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# *Exercises*

to accompany

## *Historical Linguistics* *An Introduction*

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Winfred P. Lehmann





## THE PRINCIPAL LANGUAGE

MUNSHI RAM MANOHAR LAL  
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**EXERCISES**

**to accompany**

# historical Linguistics

— AN INTRODUCTION —

WINFRED P. LEHMANN

University of Texas

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## P R E F A C E

This workbook is designed to provide students with some understanding of techniques and aims in historical linguistics. Inevitably some of the selections are problems. But it is also hoped that through this workbook students do not come to view historical linguistics merely as a pursuit of problems; through understanding the procedures of historical linguistics and events in the history of languages one may arrive at a better understanding of the humanities by mastery of probably its central discipline, linguistics.

Among the goals of humanistic training is breadth of vision. For this reason it seems attractive to include materials from a great variety of languages. Yet if historical linguistic study of the past decades has produced one central finding, it is that in viewing language one must always take an entire system into consideration. It is difficult enough in introductory materials to present data in the context of their systems, even if one restricts them to a single language and the family to which it belongs. Broader scope would be impossible unless the workbook were doubled in size. A suitable solution may be achieved through the production of a series of workbooks, each restricted essentially to materials from one language family. Contributions to such a series will be welcome; the series will eventually be available.

Historical linguistics as a separate discipline has scarcely flourished more than a century and a half, yet it has notable achievements. As I indicated in the last chapter of Historical Linguistics, however, many tasks remain to be accomplished, even in the intensively studied languages. This workbook, like the handbook it accompanies, was designed to train students so that they might carry out some of these tasks.

#### Preface to the Student

Work in historical linguistics can be successful only if based on an understanding of the techniques of descriptive linguistics. Descriptive study of one language, as well as a formal course in descriptive linguistics, may provide the necessary basis. If such study did not involve detailed work in phonetics, some means must be found for control of especially articulatory phonetics and the principles of transcription.

In dealing with the various languages which even elementary study in historical linguistics requires, students must be prepared for many differences in transcription and transliteration. Elementary work in English will have provided simple examples, such as the use of the symbol j for the initial of yes, which also is represented in other texts by y; y elsewhere is used for the front rounded vowel, as in Fr. lune. More complex problems are provided by symbols such as c, which

in some languages represents [ts], e.g. Czech, in others [tš], Sanskrit, in others still further sounds. Perplexity, even exasperation, is inevitable until one has spent some time in historical study. Some could be alleviated here by presenting all materials in transcription. But this alleviation would be deceptive, if alluring; for transcriptions, based as they are on the views of their users, provide interpretations of limited usefulness. The materials which remain constant in historical linguistics are the transmitted texts, and historical linguists simply have to deal with them, regardless of the problems. Variety in transcription may be more palatable if viewed as an example of man's ingenuity rather than his perversity.

Experience in dealing with transcriptions, and with other matters of importance in historical linguistics, can be gained through full use of one's commonly used handbooks, dictionaries, grammars, literary texts. The introduction you will obtain through use of this workbook and the accompanying textbook will best be extended to mastery of historical linguistics through expansion of control over your own language throughout the period when information about it and its earlier stages may be obtained.

June 1962

## A C K N O W L E D G E M E N T S

Material for this workbook has been taken from the standard handbooks over an extent of time so that specific credit is difficult to indicate. The texts cited below are listed because special use has been made of them. I should like to acknowledge especially permission granted by Professor Alf Sommerfelt to quote selections from Meillet's *La méthode comparative en linguistique historique*, which was published by the Instituttet for sammenlignende kulturforskning in Oslo at his urging, and to the Danish Royal Academy, especially Professor Louis Hammerich, for permission to use extracts from Pedersen's *Sprogvidenskaben i det Nittende Aarhundrede*. Use of these and other sources specifically cited was often prompted by a desire to acquaint students with some of the great names in historical linguistics.

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I am also grateful to Miss Dorothy Dow, who first used this workbook in its present form, to R. P. Lehmann, especially for the production of the chart on the development of the alphabet, to Mrs. Mary Jones for her work in assembling materials and to Mrs. Virginia Dailey for composing and typing the text.

June, 1962

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## Historical Linguistics, Chapter 1

1. Look up the following words in a good dictionary, preferably the Oxford English Dictionary, and give a brief sketch of their history in the English language; note the relationship of the words in each set, distinguishing between native and borrowed words.
  - 1.1. astronomy; disaster
  - 1.2. adventure; come; souvenir
  - 1.3. cathedral; chaise; reside; seat
  - 1.4. gender; genitive; kin; naive; nation
  - 1.5. dual; duel; dozen; rebel; two
2. Select any single set of the above list and give the etymology to the extent you can determine it.
3. On the basis of the following passage from A. Meillet, *La méthode comparative en linguistique historique* (Oslo, 1925), discuss briefly the relationship between philology and historical linguistics:

p. 10 D'une manière générale, l'histoire des langues ne se fait donc qu'en comparant des états de langue les uns aux autres. Car les faits que fournit la succession des textes dans les cas exceptionnels où les gens qui écrivent ont suivi plus ou moins complètement l'usage de la langue parlée en leur temps sont presque toujours d'importance médiocre, le plus souvent

insignifiants, par rapport aux grands faits qui ont eu lieu sans avoir été notés par personne. Pour déterminer les états de langue du passé, le linguiste doit se servir de la philologie la plus exacte, la plus précise: et chaque progrès dans la précision philologique permet un progrès nouveau pour le linguiste. Le contact de plus en plus étroit qui s'est heureusement établi entre philologues et comparatistes est nécessaire pour que le linguiste puisse utiliser tout les faits, des faits certains, et des faits observés avec la dernière précision. Mais, à elle seule, la philologie n'apporte même pas un commencement d'histoire linguistique.



## Historical Linguistics, Chapter 2

### The Genealogical Classification of Languages

1. The following data are representative of the set of aspirated voiced stops in Sanskrit; the velar has become a fricative.

1.1. Compare them with the related entities in Greek, Latin and Gothic, and give the cognate initial elements, using the scheme based on the following.

Skt. pitá Gk. patér Lat. pater Goth. fadar 'father'

Skt. p = Gk. p = Lat. p = Goth. f

On this pattern determine three formulae for the following three sets:

<u>Sanskrit</u>	<u>Greek</u>	<u>Latin</u>	<u>Gothic</u>
bharāmi	phérō	fero	baira 'I bear'
bhrátā	phrátēr	frāter	broþar 'brother'
dháyati 'sucks'	thésato 'sucked'	fēlare 'suck'	daddjan 'suckle'
dhūmās 'smoke'	thūma 'offering'	fūmus 'smoke'	dauns 'vapor'
hāniṣ 'lack'	khêros 'orphaned'	hēres 'heir'	gaidw 'lack'
háryati 'likes'	khaíró 'rejoice'	hortor 'admonish'	gairnei 'wish'

1.2. Compare the items with similar meanings in the following languages, and indicate why it is unlikely that these languages are related to the Indo-European group. The first is Chinese; the second, Swahili. Deal especially with the sets you have determined.

pao <sup>4</sup> -cho	'bear (in one's arms)'	chukua	'bear'
ko <sup>1</sup> -ko	'elder brother'	ndugu	'brother'
tsa <sup>1</sup>	'suck'	fyonza	'suck'
yen <sup>1</sup>	'smoke'	moshi	'smoke'
sun <sup>3</sup> -hao <sup>4</sup>	'loss'	kosa	'lack'
ai <sup>4</sup>	'like'	penda	'like'

1.3. Indicate which of the following languages you consider most likely to be related genetically to those in 1.1, stating your reasons. Concentrate again on the three sets.

A		B		C	
motsu	'hold'	biru	'bear'	--	
--		--		broterēlis	'dear brother'
suu	'suck'	denaim	'suck'	denà	'pregnant'
kemuri	'smoke'	dumacha	'fog'	dúma	'smoke'
fusoku	'lack'	--		giežiúos	'desire'
konomu	'like'	gor	'pious'	--	

1.4. Discuss the importance of structure in determining genealogical classifications.

1.5. If the correspondences you set up in section 1.1 are accurate, and there were no modifications through borrowing or other types of interference, what are the entities you would expect in the following words where you find blanks.

<u>Sanskrit</u>		<u>Greek</u>		<u>Latin</u>		<u>Gothic</u>	
_árgas	'shine'	_légō	'burn'	fulgur	'lightning'	_airhts	'bright'
dhākás	'container'	_ékē	'container'	_acio	'make'	_eþs	'deed'
vá_ati	'drives'	o_leús	'lever'	ve_iculum	'vehicle'	gawigan	'move'

2. In his famous statement of 1786 which is often credited with giving the initial impetus to Indo-European comparative studies, Sir William Jones said that Sanskrit in relation to Greek and Latin "bears a stronger affinity, both in the roots of verbs and in the forms of grammar, than could possibly have been produced by accident; so strong, indeed, that no philologist could examine them all three without believing them to have sprung from some common source, which, perhaps, no longer exists; there is a similar reason, though not quite so forcible, for supposing that both the Gothick and the Celtick, though blended with a very different idiom, had the same origin with the Sanskrit."

Discuss the adequacy of Jones' reasons for suggesting the affinity. Why in your opinion does he think there are less forcible reasons for deriving Gothic from the same common source? In your discussion note that Jones made this statement before the advent of historical linguistics as we know it.

3. The following statement on the inadmissibility of typological argumentation for determining genealogical relations is translated from Holger Pedersen's *Sprogvidenskaben i det Nittende Aarhundrede* (Copenhagen, 1924), Chapter 7. For a complete translation see Spargo, pp. 245-247.

"The agreements in phonology and morphology which are to be recognized as decisive for relationship must however, be etymological, for they must point back to original identity of the words and inflectional forms, not merely to parallelism.

Nothing at all, for example, is proved about the relationship between Finno-Ugric and Turkic when one points out obvious parallelism in the inflection of nouns.

<u>Hungarian</u>	hajó	'ship'	hajók	'ships'
inessive	hajó-ban	'in the ship'	hajók-ban	'in the ships'
dative	hajó-nak	'for the ship'	hajók-nak	'for the ships'
<u>Osmanli Turkish</u>	kuş	'bird'	kuşlar	'birds'
locative	kuş-ta	'in the bird'	kuşlar-da	'in the birds'
dative	kuş-a	'for the bird'	kuşlar-a	'for the birds'

Here we have the same system: a number of clearly defined case endings which are added in exactly the same way to a basic form for the singular and plural. The system is quite different from the unanalyzable entanglement of the designations for number and case in the old Indo-European languages, as for instance in Latin:

nominative	dominus	'lord'	dominī	'lords'
accusative	dominum		dominōs	
dative	dominō		dominīs	
genitive	dominī		dominōrum	

In spite of all the parallels in the systems of Hungarian and Osmanli, there is not a single pair of identical endings in the two languages. We can find similar inflectional

systems in entirely different groups, as for example in some of the younger Indo-European languages. . . .

A common linguistic type is not an indication of kinship . . . ."

Pedersen states that Armenian and Tocharian have inflectional systems like those of Hungarian and Osmanli Turkish. How does the presence of such systems in these languages support his final sentence?

If you were attempting to set up genealogical classifications for Hungarian, Turkish or Latin, what evidence would you seek?

4. Identify the following languages, indicating briefly their genealogical classification: (Give the source of your information.)

