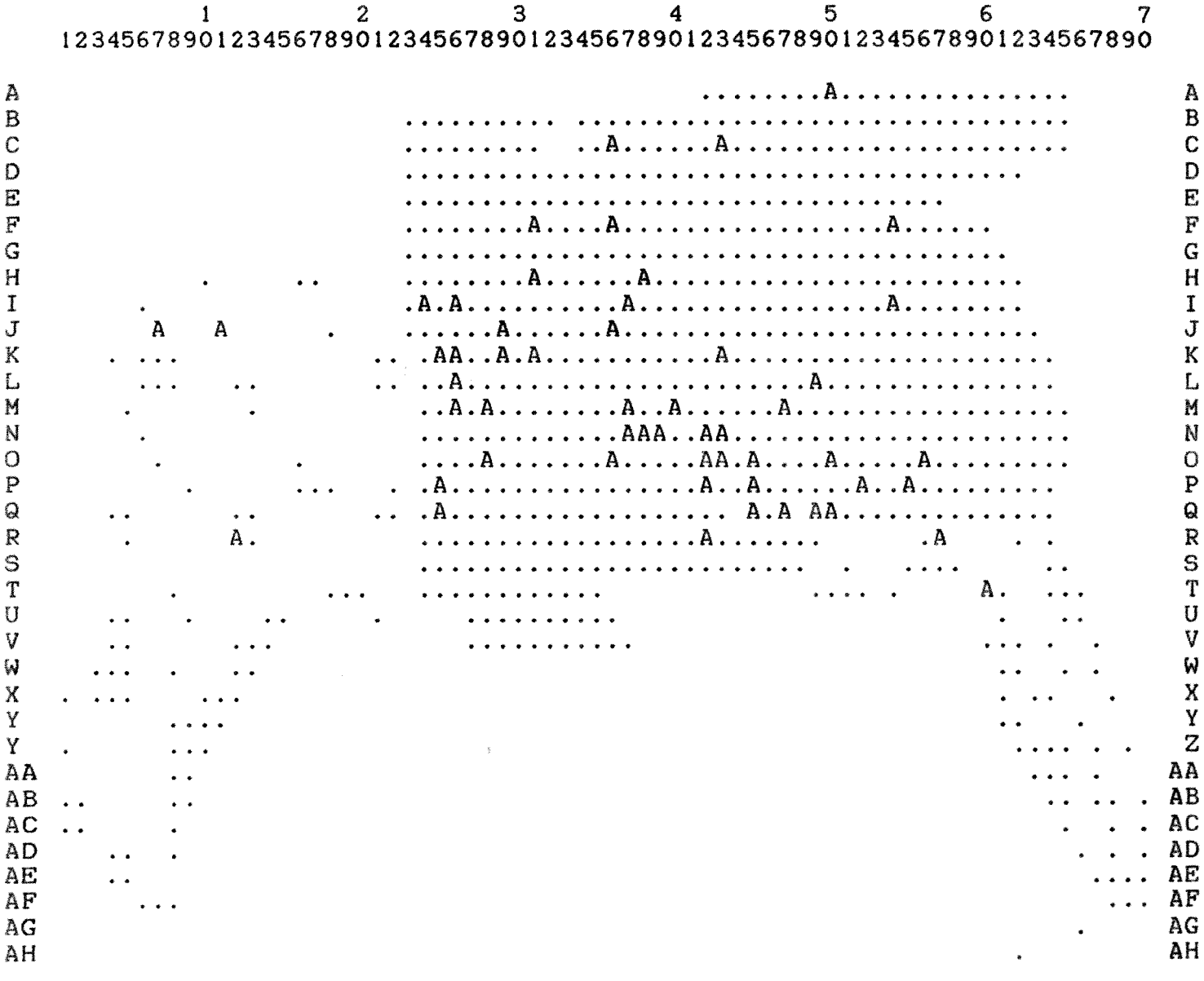


FIGURE 4D

MANTEL BOARD

A = mantel board



collection, the legendry offers immediate access to information at any level of complexity. The entries identify, summarize, and illustrate the contents of the Basic Materials in the format of a descriptive index and guide to the tape/text, protocols, concordance, and maps in print and electronic media.

PRIMARY LEGENDRY ENTRY

A primary legendry entry, Figure 5, "mantel," has a format of fifteen fields of information. Ordered as fields of form, reference, control, and distribution, the contents of a primary entry include:

1. formal fields:
   a. entry word: *mantel*
   b. speech part: *n.* (noun)
   c. pronunciation: <man(t)(e)l ~ man[n](e)l>
   d. definition: work sheet gloss
2. reference fields
   a. total incidence (*Index*): 567
   b. page and line (*Protocol*): 008.4
   c. permuted texts (*Concordance*): 14311-14325
   d. microform file (*EAM*):
   e. descriptive atlas map:
3. control fields:
   a. synonyms:
   b. matrix:
4. distributional fields:
   a. statement on regional pattern
   b. statement on social pattern
   c. statement on usage
   d. illustrative texts

Of these, only the control fields are limited to primary entries. Secondary and tertiary entries include fields of form, reference, and distribution; line entries report unique forms in the LAGS collection, identifying informants and recording illustrative texts when available. The selection of primary entries reflects the composition of the LAGS work sheets and the informant responses to items in that form during the course of the investigation. For example, the work sheet entry, the form that field workers used to investigate the *mantel* item, coincides with the findings of the survey.

FIGURE 5: MANTEL

mantel. n. <man(t)(e)l ~ man[n](e)l>. L: "Up above the fireplace to set vases on." Tot. 567. P/L 008.4. C 14311-14325. F 00; M 000.

Recurrent: *mantelpiece* (242), *fireboard* (72), *shelf* (62), *mantel board* (54), *mantelshelf* (36), *board* (6), *fireplace shelf* (3), *chimney shelf* (2), *fire mantel* (2), *fire shelf* (2), *shelf mantel* (2), *whatnot shelf* (2)
Unique: *arch, arch rock, chimenea, chimney, chimney breast, chimneypiece, clock shelf, corniche, fireplace mantel, ledge, mantel log, mantel place, manteling, manteltree, medicine shelf, oak, shelf over the fireplace, stone mantel, wooden mantel*

		1	2	3	4	5	6	7
1	mantel	404	72	50	24	11	10	16
2	mantelpiece	72	138	8	12	10	3	6
3	fireboard	50	8	11	1	5	1	5
4	shelf	24	12	1	19	0	3	2
5	mantel board	11	10	5	0	33	1	3
6	mantelshelf	10	3	1	3	1	21	2
7	other terms	16	6	5	2	3	2	28

With the exception of the immediate New Orleans focal area, where *mantelpiece* prevails, all subregional and social dialect areas show *mantel* as the dominant form. In all of those contexts, *mantel* combines with *mantelpiece*, *fireboard*, or *mantel board* to mark distinctive patterns. Only younger informants, especially in the upcountry and urban areas, consistently report *mantel* as a single response.

MMY 18 2 Birmingham UA. Held clock, jars of candy, pictures, trophies.

FMY 75 1 Lockhart LM. They always had a *mantelpiece* across the *mantel*.

FUY-S 40 2 Roma LT. That's where you put your prize belongings.

Here is the full text of the work sheet entry:

8.4 The lamp is on the) mantel *mantelshelf, *mantelpiece, *tussock, *clock shelf, *fireboard, *mantel board, *manteltree

L: Up above the fireplace to set vases on.

M: What would you call the place above the fireplace where you might put an ornament or picture or something like that?

In this instance, the word *mantel* is the form in the initial cue sentence, and this corresponds with findings of the survey that show it to be the dominant term across the Gulf States. Another entry on the same sheet, however, shows a disparity between the work sheet form and the collected synonyms:

8.6 lightwood /fatty kindling sticks for starting a fire; are kindling and lightwood different?/

M: What would you call the kind of wood you use to start a fire? How about something you'd get when you cut down a pine tree, rich wood you could light directly from a match?

The complex findings under this item recommend *kindling*, not *lightwood*, as the primary entry for the explanation of a large and complicated set of synonyms.

As in the work sheets and concordance, legendry entries accept the authority of *Webster's Third New International Dictionary* for all spellings recorded in that book or in its earlier editions. Thus, the spelling *mantel* appears without the variants included in historical dictionaries. Similarly, speech part designations also follow the code of that dictionary. The pronunciation and semantic glosses, however, reflect LAGS method.[7]

As explained elsewhere, legendry pronunciation glosses appear in an alphabetic system called the Automatic Book Code (ABC). This system reflects the intuitive, or automatic, associations a reader of English makes in the interpretation of a phonetic string. Because the English alphabet is the most

accurate, efficient, and elegant phonemic system of the language, ABC follows it and the long tradition of writing in Western civilization, rather than the nonce orthographies of orthoepists and linguists, old and new.[8] In addition to the letters and diacritics, pronunciation glosses also include parens to show letters and syllables that are sometimes deleted, as, for example, <man(t)(e)l> to indicate the pronunciations <mantel>, <mantl>, <manl>, and <manel>, and brackets to show substitute letters, as, for example <man[n](e)l>, to indicate the pronunciations <mannel>, <mannl>, <manel>,and <manl>. The semantic gloss "up above the fireplace to set vases on" is the frame used by Guy H. Loman, Jr., in his work in the Atlantic States, marked [L] in the work sheet entry. Elsewhere, the glosses of Raven I. McDavid, Jr., or Lee Pederson are often used, marked [M] and [P], respectively. Wherever possible, the gloss is drawn directly from the work sheets to maintain self-consistency within the program. Like the cues in field work, these descriptors aim to provide the broadest possible context for appropriate forms. A linguistic atlas is a lexicological, not a lexicographical, study: it is a servant to dictionaries, not a dictionary. That comfortable understanding underlies the nonce form *legendry*.

The reference fields direct a reader to the sources of information within the LAGS collection. These references identify evidence in four forms. The totals figure reports the incidence of the term as recorded as a response to the work sheet item. The page and line reference identifies the position in the protocols as published in the Basic Materials. The permuted text reference identifies the pages of the *Concordance* that record all instances of the term in the collection. The microform file reference indicates the file according to disk number (2-10) in the electronic atlas in microform.[9] The map number refers to the volume of maps that will complete the atlas.

The control fields include information that appears only in primary entries. The synonym list gives the reader a full inventory of appropriate synonyms recorded in the survey and ordered elsewhere in the legendry. The matrix includes the principal recurrent forms in combinations through multiple responses. These fields help a reader evaluate the tabulations of single features and understand the problem of divided usage with respect to a dialect area, a community, or an idiolect, wherein the record shows two or more different responses to a target item.

The distributional fields describe regional and social incidence, as well as general usage, in brief statements and illustrate those observations with representative texts drawn from the concordance or the protocol collection. Each text includes geographical and social referents, marking the community and sector, as, for example, ET (East Tennessee) and designations of sex F/M (female/male), social class A/U/M/L/I (aristocratic/upper/middle/lower/ indigent), racial caste X/Y (black/white), age, and formal education 1/2/3 (elementary school/high school/college).

SECONDARY LEGENDRY ENTRY

Secondary entries include all recurrent regional and social markers. These record evidence within formal, reference, and distributional fields as covered in primary entries, with the semantic glosses replaced with references to the base form, as, for example, *mantel*, in Figure 6, "mantelpiece." Here, description concentrates on the implications of distribution and develops that field most fully. Wherever convenient, subtotals are included in parens to support generalizations about regional and social patterns of usage.

The incidence of *mantelpiece* and *fireboard* combines to form an approximate pattern of complementary distribution. As explained in Figure 7,

FIGURE 6: MANTELPIECE

mantelpiece n. <man[n](nte)lpēs> See **mantel**

Tot. 242; 008.4; 14320-14324; 00; 00.

With *mantel*, this regional word outlines the domain of the historical Coastal pattern, but it shows much deeper and consistent interior penetration than recorded for other Coastal markers, such as *mosquito hawk*, *red bug*, and *hoghead cheese*. Rare in East Tennessee and Arkansas, where it shows highest frequency in urban speech, the incidence of *mantelpiece* suggests both the power of the New Orleans focal area in the Central Gulf Coast and Lower Mississippi Valley and the durable vitality of an old Eastern form, resisted only in rural South Midland strongholds.

High occurrence (77) among blacks of all types supports conservative lexical habits of the group. Some younger informants perceive it as an old-fashioned term, and 202 of the 242 instances are from the speech of those over age 50. Less common among upper-class (30), college-educated (58) informants, the term shows the greatest strength in the folk and common speech of Georgia and Louisiana.

MUY 25 3 St. Petersburg EF. Has heard his mother say this.

MUY 53 3 New Orleans EL. Or *mantel*; both terms used.

MLX 75 1 Lake Providence WL. You sit your lamp on that.

FIGURE 7: FIREBOARD

fireboard n. <fi(r)[e]bo[a](r)d> See **mantel**

72 instances; 008.4; 7951-7952; 00; 00.

As an exclusive response, this old South Midland marker occurs in the speech of 11 elderly, predominantly white (10/01), folk and common speakers, evenly representing four sectors: ET, UG, UA, and AR. In combinations, e.g., with *mantel* (42) and *mantelpiece* (7), *fireboard* shows historical, geographical, and social patterns of distribution consistent with other relics of the speech area.

Most responses from speakers over age 70 (52/20) with highest incidence in ET (19), UG (13), UA (09), and AR (11); less common in middle and lower plains of LG (04), LA (05), and UT (02); with single occurrences in WF, UM, LM, WL; unrecorded in EF, WT, GA, WT, GM, EL, and LT.

Evenly divided between lower- and middle-class speakers, only one instance of *fireboard* occurred among upper-class informants (35/36/01); among atlas types (I/II/III), the term prevails in folk speech, showing substantial endurance in common (general) usage, but rarely in cultivated speech, with all four occurrences recorded in ET and UG (45/23/04). Five of six instances in black speech recorded among folk speakers over age 68.

FLY 38 1 Laurel Bloomery ET. The *mantel*, parents called it *fireboard*.

FUY 68 3 Rome UG. Country people called it *fireboard*, the old-timey name.

MMY 82 1 Piggot AR. Some calls it *mantel*; we called it *fireboard*.

"fireboard," the term is a South Midland relic that endures in a narrowly delimited geographical subregion, invariably within a clearly defined social context. Whereas the synonym *mantelpiece* prevails in the lower South as a term of general currency among all social groups, its regional counterpart *fireboard* recurs only in the South Midland upcountry and its isolated extensions across the wire grass, sand hills, and pine woods between the coastal strip and the plains. In all those places, *fireboard* is rare in black speech and among the young, the upper class, and the well-educated of both racial castes.

The distributional characteristics of the two terms help to distinguish two important types of secondary entry: the subregional term of general currency (*mantelpiece*) and the subregional relic (*fireboard*). Each is useful in its contribution to the regional description, but neither is a precise counterpart for the other in a regional or social sense. That patterning requires a South Midland general currency term, apparently *mantel* in the LAGS sample, and a Lower Southern relic, perhaps *mantel board*. That term remains essentially beyond the South Midland territory in the east, but merges with it in the west. And a comparison of informants using *fireboard* and *mantel board* shows that the geographic distinctiveness of the two sets is contrasted by almost identical social characteristics. With the exception of a substantial black representation, the informants using *mantel board* are the Southern counterparts of the elderly, uneducated, lower-class folk speakers who preserve the South Midland relic *fireboard*.

In the pronunciation gloss, Figure 7 also illustrates the treatment of historical /r/, its reflexes in postvocalic positions. As the gloss of *mantel* introduced the use of deleted and added letters, with parens and brackets, respectively, the *fireboard* gloss <fi(r)[e]bo[a](r)d> sustains those

designations and adds an essential notation in the description of Southern speech. This marking concerns the representation of nonsyllabic vowels that sometimes replace the loss of retroflex /r/. Extending the conventions of English spelling, the LAGS technical alphabet might make use of any letters in ordinary spelling when they do not interfere with understanding. For example, the vocalized /r/ of *fire* [faiə] is written <fie> without ambiguity, as is the same postvocalic unit in *board* [boəd], <boad>. Elsewhere, as in *poor* [po], the form could be written <poo>. Here, however, a single letter <e> is used for all non-syllabic vocalic reflexes of /r/. thus, <fie>, <boed>, and <poe>.

Figure 8 illustrates the line entries, or unique forms, elicited for the *mantel* work-sheet item. These entries include only a cross reference to the primary form, the social and geographical descriptors, and brief glosses if any were recorded by the scribe. Many of the unglossed line entries are self-explanatory, though some may require reference to the tape/text for further clarification.

With this system of organization, every appropriate synonym, grammatical variant, or phonological text will be ordered in an alphabetical word list. The incidence of any mapped word will be immediately accessible, as will be the resources to consider patterns of distribution within the collection. For example, one conveniently marks the historical, geographical, and social implications of a set of synonyms, such as the *mantel* forms, by consulting the entries. Legendry texts aim to provide as much explicit information on distribution as the data allow, but they also suggest many other possible associations of language and culture for students to pursue.

The suggestive content of legendry entries makes the reference a tool for folklore study. Lists of variants and their incidence provide one kind of

FIGURE 8: LINE ENTRIES

arch n. see **mantel** MLY 62 1 Winslow AR. They called *arch rock* the *arch*.

arch rock n. see **mantel** MLY 62 1 Winslow AR. *Mantel* lay across the *arch rock*.