Samoyed	Burushaski	Amharic	Proto-Germanic
Tonkawa	Malayalam	Sumerian	Basque
Indonesian	Quechua	Uzbek	Pali

Typological Classification

1. The following are examples of Japanese and Sanskrit verb forms.

1.1. Japanese:

ageru	'raise'	ageta	'raised'
age	'raising'	agete	'raised (ptc.)'
agereba	'if it raises'		
agesaseru	'cause to raise'	agesaseta	'caused to raise'
agesasereba	'if it causes to raise'		
agerareru	'be raised'	agerareta	'was raised'
agerarerereba	'if it is raised'		

Analyze the forms and give reasons for labeling Japanese agglutinative.

1.2. Sanskrit:

bhavāmi	'I become'	admi	'I eat'	dveṣmi	'I hate'
bhavasi	'thou becomest'	atsi	'thou eatest'	dvekṣi	'thou hatest'
bhavati	'he becomes'	atti	'he eats'	dveṣṭi	'he hates'
bhūta	'having become'	anna	'food < (what) is eaten'	dviṣṭa	'hated'

Analyze the forms and give reasons for labeling Sanskrit inflectional. (Symbols with . under them stand for retroflex consonants; bh is a unit phoneme.)

2. The following version of Mark 4.1-8 is from an English translation of approximately 1000 A.D. It is followed by the King James version.



1) And eft h<sub>1</sub>ē on<sub>1</sub>gan h<sub>1</sub>ī æt þ<sub>1</sub>ære s<sub>1</sub>æ l<sub>1</sub>æran. And him w<sub>1</sub>æs  
 mycel m<sub>1</sub>enegu tō ge<sub>1</sub>gader<sub>1</sub>od. swā þæt h<sub>1</sub>ē on scip ēo<sub>1</sub>de, and  
 on þ<sub>1</sub>ære s<sub>1</sub>æ w<sub>1</sub>æs; and eall s<sub>1</sub>eo m<sub>1</sub>enegu ymbe þ<sub>1</sub>ā s<sub>1</sub>æ w<sub>1</sub>æs on  
 lande. 2) And h<sub>1</sub>ē h<sub>1</sub>ī fela on big<sub>1</sub>spellum l<sub>1</sub>ær<sub>1</sub>de. and h<sub>1</sub>im  
 tō cw<sub>1</sub>æð on h<sub>1</sub>is l<sub>1</sub>ær<sub>1</sub>de, 3) Ge<sub>1</sub>h<sub>1</sub>yr<sub>1</sub>a<sub>1</sub>ð: Ūt ēo<sub>1</sub>de s<sub>1</sub>ē s<sub>1</sub>ædere his  
 s<sub>1</sub>æd tō s<sub>1</sub>aw<sub>1</sub>enne. 4) And þ<sub>1</sub>ā h<sub>1</sub>ē s<sub>1</sub>ēow. sum f<sub>1</sub>ēoll wi<sub>1</sub>ð þ<sub>1</sub>o<sub>1</sub>ne  
 weg, and fugel<sub>1</sub>as cō<sub>1</sub>m<sub>1</sub>on and h<sub>1</sub>it fr<sub>1</sub>æt<sub>1</sub>on. 5) Sum f<sub>1</sub>ēoll ofer  
 stān<sub>1</sub>scyl<sub>1</sub>ige<sub>1</sub>an, þ<sub>1</sub>ar h<sub>1</sub>it n<sub>1</sub>æf<sub>1</sub>de eor<sub>1</sub>ð<sub>1</sub>an, and sōna ūp ēo<sub>1</sub>de;  
 and for þ<sub>1</sub>ām h<sub>1</sub>it n<sub>1</sub>æf<sub>1</sub>de eor<sub>1</sub>ð<sub>1</sub>an þ<sub>1</sub>ic<sub>1</sub>c<sub>1</sub>ness<sub>1</sub>e. 6) þ<sub>1</sub>ā h<sub>1</sub>it ūp  
 ēo<sub>1</sub>de, s<sub>1</sub>eo sun<sub>1</sub>ne h<sub>1</sub>it for<sub>1</sub>sw<sub>1</sub>æl<sub>1</sub>de, and h<sub>1</sub>it for<sub>1</sub>ser<sub>1</sub>ane. for  
 þ<sub>1</sub>ām h<sub>1</sub>it wyr<sub>1</sub>t<sub>1</sub>ruma<sub>1</sub>n n<sub>1</sub>æf<sub>1</sub>de. 7) And sum f<sub>1</sub>ēoll on þ<sub>1</sub>orn<sub>1</sub>as; þ<sub>1</sub>ā  
 stig<sub>1</sub>on ð<sub>1</sub>ā þ<sub>1</sub>orn<sub>1</sub>as and for<sub>1</sub>ð<sub>1</sub>r<sub>1</sub>ysmōd<sub>1</sub>on þæt. and h<sub>1</sub>it w<sub>1</sub>estm ne  
 bær. 8) And sum f<sub>1</sub>ēoll on gōd land. and h<sub>1</sub>it seald<sub>1</sub>e ūpp<sub>1</sub>-  
 stig<sub>1</sub>en<sub>1</sub>de and wex<sub>1</sub>en<sub>1</sub>de w<sub>1</sub>estm; and ān brō<sub>1</sub>hte þ<sub>1</sub>ri<sub>1</sub>tigfeald<sub>1</sub>ne.  
 sum syx<sub>1</sub>tigfeald<sub>1</sub>ne. sum hund<sub>1</sub>feald<sub>1</sub>ne.

King James version: 1) And he began again to teach by  
 the sea side: and there was gathered unto him a great  
 multitude. so that he entered into a ship and sat in the

sea; and the whole multitude was by the sea on the land.  
 2) And he taught them many things by parables, and said  
 unto them in his doctrine. 3) Hearken: Behold, there went  
 out a sower to sow. 4) And it came to pass, as he sowed,  
 some fell by the way side, and the fowls of the air came  
 and devoured it up. 5) And some fell on stony ground,  
 where it had not much earth; and immediately it sprang  
 up, because it had no depth of earth. 6) But when the  
 sun was up, it was scorched; and because it had no root,  
 it withered away. 7) And some fell among thorns, and the  
 thorns grew up, and choked it, and it yielded no fruit.  
 8) And other fell on good ground, and did yield fruit  
 that sprang up and increased, and brought forth, some  
 thirty, and some sixty, and some, an hundred.

2.1.1. Make a phonological analysis of the Old English,  
 counting the total number of segmental phonemes. then  
 1) the number of vowels, 2) the number of obstruents,  
 3) the number of resonants. Determine the proportion  
 of each. (In making your analysis, consider the eo of  
 5) eorðan and the ea of 8) sealde and 8) -fealdne diph-  
 thongs; their exact status in the Old English phonological  
 system is, however, disputed. Treat y and ȳ as writing  
 variants for i and ī.)

2.1.2. Make a phonological analysis of your pronunciation  
 of the King James version, providing the counts suggested  
 above.

- 2.1.3. Compare the figures for the two languages.
- 2.2.1. Make a morphological analysis of the Old English, counting the number of segmental morphemes. (To make the analysis simpler, pronouns and other sequences have been divided into two morphs, endings have been cut off, and where internal change is a morphemic marker, 1 has been placed below the morph.)
- 2.2.2. Determine the number of morphs per word throughout this text.
- 2.2.3. Determine the number of root, derivational, and inflectional morphemes in the text and their proportion to the total number of words. Any word, including function words, is to be analyzed with at least one root morpheme.
- 2.2.4. Make a morphological analysis of the King James version, determining the entities suggested above.
- 2.2.5. Compare the figures for the two.

## Historical Linguistics, Chapter 4

### The Use of Written Records

1. The following is the first stanza of the Rigveda. It illustrates the devanagari script. The passage is given first in standard transliteration, then in a modern form of devanagari, with syllable by syllable transliteration, and translation. Determine the means of writing ma. ra, de, o after a consonant:

agnímīle puróhitam yajñásya devámr̥tvíjam  
hótāram ratnadhātāmam

अग्निमीळे पु रो हि तं य ज्ञस्य  
दे व मृ त्वि जम् । हो ता रं र त्न धा त मम्

a gni mī le pu ro hi tam ya jña sya  
de va mṛ tvi jam ho tā ram ra tna dhā ta mam  
agnīm, acc.sg., īle, 1st p., puróhitam, acc.sg. Agni I call upon.  
the house priest.  
yajñásya, gen.sg., devám, acc.sg., ṛtvíjam, acc.sg. Of worship the god.  
appointed priest,  
hótāram, acc.sg., ratnadhātāmam, acc.sg. Chief priest. most  
bestowing blessings.

2. The following is the first line of the Old Persian inscription of Darius the Great, 521-486 B.C. at Behistan. It is an example of cuneiform adapted to an Indo-European language. First a syllabic transcription of the cuneiform is given, then a normalized text. Indicate problems in

the determination of the normalized text. The text here follows R. G. Kent, *Old Persian* (New York, 1950); an earlier editor reads the fourth word as vazarka; how do you account for the difference in interpretation?

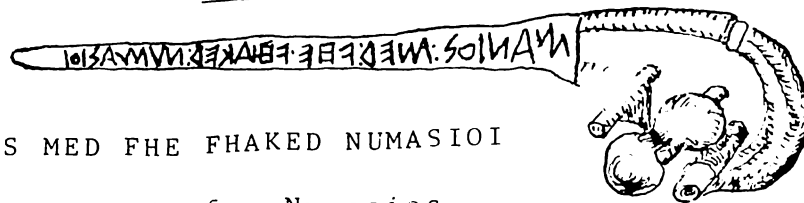
/a da ma / da a ra ya va u ša / xa ša a ya θa i ya / va za ra ka /  
 xa ša a ya θa i ya / xa ša a ya θa i ya a na a ma / xa ša a ya θa i ya /  
 pa a ra ša i ya/

adam Dārayavauš xšāyaθiya vazraka xšāyaθiya xšāyaθiyānām  
 xšāyaθiya Pāršaiy

I (am) Darius; king great; king of kings; king in Persia.

3. The following is a reproduction of the transcription on the golden fibula of Praeneste; Old Latin. of about 600 B.C. Indicate some of the differences between shapes of the letters in this inscription and the majuscule letters we are accustomed to in Latin texts. Note the use of 'word dividers' as in the Old Persian text; discuss the indicated division between the reduplicated syllable and the remainder of the form of the perfect fhefhaked, cf. Classical Latin fecit.

MANIOS MED FHE FHAKED NUMASIOI  
 Manius me made for Numasios.



4. The following is the inscription on the Golden Horn of Gallehus; note that as in the Praeneste inscription it

indicates the name of the artisan. Runic characters are believed to have been modified for use in writing on wood: lines going with the grain were avoided if possible.

Indicate the effect of this for h, t.

Further, since the symbols were used for magical purposes, they were designed to be unmistakable, whether or not upside down. Examine the shape of the l, and account for it; also the s.

ME~~N~~MF~~FX~~RTIY:HA~~T~~IZAY:HA~~R~~TF:↑F~~IN~~X?

ek hlewagastiR holtijaR horna tawido

I HlewagastiR of Holt the horn made.

5. The decipherment of unknown writing systems is one of the most intriguing problems to be met in historical linguistics. The decipherment of Egyptian hieroglyphs, completed by Champollion, is well known; the decipherment of the cuneiform writing system has been less widely discussed. Pedersen summarizes it well, *Linguistic Science in the Nineteenth Century*, 154-160.

In recent times, the most remarkable feat of decipherment was that of Linear B. The procedures are well described in M. Ventris-J. Chadwick, *Documents in Mycenaean Greek* (Cambridge, 1956). Sketch the differing procedures used in the two efforts, noting not only the men credited with the decipherments but also their predecessors. In which



effort was the procedure more systematic, and in what respects? Note also in which of the two systems secondary aids, e.g. word lists, dictionaries, played a larger role.