*chimenea n. see **mantel** MIY-S 71 2 San Ygnacio LT. Chimenea* is the *mantel*.

chimney n. see **mantel** MUY-F 58 3 New Orleans EL. People often called the *mantel* this.

chimney **breast** n. see **mantel** FUY 33 3 Houston UT. In her present home.

chimneypiece n. see **mantel** FUY 68 3 Rome UG. Heard [suggested response].

clock **shelf** n. see **mantel** MMY 72 2 Whitehouse MT. [no gloss]

corniche n. see **mantel** FLX-F 55 1 Ridge WL. A *shelf*; French.

fireplace **mantel** n. see **mantel** MLY 61 1 Belk WL. [no gloss]

ledge n. see **mantel** MMY 30 2 Port Arthur UT. [no gloss]

mantel log n. see **mantel** MMY 77 1 Germantown WL. A *mantel* made from a log.

mantel place n. see **mantel** MLX 21 2 Mobile GA. [no gloss]

manteling n. see **mantel** MLY 34 2 Barrineau Park WF. [no gloss]

manteltree n. see **mantel** MLX 70 1 Atlanta UG. Heard, but wouldn't use it.

medicine **shelf** n. see **mantel** MLY 37 2 Harmony UT. [no gloss]

oak n. see **mantel** MMY 27 3 Picayune GM. Older people would say the *oak*.

shelf over the fireplace n. see **mantel** FLX 42 2 Miami EF. [no gloss]

stone mantel n. see **mantel** FMY 82 3 Chattanooga ET. [no gloss]

wooden mantel n. see **mantel** MMY 70 1 Des Arc AR. [no gloss]

information for linguistic geography, and dialect maps, another. The legendry offers a third resource that aims particularly at the requirements of interdisciplinary study. As American folklorists routinely remark that historical dictionaries of English are more immediately useful in their work than are the archives of linguistic geography, LAGS descriptive materials seek to put the information directly into the hands of the student who may have little interest or experience in linguistic geography. The legendry means to accomplish this in the form of a lexical guide to the entire collection, giving the reader direction to the available information in the data base.

Editors of reference works cannot predict in advance the needs of investigations undertaken after its completion, but, in aiming at total accountability, the compilers of the legendry offer a research key to all the material recorded in the collection. The text outlines the flora, fauna, artifacts, beliefs, and relationships that distinguish Southern language and culture. That outline extends only as far as the systematically contrastive data of the survey functions as comparable evidence. If a form appears in a LAGS map, it also appears as a legendry entry. This editorial accountability forces the composition to deal with each recorded item as a distinct unit and to indicate the full range of information available in the collection that deals with the form. This approach will not automatically resolve all problems, but it will give a student a straightforward statement on the form and substance of the data at hand. And that should be the first question raised by any investigator who brings down a reference book from the shelf.

NOTES

1. LAGS evidence is organized in two sets. The Basic Materials include the tape/text and the microfiche publications of University Microfilms International--the protocol collection and the concordance; the Descriptive Materials include the volumes forthcoming from the University of Georgia Press--the handbook, the index, the legendry, and the maps.

2. See L. Pederson, "The Linguistic Atlas of the Gulf States: Interim Report Four," *American Speech* 56 (1981), 243-59.

3. The requisites follow the empirical principle of L. Hjelmslev, *A Prolegomena to a Theory of Language* (Madison: University of Wisconsin Press, 1961), 18.

4. L. Pederson, C. Billiard, G. Bailey, M. Bassett, and S. Leas, eds. *The Linguistic Atlas of the Gulf States: The Basic Materials* (Ann Arbor: University Microfilms International, 1981).

5. L. Pederson, "An Electronic Atlas in Microform," *LAGS Working Papers, Third Series*, #4, in *The Linguistic Atlas of the Gulf States: A Concordance of Basic Materials* (Ann Arbor: University Microfilms International, forthcoming).

6. L. Pederson, "A Graphic Plotter Grid," *Journal of English Linguistics*, forthcoming.

7. The descriptive framework of LAGS material reflects a word-level analysis of phonological, grammatical, and lexical forms. This perspective is consistent with all traditional work in American linguistic geography. LAGS description differs from its predecessors only in that it makes this context explicit.

8. L. Pederson, "An English Technical Alphabet," *LAGS Working Papers, Third Series*, #1, forthcoming.

9. The form of EAM will be determined by the files developed for the legendry. Preserved on diskettes, these sets of information will be stored in a single packet of ten units with programs for projecting findings on the frame established by the graphic plotter grid. Each item mapped in the atlas and described in the legendry will be recorded on the diskettes, and these phonological or grammatical variants and lexical synonyms should provide users with all systematically contrastive data in the atlas. The programs will make possible the creation of any combination of linguistic features and socio-regional factors that the programs can accommodate.

LAGS WORKING PAPERS, THIRD SERIES (1985)

WORKING PAPER NUMBER SEVEN

Microcomputing: Files and Maps for the LAGS Project

Lee Pederson and Susan Leas McDaniel

FIGURE 3

LEXICAL FILE SORTS

Book	Protocol	Sx	Cl	Rc	Age	Ed	Speech	Locality (Community)	Sec	FW	Sc	
** Lexical File: gopher -- I -- gopher **												
072	Q# 004.01	M	L	Y	80	1	folk	Dahlonega (Lumpkin)	UG	LP	LP	1
147	AB 078.01	F	U	Y	91	3	cultured	Butler (Taylor)	UG	GSR	LP	2
152	AC# 042.02	F	L	Y	70	2	common	Swainsboro (Emanuel)	LG	BR	PE	3
154	AC# 046.01	F	M	Y	71	2	folk	Lollie (Laurens)	LG	GSR	LP	4
155	AC# 049.01	M	M	Y	61	3	cultured	Statesboro (Bulloch)	LG	GSR	LP	5
157	AC# 051.01	F	M	Y	68	2	common	Rhine (Dodge)	LG	VP	SL	6
158	AC# 054.01	M	A	Y	61	3	cultured	Mt. Vernon (Montgomery)	LG	EC	SL	7
160	AC# 058.01	M	M	Y	67	2	common	Pembroke (Bryan)	LG	ML-1	LP	8
173	AF 092.01	F	M	Y	84	1	folk	Surrency (Appling)	LG	GSR	SL	9
174	AF 093.02	M	M	Y	63	2	common	Blackshear (Pierce)	LG	JHH	LP	10
176	AF 094.01	F	M	Y	73	3	cultured	Hazlehurst (Jeff Davis)	LG	DD	LP	11
178	AF# 062.01	F	L	Y	72	1	folk	Allenhurst (Liberty)	LG	GSR	LP	12
180	AF# 063.01	M	M	Y	76	1	common	Townsend (McIntosh)	LG	WHS	LP	13
186	AH 100.01	F	M	Y	55	2	common	Tifton (Tift)	LG	MB	LP	14
194	AJ 108.01	F	L	X	79	1	folk	Fort Gaines (Clay)	LG	GM	MB	15
196	AK 109.01	M	M	Y	62	2	common	Woodbine (Camden)	LG	JHH	LP	16
197	AK 111.02	F	M	Y	72	1	folk	Folkston (Charlton)	LG	GSR	LP	17
198	AK 111.03	M	M	Y	76	1	common	Moniac (Charlton)	LG	CM	LP	18
203	AL 114.01	F	L	Y	57	2	common	Homerville (Clinch)	LG	JW	LP	19
208	AM 117.05	M	L	Y	30	2	common	Valdosta (Lowndes)	LG	JW	PE	20
211	AM 118.02	F	M	Y	73	1	folk	Ray City (Berrien)	LG	AB	SL	21
212	AN 121.01	F	M	Y	74	1	folk	Moultrie (Colquitt)	LG	GM	PE	22
218	AO 124.01	M	M	Y	76	1	folk	Calvary (Grady)	LG	EC	SL	23
220	AO 125.01	F	M	Y	18	2	common	Bainbridge (Decatur)	LG	JW	GR	24
226	AQ 130.08	F	M	X	85	1	folk	Jacksonville (Duval)	EF	JW	LP	25
229	AQ 130.06	M	M	X	57	2	common	Jacksonville (Duval)	EF	JW	MP	26
232	AQ 130.09	F	M	Y	20	3	cultured	Jacksonville (Duval)	EF	JW	MP	27
236	AR 134.04	M	M	Y	46	2	common	Hopeful Church (Columbia)	EF	BR	PE	28
238	AS 139.02	M	L	Y	39	2	folk	Shady Grove (Taylor)	EF	BR	LP	29
239	AT 141.01	F	M	Y	52	2	common	Tallahassee (Leon)	EF	MB	SL	30
247	AU 144.01	F	M	Y	72	3	cultured	Sparr (Marion)	EF	CG	GB	31
248	AU 145.01	F	L	Y	37	2	common	Oxford (Sumter)	EF	BR	MP	32
264	AX 160.03	M	M	Y	19	3	cultured	Fort Meade (Polk)	EF	ES	GB	33
266	AY 166.01	M	U	Y	25	3	cultured	St. Petersburg (Pinellas)	EF	DAB	SL	34
267	AY 167.01	M	I	X	88	1	folk	Bealsville (Hillsborough)	EF	GS	GB	35
275	AZ 171.01	M	M	Y	77	3	cultured	Fort Ogden (De Soto)	EF	GB	SL	36
280	AZ 183.03	F	L	X	60	2	common	Miami (Dade)	EF	DS	LP	37
281	AZ 183.01	F	L	X	42	2	common	Miami (Dade)	EF	DS	SL	38
288	AZ 184.04	M	M	Y	76	1	folk	Islamorada (Monroe)	EF	GB	SL	39
395	BZ 257.01	M	L	Y	54	2	common	Tallassee (Elmore)	LA	GS	LP	40
403	CA 262.03	F	L	X	72	1	folk	Selma (Dallas)	LA	MB	GB	41
405	CA 263.01	F	M	Y	16	2	common	Camden (Wilcox)	LA	MB	SL	42
412	CC 268.02	M	U	Y	70	3	cultured	Beehive (Lee)	LA	DS	LP	43
426	CE 276.01	F	L	Y	74	1	folk	Dothan (Houston)	LA	JNR	LP	44
428	CE 276.04	F	M	Y	47	2	common	Dothan (Houston)	LA	JNR	SL	45
430	CE 277.01	F	M	Y	79	2	cultured	Daleville (Dale)	LA	MB-1	GB	46
431	CE 278.01	M	M	Y	84	1	folk	Geneva (Geneva)	LA	MB	PE	47
432	CE 278.02	F	L	X	69	1	folk	Slocomb (Geneva)	LA	JNR	SL	48
440	CF 281.02	F	M	Y	55	2	common	Greenville (Butler)	LA	GB	MB	49
441	CG 282.01	F	L	X	78	1	folk	New Brockton (Coffee)	LA	MB	PE	50
445	CG 283.02	F	M	Y	57	2	common	Andalusia (Covington)	LA	GB	SL	51

FIGURE 3 (Continued)

446	CH 284.01	F	L	Y	59	2	common	Damascus (Escambia)	LA	EH-1	LP	52
447	CH 286.02	F	L	Y	72	1	folk	Peterman (Monroe)	LA	BR	LP	53
448	CH 286.01	F	M	Y	49	2	common	Mexboro (Monroe)	LA	BR	PE	54
449	CI 288.01	M	L	X	76	2	folk	Leroy (Washington)	LA	BR	LD	55
451	CI 289.01	M	L	Y	85	1	folk	Needham (Choctaw)	LA	MB	LP	56
462	CL 298.01	M	M	Y	71	1	folk	Point Washington (Walton)	WF	GB	GR	57
463	CL 298.02	F	M	X	18	2	common	De Funiak Springs (Walton)	WF	MB	MB	58
464	CL 299.03	F	I	X	76	1	folk	Campton (Okaloosa)	WF	BR	LP	59
465	CL 299.02	F	I	Y	72	1	folk	Laurel Hill (Okaloosa)	WF	BR	PE	60
467	CM 300.01	F	M	Y	77	1	folk	Jay (Santa Rosa)	WF	GB	LP	61
468	CM 301.03	F	L	X	67	1	folk	Pensacola (Escambia)	WF	BR	SL	62
470	CM 301.04	M	L	Y	34	2	common	Barrineau Park (Escambia)	WF	BR	PE	63
473	CN 302.05	M	M	X	65	1	folk	Marlow (Baldwin)	GA	MB	MB	64
474	CN 302.04	M	M	Y	18	2	common	Gulf Shores (Baldwin)	GA	MB	GB	65
479	CN 303.05	M	M	Y	55	2	common	Mobile (Mobile)	GA	EH	SL	66
597	DW 384.01	M	M	Y	78	2	common	Leakesville (Greene)	LM	MB	SL	67
605	DX 392.01	F	M	Y	85	1	folk	Weathersby (Simpson)	LM	MB	SL	68
606	DY 394.01	M	M	Y	95	1	folk	Holmesville (Pike)	LM	MB	SL	69
632	EC 408.01	M	L	Y	79	2	folk	Bogalusa (Washington)	EL	GM	GB	70

FIGURE 4

LEXICAL FILE SORTS

Book	Protocol	Sx	Cl	Rc	Age	Ed	Speech	Locality (Community)	Sec	FW	Sc	
** Lexical File: gopher -- I -- gopher **												
072	Q# 004.01	M	L	Y	80	1	folk	Dahlonega (Lumpkin)	UG	LP	LP	1
084	S 051.01	M	L	X	69	1	folk	Conyers (Rockdale)	UG	BR	LP	2
096	T 052.06	M	M	Y	66	2	common	Decatur (De Kalb)	UG	JF	SL	3
121	Y 066.01	M	L	Y	69	1	folk	Forsyth (Monroe)	UG	KD	GB	4
122	Y 067.06	M	M	Y	64	2	common	Macon (Bibb)	UG	WA	SL	5
144	AA 075.01	F	M	Y	65	3	cultured	Waverly Hall (Harris)	UG	SL	SL	6
147	AB 078.01	F	U	Y	91	3	cultured	Butler (Taylor)	UG	GSR	LP	7
151	AC# 042.01M	M	L	Y	82	1	folk	Adrian (Emanuel)	LG	BR	SL	8
152	AC# 042.02F	F	L	Y	70	2	common	Swainsboro (Emanuel)	LG	BR	PE	9
153	AC# 044.01F	F	M	Y	71	1	folk	Hilltonia (Screven)	LG	LBF	LP	10
154	AC# 046.01F	F	M	Y	71	2	folk	Lollie (Laurens)	LG	GSR	LP	11
155	AC# 049.01M	M	M	Y	61	3	cultured	Statesboro (Bulloch)	LG	GSR	LP	12
157	AC# 051.01F	F	M	Y	68	2	common	Rhine (Dodge)	LG	VP	SL	13
158	AC# 054.01M	M	A	Y	61	3	cultured	Mt. Vernon (Montgomery)	LG	EC	SL	14
159	AC# 056.02F	F	M	Y	74	1	folk	Glennville (Tattnall)	LG	GSR	PE	15
160	AC# 058.01M	M	M	Y	67	2	common	Pembroke (Bryan)	LG	ML-1	LP	16
162	AC# 059.02F	F	M	X	45	2	common	Savannah (Chatham)	LG	HS	SL	17
168	AE 087.01	F	A	Y	81	3	cultured	Buena Vista (Marion)	LG	MB-2	SL	18
170	AE 088.03	M	U	Y	81	3	cultured	Columbus (Muscogee)	LG	SL	SL	19
173	AF 092.01	F	M	Y	84	1	folk	Surrency (Appling)	LG	GSR	SL	20
174	AF 093.02	M	M	Y	63	2	common	Blackshear (Pierce)	LG	JHH	LP	21
176	AF 094.01	F	M	Y	73	3	cultured	Hazlehurst (Jeff Davis)	LG	DD	LP	22
178	AF# 062.01F	F	L	Y	72	1	folk	Allenhurst (Liberty)	LG	GSR	LP	23
180	AF# 063.01M	M	M	Y	76	1	common	Townsend (McIntosh)	LG	WHS	LP	24
182	AG 096.01	M	M	Y	80	1	common	Nicholls (Coffee)	LG	EC	SL	25
184	AG 098.02	M	M	Y	60	2	common	Ocilla (Irwin)	LG	SMH	SL	26
185	AG 098.01	M	M	Y	21	3	cultured	Ocilla (Irwin)	LG	MB	LP	27
186	AH 100.01	F	M	Y	55	2	common	Tifton (Tift)	LG	MB	LP	28
190	AI 103.03	M	M	Y	68	2	folk	Albany (Dougherty)	LG	GM	LP	29
194	AJ 108.01	F	L	X	79	1	folk	Fort Gaines (Clay)	LG	GM	MB	30
196	AK 109.01	M	M	Y	62	2	common	Woodbine (Camden)	LG	JHH	LP	31
197	AK 111.02	F	M	Y	72	1	folk	Folkston (Charlton)	LG	GSR	LP	32
198	AK 111.03	M	M	Y	76	1	common	Moniac (Charlton)	LG	CM	LP	33
199	AK 112.01	M	L	Y	78	1	folk	Manor (Ware)	LG	MC	GR	34
203	AL 114.01	F	L	Y	57	2	common	Homerville (Clinch)	LG	JW	LP	35
204	AL 114.04	F	L	Y	51	1	common	Fargo (Clinch)	LG	JHH	SL	36
207	AM 117.01	F	L	X	47	1	folk	Valdosta (Lowndes)	LG	BCR	MB	37
208	AM 117.05	M	L	Y	30	2	common	Valdosta (Lowndes)	LG	JW	PE	38
209	AM 117.03	F	M	Y	54	3	cultured	Valdosta (Lowndes)	LG	BCR	SL	39
211	AM 118.02	F	M	Y	73	1	folk	Ray City (Berrien)	LG	AB	SL	40
212	AN 121.01	F	M	Y	74	1	folk	Moultrie (Colquitt)	LG	GM	PE	41
214	AN 122.01	F	U	Y	48	3	cultured	Thomasville (Thomas)	LG	RJ	LP	42
216	AO 123.03	F	M	Y	70	3	common	Camilla (Mitchell)	LG	LY	GB	43
217	AO 123.01	F	U	Y	63	3	cultured	Cotton (Mitchell)	LG	GS	LP	44
218	AO 124.01	M	M	Y	76	1	folk	Calvary (Grady)	LG	EC	SL	45
219	AO 125.02	M	L	Y	64	1	folk	Bainbridge (Decatur)	LG	CG-1	MP	46
220	AO 125.01	F	M	Y	18	2	common	Bainbridge (Decatur)	LG	JW	GR	47
221	AP 126.01	F	L	Y	76	1	folk	Newton (Baker)	LG	JB-1	LP	48
222	AP 127.02	M	M	Y	75	1	folk	Colquitt (Miller)	LG	JW	MP	49
224	AP 128.01	M	L	X	62	1	folk	Blakely (Early)	LG	VEP	GR	50
225	AP 129.01	M	L	Y	83	1	common	Donalsonville (Seminole)	LG	BR	LP	51