6. John Milton believed that spelling should reflect speech. Accordingly he modulated spelling for his purposes. From the following passage, *Paradise Lost* Book VI, lines 56-71, select ten spellings that differ from standard English spelling and indicate what may have prompted Milton to use them. (It is instructive, and often amusing, to observe non-standard spellings in other documents, such as *Uncle Remus*, or comics.)

So spake the Sovran voice, and Clouds began  
 To darken all the Hill, and smoak to rowl  
 In duskie wreathes, reluctant flames, the signe  
 Of wrauth awak't: nor with less dread the loud  
 Ethereal Trumpet from on high gan blow:  
 At which command the Powers Militant,  
 That stood for Heav'n, in mighty Quadrate joyn'd  
 Of Union irresistible, mov'd on  
 In silence thir bright Legions, to the sound  
 Of instrumental Harmonie that breath'd  
 Heroic Ardor to advent'rous deeds  
 Under thir God-like Leaders, in the Cause  
 Of God and his Messiah. On they move

Indissolubly firm; nor obvious Hill.

Nor streit'ning Vale, nor Wood, nor Stream divides




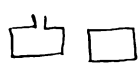















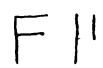








Thir perfet ranks;




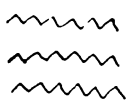
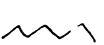























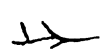





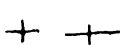
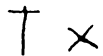

7. The following chart illustrates the development of our alphabet from Egyptian hieroglyphs to early Latin forms much like our capital letters. For a discussion of the origin of letters not included here see Historical Linguistics 4.4.

A prime difficulty in determining the Egyptian forerunner of some of the letters is caused by the practice of determining the value of a symbol by the name of the object for which it stands. These may have differed considerably in Egyptian and Semitic; accordingly symbols with one value in Egyptian may have acquired another in Semitic.

Shapes also may have been modified by practices used in writing, as noted in Historical Linguistics 4.4. Account for the difference you find in the Roman form of West Semitic: C N

# DEVELOPMENT OF THE ALPHABET

EGYPTIAN ca. 2000 B.C.		SINITIC ca. 1700 B.C.	WEST SEMITIC ca. 1200 B.C.	IONIC GREEK ca. 500 B.C.	EARLY ROMAN
	head of ox				
	house				
	corner of wall				
	door				
	man with both arms raised				
	lotus (possibly man was model here too)				
	grain of sand				
	hand				
	animal of Seth recumbent				
	open hand				
	sedge				

	sandy tract, horizon (perhaps not origin of L)				
	ripples (suggested also for M and even L.)				
	cobra				
	ornament (often vertical) or weapon				
	cobra				
	eye				
	mouth				
	animals' belly with teats and tail				
	head				
	branch				
	sandy hills				
	unidentified cross or "ankh" the sandal strap				

## Historical Linguistics, Chapter 5

### The Comparative Method

1. Since Proto-Germanic is a reconstructed language, we determine its phonemes largely by applying the comparative method to data found in Gothic, Old Norse, Old English, Old High German and other dialects.

1.1. Examining the following material, which is given in transliteration of the manuscript readings, reconstruct the Proto-Germanic equivalents of Old English p t k: (OHG z = [s]; hh = [x] [xx]; OHG z = [ts]).

<u>Old English</u>	<u>Old High German</u>	<u>Gothic</u>	<u>Old Norse</u>	
slæpan	slāfan	slepan	slāpr	'sleepyhead' 'sleep'
hrōpan	hruofan	hropan	hrōpa	'shout'
etan	ezzan	itan	eta	'eat'
lætan	lāzan	letan	lāta	'let'
sacan	sahhan	sakan	saka	'quarrel'
tācen	zeihhan	taikn	teikn	'token'

1.2. The following examples indicate the initial correspondences:

pund	pfunt	pund	pund	'pound'
tēon	ziohan	tiuhan	togenn (pte.)	'pull. tug'
corn	corn	kaurh	korn	'corn'

Indicate how the Old High German form in this set confirms our conclusions about the conservatism of the other

dialects with regard to p t k; see also Historical Linguistics 5.4.2.

1.3. What further corroboration is given us by the following set:

(ge)trȳwe      (ge)triuwi      triggws      tryggr      'true'

Procedures: 1. In this exercise, carefully selected forms are listed in columns for your convenience. (In exercise 2, the selected forms are listed in alphabetical order. Your first step will be to arrange them in columns.)

If you were working with material that had not been carefully sorted, such as material from Papuan languages, your initial activities would be to locate items which would be profitable to explore. It would be advisable to cull out words from the common area of the vocabulary, such as the every-day actions like those in the example here, or kinship terms, the low numerals and other items which are also used in lexicostatistical study; see the lists after Chapter 7.

You then would look for correspondences which recur in the same environment, such as t = d initially in two or more pairs, t = s medially in a preponderance of the occurrences of medial t in one of the languages. If you found adequate correspondences to justify the preliminary assumption that the languages were related, you would proceed to other phonemes occupying a similar position in the



phonological system, such as p, k, d, b, g if they occur, and find correspondences for them. In this way you would arrive at the correspondences of highest frequency and you could relate the sound systems to each other, accounting later for the less frequent correspondences.

Procedures: 2. With material as carefully sorted as that in this exercise you might simply set up formulae like the following:

OE -p- = OHG -f- = Goth. -p- = ON -p-

Noting the aberrancies in Old High German, you would assume that p t k have undergone modification between Proto-Germanic and Old High German, and for your reconstructions you would place greater reliance on the other dialects when dealing with the obstruents.

Procedures: 3. It may be well, however, to follow a more explicit method in arranging material like this for a solution: to chart the entities by their position, as does Hoenigswald, LCLR. Such a method would be virtually mandatory in dealing with unexplored languages.

Taking environment by environment, one plots the entities for two related languages in a frame as follows:

	-p-
	Gothic
Proto-Germanic	
	Old English
	-p-

On the basis of the correspondences, one inserts on the left side of the frame the reconstructed entities, here PGmc. -p-.

-p-	-p-
Proto-Germanic	Gothic
	Old English
-p-	-p-

When comparison is made with the medial Old High German stops, one may indicate as follows the change which is indicated by the formula: PGmc. -p- > OHG -f-.

-p-	-p-
Proto-Germanic	Gothic
	Old High German
-p- > -f-	-f-

Procedures: 4. Various devices are used to present information as compactly as possible. As above, hyphens are used to indicate the environments of entities: - - before and after an entity, e.g. -t-, indicates medial position; - after an entity, e.g. t-, indicates initial position; - before an entity, e.g. -t, indicates final position.

This notation may not be adequate in complex situations; for example, it would have to be supplemented when dealing with OHG (gi)triuwi 'faithful'. Instead of hyphens, one would take over in such a situation the immediately neighboring entity, e.g. t(r). To deal more

economically with such complexities, one may determine the various environments, label them with Arabic numerals, and indicate these in the frames.

From the material in this problem, one might label the medial position 2, the initial position 1, the position before r 3, and set up the following frame:

				t	1	2	3
				Gothic			
t	1	2	3	Proto-Germanic			
			3	Old High German			
			2	t			
		2		ʒ			
	1			z			

Or, one might be more explicit in indicating the changes:

	t > t		t
			Gothic
t	Proto-Germanic		
	t > t		Old High German
	t > ʒ		t
	t > z		ʒ
			z

Such a frame is useful when one includes more entities of languages. If, for example, one dealt with the voiced dental stop before r, as in:

drincan      trinkan      drigkan      drekka      'drink'  
 one would have a further entity in Gothic, with coalescence of t < PGmc. dr and t < PGmc. tr in Old High German. The

frame might then be filled as follows:

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is that of the initial part of Armenian erku 'two'. One can readily apply the comparative method to Greek duō, Lat. duō, and also to Sanskrit dvā 'two'. From these one would reconstruct PIE dwō.

In MCLH Meillet discusses the Armenian development as follows:

Page 6: Ainsi arm. erku 'deux' ne ressemble pas à lat. duo, etc.; mais d'autres correspondances montrent que erk- peut répondre à \*dw- d'autres langues; ainsi, de même que le grec a pour l'idée de 'craindre' une racine dwi-, l'arménien a erki- (erkiwl 'crainte'), et de même que le grec a pour dire 'longtemps' un vieil adjectif dwārón, l'arménien a erkar 'long'. La concordance se laisse donc ramener à une règle générale de correspondance: un ancien dw- aboutit à arm. erk-).

Page 31: Ce n'est pas avec des ressemblances de formes qu'on opère quand on compare des langues d'une même famille, mais uniquement avec des règles de correspondances. ... Le groupe de consonne dentale suivie de w aboutit en arménien à une gutturale: tw- est représenté par k'-, ainsi dans k'o 'de toi', en face de formes telles que twe (d'où attique se) du grec. La sourde k provient de ce que, en arménien comme en germanique, il y a eu une mutation des anciennes occlusives sonores en sourdes: d passe à t, g à k. L'r qui précède est une trace de l'ancien caractère sonore de la consonne initiale du groupe, cette r

a entraîné à son tour de développement de l'e initial qui figure dans erku. ... Tout, dans la correspondance si étrange de arm. erk- avec \*dw-, résulte de la structure de l'arménien. Une correspondance qui ne s'expliquerait pas ainsi serait suspecte.

Set up a frame illustrating the Proto-Indo-European cluster dw before vowels in Sanskrit and in Armenian, and indicating the change from Proto-Indo-European into each.

## Historical Linguistics, Chapter 6

### Internal Reconstruction

1. In the Old English present indicative of some verbs, e alternates with i, as in the following examples:

1.1.	1 sg.	helpe	'help'	bere	'bear'	ete	'eat'
	2 sg.	hilpest		birest		itest	
	3 sg.	hilpeð		bireð		iteð	
	pl.	helpað		berað		etað	

In other verbs, no such alternation occurs, e.g. those with i in the stem:

1.2.	1 sg.	binde	'bind'	winde	'wind'
	2 sg.	bindest		windest	
	3 sg.	bindeð		windeð	
	pl.	bindað		windað	

Reconstruct the earlier form of the stem of the verbs in group 1.1 on the basis of internal evidence.

Given an Old English second singular present indicative with i in the stem, could you make the first singular?

2. In the nominative/accusative plural of Old English root nouns there is no ending, but in some words we find internal change, e.g.

2.1.	Nom., Acc. Sg.	fōt	'foot'	Nom. Acc. Pl.	fēt
2.2.		tōð	'tooth'		tē <sup>æ</sup>
2.3.		mann	'man'		menn

Compare:

2.4.		niht	'night'		niht
------	--	------	---------	--	------

Could you reconstruct on the basis of these forms alone the earlier stem form of the first three nouns? Why not?

Given the neuters

bēacen	'beacon'	bēacen
cnōsl	'race'	cnōsl
tākn	'token'	tākn
scrūd	'garment (shroud)'	scrūd
cynn	'race'	cynn

and the additional forms with variation:

2.5.	cū	'cow'	cȳ
2.6.	mūs	'mouse'	mȳs
2.7.	lūs	'louse'	lȳs

could you reconstruct the earlier stem forms? On the basis of this further information, reconstruct the stem forms of the nouns given after 2.1-2.3.

3. The variation in consonants between voiceless fricative in the preterite singular and the voiced fricative in the preterite plural, discussed in Historical Linguistics 6.4, was obscured through various sound changes by the time of Old English.