FIGURE 4 (Continued)

226	AQ 130.08	F	M	X	85	1	folk	Jacksonville (Duval)	EF	JW	LP	52
228	AQ 130.02	F	L	Y	80	2	common	Jacksonville (Duval)	EF	JW	MB	53
229	AQ 130.06	M	M	X	57	2	common	Jacksonville (Duval)	EF	JW	MP	54
231	AQ 130.04	M	M	Y	53	2	common	Jacksonville (Duval)	EF	JW	PE	55
232	AQ 130.09	F	M	Y	20	3	cultured	Jacksonville (Duval)	EF	JW	MP	56
234	AR 134.03	M	L	X	72	1	folk	Mason City (Columbia)	EF	BR	LD	57
235	AR 134.01	F	L	Y	77	1	folk	Mason City (Columbia)	EF	BR	LP	58
236	AR 134.04	M	M	Y	46	2	common	Hopeful Church (Columbia)	EF	BR	PE	59
238	AS 139.02	M	L	Y	39	2	folk	Shady Grove (Taylor)	EF	BR	LP	60
239	AT 141.01	F	M	Y	52	2	common	Tallahassee (Leon)	EF	MB	SL	61
240	AT 142.02	F	M	Y	18	3	cultured	Tallahassee (Leon)	EF	DB	SL	62
242	AT 142.02	F	M	Y	81	1	folk	Sopchoppy (Wakulla)	EF	BR	LP	63
243	AT 142.03	M	M	Y	35	2	common	Sopchoppy (Wakulla)	EF	BR	PE	64
245	AU 143.02	M	M	Y	81	3	cultured	Gainesville (Alachua)	EF	MM-1	SL	65
247	AU 144.01	F	M	Y	72	3	cultured	Sparr (Marion)	EF	CG	GB	66
248	AU 145.01	F	L	Y	37	2	common	Oxford (Sumter)	EF	BR	MP	67
249	AU 146.01	F	M	Y	64	2	common	Whitney (Lake)	EF	GB	GR	68
250	AV 148.01	M	M	Y	66	1	folk	Jena (Dixie)	EF	GB	MB	69
251	AV 150.01	M	L	X	72	1	folk	Cedar Key (Levy)	EF	BR	LD	70
253	AV 150.02	F	L	Y	34	2	common	Cedar Key (Levy)	EF	BR	PE	71
254	AW 153.03	M	M	Y	72	2	common	St. Augustine (St. Johns)	EF	AS	MP	72
255	AW 153.01	M	U	Y	77	2	cultured	St. Augustine (St. Johns)	EF	FWB	PE	73
258	AX 156.01	M	L	Y	56	1	common	Tomoka Farms (Volusia)	EF	BR	RIM	74
260	AX 157.01	M	M	Y	70	1	folk	Paola (Seminole)	EF	LO	PE	75
261	AX 158.01	F	M	Y	19	3	cultured	Orlando (Orange)	EF	SL	SL	76
262	AX 160.02	M	M	Y	87	1	folk	Fort Meade (Polk)	EF	GB	PE	77
263	AX 160.01	M	M	Y	77	3	cultured	Lake Wales (Polk)	EF	GB	LP	78
264	AX 160.03	M	M	Y	19	3	cultured	Fort Meade (Polk)	EF	ES	GB	79
265	AX 162.01	M	L	Y	80	1	folk	Fellsmere (Indian River)	EF	GB	SL	80
266	AY 166.01	M	U	Y	25	3	cultured	St. Petersburg (Pinellas)	EF	DAB	SL	81
267	AY 167.01	M	I	X	88	1	folk	Bealsville (Hillsborough)	EF	GS	GB	82
269	AY 167.02	M	M	Y	76	2	common	Plant City (Hillsborough)	EF	GS	GR	83
271	AY 167.03	F	M	X	33	3	cultured	Tampa (Hillsborough)	EF	GS	LP	84
272	AY 167.04	M	M	Y	65	3	common	Tampa (Hillsborough)	EF	GS	MP	85
274	AY 167.06	F	M	Y	30	3	cultured	Tampa (Hillsborough)	EF	GS	PE	86
275	AZ 171.01	M	M	Y	77	3	cultured	Fort Ogden (De Soto)	EF	GB	SL	87
276	AZ 173.01	M	M	Y	73	1	folk	Basinger (Okeechobee)	EF	GB	LP	88
278	AZ 180.01	F	U	Y	20	3	cultured	Fort Myers (Lee)	EF	GR	LP	89
280	AZ 183.03	F	L	X	60	2	common	Miami (Dade)	EF	DS	LP	90
281	AZ 183.01	F	L	X	42	2	common	Miami (Dade)	EF	DS	SL	91
283	AZ 183.05	M	L	X	17	2	common	Miami (Dade)	EF	DS	GR	92
284	AZ 183.04	M	M	Y	59	2	common	Miami (Dade)	EF	DS	MP	93
288	AZ 184.04	M	M	Y	76	1	folk	Islamorada (Monroe)	EF	GB	SL	94
289	AZ 184.01	F	M	Y	34	2	common	Key West (Monroe)	EF	DS	LP	95
363	BS 238.01	M	M	X	42	2	common	Bexar (Marion)	UA	EC-2	MB	96
394	BZ 257.02	M	M	Y	73	2	common	Tallassee (Elmore)	LA	GS	LD	97
395	BZ 257.01	M	L	Y	54	2	common	Tallassee (Elmore)	LA	GS	LP	98
399	BZ 259.02	M	L	X	71	2	common	Clanton (Chilton)	LA	AMF	SL	99
403	CA 262.03	F	L	X	72	1	folk	Selma (Dallas)	LA	MB	GB	100
404	CA 262.01	F	M	Y	77	3	cultured	Selma (Dallas)	LA	GB	SL	101
405	CA 263.01	F	M	Y	16	2	common	Camden (Wilcox)	LA	MB	SL	102
412	CC 268.02	M	U	Y	70	3	cultured	Beehive (Lee)	LA	DS	LP	103
415	CD 271.01	M	M	Y	71	2	common	Union Springs (Bullock)	LA	MB	MB	104
420	CD 273.02	M	L	Y	74	1	folk	Macedonia (Lowndes)	LA	GB	MP	105
426	CE 276.01	F	L	Y	74	1	folk	Dothan (Houston)	LA	JNR	LP	106
427	CE 276.02	F	L	X	44	2	common	Dothan (Houston)	LA	JNR	PE	107

FIGURE 4 (Continued)

428	CE 276.04	F	M	Y	47	2	common	Dothan (Houston)	LA	JNR	SL	108
430	CE 277.01	F	M	Y	79	2	cultured	Daleville (Dale)	LA	MB-1	GB	109
431	CE 278.01	M	M	Y	84	1	folk	Geneva (Geneva)	LA	MB	PE	110
432	CE 278.02	F	L	X	69	1	folk	Slocomb (Geneva)	LA	JNR	SL	111
435	CF 279.03	M	M	Y	73	2	common	Troy (Pike)	LA	GB	GB	112
436	CF 279.08	F	M	X	56	2	common	Troy (Pike)	LA	CL	MB	113
438	CF 281.01	M	L	X	73	1	folk	Greenville (Butler)	LA	GB	LP	114
440	CF 281.02	F	M	Y	55	2	common	Greenville (Butler)	LA	GB	MB	115
441	CG 282.01	F	L	X	78	1	folk	New Brockton (Coffee)	LA	MB	PE	116
442	CG 282.02	M	M	Y	77	2	common	New Brockton (Coffee)	LA	MB	GR	117
444	CG 283.01	M	M	Y	76	1	folk	Gantt (Covington)	LA	GB	LP	118
445	CG 283.02	F	M	Y	57	2	common	Andalusia (Covington)	LA	GB	SL	119
446	CH 284.01	F	L	Y	59	2	common	Damascus (Escambia)	LA	EH-1	LP	120
447	CH 286.02	F	L	Y	72	1	folk	Peterman (Monroe)	LA	BR	LP	121
448	CH 286.01	F	M	Y	49	2	common	Mexboro (Monroe)	LA	BR	PE	122
449	CI 288.01	M	L	X	76	2	folk	Leroy (Washington)	LA	BR	LD	123
451	CI 289.01	M	L	Y	85	1	folk	Needham (Choctaw)	LA	MB	LP	124
452	CJ 290.01	M	M	Y	50	3	cultured	Apalachicola (Franklin)	WF	GB	SL	125
454	CJ 292.01	M	L	Y	69	1	folk	Port St. Joe (Gulf)	WF	BR	LP	126
457	CK 294.02	M	M	X	46	3	cultured	Panama City (Bay)	WF	MB	MB	127
458	CK 294.01	F	M	Y	46	3	cultured	Panama City (Bay)	WF	GB	SL	128
460	CK 296.01	F	L	Y	87	1	folk	Rock Hill (Washington)	WF	BR	LD	129
461	CK 296.02	M	M	Y	42	2	common	Wausau (Washington)	WF	BR	PE	130
462	CL 298.01	M	M	Y	71	1	folk	Point Washington (Walton)	WF	GB	GR	131
463	CL 298.02	F	M	X	18	2	common	De Funiak Springs (Walton)	WF	MB	MB	132
464	CL 299.03	F	I	X	76	1	folk	Campton (Okaloosa)	WF	BR	LP	133
465	CL 299.02	F	I	Y	72	1	folk	Laurel Hill (Okaloosa)	WF	BR	PE	134
466	CL 299.01	F	M	Y	88	1	common	Laurel Hill (Okaloosa)	WF	BR	SL	135
467	CM 300.01	F	M	Y	77	1	folk	Jay (Santa Rosa)	WF	GB	LP	136
468	CM 301.03	F	L	X	67	1	folk	Pensacola (Escambia)	WF	BR	SL	137
470	CM 301.04	M	L	Y	34	2	common	Barrineau Park (Escambia)	WF	BR	PE	138
471	CM 301.02	M	U	Y	64	3	cultured	Pensacola (Escambia)	WF	BR	LD	139
472	CN 302.03	M	L	Y	74	1	folk	Stockton (Baldwin)	GA	MB	SL	140
473	CN 302.05	M	M	X	65	1	folk	Marlow (Baldwin)	GA	MB	MB	141
474	CN 302.04	M	M	Y	18	2	common	Gulf Shores (Baldwin)	GA	MB	GB	142
475	CN 302.02	F	M	Y	70	3	cultured	Stockton (Baldwin)	GA	MB	LP	143
476	CN 302.01	M	M	Y	52	3	cultured	Foley (Baldwin)	GA	MB	LP	144
477	CN 303.01	F	L	X	75	2	folk	Mobile (Mobile)	GA	MM	SL	145
479	CN 303.05	M	M	Y	55	2	common	Mobile (Mobile)	GA	EH	SL	146
482	CN 303.08	F	M	Y	84	2	common	Mobile (Mobile)	GA	MB	LP	147
533	DK 338.01	M	M	Y	25	3	cultured	Houston (Chickasaw)	UM	MB	SL	148
539	DL 343.01	M	M	Y	64	3	common	Holcomb (Grenada)	UM	GM	LP	149
574	DR 371.01	F	M	Y	63	1	folk	Pleasant Hill (Yazoo)	LM	BR	LD	150
582	DT 375.01	M	M	Y	76	1	folk	Quitman (Clarke)	LM	MB	LP	151
597	DW 384.01	M	M	Y	78	2	common	Leakesville (Greene)	LM	MB	SL	152
600	DW 387.05	M	L	X	84	1	folk	Soso (Jones)	LM	BR	GR	153
604	DX 388.02	F	M	Y	78	2	common	Lumberton (Lamar)	LM	BR	LP	154
605	DX 392.01	F	M	Y	85	1	folk	Weathersby (Simpson)	LM	MB	SL	155
606	DY 394.01	M	M	Y	95	1	folk	Holmesville (Pike)	LM	MB	SL	156
617	EA 401.02	M	L	Y	51	2	common	Pascagoula (Jackson)	GM	GM	GR	157
619	EA 402.02	M	L	Y	85	1	folk	Biloxi (Harrison)	GM	GM	LP	158
620	EA 402.04	M	M	X	87	1	folk	Biloxi (Harrison)	GM	GM	MP	159
621	EA 402.03	M	L	Y	53	2	common	Biloxi (Harrison)	GM	GM	LP	160
623	EA 402.01	F	M	Y	66	2	common	Saucier (Harrison)	GM	CWU	SL	161
624	EA 404.01	F	M	X	33	3	cultured	Red Creek (Stone)	GM	MB	MB	162
625	EB 405.01	M	L	Y	84	2	common	Kiln (Hancock)	GM	GM	MB	163

FIGURE 4 (Continued)

627	EB 406.02	M	L	X	79	1	folk	Carriere (Pearl River)	GM	BR	PE	164
628	EB 406.01	F	L	Y	73	1	folk	White Chapel (Pearl River)	GM	BR	PE	165
629	EB 406.03	M	M	Y	27	3	cultured	Picayune (Pearl River)	GM	BR	SL	166
630	EC 407.02	M	L	Y	67	1	folk	Slidell (St. Tammany)	EL	GM	GB	167
632	EC 408.01	M	L	Y	79	2	folk	Bogalusa (Washington)	EL	GM	GB	168
730	FK 479.03	F	M	Y	73	1	common	Fort Smith (Sebastian)	AR	MB	GB	169
792	FV 529.01	F	M	Y	95	1	folk	Hopewell (Beauregard)	WL	GM	MB	170
801	FX 536.01	F	M	Y	46	2	common	Harrisonburg (Catahoula)	WL	BR	LP	171

FIGURE 5

MORPHOLOGICAL FILE SORTS

Book	Protocol	Sx	Cl	Rc	Age	Ed	Speech	Locality (Community)	Sec	FW	Sc	
** Morphological Form -- C -- deleted copula **												
001	A 001.04	F	L	Y	99	1	folk	Neva (Johnson)	ET	LP	LP	1
004	A 001.05	F	L	Y	38	2	common	Laurel Bloomery (Johnson)	ET	MMc	LP	2
005	A 001.02	F	M	Y	78	3	cultured	Laurel Bloomery (Johnson)	ET	LP	LP	3
009	B 004.02	M	M	Y	82	3	common	Leesburg (Washington)	ET	LP	LP	4
010	B 004.01	M	M	Y	79	1	common	Leesburg (Washington)	ET	LP	LP	5
013	C 006.03	M	L	Y	58	1	folk	Holston Valley (Sullivan)	ET	LP	LP	6
018	D 009.01	F	I	Y	43	1	folk	Rankin (Cocke)	ET	LP	LP	7
019	D 009.02	M	M	Y	76	2	common	Bat Harbor (Cocke)	ET	LP	LP	8
025	F 015.01	M	M	Y	76	1	folk	Wear Valley (Sevier)	ET	LP	LP	9
028	G 017.03	F	L	Y	65	1	folk	Knoxville (Knox)	ET	TC	LP	10
029	G 017.04	M	L	X	71	1	folk	Knoxville (Knox)	ET	LP	LP	11
032	G 017.02	M	U	Y	60	3	common	Knoxville (Knox)	ET	TC	LP	12
036	H 019.02	M	L	Y	80	1	folk	Jacksboro (Campbell)	ET	LP	LP	13
037	H 019.01	F	M	Y	50	3	cultured	La Follette (Campbell)	ET	LP	LP	14
041	I 023.01	M	L	Y	82	1	folk	Lenoir City (Loudon)	ET	LP	LP	15
042	J 024.01	M	L	Y	89	2	folk	Kingston (Roane)	ET	LP	LP	16
044	J 026.01	F	L	Y	86	1	folk	Sequatchie Valley (Cumberland)	ET	BR	LP	17
050	L 030.01	F	L	Y	69	1	common	Reliance (Polk)	ET	LB-1	LP	18
053	M 032.02	M	L	Y	62	1	folk	Chattanooga (Hamilton)	ET	TC	LP	19
054	M 032.07	M	L	Y	60	1	folk	Chattanooga (Hamilton)	ET	DBT	SL	20
055	M 032.05	F	M	Y	82	3	common	Chattanooga (Hamilton)	ET	BR	SL	21
058	M 032.11	M	M	Y	24	3	cultured	Chattanooga (Hamilton)	ET	MB	LP	22
061	O 036.01	M	L	Y	81	1	folk	Ellijay (Gilmer)	UG	MMc	RIM	23
065	O# 003.01	M	L	Y	72	2	folk	Flat Creek (Rabun)	UG	PT	MB	24
066	P 038.01	M	L	X	63	1	folk	Rocky Face (Whitfield)	UG	DBT	LD	25
072	Q# 004.01	M	L	Y	80	1	folk	Dahlonega (Lumpkin)	UG	LP	LP	26
074	Q# 006.03	F	L	X	84	1	folk	Cornelia (Habersham)	UG	JND	SL	27
075	R 045.01	M	M	Y	65	2	common	Curryville (Gordon)	UG	CSD	SL	28
077	R 047.04	M	M	X	84	1	folk	Rome (Floyd)	UG	CJ	GR	29
080	R 048.01	M	M	Y	76	2	common	Menlo (Chattooga)	UG	JMF	LP	30
081	S 049.01	F	L	Y	72	2	common	Ducktown (Forsyth)	UG	SW	LP	31
083	S 050.02	M	M	Y	78	1	common	Norcross (Gwinnett)	UG	JK	MB	32
084	S 051.01	M	L	X	69	1	folk	Conyers (Rockdale)	UG	BR	LP	33
087	S# 008.01	F	M	Y	74	2	common	Homer (Banks)	UG	CH-2	SL	34
093	S# 015.01	F	M	Y	71	2	common	Monroe (Walton)	UG	CP	GR	35
096	T 052.06	M	M	Y	66	2	common	Decatur (De Kalb)	UG	JF	SL	36
097	T 052.03	F	M	Y	45	2	common	Decatur (De Kalb)	UG	SWH	SL	37
098	T 053.11	M	L	X	70	1	folk	Atlanta (Fulton)	UG	MNT	GR	38
099	T 053.15	M	M	Y	58	2	common	Atlanta (Fulton)	UG	CTR	GB	39
100	T 053.13	M	L	X	15	2	common	Atlanta (Fulton)	UG	SL	SL	40
103	T 053.07	M	U	X	47	3	cultured	Atlanta (Fulton)	UG	SL	SL	41
111	W 061.03	F	L	X	48	1	folk	Lovejoy (Clayton)	UG	VS	MP	42
115	W# 025.01	F	L	Y	73	2	folk	Lincolnton (Lincoln)	UG	JHH	LP	43
116	X 063.02	M	L	X	80	1	folk	Newnan (Coweta)	UG	SB-1	LP	44
119	Y 065.02	F	M	X	78	2	folk	Jackson (Butts)	UG	NH	SL	45
121	Y 066.01	M	L	Y	69	1	folk	Forsyth (Monroe)	UG	KD	GB	46
123	Y 067.01	F	U	Y	67	3	cultured	Macon (Bibb)	UG	LP	LP	47
125	Y# 026.01	M	M	Y	49	1	folk	Monticello (Jasper)	UG	GSR	LP	48
126	Y# 028.01	M	L	X	68	1	folk	Sparta (Hancock)	UG	KS	LP	49
127	Y# 029.01	M	M	Y	62	2	folk	Warrenton (Warren)	UG	JHH	LP	50
128	Y# 031.01	M	L	Y	68	1	folk	Appling (Columbia)	UG	JHH	LP	51

FIGURE 5 (Continued)

132	Y# 038.01	M	M	Y	69	1	folk	Gough (Burke)	UG	LBF	LP	52
134	Z 069.01	M	L	X	76	1	folk	Griffin (Spalding)	UG	JWB	LP	53
135	Z 069.05	F	U	Y	47	3	cultured	Griffin (Spalding)	UG	MA	LD	54
137	Z 070.02	F	U	Y	66	3	cultured	Thomaston (Upson)	UG	AB	SL	55
138	Z 071.02	F	M	Y	84	1	folk	New Hope (Pike)	UG	LH	MP	56
142	AA 074.01	M	L	Y	74	1	folk	Abbottsford (Troup)	UG	SER	LD	57
143	AA 074.03	F	M	Y	65	2	common	La Grange (Troup)	UG	AB	GB	58
144	AA 075.01	F	M	Y	65	3	cultured	Waverly Hall (Harris)	UG	SL	SL	59
145	AB 076.02	F	L	X	67	1	folk	Fort Valley (Peach)	UG	CLM	LP	60
148	AC 080.01	M	L	Y	80	1	folk	Hawkinsville (Pulaski)	LG	JW	LD	61
149	AC 082.01	M	I	X	72	1	folk	Vienna (Dooly)	LG	CBH	LP	62
150	AC 083.02	M	M	Y	70	2	common	Cordele (Crisp)	LG	DPT	MB	63
151	AC# 042.01	M	L	Y	82	1	folk	Adrian (Emanuel)	LG	BR	SL	64
155	AC# 049.01	M	M	Y	61	3	cultured	Statesboro (Bulloch)	LG	GSR	LP	65
157	AC# 051.01	F	M	Y	68	2	common	Rhine (Dodge)	LG	VP	SL	66
158	AC# 054.01	M	A	Y	61	3	cultured	Mt. Vernon (Montgomery)	LG	EC	SL	67
160	AC# 058.01	M	M	Y	67	2	common	Pembroke (Bryan)	LG	ML-1	LP	68
162	AC# 059.02	F	M	X	45	2	common	Savannah (Chatham)	LG	HS	SL	69
165	AD 086.02	F	L	X	73	1	folk	Plains (Sumter)	LG	AB	PE	70
168	AE 087.01	F	A	Y	81	3	cultured	Buena Vista (Marion)	LG	MB-2	SL	71
169	AE 089.01	F	L	X	67	2	folk	Upatoi (Muscogee)	LG	PG	MB	72
170	AE 088.03	M	U	Y	81	3	cultured	Columbus (Muscogee)	LG	SL	SL	73
172	AE 089.01	F	L	Y	77	1	folk	Eelbeck (Chattahoochee)	LG	PG	SL	74
173	AF 092.01	F	M	Y	84	1	folk	Surrency (Appling)	LG	GSR	SL	75
174	AF 093.02	M	M	Y	63	2	common	Blackshear (Pierce)	LG	JHH	LP	76
176	AF 094.01	F	M	Y	73	3	cultured	Hazlehurst (Jeff Davis)	LG	DD	LP	77
177	AF# 060.01	M	M	Y	76	1	common	Mt. Pleasant (Wayne)	LG	WHS	LD	78
178	AF# 062.01	F	L	Y	72	1	folk	Allenhurst (Liberty)	LG	GSR	LP	79
179	AF# 063.04	M	L	X	55	1	folk	Sapelo Island (McIntosh)	LG	HTM	LP	80
180	AF# 063.01	M	M	Y	76	1	common	Townsend (McIntosh)	LG	WHS	LP	81
181	AF# 063.03	M	M	Y	74	3	cultured	Darien (McIntosh)	LG	WHS	LP	82
188	AI 102.03	M	L	X	65	1	folk	Leesburg (Lee)	LG	AB	LP	83
190	AI 103.03	M	M	Y	68	2	folk	Albany (Dougherty)	LG	GM	LP	84
191	AI 103.02	M	M	Y	28	3	cultured	Albany (Dougherty)	LG	MKC	GR	85
192	AJ 106.04	F	L	X	70	1	folk	Cuthbert (Randolph)	LG	RA	MB	86
193	AJ 107.01	M	M	Y	70	2	common	Georgetown (Quitman)	LG	GM	MB	87
194	AJ 108.01	F	L	X	79	1	folk	Fort Gaines (Clay)	LG	GM	MB	88
197	AK 111.02	F	M	Y	72	1	folk	Folkston (Charlton)	LG	GSR	LP	89
198	AK 111.03	M	M	Y	76	1	common	Moniac (Charlton)	LG	CM	LP	90
199	AK 112.01	M	L	Y	78	1	folk	Manor (Ware)	LG	MC	GR	91
200	AK# 064.05	F	L	X	74	1	folk	St. Simons (Glynn)	LG	WHS	LP	92
203	AL 114.01	F	L	Y	57	2	common	Homerville (Clinch)	LG	JW	LP	93
206	AM 117.06	F	L	Y	69	1	folk	Valdosta (Lowndes)	LG	SL	LP	94
207	AM 117.01	F	L	X	47	1	folk	Valdosta (Lowndes)	LG	BCR	MB	95
208	AM 117.05	M	L	Y	30	2	common	Valdosta (Lowndes)	LG	JW	PE	96
214	AN 122.01	F	U	Y	48	3	cultured	Thomasville (Thomas)	LG	RJ	LP	97
215	AO 123.02	F	L	X	59	1	folk	Flint (Mitchell)	LG	CC	LP	98
217	AO 123.01	F	U	Y	63	3	cultured	Cotton (Mitchell)	LG	GS	LP	99
219	AO 125.02	M	L	Y	64	1	folk	Bainbridge (Decatur)	LG	CG-1	MP	100
222	AP 127.02	M	M	Y	75	1	folk	Colquitt (Miller)	LG	JW	MP	101
223	AP 127.03	M	M	Y	59	2	common	Colquitt (Miller)	LG	JW	MB	102
224	AP 128.01	M	L	X	62	1	folk	Blakely (Early)	LG	VEP	GR	103
225	AP 129.01	M	L	Y	83	1	common	Donalsonville (Seminole)	LG	BR	LP	104
226	AQ 130.08	F	M	X	85	1	folk	Jacksonville (Duval)	EF	JW	LP	105
229	AQ 130.06	M	M	X	57	2	common	Jacksonville (Duval)	EF	JW	MP	106
233	AQ 130.05	M	M	X	23	3	cultured	Jacksonville (Duval)	EF	JW	MB	107

FIGURE 5 (Continued)

234	AR	134.03	M	L	X	72	1	folk	Mason City (Columbia)	EF	BR	LD	108
237	AS	139.01	F	L	Y	78	1	folk	Shady Grove (Taylor)	EF	BR	MB	109
244	AU	143.01	M	M	X	71	1	folk	Newberry (Alachua)	EF	BCR	SL	110
246	AU	144.02	M	M	Y	73	1	folk	Flemington (Marion)	EF	BR	LP	111
247	AU	144.01	F	M	Y	72	3	cultured	Sparr (Marion)	EF	CG	GB	112
249	AU	146.01	F	M	Y	64	2	common	Whitney (Lake)	EF	GB	GR	113
250	AV	148.01	M	M	Y	66	1	folk	Jena (Dixie)	EF	GB	MB	114
251	AV	150.01	M	L	X	72	1	folk	Cedar Key (Levy)	EF	BR	LD	115
252	AV	150.03	M	M	Y	55	1	common	Cedar Key (Levy)	EF	BR	LP	116
255	AW	153.01	M	U	Y	77	2	cultured	St. Augustine (St. Johns)	EF	FWB	PE	117
256	AW	154.01	M	I	Y	80	1	folk	Bardin (Putnam)	EF	BR	LP	118
257	AW	154.02	F	L	Y	57	2	common	Bardin (Putnam)	EF	BR	LP	119
258	AX	156.01	M	L	Y	56	1	common	Tomoka Farms (Volusia)	EF	BR	RIM	120
261	AX	158.01	F	M	Y	19	3	cultured	Orlando (Orange)	EF	SL	SL	121
263	AX	160.01	M	M	Y	77	3	cultured	Lake Wales (Polk)	EF	GB	LP	122
264	AX	160.03	M	M	Y	19	3	cultured	Fort Meade (Polk)	EF	ES	GB	123
265	AX	162.01	M	L	Y	80	1	folk	Fellsmere (Indian River)	EF	GB	SL	124
269	AY	167.02	M	M	Y	76	2	common	Plant City (Hillsborough)	EF	GS	GR	125
270	AY	167.05	F	L	X	18	3	common	Tampa (Hillsborough)	EF	GS	GR	126
271	AY	167.03	F	M	X	33	3	cultured	Tampa (Hillsborough)	EF	GS	LP	127
272	AY	167.04	M	M	Y	65	3	common	Tampa (Hillsborough)	EF	GS	MP	128
276	AZ	173.01	M	M	Y	73	1	folk	Basinger (Okeechobee)	EF	GB	LP	129
280	AZ	183.03	F	L	X	60	2	common	Miami (Dade)	EF	DS	LP	130
281	AZ	183.01	F	L	X	42	2	common	Miami (Dade)	EF	DS	SL	131
283	AZ	183.05	M	L	X	17	2	common	Miami (Dade)	EF	DS	GR	132
287	AZ	183.06	M	M	X	30	3	cultured	Miami (Dade)	EF	DS	GB	133
288	AZ	184.04	M	M	Y	76	1	folk	Islamorada (Monroe)	EF	GB	SL	134
289	AZ	184.01	F	M	Y	34	2	common	Key West (Monroe)	EF	DS	LP	135
290	BA	185.01	F	L	Y	65	1	folk	Forbus (Fentress)	MT	BR	LP	136
292	BB	191.02	F	L	Y	78	1	folk	Portland (Sumner)	MT	BR	LP	137
293	BB	191.01	M	M	Y	62	3	common	Portland (Sumner)	MT	BR	LP	138
294	BB	191.04	M	M	Y	23	3	cultured	Portland (Sumner)	MT	WJB	SL	139
295	BC	192.01	F	L	Y	71	1	folk	Springfield (Robertson)	MT	BR	LD	140
297	BC	193.01	F	M	Y	18	2	common	Ashland City (Cheatham)	MT	WJB	SL	141
301	BE	198.01	F	I	Y	82	1	folk	Gainesboro (Jackson)	MT	BR	LD	142
309	BG	204.02	F	M	X	51	3	common	Nashville (Davidson)	MT	MM	GR	143
310	BG	204.04	M	M	Y	42	2	common	Nashville (Davidson)	MT	MM	LP	144
314	BH	205.01	M	M	Y	19	3	common	Dickson (Dickson)	MT	WJB	SL	145
316	BH	207.03	M	M	X	65	1	folk	Centerville (Hickman)	MT	BJM	PE	146
317	BH	207.01	F	L	Y	81	2	folk	Only (Hickman)	MT	BR	LD	147
320	BI	209.03	F	L	Y	76	1	folk	Spencer (Van Buren)	MT	BR	LP	148
327	BK	217.02	F	M	Y	54	2	common	Poplins Crossroads (Bedford)	MT	BR	LD	149
330	BL	219.01	M	L	Y	67	1	folk	Arno (Williamson)	MT	BR	LP	150
332	BM	221.01	M	L	Y	76	2	folk	Lynnville (Giles)	MT	SB	GR	151
333	BM	222.01	M	I	Y	71	1	folk	Leoma (Lawrence)	MT	BR	LP	152
342	BN	226.03	F	M	Y	61	2	common	Huntsville (Madison)	UA	CWF	GR	153
344	BO	227.02	M	I	X	84	1	folk	Athens (Limestone)	UA	GAK	MB	154
347	BO	229.03	F	L	X	66	1	folk	Moulton (Lawrence)	UA	RT	MP	155
348	BO	229.01	F	M	Y	50	2	common	Town Creek (Lawrence)	UA	AW	MB	156
349	BP	230.03	M	L	Y	81	1	folk	Green Hill (Lauderdale)	UA	JS-1	LD	157
350	BP	230.01	M	L	Y	64	2	common	Lexington (Lauderdale)	UA	AB-1	MP	158
353	BQ	233.01	M	L	Y	87	2	folk	Arab (Marshall)	UA	FWB	SL	159
355	BR	234.01	F	M	Y	69	1	folk	Blountsville (Blount)	UA	JH-1	LP	160
356	BR	234.02	F	M	Y	61	1	folk	Oneonta (Blount)	UA	JG	GB	161
359	BS	237.01	M	M	Y	78	2	common	Haleyville (Winston)	UA	SL	SL	162
363	BS	238.01	M	M	X	42	2	common	Bexar (Marion)	UA	EC-2	MB	163

FIGURE 5 (Continued)