Voiced ð had become d, as in:

	<u>Infinitive</u>	<u>Preterite singular</u>	<u>Preterite plural</u>
3.1.	snīþan 'cut'	snāþ	snidon
3.2.	weorþan 'become'	wearþ	wurdon
3.3.	sēoþan 'boil (seethe)'	sēaþ	sudon

A verb without such change is:

3.4.	rīdan	rād	ridon
------	-------	-----	-------



In the s : z alternation, z had become r, as in:

3.5.	wesan	'be'	wæs	wæron
3.6.	frēosan	'freeze'	frēas	fruron
3.7.	forlēosan	'lose'	forlēas	forluron

A. If you assumed paralellism between the fricatives þ and s, to what extent could you reconstruct the consonant of the preterite plural at the end of the stem in the two sets? A verb like

3.8.	beran	'bear'	bær	bæron
------	-------	--------	-----	-------

would provide a further form without consonant change.

The alternation of palato-velars is still evident in the preterite, but there is no longer a reflex of Proto-Germanic /x/ in the infinitive, as in:

3.9.	flēon	'flee'	flēah	flugon
3.10.	tēon	'draw (tug)'	tēah	tugon
3.11.	þēon	'thrive'	þēah	þigon

Further, neither /h/ nor /g/ is a palato-velar fricative.

B. How could you use the alternations in 3.1-3.3 to reconstruct the Proto-Germanic situation in 3.9-3.11?

The labials may provide the greatest problem of all four sets, for the contrast of voicing did not exist in Old English fricatives; voiced allophones were used intervocalically as in drifen, preterite plural of 3.12 drīfan 'drive', voiceless finally, as in drāf 'drove'. Also in

3.13.	giefan	'give'	geaf	gēafon
3.14.	scrīfan	'decree (shrive)'	scrāf	scrifon

In some of the earliest Old English materials, b is used in forms like the preterite plural, e.g. scribun 'they decreed'.

C. To what extent could you use such spellings as a support for the internal reconstruction you would base on parallelism of 3.12-3.14 with 3.1-3.3.

After you have analyzed 3.12-3.14, it may be clear that in 3.1-3.3 and 3.5-3.7 b and s had voiced allophones when intervocalic, as is still evident today in the reflexes 3.3 seethe and 3.6 freeze. An interchange of voiced and voiceless fricatives had accordingly developed in Old English, with intervocalic position the conditioning feature for voicing. The earlier variation therefore would have to be constructed from forms like 3.3 seethe : sodden, 3.6 frost : frore.

D. To what extent could you achieve certainty in reconstructing such variation? What paradigms would you examine in your attempt to account for the variation between frost, freeze, and frore?

No obvious phonological or orthographical evidence is evident in the pair: ten '10' -ty as in sixty. In Old English the two numerals are

	tīen	siextig
In Gothic:	taihun	saihs tīgum

E. From which of these pairs could you make credible reconstructions of the Proto-Germanic consonant variation?

4. In his celebrated *Mémoire sur le système primitif des voyelles dans les langues indo-européennes* of 1879, Ferdinand de Saussure compared Sanskrit present tense forms whose structure previously was unclear, verbs of present classes 7 and 9, e.g.

(7) *bhinátti* 'splits'      (9) *punáti* 'cleanses'

Viewing the i and u of the stem as vocalic forms of resonants, he suggested that the two classes were alike in formation. The root from which *bhinátti* is made was assumed to be *bhid-*; we now write it *bh-y-d-*. That of *punáti* was assumed to be *pū-*, but by applying the method of internal reconstruction Saussure proposed *p-w-A-*, with *A* standing for an unidentified consonant.

The pre-Sanskrit *A* left i as reflex in other forms, as in the infinitive *pavi-tum* 'cleanse'. In such forms the third consonant of class 7 roots was maintained, e.g. *bhet-tum* 'split'. (d > t before t; j > k before t; i u before consonants > e o, from earlier a plus i u; *bh*, *ch* are clumsy transliterations for aspirated stops which are unit phonemes; r̥ is the transliteration for vocalic r; ṇ for a retroflex nasal.)

Additional forms from the two classes are given below; for simplicity they are all given in the third singular present indicative and the infinitive, although these forms may not be attested in the Sanskrit texts.

	<u>3d sg. pres. ind.</u>	<u>Infinitive</u>	<u>Root constructed before Saussure</u>
Class 7	yunakti 'yokes'	yóktum	yuj-
	bhunákti 'enjoys'	bhóktum	bhuj-
	chinátti 'cuts off'	chettum	chid-
Class 9	lunáti 'cuts'	lávítum	lū-
	pr̥ṇáti 'fills'	páritum	pṛ-
	gr̥ṇáti 'sings'	gáritum	gr-

Compare the two sets of forms to verify Saussure's suggestion. Then construct roots of three elements which indicate the previous root structure more accurately than do the traditional roots reproduced here.

## Historical Linguistics, Chapter 7

### Glottochronology

The following are words from Modern English, Modern German, Old Icelandic, French, and Spanish which may be used to test the application of glottochronology. To facilitate practice in using the method the cognates between other dialects and English in this list have been underlined. You may be able to determine the cognates between German and Old Icelandic, and between French and Spanish independently.

	<u>English</u>	<u>German</u>	Old <u>Icelandic</u>	<u>French</u>	<u>Spanish</u>
1.	all	<u>all</u>	<u>allr</u>	tout	todo
2.	ashes	<u>Asche</u>	<u>aska</u>	cendre	ceniza
3.	bark	bellen	gnǫllra	écorce	corteza
4.	belly	Magen	magi	ventre	barriga
5.	big	gross	stōrr	grand	grande
6.	bird	Vogel	fugl	oiseau	pájaro
7.	bite	<u>beissen</u>	<u>bīta</u>	mordre	morder
8.	black	schwarz	svartr	noir	negro
9.	blood	<u>Blut</u>	<u>blōð</u>	sang	sangre
10.	bone	Knochen	<u>bein</u>	os	hueso
11.	breast	<u>Brust</u>	<u>brjōst</u>	poitrine	pecho
12.	burn	<u>brennen</u>	<u>brenna</u>	brûler	quemarse
13.	claw	<u>Klaue</u>	<u>klō</u>	griffe	garra
14.	cloud	Wolken	ský	nuage	nube
15.	cold	<u>kalt</u>	<u>kaldr</u>	froid	frío
16.	come	<u>kommen</u>	<u>koma</u>	<u>venir</u>	<u>venir</u>
17.	die	sterben	<u>deyja</u>	mourir	morir
18.	dog	Hund	hundr	chien	perro

	<u>English</u>	<u>German</u>	<u>Old Icelandic</u>	<u>French</u>	<u>Spanish</u>
19.	drink	<u>trinken</u>	<u>drekka</u>	boire	beber
20.	dry	<u>trocken</u>	<u>þurr</u>	sec	seco
21.	ear	<u>Ohr</u>	<u>eyra</u>	<u>oreille</u>	<u>oreja</u>
22.	earth	<u>Erde</u>	<u>jörð</u>	terre	tierra
23.	eat	<u>essen</u>	<u>eta</u>	manger	<u>comer</u>
24.	egg	<u>Ei</u>	<u>egg</u>	<u>oeuf</u>	<u>huevo</u>
25.	eye	<u>Auge</u>	<u>auga</u>	<u>oeil</u>	<u>ojo</u>
26.	fat	<u>fett</u>	<u>feitr</u>	graisse	grasa
27.	feather	<u>Feder</u>	<u>fjör</u>	plume	pluma
28.	fire	<u>Feuer</u>	eldr	feu	<u>fuego</u>
29.	fish	<u>Fisch</u>	<u>fiskr</u>	<u>poisson</u>	<u>pez</u>
30.	fly	<u>fliegen</u>	<u>fljúga</u>	<u>voler</u>	<u>volar</u>
31.	foot	<u>Fuss</u>	<u>fōtr</u>	<u>pied</u>	<u>pie</u>
32.	full	<u>voll</u>	<u>fullr</u>	<u>plein</u>	<u>lleno</u>
33.	give	<u>geben</u>	<u>gefa</u>	donner	dar
34.	good	<u>gut</u>	<u>gōðr</u>	bon	bueno
35.	green	<u>grün</u>	<u>grænn</u>	vert	verde
36.	hair	<u>Haar</u>	<u>hār</u>	cheveu	pelo
37.	hand	<u>Hand</u>	<u>hand</u>	main	mano
38.	head	Kopf	<u>hǫfuð</u>	tête	<u>cabeza</u>
39.	hear	<u>hören</u>	<u>heyra</u>	entendre	oír
40.	heart	<u>Herz</u>	<u>hjarta</u>	<u>coeur</u>	<u>corazón</u>
41.	horn	<u>Horn</u>	<u>horn</u>	<u>corne</u>	<u>cuerno</u>
42.	I	<u>ich</u>	<u>ek</u>	<u>je</u>	<u>yo</u>
43.	kill	töten	<u>kvelja</u>	tuer	matar
44.	knee	<u>Knie</u>	<u>kné</u>	<u>genou</u>	rodilla
45.	know	wissen	<u>kunna</u>	<u>connaître</u>	saber
46.	leaf	Blatt	<u>lauf</u>	feuille	hoja
47.	lie	<u>liegen</u>	<u>liggja</u>	être étendu	estar recostado
48.	liver	<u>Leber</u>	<u>lifr</u>	foie	hígado
49.	long	<u>lang</u>	<u>langr</u>	<u>long</u>	largo
50.	louse	<u>Laus</u>	<u>lūs</u>	pou	piojo

	<u>English</u>	<u>German</u>	Old <u>Icelandic</u>	<u>French</u>	<u>Spanish</u>
51.	man	<u>Mann</u>	<u>maðr</u>	homme	hombre
52.	many	viele	<u>margr</u>	beaucoup	muchos
53.	meat	Fleisch	<u>matr</u>	viande	carne
54.	moon	<u>Mond</u>	<u>máni</u>	lune	luna
55.	mountain	Berg	fjall	<u>montagne</u>	<u>montaña</u>
56.	mouth	<u>Mund</u>	<u>munnr</u>	bouche	boca
57.	name	<u>Name</u>	<u>nafn</u>	<u>nom</u>	<u>nombre</u>
58.	neck	Hals	<u>hnakki</u>	cou	pescuezo
59.	new	<u>neu</u>	<u>nýr</u>	<u>nouveau</u>	<u>nuevo</u>
60.	night	<u>Nacht</u>	<u>nött</u>	<u>nuit</u>	<u>noche</u>
61.	nose	<u>Nase</u>	<u>nʁs</u>	<u>nez</u>	<u>nariz</u>
62.	not	<u>nicht</u>	ekki	pas	<u>no</u>
63.	one	<u>eins</u>	<u>einn</u>	<u>un</u>	<u>uno</u>
64.	person	<u>Person</u>	<u>persóna</u>	<u>personne</u>	<u>persona</u>
65.	rain	<u>Regen</u>	<u>regn</u>	pluie	lluvia
66.	red	<u>rot</u>	<u>rauðr</u>	<u>rouge</u>	colorado
67.	road	Weg	vegr	route	camino
68.	root	<u>Wurzel</u>	<u>rót</u>	<u>racine</u>	<u>raíz</u>
69.	round	<u>rund</u>	sí-valr	<u>rond</u>	<u>redondo</u>
70.	sand	<u>Sand</u>	<u>sandr</u>	sable	arena
71.	say	<u>sagen</u>	<u>segja</u>	dire	decir
72.	see	<u>sehen</u>	<u>sjá</u>	voir	ver
73.	seed	<u>Saat</u>	<u>sáð</u>	<u>semence</u>	<u>semilla</u>
74.	sit	<u>sitzen</u>	<u>sitja</u>	<u>s'asseoir</u>	<u>sentarse</u>
75.	skin	Haut	<u>skinn</u>	peau	piel
76.	sleep	<u>schlafen</u>	sofa	dormir	dormir
77.	small	klein	<u>smár</u>	petit	pequeño
78.	smoke	Rauch	reykr	fumée	humo
79.	stand	<u>stehen</u>	<u>standa</u>	être debout	<u>estar</u> de pie
80.	star	<u>Stern</u>	<u>stjarna</u>	<u>étoile</u>	<u>estrella</u>
81.	stone	<u>Stein</u>	<u>steinn</u>	pierre	piedra
82.	sun	<u>Sonne</u>	<u>sunna</u>	<u>soleil</u>	<u>sol</u>