365	BS 239.02	F	M	Y	45	2	common	Belgreen (Franklin)	UA	CWF	LP	164
366	BT 240.01	F	M	Y	86	3	cultured	Centre (Cherokee)	UA	DK	SL	165
367	BT 241.01	F	L	Y	89	1	folk	Altoona (Etowah)	UA	CWF	LP	166
373	BU 243.06	F	M	X	72	3	cultured	Birmingham (Jefferson)	UA	MM	GR	167
377	BV 244.01	F	L	X	65	1	folk	Fosters (Tuscaloosa)	UA	AHH	LP	168
380	BV 245.01	M	M	Y	73	3	common	Gordo (Pickens)	UA	JSR	SL	169
382	BW 249.02	M	M	Y	76	2	common	Anniston (Calhoun)	UA	MRK	LD	170
386	BX 250.05	F	M	X	57	3	cultured	Talladega (Talladega)	UA	MB	LP	171
389	BX 251.02	M	M	Y	55	2	common	Montevallo (Shelby)	UA	AMF	GB	172
390	BY 252.01	M	M	Y	65	2	common	Roanoke (Randolph)	LA	SL	SL	173
391	BY 254.01	M	M	Y	27	3	cultured	Lanett (Chambers)	LA	SL	SL	174
392	BY 255.01	M	L	Y	72	1	folk	Alexander City (Tallapoosa)	LA	GS	LP	175
393	BY 256.01	F	M	Y	74	2	common	Goodwater (Coosa)	LA	DG	GR	176
395	BZ 257.01	M	L	Y	54	2	common	Tallassee (Elmore)	LA	GS	LP	177
396	BZ 258.03	F	I	X	83	1	folk	Prattville (Autauga)	LA	AMF	LP	178
397	BZ 258.01	F	L	Y	66	1	folk	Booth (Autauga)	LA	AMF	SL	179
399	BZ 259.02	M	L	X	71	2	common	Clanton (Chilton)	LA	AMF	SL	180
400	BZ 260.02	F	L	X	72	2	folk	Centreville (Bibb)	LA	MB	GB	181
401	CA 261.02	F	L	X	73	1	folk	Marion (Perry)	LA	MB	MP	182
402	CA 261.01	M	M	Y	68	2	common	Sprott (Perry)	LA	GB	LP	183
403	CA 262.03	F	L	X	72	1	folk	Selma (Dallas)	LA	MB	GB	184
404	CA 262.01	F	M	Y	77	3	cultured	Selma (Dallas)	LA	GB	SL	185
406	CB 264.01	F	L	X	40	1	folk	Greensboro (Hale)	LA	GS	PE	186
407	CB 265.01	F	M	Y	58	2	common	Aimwell (Marengo)	LA	GS	LP	187
410	CC 268.01	F	M	X	81	1	folk	Auburn (Lee)	LA	JEM	SL	188
412	CC 268.02	M	U	Y	70	3	cultured	Beehive (Lee)	LA	DS	LP	189
414	CC 270.01	M	M	X	35	3	cultured	Tuskegee (Macon)	LA	MB	GR	190
415	CD 271.01	M	M	Y	71	2	common	Union Springs (Bullock)	LA	MB	MB	191
416	CD 272.02	M	M	Y	49	2	common	Montgomery (Montgomery)	LA	GB	GB	192
417	CD 272.05	F	U	Y	79	2	cultured	Montgomery (Montgomery)	LA	GB	SL	193
419	CD 272.01	M	M	Y	27	3	cultured	Montgomery (Montgomery)	LA	MB	LP	194
420	CD 273.02	M	L	Y	74	1	folk	Macedonia (Lowndes)	LA	GB	MP	195
423	CE 274.01	M	M	Y	45	2	common	Louisville (Barbour)	LA	MB	GB	196
431	CE 278.01	M	M	Y	84	1	folk	Geneva (Geneva)	LA	MB	PE	197
434	CF 279.01	M	M	X	90	1	folk	Shady Grove (Pike)	LA	MB	LP	198
436	CF 279.08	F	M	X	56	2	common	Troy (Pike)	LA	CL	MB	199
437	CF 279.06	M	M	Y	28	3	cultured	Troy (Pike)	LA	SL	LP	200
438	CF 281.01	M	L	X	73	1	folk	Greenville (Butler)	LA	GB	LP	201
442	CG 282.02	M	M	Y	77	2	common	New Brockton (Coffee)	LA	MB	GR	202
444	CG 283.01	M	M	Y	76	1	folk	Gantt (Covington)	LA	GB	LP	203
447	CH 286.02	F	L	Y	72	1	folk	Peterman (Monroe)	LA	BR	LP	204
449	CI 288.01	M	L	X	76	2	folk	Leroy (Washington)	LA	BR	LD	205
450	CI 288.02	M	L	Y	78	2	common	Leroy (Washington)	LA	BR	MP	206
451	CI 289.01	M	L	Y	85	1	folk	Needham (Choctaw)	LA	MB	LP	207
462	CL 298.01	M	M	Y	71	1	folk	Point Washington (Walton)	WF	GB	GR	208
463	CL 298.02	F	M	X	18	2	common	De Funiak Springs (Walton)	WF	MB	MB	209
464	CL 299.03	F	I	X	76	1	folk	Campton (Okaloosa)	WF	BR	LP	210
465	CL 299.02	F	I	Y	72	1	folk	Laurel Hill (Okaloosa)	WF	BR	PE	211
467	CM 300.01	F	M	Y	77	1	folk	Jay (Santa Rosa)	WF	GB	LP	212
468	CM 301.03	F	L	X	67	1	folk	Pensacola (Escambia)	WF	BR	SL	213
472	CN 302.03	M	L	Y	74	1	folk	Stockton (Baldwin)	GA	MB	SL	214
473	CN 302.05	M	M	X	65	1	folk	Marlow (Baldwin)	GA	MB	MB	215
478	CN 303.06	F	L	X	49	2	folk	Mobile (Mobile)	GA	MM	SL	216
480	CN 303.09	F	M	Y	43	2	common	Bayou La Batre (Mobile)	GA	MB	LP	217
481	CN 303.04	M	L	X	21	2	common	Mobile (Mobile)	GA	EH	SL	218
482	CN 303.08	F	M	Y	84	2	common	Mobile (Mobile)	GA	MB	LP	219

FIGURE 5 (Continued)

485	CN 303.03	M	M	X	31	3	cultured	Mobile (Mobile)	GA	EH	SL	220
486	DA 304.01	F	M	Y	80	1	folk	Elkhorn (Henry)	WT	EC	LP	221
490	DA 307.01	F	M	Y	32	3	cultured	Dresden (Weakley)	WT	MB	LP	222
491	DB 308.01	M	M	Y	78	1	folk	Dyer (Gibson)	WT	JT	LP	223
492	DB 309.01	M	M	Y	75	1	folk	Dyersburg (Dyer)	WT	MB	MB	224
501	DD 317.02	M	M	Y	67	2	common	Jackson (Madison)	WT	JT	SL	225
504	DD 319.02	F	M	Y	35	2	common	Brownsville (Haywood)	WT	JT	SL	226
505	DE 320.02	F	M	X	65	1	folk	Covington (Tipton)	WT	MB	LP	227
506	DE 320.01	M	M	Y	71	1	folk	Covington (Tipton)	WT	MB	GB	228
507	DE 321.02	F	L	X	76	1	folk	Fulton (Lauderdale)	WT	EC	LD	229
509	DF 322.01	M	M	Y	49	2	common	Bolivar (Hardeman)	WT	EC	LD	230
510	DF 322.04	M	M	X	65	3	cultured	Bolivar (Hardeman)	WT	EC	SL	231
512	DG 324.09	F	L	X	72	1	folk	Memphis (Shelby)	WT	JT	LP	232
513	DG 324.08	M	L	Y	73	1	folk	Memphis (Shelby)	WT	JT	LP	233
514	DG 324.04	F	M	X	16	2	common	Memphis (Shelby)	WT	JT	GR	234
527	DI 332.01	F	U	Y	85	2	cultured	Hernando (De Soto)	UM	GM	MB	235
528	DJ 333.01	M	U	Y	87	1	common	Tunica (Tunica)	UM	EC	LP	236
529	DJ 334.01	M	M	Y	81	3	cultured	Marks (Quitman)	UM	EC	LD	237
530	DJ 335.01	M	L	X	74	1	folk	Sherard (Coahoma)	UM	GM	PE	238
533	DK 338.01	M	M	Y	25	3	cultured	Houston (Chickasaw)	UM	MB	SL	239
534	DK 339.02	M	M	Y	69	1	folk	Saltillo (Lee)	UM	MB	MP	240
535	DK 339.01	F	M	Y	67	2	common	Tupelo (Lee)	UM	MB	GR	241
536	DK 340.01	M	M	Y	86	1	folk	Toxish (Pontotoc)	UM	EC	PE	242
538	DK 340.03	F	M	Y	81	2	common	Pontotoc (Pontotoc)	UM	EC	LP	243
540	DL 345.02	M	M	Y	70	1	folk	Enid (Tallahatchie)	UM	GM	LP	244
541	DL 345.01	F	M	Y	18	2	cultured	Charleston (Tallahatchie)	UM	GM	MB	245
542	DL 346.01	M	I	Y	65	1	folk	Oxford (Lafayette)	UM	EC	LD	246
543	DL 346.02	M	L	X	64	1	folk	Lafayette Springs (Lafayette)	UM	EC	LP	247
545	DL 346.04	F	M	X	63	3	cultured	Oxford (Lafayette)	UM	EC	PE	248
546	DL 346.05	M	U	Y	80	3	cultured	Burgess (Lafayette)	UM	EC	SL	249
548	DM 348.01	F	L	Y	69	1	folk	Drew (Sunflower)	UM	MB	LP	250
550	DM 350.01	F	L	X	63	1	folk	Leland (Washington)	UM	EC	SL	251
555	DN 352.03	M	L	X	68	1	folk	Brooksville (Noxubee)	UM	EC	LD	252
561	DO 359.01	M	L	Y	58	1	folk	Kosciusko (Attala)	UM	EC	LP	253
562	DO 359.04	F	M	Y	85	2	common	McCool (Attala)	UM	MB	LP	254
565	DP 361.01	F	L	Y	80	1	folk	Jefferson (Carroll)	UM	MB	GB	255
566	DP 361.02	F	L	X	31	2	folk	Vaiden (Carroll)	UM	EC	SL	256
567	DP 363.02	M	U	Y	86	2	common	Greenwood (Leflore)	UM	EC	GR	257
568	DP 363.01	M	M	Y	56	2	common	Greenwood (Leflore)	UM	EC	LP	258
570	DQ 365.01	F	M	Y	75	1	folk	Lockhart (Lauderdale)	LM	CWU	SL	259
571	DQ 367.02	F	L	X	24	2	common	Philadelphia (Neshoba)	LM	GM	MP	260
572	DQ 367.01	M	M	Y	44	2	common	Bogue Chitto (Neshoba)	LM	GM	SL	261
573	DR 371.03	M	L	X	87	1	folk	Eden (Yazoo)	LM	BR	SL	262
577	DS 372.02	F	M	X	77	1	folk	Vicksburg (Warren)	LM	BR	LD	263
578	DS 372.03	F	L	Y	68	1	folk	Redwood (Warren)	LM	BR	PE	264
580	DS 374.02	M	L	X	78	1	folk	Mayersville (Issaquena)	LM	GM	SL	265
581	DS 374.01	F	U	Y	77	3	cultured	Mayersville (Issaquena)	LM	GM	MP	266
582	DT 375.01	M	M	Y	76	1	folk	Quitman (Clarke)	LM	MB	LP	267
583	DT 377.01	M	L	Y	77	2	common	Trenton (Smith)	LM	BR	LD	268
585	DT 378.01	M	L	X	52	1	folk	Pulaski (Scott)	LM	BR	LP	269
586	DU 379.04	M	L	X	88	2	folk	Edwards (Hinds)	LM	CWU	SL	270
587	DU 379.02	M	M	X	77	1	folk	Edwards (Hinds)	LM	CWU	GB	271
588	DU 379.05	M	M	Y	78	1	folk	Raymond (Hinds)	LM	CWU	SL	272
589	DU 379.07	F	M	X	13	2	common	Jackson (Hinds)	LM	MB	SL	273
592	DU 379.01	F	M	Y	70	3	cultured	Jackson (Hinds)	LM	CWU	MB	274
593	DV 381.01	M	L	X	74	1	folk	Lorman (Jefferson)	LM	BR	LP	275

MICROCOMPUTING: FILES AND MAPS FOR THE LAGS PROJECT

Lee Pederson and Susan Leas McDaniel

In an earlier report, we outlined the exhaustive concordance of LAGS protocol data and suggested some resources made possible with that tool.[1] That summary, however, was written before we learned the uses of the concordance in conjunction with microcomputers. Later experience refocused the research and in the process placed the entire data base in a new framework. It changed our understanding of lists, maps, and descriptive statements. It brought the principles of coherence, comprehensiveness, and simplicity into view as practical realities. And it offered direction for the completion of the atlas project.

This paper shows how the work has evolved from an exclusively manual operation to a fully automated program of analysis and description. There are three principal operations, each of which is dependent upon the microcomputer. First, the features code of Systematic Phonetics is illustrated in relation to computer programs that read sequential ASCII files of informant data and phonetic data. Second, the contents of the LAGS legendry are established through the programs designed to handle lexical data. And, finally, the functions of the Graphic Plotter Grid are related to the mapping programs and the completion of the atlas. All of these concern simple matching and printing operations, and each responds to the central problem of linguistic geography as realized in this project.

Registered in 28,000 pages of the concordance, the data mass defies conventional manipulation. Furthermore, traditional studies of word geography, verb morphology, and phonology seem unsatisfactory in terms of the

FIGURE 5 (Continued)

594	DV 381.02	M	L	Y	68	2	common	Lorman (Jefferson)	LM	BR	LP	276
596	DV 382.01	M	M	X	78	1	folk	Little Springs (Franklin)	LM	CWU	SL	277
597	DW 384.01	M	M	Y	78	2	common	Leakesville (Greene)	LM	MB	SL	278
600	DW 387.05	M	L	X	84	1	folk	Soso (Jones)	LM	BR	GR	279
603	DX 388.01	M	I	Y	72	1	folk	Baxterville (Lamar)	LM	BR	LP	280
604	DX 388.02	F	M	Y	78	2	common	Lumberton (Lamar)	LM	BR	LP	281
606	DY 394.01	M	M	Y	95	1	folk	Holmesville (Pike)	LM	MB	SL	282
607	DY 396.02	M	M	Y	85	2	common	Bogue Chitto (Lincoln)	LM	CWU	LP	283
608	DY 396.03	F	M	Y	72	2	common	Brookhaven (Lincoln)	LM	CWU	MB	284
609	DZ 399.02	M	L	X	85	1	folk	Lessley (Wilkinson)	LM	GM	SL	285
610	DZ 399.03	M	L	X	73	2	common	Woodville (Wilkinson)	LM	GJ	SL	286
611	DZ 399.04	F	U	X	75	3	cultured	Woodville (Wilkinson)	LM	BR	GR	287
612	DZ 400.01	F	I	X	70	1	folk	Sibley (Adams)	LM	CWU	SL	288
616	EA 401.03	M	U	Y	75	2	common	Vancleave (Jackson)	GM	GM	GB	289
617	EA 401.02	M	L	Y	51	2	common	Pascagoula (Jackson)	GM	GM	GR	290
619	EA 402.02	M	L	Y	85	1	folk	Biloxi (Harrison)	GM	GM	LP	291
621	EA 402.03	M	L	Y	53	2	common	Biloxi (Harrison)	GM	GM	LP	292
623	EA 402.01	F	M	Y	66	2	common	Saucier (Harrison)	GM	CWU	SL	293
625	EB 405.01	M	L	Y	84	2	common	Kiln (Hancock)	GM	GM	MB	294
626	EB 405.02	M	U	Y	70	2	common	Kiln (Hancock)	GM	GM	LP	295
627	EB 406.02	M	L	X	79	1	folk	Carriere (Pearl River)	GM	BR	PE	296
629	EB 406.03	M	M	Y	27	3	cultured	Picayune (Pearl River)	GM	BR	SL	297
630	EC 407.02	M	L	Y	67	1	folk	Slidell (St. Tammany)	EL	GM	GB	298
632	EC 408.01	M	L	Y	79	2	folk	Bogalusa (Washington)	EL	GM	GB	299
633	EC 408.02	M	M	Y	60	2	common	Bogalusa (Washington)	EL	GM	PE	300
638	ED 412.01	M	M	Y	72	2	common	Clinton (E. Feliciana)	EL	GM	SL	301
640	ED 413.03	M	L	X	67	1	folk	Zachary (E. Baton Rouge)	EL	BR	SL	302
641	ED 413.05	M	L	X	46	2	common	Zachary (E. Baton Rouge)	EL	BR	GR	303
642	ED 413.06	M	M	Y	70	3	cultured	Baton Rouge (E. Baton Rouge)	EL	GM	GB	304
646	ED 414.01	M	M	Y	75	1	folk	St. Francisville (W. Feliciana)	EL	GM	MB	305
647	EE 416.01	F	L	X	77	1	folk	Boothville (Plaquemines)	EL	BR	LP	306
651	EE 417.09	M	L	Y	67	1	folk	New Orleans (Orleans)	EL	GM	LP	307
652	EE 417.02	F	L	Y	68	2	common	New Orleans (Orleans)	EL	BR	GB	308
653	EE 417.06	F	L	Y	81	2	common	New Orleans (Orleans)	EL	GM	MB	309
658	EE 418.01	F	M	Y	66	1	folk	Grand Isle (Jefferson)	EL	GM	LP	310
660	EF 421.01	M	L	X	87	1	folk	Ardoyne (Terrebonne)	EL	BR	PE	311
661	EF 421.02	F	M	Y	65	1	common	Little Bayou Blk. (Terrebonne)	EL	BR	GR	312
662	EF 421.03	F	M	Y	35	2	common	Schriever (Terrebonne)	EL	BR	LP	313
663	EF 422.01	M	L	Y	86	1	folk	Morgan City (St. Mary)	EL	GM	MP	314
665	EF 425.02	M	L	X	82	1	folk	Donaldsonville (Ascension)	EL	GM	GB	315
666	EF 425.01	M	M	Y	87	1	common	Donaldsonville (Ascension)	EL	GM	MP	316
667	EG 427.01	M	L	X	80	1	folk	Olivier (Iberia)	EL	GM	LP	317
670	EG 429.04	F	M	Y	87	1	folk	Grosse Tete (Iberville)	EL	GM	MB	318
672	EG 431.01	M	M	X	84	1	folk	Mix (Pointe Coupee)	EL	GM	MB	319
673	EG 431.02	M	M	Y	68	3	cultured	New Roads (Pointe Coupee)	EL	GM	SL	320
674	FA 432.01	M	M	Y	82	1	folk	Piggott (Clay)	AR	MMc	LP	321
676	FA 434.03	F	M	X	67	2	folk	Blytheville (Mississippi)	AR	MMc	LD	322
681	FB 439.01	M	L	Y	65	1	folk	Cave City (Sharp)	AR	GM	MP	323
686	FB 441.02	M	L	Y	82	1	folk	Melbourne (Izard)	AR	GM	GB	324
688	FC 444.03	F	M	X	77	1	folk	Forrest City (St. Francis)	AR	MMc	LP	325
694	FD 450.02	M	M	Y	70	1	folk	Des Arc (Prairie)	AR	MMc	LP	326
696	FE 452.01	M	L	Y	85	1	folk	Rondo (Lee)	AR	GM	LP	327
697	FE 453.01	F	M	X	84	1	folk	Helena (Phillips)	AR	MMc	PE	328
698	FE 453.03	M	M	Y	53	2	common	West Helena (Phillips)	AR	GM	GB	329
702	FF 455.02	M	U	Y	53	3	cultured	Pine Bluff (Jefferson)	AR	GM	MP	330
704	FG 458.01	F	M	X	61	1	folk	Little Rock (Pulaski)	AR	MMc	SL	331

epistemological criteria mentioned earlier. The resources of microcomputers, an IBM PC and PC XT with 256k of memory, offer convenient means to deal with those problems within the guidelines of traditional research. Because from its inception LAGS promised information compatible with earlier atlas projects, the goal remains the same. Only the methods have been simplified, first with the tape recorder, then with microphotography and mainframe computation, and now with microcomputers. Nothing is suggested here that Kurath, McDavid, and Allen would not have used had the resources been available two decades earlier.

SYSTEMATIC PHONETICS AND THE COMPUTER

Any reader of the LAGS *Basic Materials*[2] must remain bewildered by the variety, complexity, and sheer volume of segmental and suprasegmental notations on the protocol pages. To translate the raw data into a useful statement, several steps are required, and each of these needs tools of analysis and description. Illustrated in the final interim report,[3] the idiolect synopsis offers a guide to the principal features of the vowel system with a sampling of functional, inflected, and regional words to mark the speech of each informant.[4] The synopsis is a useful index, but even that form introduces more data than can readily be scanned effectively with the naked eye.

Systematic Phonetics orders the segmental units, consonants and vowels, in a simple code for machine reading. The aim of the work is comprehension, and the results are deductive analyses. The computer lists and prints the evidence in a format that lends itself to parsing, or "factoring," as it is called in elementary school mathematics. The products are materials immediately useful in the composition of phonological maps and legendry

entries.

As outlined elsewhere,[5] Systematic Phonetics provides a three-element code for the representation of all phonetic features recorded systematically by LAGS scribes (see Figure 1). The code makes no claims to applications beyond the project and stands as a solution to special problems of American linguistic geography. The tool, however, lends itself to logical division because it consistently distinguishes features as primary, secondary, and tertiary elements, thereby establishing a formal hierarchy. Among vowels, for example, primary (positional) features take precedence over secondary (conditional) features or tertiary (modificational) features. That order would thus identify a high front vowel [i>] as A before recording the conditional feature of tenseness (B) and the modificational feature of retraction (E) in the string ABE. The process of alphabetizing orders the list of variants in a familiar form. Figure 2 shows a summary of allophones of the high front vowel /i/ before a voiceless consonant, as in *grease*. Each allophone has nine fields, to allow for monophthongs, diphthongs, and triphthongs (with occasional tetraphthongs). The vowels of all 1,121 LAGS informants are recorded in these files.

That set of allophones makes possible a straightforward statement on the pronunciation of the vowel in that context in the LAGS material. It identifies the dominant and recessive variants, suggesting the full range of features observed by LAGS scribes and the patterns that proceed from those observations. Because this work is as much interested in testing the validity of its own methods of observation as it is in drawing conclusions from them, the phonetics code offers a convenient reference for both kinds of consideration. Scribal habits of some can be noted, if not fully explained and calibrated with the work of others, and these observations may advance

FIGURE 1: SYSTEMATIC PHONETICS, VOWEL CODE

I. PRIMARY FEATURES (POSITIONAL):

A. i		B. ɨ		C. ɯ
D. ɪ		E. ɨ		F. ʏ
G. e	H. ɵ		I. e̞	J. o̞
K. ɛ	L. ɜ	M. ə	N. ʌ	
O. æ		P. ɐ		Q. ɔ̝
R. a		S. ɑ		T. ɒ

II. SECONDARY FEATURES (CONDITIONAL):

A. Unmarked	I. B + E	Q. B + C + D	Y. C + E + F
B. Tense	J. B + F	R. B + C + E	Z. D + E + F
C. Long	K. C + D	S. B + C + F	1. B + C + D + E
D. Nasal	L. C + E	T. B + D + E	2. B + C + D + F
E. Retroflex	M. C + F	U. B + D + F	3. B + C + E + F
F. Round	N. D + E	V. B + E + F	4. B + D + E + F
G. B + C	O. D + F	W. C + D + E	5. C + D + E + F
H. B + D	P. E + F	X. C + D + F	6. B + C + D + E + F

III. TERTIARY FEATURES (MODIFICATIONAL):

A. Unmarked	J. Weak	S. Glottal	2. S + J
B. Raised	K. J + B	T. S + B	3. S + K
C. Lowered	L. J + C	U. S + C	4. S + L
D. Advanced	M. J + D	V. S + D	5. S + M
E. Retracted	N. J + E	W. S + E	6. S + N
F. B + D	O. J + F	X. S + F	7. S + O
G. B + E	P. J + G	Y. S + G	8. S + P
H. C + D	Q. J + H	Z. S + H	9. S + Q
I. C + E	R. J + I	1. S + I	0. S + R

FIGURE 2: Allophones of /i/ before a voiceless consonant

Allophone	(total)	Allophone	(total)
ABA --- ---	(3)	ab1 ABA ---	(1)
ABA bbl ---	(1)	ab1 ABE ---	(2)
ABA dab ---	(1)	aba ABA ---	(2)
ABA eaa ---	(1)	aba BBA ---	(14)
ABA eaj ---	(16)	aba BBC ---	(1)
ABA eak ---	(1)	aba BBJ ---	(1)
ABC --- ---	(1)	abc ABA ---	(45)
ABC daa ---	(1)	abc ABE ---	(1)
ABE --- ---	(147)	abc ABJ ---	(1)
ABE eaj ---	(1)	abc AGA ---	(1)
ABE eak ---	(1)	abc AGE ---	(1)
ABI --- ---	(14)	abc BBA ---	(2)
ABW --- ---	(3)	abd ABA ---	(1)
ACE --- ---	(1)	abe ABA ---	(3)
AG1 --- ---	(1)	abe ABE ---	(1)
AGA --- ---	(13)	abi ABA ---	(7)
AGA abk ---	(1)	abi ABC ---	(1)
AGA bbj ---	(1)	abi ABE ---	(7)
AGA daa ---	(1)	abs ABS ---	(1)
AGA dab ---	(2)	abu ABA ---	(2)
AGA eaa ---	(7)	aga ABE ---	(1)
AGA eab ---	(1)	aga BBA ---	(12)
AGA eaj ---	(10)	aga BBC ---	(1)
AGA eak ---	(1)	agc ABA ---	(1)
AGA eba ---	(1)	agc BBA ---	(1)
AGB --- ---	(1)	age ABA ---	(2)
AGC --- ---	(11)	age ABE ---	(1)
AGE --- ---	(200)	age ABN ---	(3)
AGE bba ---	(1)	age BBJ ---	(1)
AGE bbj ---	(3)	agi ABA ---	(2)
AGE eaj ---	(4)	agi ABE ---	(7)
AGE eak ---	(2)	ahc AHE ---	(1)
AGE maj ---	(4)	bbc ABC ---	(1)
AGG --- ---	(1)	bbh ABE ---	(1)
AGI --- ---	(7)	bbv ABA ---	(1)
AGI bbj ---	(1)	bgd ABA ---	(1)
AGS --- ---	(2)	daa ABA ---	(17)
AGW --- ---	(22)	daa ABC ---	(2)
AQE ahn ---	(1)	daa ABE ---	(1)
ASA eaj ---	(1)	daa AGA ---	(2)
BAH --- ---	(1)	daa BBA ---	(2)
BBD --- ---	(3)	daa DAB ---	(1)
BGA --- ---	(5)	dab ABA ---	(22)
BGD --- ---	(1)	dab ABC ---	(5)
DAB maj ---	(1)	dab ABE ---	(7)
DAF maj ---	(1)	dab ABI ---	(1)
DAG --- ---	(1)	dab ABJ ---	(1)
DCA eaj ---	(1)	dab AGA ---	(2)
DCE --- ---	(1)	dab AGE ---	(1)
EAA --- ---	(1)	dac ABA ---	(2)
KAA --- ---	(1)	dac AGG ---	(1)

FIGURE 2 (Continued)

```
dac BBA ---  (4)
dad ABD ---  (1)
dae ABA ---  (7)
dae ABE ---  (133)
dae ABG ---  (1)
dae ABI ---  (5)
dae ABN ---  (6)
dae AGA ---  (1)
dae AGE ---  (32)
dae AGG ---  (1)
dae AGI ---  (1)
dae BBA ---  (1)
dae BBJ ---  (1)
daf ABE ---  (2)
dag ABA ---  (3)
dag ABC ---  (1)
dag ABE ---  (13)
dag ABG ---  (2)
dag ABI ---  (1)
dag AGE ---  (2)
dag AGI ---  (1)
dag BBJ ---  (1)
dah ABA ---  (1)
dai ABE ---  (9)
dai ABI ---  (2)
dai ABR ---  (1)
dai AGE ---  (1)
das ABA ---  (1)
dat ABE ---  (3)
dat AGA ---  (1)
daw ABE ---  (8)
daw AGE ---  (2)
day ABE ---  (1)
day AGE ---  (1)
daz BBA ---  (1)
dbb ABE ---  (1)
dbe ABE ---  (2)
dca ABA ---  (14)
dca ABE ---  (1)
dca BBA ---  (1)
dcb ABA ---  (2)
dcb ABC ---  (1)
dcb ABE ---  (2)
dcb AGE ---  (1)
dcb BBJ ---  (1)
dcc BBA ---  (1)
dcd ABD ---  (1)
dce ABE ---  (7)
dce AGE ---  (1)
dce BBA ---  (1)
dcg ABE ---  (1)
dcg ABG ---  (1)
dci ABE ---  (1)
dcs ABA ---  (2)
dcs BBA ---  (2)
dcw ABE ---  (2)
dcw BBA ---  (1)
dda AHA ---  (3)
ddz BHA ---  (1)
dga ABA ---  (1)
dgt ABE ---  (1)
eaa ABA ---  (1)
eaa ABE ---  (7)
eaa AGE ---  (1)
eaa BAA ---  (1)
eaa BBA ---  (40)
eaa BBD ---  (3)
eaa BGA ---  (3)
eab BBD ---  (1)
eac ABE ---  (1)
eac BBA ---  (4)
eac BBD ---  (5)
eac BBJ ---  (2)
ead ABA ---  (1)
ead ABE ---  (4)
ead AGI ---  (1)
ead BBD ---  (1)
ead BGH ---  (1)
eae BBA ---  (3)
eaf ABG ---  (1)
eah ABE ---  (3)
eah BBA ---  (3)
eah BBD ---  (3)
eai ABI ---  (1)
eai BBA ---  (1)
eaj ABE ---  (1)
eas BBA ---  (1)
eau ABE ---  (1)
ebc ABA ---  (1)
ebc ABJ ---  (1)
ebd ABA ---  (1)
ebs BBA ---  (1)
eca BGA ---  (1)
ecc BBA ---  (1)
ecs BBA ---  (2)
efa ABE ---  (1)
efd BBJ ---  (1)
egb BBA ---  (1)
eha BHA ---  (1)
kbf ABE ---  (1)
```

perceptual understanding, while modifying description in terms of recorded facts.

As a utilitarian tool, however, the code is most useful in its small set of contrastive features. These can be set one against another in the comparison of the pronunciation of a single vowel, such as rounded and advanced against unrounded and retracted, or in the comparison of general tendencies within the phonological system, such as raised and centralized vowels against those that are not. With the full inventory of 15 stressed vowels in 74 positions preserved on 15 diskettes, the microcomputer becomes a convenient tool for searches, comparisons, and descriptive contrasts. Like the other LAGS programs, those that read and manipulate these files are written in IBM PC BASIC[6] and will be available for users in compiled versions to shorten running time.

LEXICAL FILES AND THE COMPUTER

These files form the core of the LAGS legendry, which will deal not only with lexical items but also with morphological and phonological entries, all stored on diskettes in identical formats so that the same sets of programs can be used to list and map the data. Each synonym or variant is represented in the data file by a one or two-letter code in a single field, as opposed to the nine fields of the Systematic Phonetics files.

The lexical files contain 100 items, including most of those from Kurath's *Word Geography of the Eastern United States* (1949) and Atwood's *Regional Vocabulary of Texas* (1962), with additions from the LAGS basic work sheets and urban supplement. The microcomputer programs for these texts use only the responses of the 914 primary informants and allow the user to list forms from single occurrences only or from combinations. For example, when

considering synonyms for a burrowing land turtle, the operator can list the informants who responded only with *gopher* or with *gopher* plus one or more synonyms, such as *terrapin* or *tortoise*. Figure 3 illustrates the 70 occurrences of *gopher* as a single response to the work-sheet item; Figure 4 lists those 70 plus the 101 informants who use *gopher* and at least one other form. Both figures indicate clearly that *gopher* occurs primarily in Lower Georgia, East Florida, Lower Alabama, and the West Florida/Gulf Alabama complex, but Figure 4 also shows that the term occurs frequently in the Gulf Mississippi/East Louisiana sector, in combination with other forms.

Morphological files contain 50 function words and inflectional forms, including those recorded in Atwood's *Survey of Verb Forms in the Eastern United States* (1953), with the addition of other items. LAGS work sheets provide for the principal parts of a number of verbs and the *zero* patterns of inflection (number and tense), function words (articles, prepositions, and verb auxiliaries), and linking verbs (deleted copula), as well as other deletions, such as conjunctions and relative pronouns. Figure 5 is a computer-generated list of the 412 primary informants whose use of the deleted copula is documented in the concordance.[7] The figure demonstrates that this grammatical feature occurs in all sectors among representatives of both racial castes and all social classes and educational levels. Even more widespread across the LAGS territory is the deletion of other forms. For instance, article deletion is recorded in the speech of 447 informants, preposition deletion in that of 627, and verb auxiliary deletion in 695.