	<u>English</u>	<u>German</u>	Old <u>Icelandic</u>	<u>French</u>	<u>Spanish</u>
83.	swim	<u>schwimmen</u>	<u>svimma</u>	nager	nadar
84.	tail	Schwanz	<u>tagl</u>	queue	rabo
85.	that	<u>das</u>	<u>þat</u>	cela	aquel
86.	this	<u>dies</u>	<u>þessi</u>	ceci	este
87.	thou	<u>du</u>	<u>þú</u>	<u>tu</u>	<u>tu</u>
88.	tongue	<u>Zunge</u>	<u>tunga</u>	<u>langue</u>	<u>lengua</u>
89.	tooth	<u>Zahn</u>	<u>tǫnn</u>	<u>dent</u>	<u>diente</u>
90.	tree	Baum	<u>trē</u>	arbre	árbol
91.	two	<u>zwei</u>	<u>tveir</u>	<u>deux</u>	<u>dos</u>
92.	walk	laufen	ganga	marcher	caminar
93.	warm	<u>warm</u>	<u>varmr</u>	chaud	caliente
94.	water	<u>Wasser</u>	<u>vatn</u>	eau	agua
95.	we	<u>wir</u>	<u>vēr</u>	nous	nosotros
96.	what	<u>was</u>	<u>hvat</u>	<u>que</u>	<u>que</u>
97.	white	<u>weiss</u>	<u>hvītr</u>	blanc	blanco
98.	who	<u>wer</u>	<u>hverr</u>	<u>qui</u>	<u>quien</u>
99.	woman	Frau	kona	femme	mujer
100.	yellow	<u>gelb</u>	<u>gulr</u>	jaune	amarillo

In assembling lists to examine with the technique of glottochronology, it is most convenient to start with any well-tested list, like this one of a hundred words as used by Rea, IJAL 24.145-50, or the two-hundred-word list in the text.

First, one assembles materials. It is suggested that you assemble an additional list from any of the Indo-European languages, and determine the time depth with English and as many other lists given here as your leisure permits.

After the lists have been assembled, the cognates are determined.

Then the time depth is determined by using the formula:

$$t = \frac{\log c}{2 \log r}$$



(See R. B. Lees, "The Basis of Glottochronology," Lg. 29.113-27 (1953) for the development of this formula. Since natural logarithms are the most convenient to use, a table is given here; apart from the first line, which may be useful in computations based on a large number of words. the table corresponds to that given by Gudschinsky.)

N	.00	.01	.02	.03	.04	.05	.06	.07	.08	.09
						-2.996	-2.813	-2.659	-2.526	-2.408
.1	-2.303	-2.207	-2.120	-2.04	-1.966	-1.897	-1.833	-1.772	-1.715	-1.661
.2	-1.609	-1.561	-1.514	-1.47	-1.427	-1.386	-1.347	-1.309	-1.273	-1.238
.3	-1.204	-1.171	-1.139	-1.109	-1.079	-1.050	-1.022	-.994	-.968	-.942
.4	-.916	-.892	-.868	-.844	-.821	-.799	-.777	-.755	-.734	-.713
.5	-.693	-.673	-.654	-.635	-.616	-.598	-.580	-.562	-.545	-.528
.6	-.511	-.494	-.478	-.462	-.446	-.431	-.416	-.4	-.386	-.371
.7	-.357	-.342	-.329	-.315	-.301	-.288	-.274	-.261	-.248	-.236
.8	-.223	-.211	-.198	-.186	-.174	-.163	-.151	-.139	-.128	-.117
.9	-.105	-.094	-.083	-.073	-.062	-.051	-.041	-.03	-.02	-.01

We use this information to arrive at our results, as follows:

From the list given above, 75 words are cognate in English and German. Assuming a rate of retention of 80.5% per thousand years, we arrive at the following time depth:

$$t = \frac{\log 75\%}{2 \times \log 80.5\%} = \frac{.288}{2 \times .217} = 663 \text{ years}$$

When we use this list and the value of 80.5% for rate of retention per thousand years, we reach the conclusion that

English and German separated approximately 1299 A.D. This result is not in keeping with our historical information. It illustrates how languages in cultural contact may require a higher number for the rate. A longer list might also give more reliable results. These and other problems of glotto-chronology are now under investigation.

Determine on this pattern the time depth for English and Old Icelandic, English and French, English and Spanish.

## Historical Linguistics, Chapter 8

### Dialect Geography

1. The most up-to-date linguistic atlas dealing with the entire territory of one of the major languages is the Sprach- und Sachatlas Italiens und der Südschweiz by Karl Jaberg and Jakob Jud, Volumes I-VIII, Zofingen 1928-40; Index, Bern, 1960. See the reviews by Robert A. Hall, Jr., Lg. 18.282-87 (1942) and 38.76-79 (1962).

Using data from the atlas, Professor Hall has written an excellent interpretation of linguistic developments in the former Papal States, Lg. 19.125-40 (1943). It is useful to review his conclusions, noting the procedures which are followed in using dialect collections and in interpreting resultant findings.

The following lists give the forms found at various points of investigation in central Italy. The outline maps with numbered points indicate where the listed forms were elicited. In deriving conclusions from the data provided by workers in dialect geography one best plots selected features on a map, and draws isoglosses indicating their limits.

1.1. AIS map 104 deals with Italian bocca. Of interest here is the treatment of -kk-.

Determine the distribution of this feature and draw isoglosses to indicate the areas delimited.

	<u>bocca (#104)</u>	<u>stracciare (#204)</u>	<u>giocare (#741)</u>	<u>potare (#1315)</u>	<u>botte (#1325)</u>
189	a búka	u stratsá	zŭga; uzęga	puá; u púa	a búte.., karętelu < 500, a barí <sup>+</sup>
199	na bókka	è stratsáyo	dzogáę; i dzogá	podáę; i pódá	bóta, or barí <sup>+</sup>
520	bókka	il cęncáyo	góá; zóa <sup>+++</sup>	pót <sup>h</sup> á; pót <sup>h</sup> a	..bót <sup>tę</sup> , bārīle 50
530	la bók <sup>k</sup> a	şenşáyo	gókáę, *goáę; zóha(bęę) *góo l		..la bótte, il barīę
541	la bókka	ćencáyo	góhąę; zóha	pótąę	la bótte.., ibbarīę
542	la bókka	şencáyo	zohá; zóha	pótálle uíkę	..la bótte, barīle
550	la bók <sup>k</sup> a	ćencáyo	góhąę; zóha	pótá; pót <sup>h</sup> a	..la bótte, l barīę
551	la bók <sup>k</sup> a	ćencáyo	góhą; góha	póthá; póttha	..la bótte, il barīle, là barletta <sup>+</sup>
571	la bókka	ćencáyo	zohá; zóha	pótá	la bótte.., el barīle
581	la bók <sup>k</sup> <sup>α</sup>	αl cęncáyo	zoká; si zóka	pótá le uíte; pótol	: la bótte.., barīę
582	la b <sup>b</sup> ókka	ćencáyo	góká <sup>+++</sup>	pótá	: ..la bótte, ibbalire 50, un tertsinu 12-16, là barletta 8-9
590	la bókka	ćencáyo	zoká; zóka, góka	pótá	..la bótte.., or balire
630	la bókka	lo ştraćáro	gogá; góga	podá; pótá	..la bótte. el barīle 50-60 <sup>+</sup>
640	bókka	straćarólo	góká, gogá, góga	pótá	la bótte.., er barīle 60 męddzo b-30; kupélla 22 <sup>+</sup> , kwartarólo 15

	<u>bocca (#104)</u>	<u>stracciare (#204)</u>	<u>giocare (#741)</u>	<u>potare (#1315)</u>	<u>botte (#1325)</u>
652	a b <sub>o</sub> k <sup>kā</sup>	stràccárr <sub>o</sub> lo	góga; g <sub>o</sub> ga		bótte, baríle
662	a v <sub>o</sub> kkā	u straccárr <sub>o</sub> lu	ggóká; gg <sub>o</sub> ka	p <sub>o</sub> tá; p <sub>o</sub> ta	abbótte., u karat <sub>y</sub> éllu, u bbaríle
682	la v <sub>o</sub> kkā	y <sub>o</sub> šengárr <sub>o</sub>	gók <sub>w</sub> á; g <sub>o</sub> ka	putá; p <sub>u</sub> ta	la <sup>β</sup> ótte., y <sub>o</sub> bbaríle

	<u>bocca (#104)</u>	<u>stracciare (#204)</u>	<u>giocare (#741)</u>	<u>potare (#1315)</u>	<u>botte (#1325)</u>
436	la bókα	štrašĕr	žugĕr, žógα	pudĕr	la bótα., um barĕl
446	la bókε	αl šulfanĕr <sup>+</sup>	žugĕr, αl žúgε	pudĕr	la bót.,, αl barĕl
456	la báka	I. α <sup>?</sup> štrašaról, šùlfanĕr <sup>+</sup>	I. žugĕr; žúgα II. žugĕr, i žúgαn 6 I. ?		I. la bát.,, al barĕl
466	la bókα	ε štrašĕr; i-sĕr	žugĕr; žógα	pudĕr	la bót.,, εy barĭl
476	la bókα	ε štrasĕr	zugéα; zúga	a pōdéα	la bót.,, la bαrĭla 50 <sup>++</sup>
478	la bókα	ε štrašĕr; i-sĕr	žugé <sup>α</sup> ; u žúgα	a pudĕlα; u púdα	la bótα.,, ε barĭl,
490	*la bókka, bókα	ε štrasĕ <sup>y</sup> ; i-sĕy	zugē; o zúga		..bót, barĭl
526	la bókka	čenčáyo	gókāre; gókα	pōtāre	la vótte, ibbarile 50 vazéllō 25
528	la bókα	ε štračĕr	gúkĭ; ε gókα	pudĕla	..la bótα, na barĭla 40 <sup>++</sup>
535	bókka *labókk <sup>ā</sup>	šenčáyo, šenčayōlo	žokāre; žókα	pōtāre; e pōta	
536	la bókka	štračĕy	gókĕ; gókα	škapšĕ, škáp <sup>α</sup> šĕ; škapĕšša	la bōttα, barĭl
546	la bókka	lù štraččáro	..gókĕye; gókα	pōté	la bōtte.,, l barĭle
547	bók <sup>k</sup> a	lō štraččáro	góká; gókα	pōtá; pōta	la bōtte.,, barĭle
556	la bókka	lò straccĕro	gókĕ; gókα	pōté <sup>+</sup>	*la bōtte.,, αl barĭle
557	la vók <sup>k</sup> a	lu straccĕaru	gógá, ..yogá; yóga	pōdá; se pōda	la vótte, lu b <sup>b</sup> arĭle, *lu varĭle