The phonemic and phonetic files for the legendry, containing 50 items each, are identical in appearance to the lexical and morphological files. Phonemic files include the consonants and vowels recorded in Kurath and McDavid's *Pronunciation of English in the Atlantic States* (1961) with some

FIGURE 5 (Continued)

708	FG	458.06	F	M	X	43	2	common	Little Rock (Pulaski)	AR	MMc	MP	332
714	FH	459.02	M	M	Y	41	2	common	Greenbrier (Faulkner)	AR	MB	SL	333
717	FI	465.01	F	M	Y	71	1	folk	Hilltop (Searcy)	AR	MMc	PE	334
721	FJ	469.01	M	M	Y	76	1	cultured	Berryville (Carroll)	AR	MB	SL	335
726	FJ	473.01	F	L	Y	86	1	folk	Mulberry (Crawford)	AR	MMc	GR	336
735	FK	481.03	F	M	Y	80	3	cultured	Mena (Polk)	AR	EC	GR	337
740	FM	488.01	F	M	Y	77	1	folk	Hearn (Clark)	AR	MMc	LP	338
748	FQ	501.01	M	M	X	84	1	folk	El Dorado (Union)	AR	GM	SL	339
751	FQ	501.02	M	U	Y	68	3	cultured	Junction City (Union)	AR	GM	MB	340
752	FP	503.02	M	M	Y	31	2	common	Arkansas City (Desha)	AR	GM	LP	341
754	FP	506.02	M	L	X	70	1	folk	Lake Village (Chicot)	AR	GM	PE	342
756	FQ	507.01	M	L	X	75	1	folk	Lake Providence (E. Carroll)	WL	BR	PE	343
759	FQ	509.02	M	L	X	62	1	folk	Tallulah (Madison)	WL	GM	GB	344
760	FQ	509.01	M	U	Y	65	3	cultured	Omega (Madison)	WL	GM	MP	345
761	FQ	510.01	F	L	X	91	1	folk	Cooters Point (Tensas)	WL	GM	LP	346
764	FR	514.01	M	L	Y	76	2	common	Mount Union (Union)	WL	BR	LD	347
766	FR	515.02	F	L	X	72	1	folk	Sterlington (Ouachita)	WL	BR	LD	348
768	FR	515.05	F	L	X	38	3	common	Monroe (Ouachita)	WL	BR	MP	349
771	FS	518.01	M	L	X	88	1	folk	Ruston (Lincoln)	WL	GM	SL	350
773	FS	521.01	M	M	Y	77	1	folk	Germantown (Webster)	WL	GM	LP	351
774	FT	523.06	M	I	X	82	1	folk	Shreveport (Caddo)	WL	BR	LP	352
775	FT	523.04	M	L	Y	87	1	folk	Spring Ridge (Caddo)	WL	BR	LD	353
777	FT	523.07	M	M	X	18	2	common	Shreveport (Caddo)	WL	MB	SL	354
778	FT	523.03	F	U	Y	79	2	cultured	Shreveport (Caddo)	WL	BR	SL	355
779	FT	523.01	F	M	Y	23	3	cultured	Shreveport (Caddo)	WL	SD	LP	356
780	FT	523.08	M	M	Y	20	3	cultured	Shreveport (Caddo)	WL	MB	SL	357
783	FU	525.02	M	L	Y	69	2	common	Coushatta (Red River)	WL	MB	SL	358
784	FU	526.04	M	L	X	69	1	folk	Natchitoches (Natchitoches)	WL	BR	LD	359
785	FU	526.01	M	M	Y	88	1	common	Robeline (Natchitoches)	WL	BR	GR	360
786	FU	526.03	M	L	Y	67	1	folk	Provencal (Natchitoches)	WL	BR	GB	361
788	FU	527.01	M	M	Y	76	1	folk	Many (Sabine)	WL	GM	MP	362
789	FV	528.02	M	L	X	67	1	folk	Hawthorne (Vernon)	WL	GM	GB	363
791	FV	528.03	M	M	Y	51	2	common	Hawthorne (Vernon)	WL	GM	GB	364
794	FW	531.01	M	L	Y	77	1	common	Winnfield (Winn)	WL	BR	LP	365
796	FW	533.03	F	L	X	71	1	folk	Pineville (Rapides)	WL	BR	PE	366
797	FW	533.02	M	L	Y	72	1	folk	Bayou Rapides (Rapides)	WL	BR	GR	367
807	FY	540.02	M	L	Y	82	1	folk	Ridge (Lafayette)	WL	BR	GR	368
808	FY	540.03	F	L	X	55	1	folk	Ridge (Lafayette)	WL	BR	LD	369
809	FY	540.01	M	M	Y	52	2	common	Lafayette (Lafayette)	WL	BR	RIM	370
810	FY	541.01	M	M	Y	83	1	folk	Iota (Acadia)	WL	GM	LP	371
811	FY	541.02	M	M	X	38	1	folk	Church Point (Acadia)	WL	GM	SL	372
812	FY	542.01	M	M	Y	87	1	folk	Pecan Island (Vermilion)	WL	GM	LP	373
813	FY	542.02	F	M	Y	65	1	common	Pecan Island (Vermilion)	WL	GM	MP	374
817	FZ	545.01	M	L	Y	67	2	folk	Cameron (Cameron)	WL	JNR	SL	375
818	GA	547.03	M	M	X	89	1	folk	Indian Hill (Newton)	UT	BR	LD	376
819	GA	547.02	M	M	Y	70	1	folk	Wiergate (Newton)	UT	BR	LP	377
820	GA	547.01	F	M	Y	42	3	cultured	Wiergate (Newton)	UT	BR	GR	378
821	GB	558.03	F	L	X	66	1	folk	Pine Flat (Nacogdoches)	UT	BR	SL	379
829	GC	567.01	F	M	Y	80	1	common	Marshall (Harrison)	UT	BR	LD	380
830	GC	567.04	F	M	X	23	3	cultured	Marshall (Harrison)	UT	BR	GR	381
831	GC	567.02	M	M	Y	32	3	cultured	Marshall (Harrison)	UT	BR	PE	382
836	GD	576.01	M	L	Y	61	1	folk	Belk (Lamar)	UT	BR	LD	383
840	GE	584.01	F	L	Y	79	1	folk	Denton (Denton)	UT	SF	SL	384
841	GF	585.01	F	L	Y	70	1	folk	Fort Worth (Tarrant)	UT	MB	PE	385
842	GF	586.05	F	L	X	64	2	common	Dallas (Dallas)	UT	SF	MB	386
847	GF	586.06	M	M	X	32	3	cultured	Dallas (Dallas)	UT	SF	LP	387

FIGURE 5 (Continued)

849	GG 593.01	M	M	Y	69	3	cultured	Corsicana (Navarro)	UT	MB	SL	388
851	GG 595.01	F	M	Y	84	2	common	Venus (Johnson)	UT	MB	MP	389
853	GG 598.01	F	M	Y	80	1	common	Waco (McLennan)	UT	SF	SL	390
855	GH 604.01	M	M	Y	74	1	folk	Caldwell (Burleson)	UT	MB	MB	391
856	GH 611.06	M	L	Y	88	1	folk	Huntsville (Walker)	UT	JNR	SL	392
859	GH 611.03	F	U	Y	41	3	cultured	Huntsville (Walker)	UT	JNR	SL	393
860	GI 616.03	F	L	X	69	1	folk	Beaumont (Jefferson)	UT	BR	LD	394
861	GI 616.02	M	L	Y	64	2	common	Beaumont (Jefferson)	UT	BR	LP	395
864	GJ 618.01	F	L	X	75	1	folk	Houston (Harris)	UT	BR	LD	396
865	GJ 618.04	M	L	Y	72	1	folk	Houston (Harris)	UT	BR	LP	397
868	GJ 618.06	M	U	X	53	3	cultured	Houston (Harris)	UT	BR	LP	398
870	GJ 618.02	F	U	Y	33	3	cultured	Houston (Harris)	UT	BR	SL	399
871	GJ 619.01	M	M	Y	79	3	cultured	Galveston (Galveston)	UT	MB	PE	400
872	GK 623.02	F	L	X	91	1	folk	Bay City (Matagorda)	LT	BR	SL	401
877	GL 625.02	M	U	Y	44	3	cultured	Victoria (Victoria)	LT	BR	LP	402
883	GM 638.01	F	M	Y	82	2	common	Austin (Travis)	LT	SF	LP	403
885	GM 640.01	F	M	Y	72	1	common	New Braunfels (Comal)	LT	SF	GB	404
888	GN 645.04	M	L	X	17	2	common	San Antonio (Bexar)	LT	SF	GR	405
890	GN 645.02	F	M	X	41	3	cultured	San Antonio (Bexar)	LT	SF	SL	406
892	GO 647.01	M	M	Y	73	3	cultured	Hondo (Medina)	LT	MB	MB	407
900	GO 655.02	M	M	Y	53	2	common	Falfurrias (Brooks)	LT	BR	LD	408
906	GP 660.04	F	A	Y	72	3	cultured	Corpus Christi (Nueces)	LT	JF	LP	409
908	GQ 664.02	F	M	Y	20	3	cultured	Edinburg (Hidalgo)	LT	JNR	LD	410
910	GQ 665.01	M	M	Y	69	2	common	Brownsville (Cameron)	LT	BR	LD	411
911	GQ 665.02	M	U	Y	43	3	cultured	Brownsville (Cameron)	LT	BR	LP	412

additions from the LAGS corpus. These files have two requirements. First, the forms should adequately represent the distinctive patterns of pronunciation that characterize Gulf States speech. Second, the files should include sufficient information to make possible comparisons of LAGS findings with those of other American regional surveys. Phonetic files use the idiolect synopses and LAGS protocols for a selection of consonants and vowels. A relatively small set of forms will be developed beyond the basic inventory of the synopses.

THE GRAPHIC PLOTTER GRID AND THE ELECTRONIC ATLAS IN MICROFORM

The LAGS Graphic Plotter Grid produces a reasonable facsimile of the Gulf States as formed by the positions of the 914 primary informants on a matrix.[8] The microcomputer mapping programs use the coordinates of the informants on the grid to print onscreen or hard-copy maps that represent the approximate geographical distribution of one, two, or three variables from any one data file, whether lexical, morphological, phonemic, or phonetic. Figures 6 and 7 show, first, the distribution of *gopher* alone, and then *gopher* plus *terrapin*. The map in Figure 7 demonstrates that while there is some use of both terms in the sectors where *gopher* is dominant, *terrapin* occurs widely in the areas where *gopher* is absent, though less frequently in Louisiana and Texas.

Figures 8-11 map four morphological deleted forms: copulas, articles, prepositions, and auxiliary verbs, respectively. The deletions occur chiefly during free conversation in the LAGS interviews in a variety of contexts, and their presence in the protocols and concordance is dependent on scribal observation. Many examples from the tape/text, therefore, may not have been recorded; in addition, short interviews that are limited primarily to one-word responses to work-sheet questions are unlikely to contain many of these