	<u>bocca (#104)</u>	<u>stracciare (#204)</u>	<u>giocare (#741)</u>	<u>potare (#1315)</u>	<u>botte (#1325)</u>
566	la b <sup>ok</sup> <sub>k</sub> a	lò stracáyo	gógāne, g <sup>o</sup> ga	p <sup>o</sup> tá	..la b <sup>o</sup> tte, el b <sup>ar</sup> ile
567	la v <sup>o</sup> kka	lu straccáru	yogá; y <sup>o</sup> ga	p <sup>o</sup> dá; p <sup>o</sup> da	..la v <sup>o</sup> tte, lu varile
575	la v <sup>o</sup> ka	lu straccáy <sup>o</sup>	gógāre, ..yogá; y <sup>o</sup> ga	p <sup>o</sup> tá, p <sup>o</sup> tá	la v <sup>o</sup> tte., lu varile
576	la b <sup>b</sup> ókka, la ókka(v)	ru štračáyyu	yogá; y <sup>o</sup> ka	p <sup>o</sup> dá	:la b <sup>b</sup> ótte., rùbbarile
577	la v <sup>o</sup> k <sup>k</sup> a	lu štračča	yogá; y <sup>o</sup> ga	p <sup>o</sup> ta; p <sup>o</sup> ta	a v <sup>o</sup> tte., lu varri
578	la v <sup>o</sup> kα	lu cingár <sup>e</sup>	yiká; y <sup>o</sup> ka	p <sup>o</sup> tá; p <sup>o</sup> ta	la v <sup>o</sup> tte., lu varriile
608	la vák <sup>k</sup>	lu cingér	ye <sup>k</sup> <sub>k</sub> ; y <sup>o</sup> k <sup>a</sup>	poté; pátə(bb <sup>o</sup> n <sup>a</sup> )	la vát <sup>t</sup> , lukàrrαtéll <sup>a</sup> < 500, lu var <sup>a</sup>
616	la b <sup>b</sup> ókka, la v <sup>o</sup> ka	stracarólu	gógá; g <sup>o</sup> ga	p <sup>o</sup> dá	la b <sup>o</sup> tta., lub <sup>b</sup> arile
618	la v <sup>o</sup> kk	lu cingèr	á yūké; y <sup>o</sup> kα	p <sup>o</sup> té; pát <sup>e</sup> (bb <sup>o</sup> n <sup>u</sup> kwéll)	lā v <sup>o</sup> tta., lú varil
637	la vókka	yu cingár	y <sup>e</sup> ká; y <sup>o</sup> ga (b <sup>o</sup> n)	p <sup>o</sup> tá; p <sup>o</sup> tα	..la v <sup>o</sup> tt <sup>a</sup> , yu b <sup>b</sup> aril

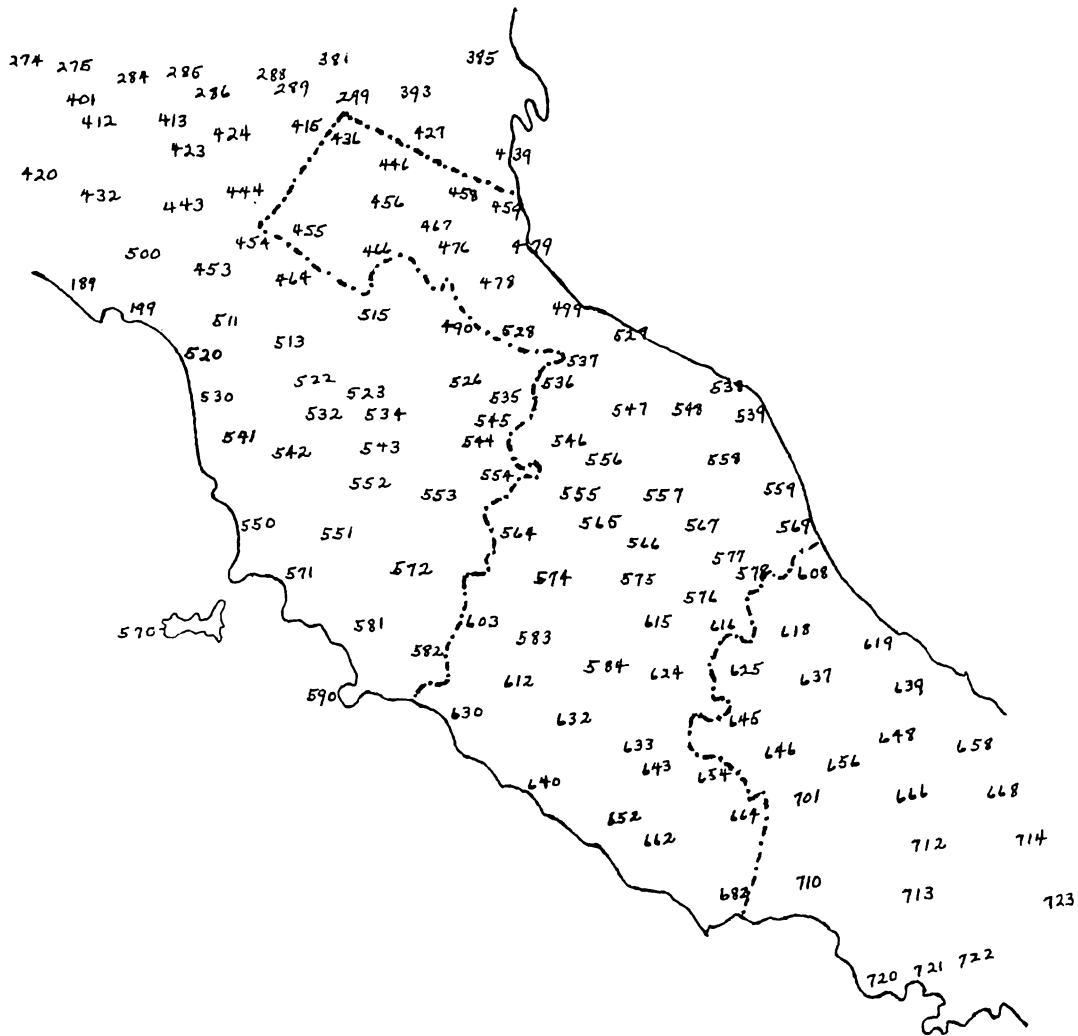
	<u>bocca (#104)</u>	<u>stracciario (#204)</u>	<u>giocare (#741)</u>	<u>potare (#1315)</u>	<u>botte (#1325)</u>
443	búkα	α1 štrašār	žügār; α1 žōga	pudār	la bótα., baríl
444	la bókα <sup>+</sup>	α1 štrašār	zugār; zōga	pudār	..bótα., α1 barél
453	la búk <sup>α</sup>	α štrašāyy, i štraćāyy	žügār; α1 žōgα <sup>+++</sup>	pudār <sup>e</sup>	la bútα., e baríl <sup>e+</sup>
455	bókα	α štrašēr	zugē; zōgα	pudē	la bót.., na baríl
458	la bókα	e štrašēr	žugéα; žúgα	apudéα	la bótα., e baríl
464	la bókα	e štrašārčel, štraćārčel	gügá; gúgα	pudá; αs púdα..	la bútα., e baríl
500	búkα	α1 štrašār	žügār; u zōgl	pudār	la búta., m barí 33 <sup>+</sup>
511	bókα	èl cēncāyyo	žoká; gókα	potá	..la bótē, èl baríle 40
513	bók <sup>kα</sup>	il cēncayólo	góhāre, gókhāre, góha	pot <sup>h</sup> āre	la bótte., il baríle
515	bókka, la bók <sup>v</sup> -	cēncayólo	góhāre	pothāre	la bótte., i bbaríle
522	bókka	cēncāyo	góhāre; lúyžóha	pot <sup>h</sup> āre	..la bótte, ibbaríle 50 <sup>+</sup>
7 523	I. la bókka		I. góhāre; lúyžóha II. góhāre; góha		I. ...bótte., ibbaríle II. la bótte., baríle
532	la bókka	cēncāyo	góhāre; žóha	pothāre; pótha	la bótte., il baríle balíre
534	la bókka	cēncayólo	a góhāre; góha <sup>+++</sup>	pot <sup>h</sup> āre; pótha	..la bótte, baríle <sup>+</sup>
537	la bókα		góké <sup>α</sup> ; gókα		
543	la bókka	ì ttrekkōne <sup>+</sup>	góhāre; góha	pothāre	la bótte., baríle
544	la bókka	:rìgatyéri <sup>+</sup>	sá gókāre, ~ žo-; se žoka		..la bótte, èl baríle
545	la bókka	cēncēo	žokēre; žóka	potēre	la bót <sup>i</sup> ti., baríle
548	la bók <sup>kā</sup>	lò straccāru	žogá; žoga <sup>+</sup>	podá	..la bótte, α1 béríle <sup>α</sup>
552	la bókka	cēncayólo	góhāre; góha		la bótte, α1 baríle, *balíre



	<u>bocca (#104)</u>	<u>stracciare (#204)</u>	<u>giocare (#741)</u>	<u>potare (#1315)</u>	<u>botte (#1325)</u>
553	la b <sup>o</sup> kk <sup>a</sup>	š <sup>en</sup> ćáyo	žokáe <sup>+</sup> ; ž <sup>o</sup> ka	p <sup>o</sup> tá	..la b <sup>o</sup> tte, baríle
554	la b <sup>o</sup> kk <sup>a</sup>	el <sup>en</sup> ćé <sup>o</sup>	žoké <sup>re</sup> ; žú <sup>o</sup> ka	p <sup>o</sup> té <sup>re</sup>	la b <sup>o</sup> tte., el baríle
555	b <sup>o</sup> kk <sup>a</sup>	lò strac <sup>en</sup> ćé <sup>o</sup> , p <sup>o</sup> llay <sup>o</sup> lo	g <sup>o</sup> ká; g <sup>o</sup> ka	p <sup>o</sup> té	...la b <sup>o</sup> tte, baríle
558	a v <sup>o</sup> k <sup>k</sup> a	u <sup>en</sup> ćá	ž <sup>o</sup> ká; se š <sup>o</sup> ga	p <sup>o</sup> tá	a v <sup>o</sup> tte., ù varrí
564	la b <sup>o</sup> kk <sup>a</sup>	al br <sup>en</sup> ćáyo <sup>+</sup>	g <sup>o</sup> káe, -ká; gú <sup>o</sup> ka	à p <sup>o</sup> tá, p <sup>o</sup> táe	la b <sup>o</sup> tte, l <sup>o</sup> baríle
565	b <sup>o</sup> kk <sup>a</sup>	lò strac <sup>en</sup> ćáro	g <sup>o</sup> ká; g <sup>o</sup> ka		..b <sup>o</sup> tte, l <sup>o</sup> baríle
572	b <sup>o</sup> kk <sup>a</sup>	?	ž <sup>o</sup> ká; ž <sup>o</sup> ka	p <sup>o</sup> tá	..b <sup>o</sup> tte., balíre
574	la b <sup>o</sup> kk <sup>a</sup>	strac <sup>en</sup> ćáro	g <sup>o</sup> ká; g <sup>o</sup> k <sup>a</sup>	p <sup>o</sup> tá la v <sup>i</sup> ña	la b <sup>o</sup> tte., baríle
583	la b <sup>o</sup> k <sup>k</sup> a	strac <sup>en</sup> ćáro	g <sup>o</sup> gá; g <sup>o</sup> ka	p <sup>o</sup> tá; p <sup>o</sup> ta	la b <sup>o</sup> tt <sup>e</sup> ., baríle
584	la b <sup>o</sup> ka	lò štrac <sup>en</sup> ćáro <sup>+</sup>	y <sup>o</sup> gáne; y <sup>o</sup> ga, y <sup>o</sup> ga	p <sup>o</sup> dá; p <sup>o</sup> da	la b <sup>o</sup> tte., el baríle
612	la bb <sup>o</sup> kk <sup>a</sup>		g <sup>o</sup> ká; g <sup>o</sup> ka	p <sup>o</sup> tá	la b <sup>o</sup> tte., i b <sup>o</sup> baríle 50 <sup>+</sup> , la barl <sup>o</sup> tt <sup>sa</sup> 30 <sup>+</sup>
615	la <sup>o</sup> kk <sup>a</sup>	ru strac <sup>en</sup> ćáru	g <sup>o</sup> gá; g <sup>o</sup> ga		..la b <sup>o</sup> tt <sup>e</sup> , ru b <sup>o</sup> balíre 50
624	la b <sup>o</sup> ka	lu strac <sup>en</sup> ćar <sup>o</sup> lu	g <sup>o</sup> gá, corr. y <sup>o</sup> gá; p <sup>o</sup> dá; se p <sup>o</sup> da g <sup>o</sup> ga, corr. g <sup>o</sup> -		la bb <sup>o</sup> tte., lu b <sup>o</sup> baríle
625	la <sup>o</sup> ka	yu <sup>en</sup> ćáru	g <sup>o</sup> gá, corr. y <sup>o</sup> gá; p <sup>o</sup> dá g <sup>o</sup> ga, corr. y <sup>o</sup> ga		..b <sup>o</sup> tte, yu b <sup>o</sup> baríle
632	la b <sup>o</sup> k <sup>a</sup>	o strac <sup>en</sup> ćáro	g <sup>o</sup> ká; g <sup>o</sup> ka	p <sup>o</sup> ta	..a b <sup>o</sup> tt <sup>e</sup> , um baríle 50
633	a <sup>o</sup> kk <sup>a</sup>	ù strac <sup>en</sup> ćáru	à g <sup>o</sup> gá; g <sup>o</sup> ga, corr. g <sup>o</sup> ga	à p <sup>o</sup> dá	..b <sup>o</sup> tte, u b <sup>o</sup> baríle
643	a v <sup>o</sup> kk <sup>a</sup>	u štrac <sup>en</sup> ćar <sup>o</sup> lu	g <sup>o</sup> gá; g <sup>o</sup> ga	à p <sup>o</sup> dá; p <sup>o</sup> da	a v <sup>o</sup> tte., v <sup>o</sup> b <sup>o</sup> baríle
664	la v <sup>o</sup> kk <sup>a</sup>	lu š <sup>in</sup> ćáru	y <sup>o</sup> ká; y <sup>o</sup> ka	p <sup>o</sup> tá; p <sup>o</sup> ta	la v <sup>o</sup> tte., lu barílu la k <sup>o</sup> p <sup>o</sup> ella