FIGURE 6

Distribution of GOPHER

A = gopher

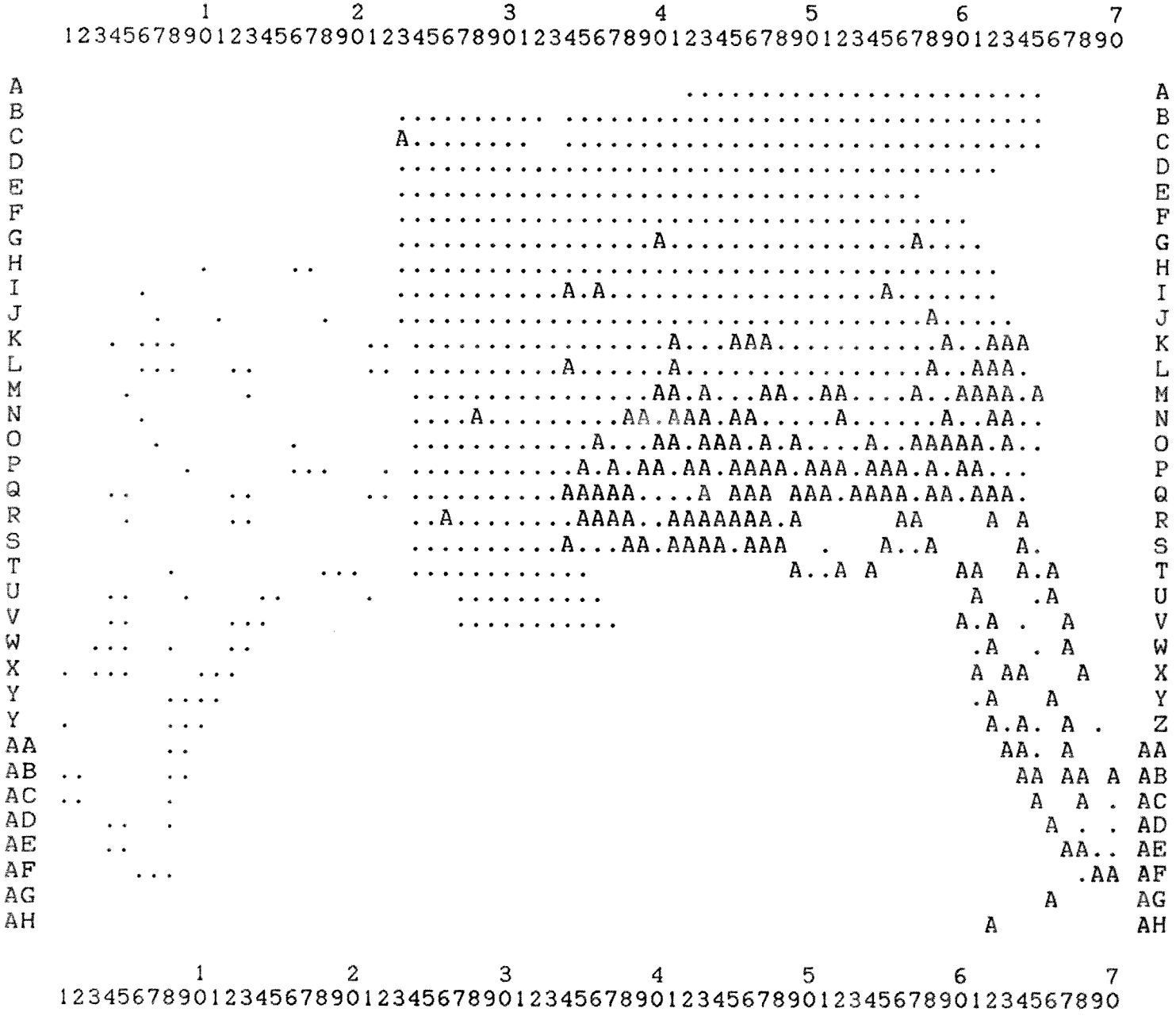


FIGURE 7

GOPHER + TERRAPIN

A = gopher
B = terrapin
+ = gopher + terrapin

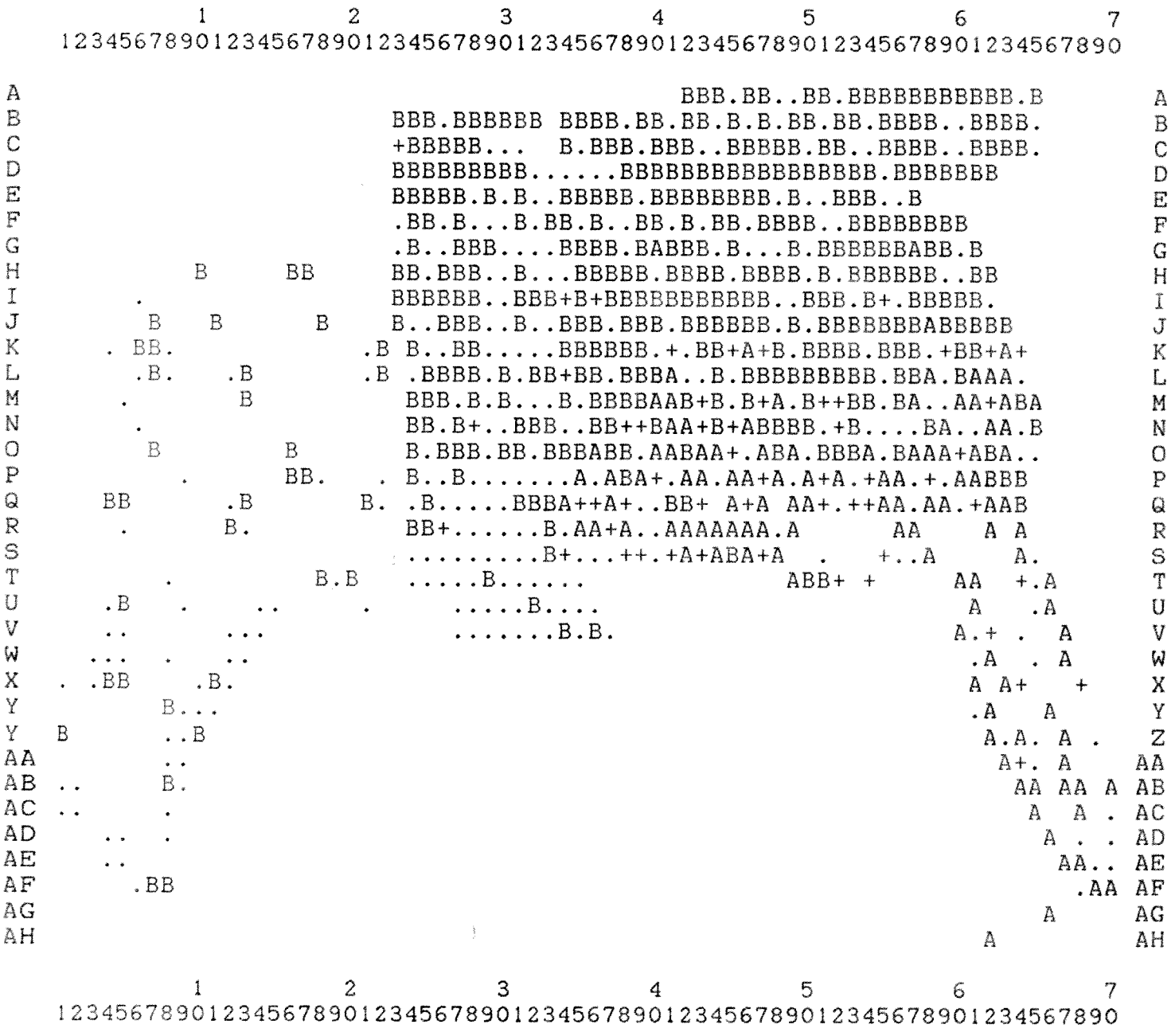


FIGURE 8

Distribution of Deleted Copula

A = deleted copula

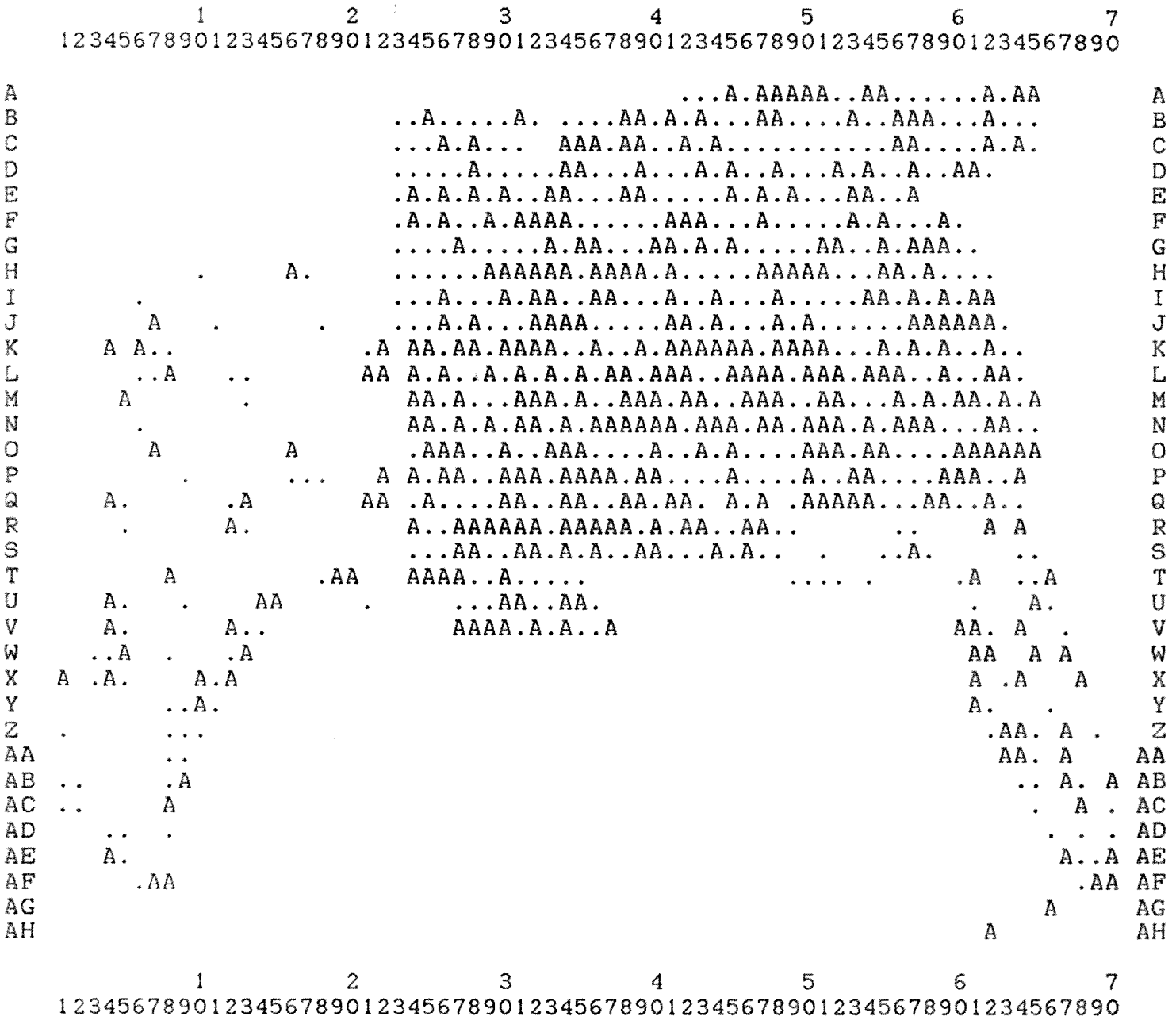


FIGURE 9

Distribution of Deleted Article

A = deleted article

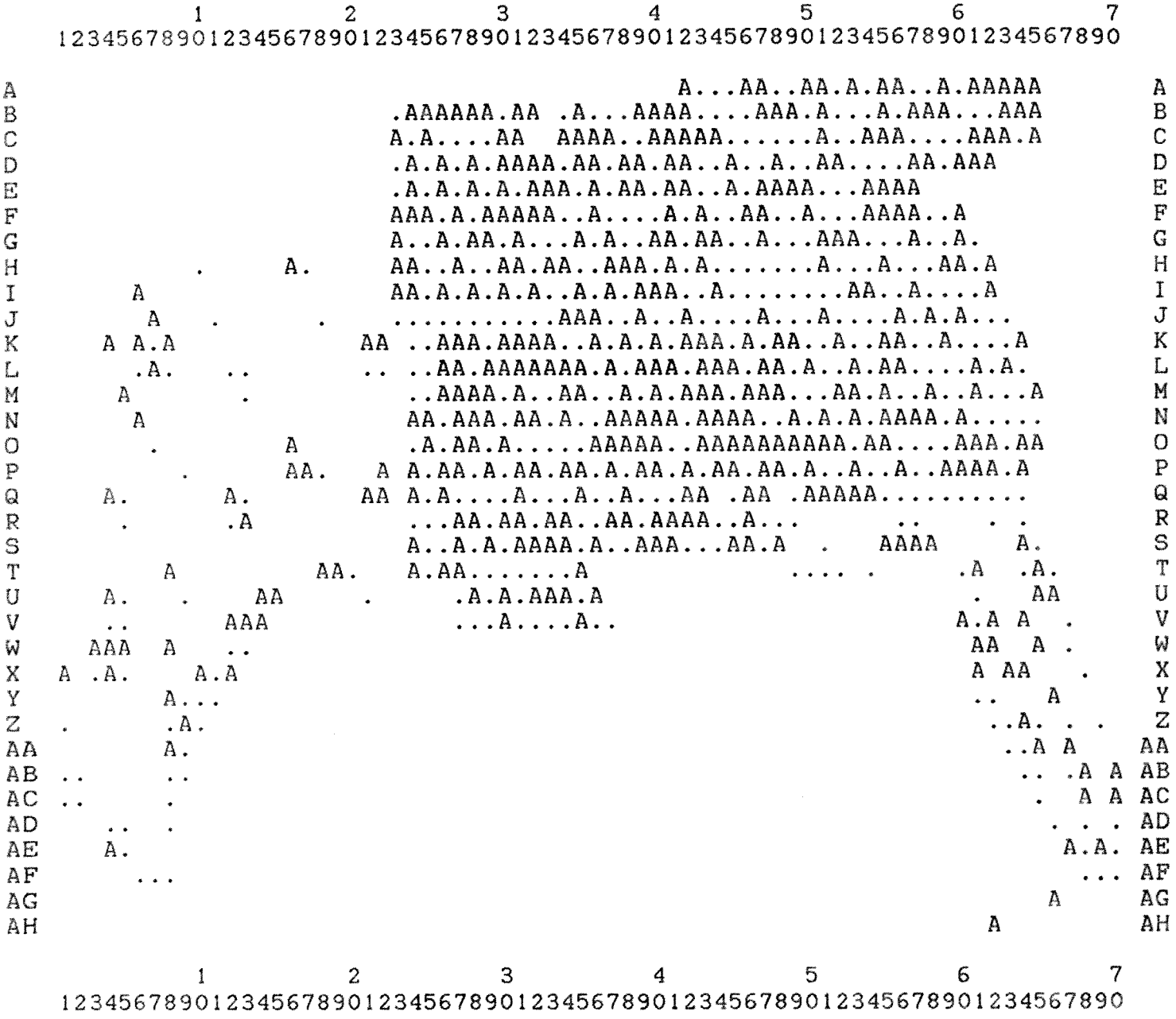


FIGURE 10

Distribution of Deleted Preposition

A = deleted preposition

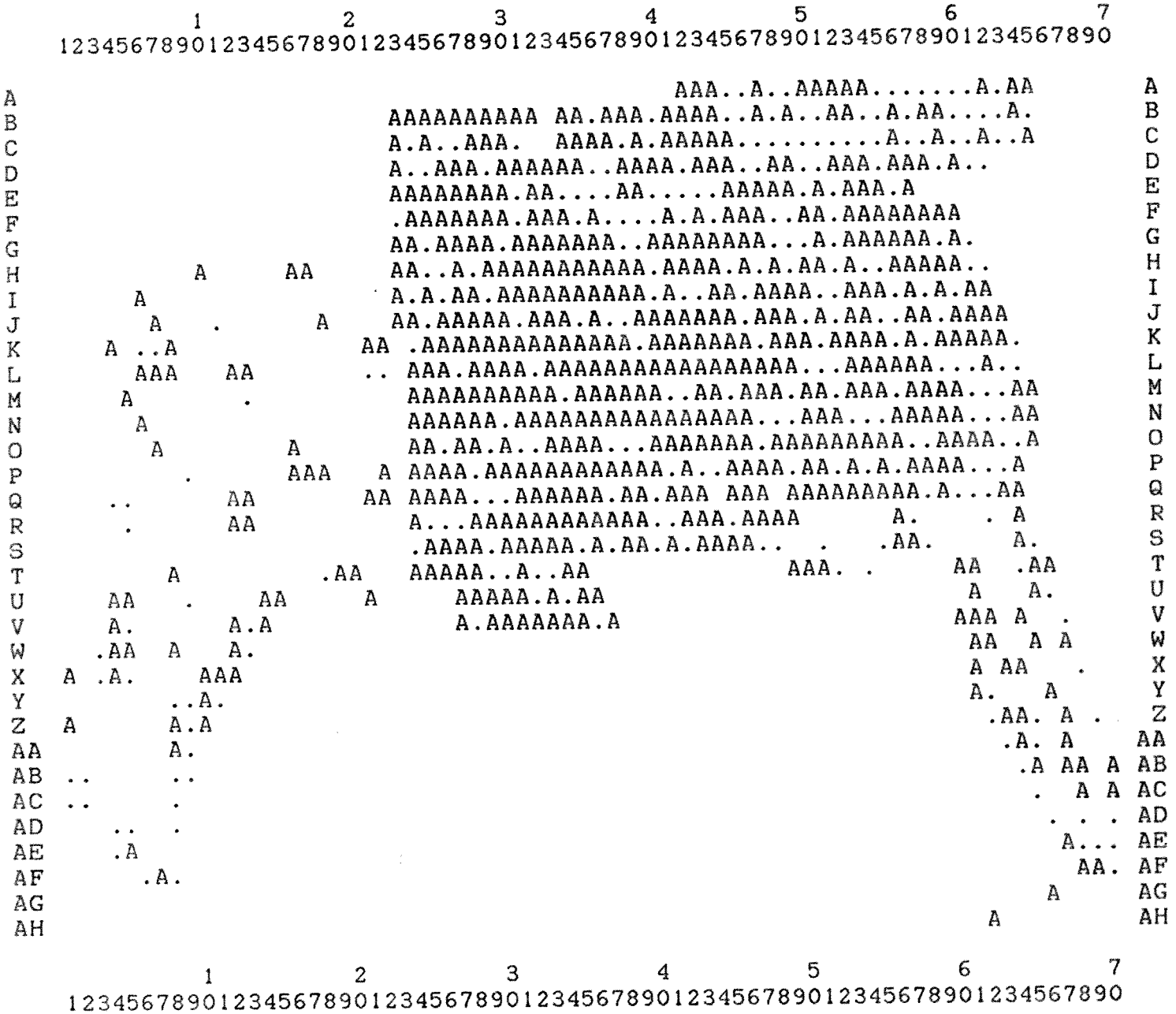
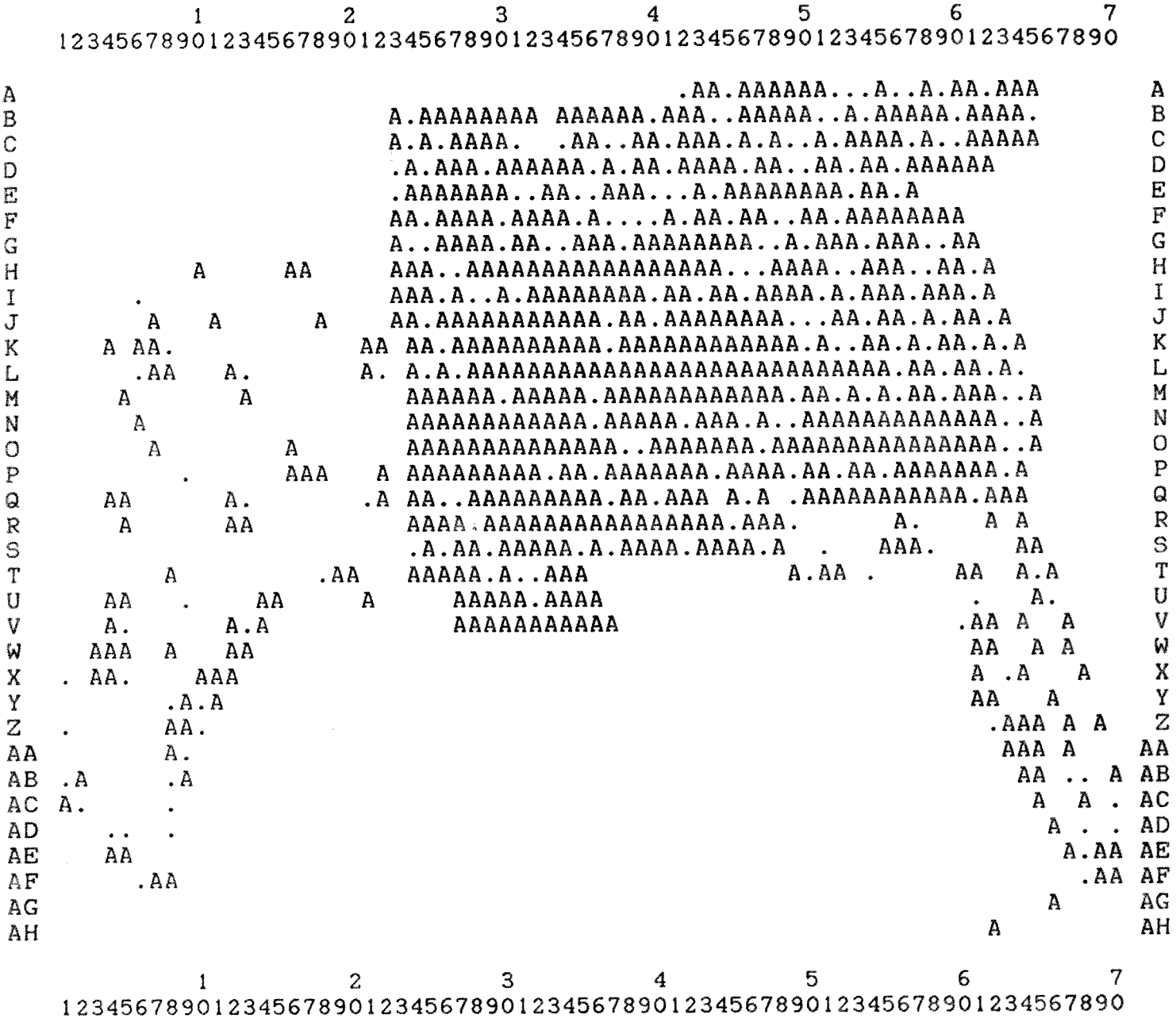


FIGURE 11

Distribution of Deleted Auxiliary Verb

A = deleted auxiliary



conversational features. Nevertheless, the final section of the concordance, where the majority of deleted forms are printed, contains many examples of *zero* forms of all types.

The Electronic Atlas in Microform (EAM)[9] will enable users of the LAGS materials to create their own lists and maps of linguistic items by making available a set of ten diskettes, the first containing the necessary compiled BASIC programs and the following nine containing the files used in the preparation of the legendry. The lists, as illustrated in figures 3-5, may be more useful in comparing social factors, whereas the maps, as in figures 6-7, more conveniently suggest regional patterns. This final application of the microcomputer for the handling of LAGS data will present students of dialectology and American English with a tool to make their own studies of legendry items, or, by creating simple ASCII files in similar formats by using the resources of the LAGS protocols and concordance, to study any form systematically recorded in this survey of Gulf States speech.[10]

Notes

1. Lee Pederson, Susan Leas McDaniel, and Marvin Bassett, "The LAGS Concordance." *American Speech*, 59 (1984): 332-39.

2. Lee Pederson *et al.*, eds. *The Linguistic Atlas of the Gulf States: the Basic Materials.* Part IV, *The Protocols and the Urban Supplements* (Ann Arbor: University Microfilms International, 1981).

3. Lee Pederson, "The Linguistic Atlas of the Gulf States: Interim Report Four." *American Speech*, 56 (1981): 243-59.

4. See Lee Pederson *et al.*, eds. *The Linguistic Atlas of the Gulf States: The Basic Materials.* Part III, *The Idiolect Synopses* (Ann Arbor: University Microfilms International, 1981) for the complete collection of synopses.

5. Lee Pederson, "Systematic Phonetics." *Journal of English Linguistics*, 18 (1985), 14-24. See also Pederson, "A Survey in Deductive Phonetics" (LAGS Working Papers, Third Series, no. 2, forthcoming) and Pederson and McDaniel, "Mapping Phonetics in the Gulf States" (LAGS Working Papers, Third Series, no. 5, forthcoming).

6. LAGS microcomputer programs are written in IBM BASIC by Microsoft and compiled with the IBM Personal Computer BASIC Compiler, with the assistance of consultant William H. McDaniel. All programs and files have been prepared for IBM and IBM-compatible computers and cannot be used with other personal computers without special conversion programs.

7. Lee Pederson, Susan Leas McDaniel, and Marvin Bassett, eds. *The Linguistic Atlas of the Gulf States: A Concordance of the Basic Materials* (Ann Arbor: University Microfilms International, forthcoming). The concordance is an alphabetical record, in conventional orthography, of all words entered in the protocols in narrow phonetics.

8. Lee Pederson, "A Graphic Plotter Grid" (LAGS Working Papers, Third Series, no. 3, forthcoming).

9. Lee Pederson, "An Electronic Atlas in Microform" (LAGS Working Papers, Third Series, no. 4, forthcoming).

10. Files in the format of the legendry files used by the microcomputer, in sequential order from informant 1 through informant 911, may be created from the microfilm component of the *Basic Materials*, which contains all protocol items in order page-by-page, as opposed to the book-by-book order of the microfiche. Any word processing or data management program capable of producing ASCII files can be used. A commercial sorting program that can alphabetize multiple fields would also be helpful in manipulating the data.