	<u>bocca (#104)</u>	<u>stracciario (#204)</u>	<u>giocare (#741)</u>	<u>potare (#1315)</u>	<u>botte (#1325)</u>
439	la bókα	istrasĕr	žugĕr; žúαgα	pudĕr il ít	la bótα., αl barĕl
459	la bókα		zugĕα; zúga		..la bótα, ĕ barĭl
479	la bókα	ĕ štrasĕr	zugía; ĕ zúgα	pudĕ	..la bótα, la barĭlα, ĕ barĭl
499	la bókα	u štraćĕr	gugĕ; gúgα <sup>uu</sup>	pudĕ	..la bótα, ĕ barĭl ,
529	la bók <sup>k</sup> α	ĕ štraćár	gókĕ; gókα, gókα(bĕŋ)	putá; póta	..la bót, ĕl barĭl
538	la bók <sup>ā</sup>	straćár	guga; gōga	putá; póta	:..la bót, barĭl
539	lá bókα	straćár <sup>o</sup>	..žugá; kwél <sup>u</sup> , žōga, ~ gōga <sup>a</sup>		..la bót <sup>α</sup> , um barĭl <sup>e</sup>
559	la vókα	lu štraćá	yóká; yókα	pótá; póta	la vótte.., lú varrí
569	la vákkα	lù cínćárα	yuká; yókα	putá; puta (bbĕ)	la vállα.., lu varré
608	la vák <sup>k</sup>	lu cínćĕr	yekĕ; yók <sup>a</sup>	pótĕ; pātə (bbĕn <sup>a</sup> )	la vát <sup>a</sup> , lukərrətél <sup>a</sup> < 500, lu varĕl
619	la vókα	lu cínćár ; li-gĭrə	yuka; yókα	putá	..na vótte, lú varĭlə

OPPOSITE - Map of Central Italy, with the former Papal States indicated (for further work-copies see end of text).



1.2. AIS map 741 deals with Italian giocare. Of interest here is the treatment of -k-. Follow the procedure indicated under 1.1.

1.3. AIS map 1325 deals with Italian botte, with the feature of interest here -tt-; AIS map 1315 deals with Italian potare, with the feature of interest here -t-.

Discuss the resultant dialect areas which are determined by these phonological characteristics, indicating focal and transition areas.

1.4. Study of vocabulary supports the conclusions drawn from phonological developments. Use the data from AIS map 204, indicating the occurrences of stracciario and comparing the area in which it is found with those determined above.

1.5. On the basis of the data dealt with here, and similar data, Professor Hall concludes that North Italian features were introduced into the former Papal States by borrowing. Discuss his conclusion, indicating which of the items given above best supports his conclusion.

2. In his review of Volume II of the Linguistic Atlas of New England, Lg. 18.45-51 (1942), Robert J. Menner states, p. 47, that the similarities and differences between the American and European atlases may be determined by examining two words in detail. After examining johnny-cake, he examines stout for 'intolerance of polysemy' and 'a kind of evidence not easily paralleled in the European maps.'

He discusses his conclusions as follows:

"Stout is familiar in every section of New England both in the sense of fat and of strong, and the editorial comment tells us that the word is used in both senses by 141 informants. But many of these cases include suggested responses, marked by s. on the maps, over half of them occurring in the territory of Lowman, who suggested responses more often than the other investigators; such responses are not very significant, since the word is naturally known in both the archaic and the new sense in country districts. Charting of the use of stout reveals the remarkable fact that although stout in each sense is very common as the first response of informants, only twelve out of over 400 gave the word as their first response for both meanings. Except for these cases, if the request for an adjective describing a person weighing more than he should called forth stout, that informant thought first of strong, sturdy, powerful, brawny, husky, or robust for 'a person with well-developed muscles capable of lifting heavy objects.' Conversely, those who first replied stout for 'strong' thought first of fleshy, pussy (= pursy), portly, paunchy, etc., as a synonym for 'fat'. Disregarding the suggested responses, one finds that in more than a hundred cases, the informant who mentions stout in one sense, fails to think of it in the other, in spite of the fact that most informants give several synonyms. The evidence points

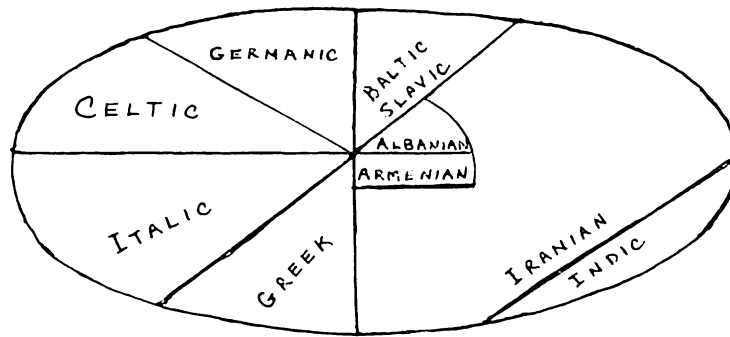
clearly to a tendency in INDIVIDUALS to avoid the use of one sense of the word and substitute other words, even though there is no geographical delimitation of the two meanings."

Discuss the importance of a well-trained investigator in collecting dialect material, as indicated in the example dealt with here. Discuss also the shortcomings of collecting dialect material by mail.

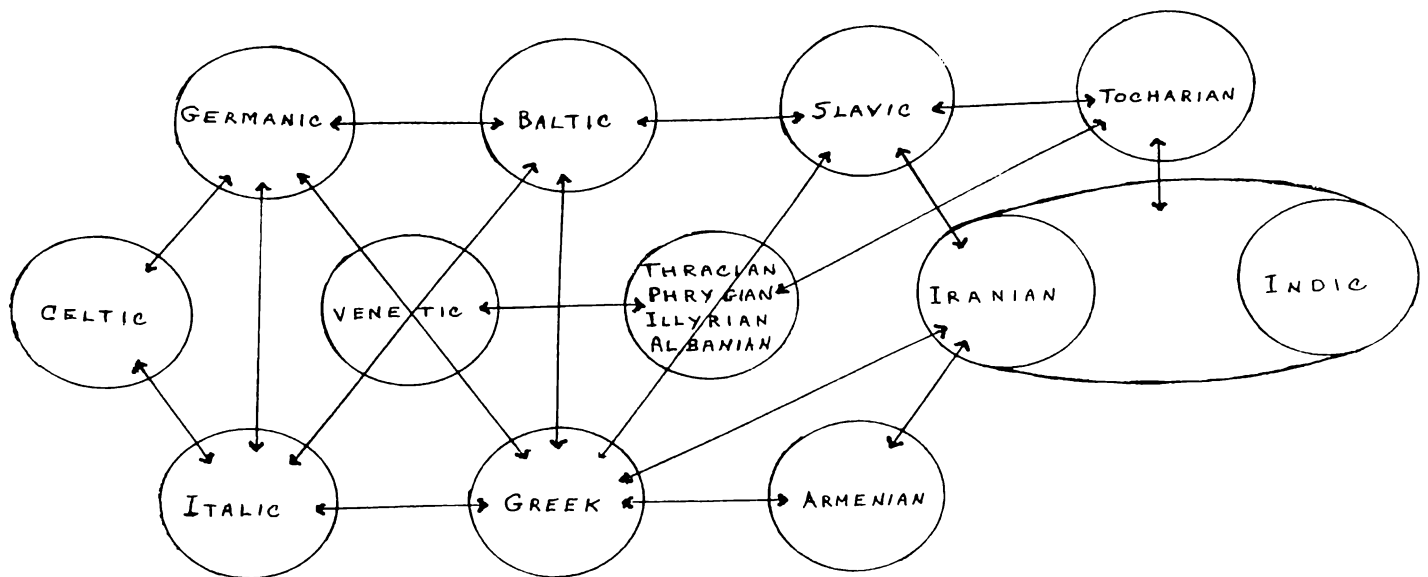
Earlier in the paragraph quoted in part here Menner had said: "An atlas can show, as a dictionary cannot, how far two quite different meanings of the same word co-exist in any given dialect." How does 'stout' support this statement?

Models of Language

1.1. After the models of Schleicher and Schmidt, reproduced in Chapter 9, other models of the original distribution of the Indo-European dialects were produced. That of A. Meillet, subsequently changed in part, *Les dialectes indo-européens* p. 134 (Paris, 1922), is modified from the model of Schmidt.



1.2. Somewhat later, G. Bonfante, *I dialetti indoeuropei*, *Annali del R. Istituto Orientale di Napoli* 4.69-185 (1931) produced a model on a somewhat different format, p. 174.



Discuss the advantages and disadvantages of these models in suggesting that the various dialects within the areas indicated are distinct. Assuming that some Proto-Indo-European k became sibilants, cf. Historical Linguistics 8.9, in Baltic, Slavic, Iranian, Indic, Armenian, Albanian, are these models convenient for indicating the innovation? Do they permit us to plot the verbal endings in r as retentions in Celtic, Iranian, Indic?

1.3. A somewhat different model, concentrating on the Western languages--actually on their speakers--was proposed by V. Pisani in 1933, *Studi sulla preistoria delle lingue indo-europee* (Memorie della R. Accademia Nazionale dei Lincei, Ser. VI, Vol. IV, Fasc. VI, pp. 545-653 (Rome, 1953)).

Irish Celtic Gallo-Breton	G e r m a n i c		Balto-Slavic	Indo-Iranian
Ligurian	Latin- Sicilian	Illyrian	Thraco-Phrygian	Tocharian
		Oско- Umbrian	Greek	
			Hittite	

This model was criticized because it suggested language boundaries over which changes admittedly passed. Pisani subsequently dealt with this problem and maintained his view that changes spread out over distinct language boundaries. Comment on the usefulness and flexibility of Pisani's model in contrast with the others proposed.



1.4. The problem of the interrelationships of the various Indo-European dialects was last fully discussed by W. Porzig, *Die Gliederung des indo-germanischen Sprachgebiets* (Heidelberg, 1954), who examines these models, data on which they were based and data subsequently adduced. Without dealing with the specific problems of the early interrelationships of the Indo-European dialects, comment on the various models for the following features.

1.4.1. In Indo-Iranian, Greek, Slavic and Phrygian, a form of PIE /yos/ came to be used as relative pronoun; from material in other dialects we view this as an innovation. Do the various models enable us to account for it readily?

1.4.2. In Italic, Germanic, Baltic and Slavic, an innovation was introduced for the word 'beard', cf. Lat. barba, Russ. borodá, etc. Can you account for this with the various models?

1.4.3. The Proto-Indo-European word for 'neck' had a root men-, which survives in mane. In Latin and Germanic it was replaced by the word surviving in German Hals. In Indo-Iranian, Greek, Baltic and Slavic it was replaced by a word attested in Gk. dérē. Discuss the usefulness of the various models in reflecting the conditions which made these innovations possible.

As indicated in Historical Linguistics, Chapter 9, a completely different type of model is commonly devised in an attempt to depict the relationships of entities of a language to one another. These models reflect in some way the articulatory system of a language.

It is often suggested that there is a tendency towards balance in language, and that models based on articulation permit us to understand changes in linguistic systems. The pre-Old English and the Middle English consonant systems may provide material which illustrates such views.

#### pre-Old English

p   t   k  
 b   d   g  
 f   θ   s   x   h  
  
 m   n  
 w   l   r   y

#### Middle English

p   t   č   k  
 b   d   ĵ   g  
 f   θ   s   š   x   h  
 v   ċ   z  
 m   n  
 w   l   r   y

In pre-Old English, the obstruents consisted of three members, voiceless and voiced stops for each point of articulation, and fricatives, which though single phonemes had voiceless and voiced allophones. In Middle English there was a partial balance of voiceless and voiced phonemes in both stops and fricatives; voiced fricative phonemes arose when medial voiced fricatives came to be final and contrasted with final voiceless fricatives as in five fife. Use the model to indicate how voiced fricatives

may have developed to balance the phonemic structure. Discuss the imbalance in Middle English, noting that there is no voiced counterpart of /š/ until after Middle English; /x/ had been lost in many environments, and eventually was completely lost; /h/ was maintained, but does not agree with the obstruents in being paired with a voiced counterpart. /h/ now is often listed with the resonants; discuss its position with them.

Discuss also the development of NE /ŋ/ on the basis of such a model. Would we expect its development as a separate phoneme on the basis of the balance in other parts of the system? Would we expect the loss of ME /x/ if the model reflected accurately the structure of the language? It may be clear that in such models much is omitted. We have for example no information in this one that [ŋ] was an allophone of /n/ in pre-Old English and Middle English, or even that the fricatives had voiced allophones in Old English. Further, that there were geminate consonants in Old English. How might you amplify the pre-Old English model to suggest the possibility of changes that occurred later?

3. The forms we reconstruct in Proto-languages reflect current methodology as well as the state of our information. At the early part of the nineteenth century the third singular present indicative of the Proto-Indo-European verb

corresponding to NE is was posited as asti. The first vowel was taken from Sanskrit, for at the time it was thought that Sanskrit was a more reliable witness for Proto-Indo-European than were all of the other Indo-European languages.

After it became clear that PIE e a o fell together in Sanskrit a, the form was reconstructed esti.

After the development of the laryngeal theory, the form is reconstructed with initial glottal stop, ʔesti.

It has been demonstrated that [i] was an allophone of Proto-Indo-European /y/. Following this analysis we reconstruct the form /ʔesty/ [esti].

Handbooks of Proto-Indo-European remain in use for decades, largely for economic reasons. Accordingly students of historical linguistics must be prepared to meet the variants (1) esti, (2) /esty/, (3) /ʔesty/. If you found a given one of these forms in a handbook, what might be your inferences about the methodological views of the author?

## Historical Linguistics, Chapter 10

### Phonological Change

In dealing with phonological change, one must take into account the entire system of the language involved. Because sound systems are complex, the sound systems used for illustrations must be restricted in number and should be as well known as possible. For this reason, the problems selected here are taken from English.

We may set up the phonological system of the West Saxon dialect of Old English as follows, about 900 A.D. The Middle English phonological system is that found in literary texts, e.g. Chaucer. Although there were numerous Old English dialects and although the chief source of contemporary English is a different dialect, there are numerous Old English etyma which are equivalent to those in the area which is more directly the source of New English. The series of data presented below illustrate some of the changes in English between 900 A.D. and today; the aim is not to suggest a brief historical phonology of English but to provide data which may be used to understand various phonological changes within their system. Allophones are given only where the orthography may not suggest them.

<u>Old English</u>				<u>Middle English</u>			
p	t	č	k	p	t	č	k
b	d	ǰ	g	b	d	ǰ	g
f[f,v]	θ[θ,ð]	s[s,z]	š x h	f	θ	s š x	h
				v	ð	z	
m	n[n,ŋ]			m	n[n,r]		
w	l r y			w	l r y		
i	u	ī	ū	i	u	ī	ū
e	o	ē	ō	e	o	ē	ō ei eu oi ou
æ	a	ǣ	ā	a		ǣ	ā ai au

(The second element of all Old English diphthongs is a central offglide.)

1. The following are examples of the development of Old English long vowels to their modern reflexes. They indicate the modifications which took place in the Great English Vowel Shift.

<u>New English</u>	<u>Old English</u>	<u>New English</u>	<u>Old English</u>
tide	tīd 'time'	house	hūs
ice	īs	brown	brūn
five	fīf	mouth	mūþ
he	hē	doom	dōm
deem	dēman	roost	hrōst
meed	mēd	sooth	sōþ
eel	ǣl	home	hām
even(ing)	ǣfen	oak	āc
leech	lǣce	rode	rād

- a. Formulate the changes on the pattern:

NE /ay/ < OE /ī/

OE /ī/ > NE /ay/

- b. Supply the missing vowels in the Old English and contemporary forms given below:

h__	hū	idle	_del
stone	st__n	m__r	mōr
d__d	dæd	st__ple	stēpel

- c. Assuming that you have enough data above to handle the relevant changes between Old and New English, supply the New English replacements for the following Old English forms:

cū	sōn	mēd	wīn	gōs	tā
mē	bān	sæd	þū	čīld	dæl

2. In Old English, /f θ s/ had voiceless allophones finally, when geminated, and in other environments, voiced medially between vowels. In paradigms there was accordingly a subphonemic alternation, as in:

Inf.	drīfan [dri:van]	'drive'	Pret. 1/3 st.	drāf [dra:f]
	wriþan [wri:ðan]	'writhe'		wrāþ [wra:þ]
	rīsan [ri:zan]	'rise'		rās [ra:s]

After the Old English period, contrasts arose when long consonants were shortened, and voiceless consonants came to contrast with voiced, as in cyssan 'kiss'. Further contrasts arose when words were borrowed from French.

Discuss the effect of such mergers on the consonant system, especially the resultant split of the Old English fricatives.

Compare the two obstruent systems, stops and fricatives--that of Old English and that of the post-Old English period--noting the distinctive features of the obstruents and indicating which of the two systems is in better balance.

3. After the Old English period, diphthongs arose in various ways, especially from the vocalization of consonants, but also from borrowings, e.g. /oi/:

<u>Old English</u>	<u>Middle English</u>	<u>Old English</u>	<u>Middle English</u>
	/ei/		/eu/
weg	wei 'way'	brēowan	brewen 'brew'
legde	leide 'laid'	trēowe	trewe 'true'
	/ai/		/au/
dæg	dæi 'day'	sagu	sawe 'saw'
mæġden	maiden 'maiden'	hafoc	hawk 'hawk'
	/oi/		/ou/
(Fr. joie)	joie 'joy'	boga	bowe 'bow'
(Fr. point)	point 'point'	(ge)flogan	flowen 'flown'

Discuss the shift in place of articulation from [g] to the second element of a diphthong with front articulation, as in ME wei, maiden; from [v] to the second element of a diphthong with back articulation, as in OE hafoc. Account also for the shift of [g] to the second



element of a back diphthong after the back vowels  
OE /a o/.

4. A shift in place of articulation is illustrated by  
OE sc in the neighborhood of front vowels, as in the  
Old English forms:

fisc	'fish'	vs.	tusc	'tusk, tooth'
disc	'dish'		frosc	'frog, dial. frosk'
æsc	'ash'		āscap	'asks'

Comparing the shifts in place of articulation in  
OE čēosan 'choose', pič 'pitch', outline the probable  
course of development in words like fish.

5. A shift in manner of articulation is illustrated by pre-  
OE k g > č ĵ, as in the Old English forms:

cīld	'child'	ecg	'edge'
ynce	'inch'	brycg	'bridge'

In the process of the shift, these segments fell  
together with [tj dj] as in OE orčeard 'orchard' < ortčeard,  
ort-geard 'root-yard'. Account for the merger, describing  
the phonetic processes involved.

6. A shift involving the position of the velum is illustrated  
by a pre-Old English shift in which nasals maintained in  
contemporary German were lost, e.g.

OE fīf	'five'	cf.	NHG fūnf (Goth. fimf)
OE tōþ	'tooth'		NHG Zahn
OE mūþ	'mouth'		NHG Mund
OE dūst	'dust'		NHG Dunst

Upon the loss of the nasals before spirants, the preceding vowels underwent compensatory lengthening. Other such changes took place in the pre-Old English forms of the following; on the basis of the contemporary English and the German forms, construct the Old English vocalism of the following:

NE lithe	OE l___þe	NHG linde
NE goose	OE g___s	NHG Gans
NE (un)couth	OE c___þ	NHG kund 'known'

7. In Old English, metathesis especially of r occurred in relatively many forms, such as the following:

hors	'horse'	cf.	NE wal-rus '(whale) horse'
breht	'bright'		OE beorht
wæsp			OE wæps 'wasp'
hæpse	'hasp'		OE hæspe

Others in which it occurred but was not maintained are:

cerse	'cress'
forst	'frost'

This metathesis was particularly common when r preceded a short vowel which was followed by s or n, less common when d followed the vowel. Give the metathesized forms of the following:

OE bruna 'stream'  
frist 'period of time'  
bridas 'birds'

Discuss metathesis as a problem of consonant clustering. Can any inferences be drawn from its occurrences about permissible or favored consonant clusters? If so, state them for Old English.

### Morphological Change

In the morphological system of Old English, two large groups of inflected words were distinguished: substantives and verbs. In addition there were uninflected words, which may be classified by their syntactic uses. Substantives were inflected for case, number, and in part for gender. There were three subgroups, distinguished by utilization of the gender category: Personal pronouns were not inflected for gender; even the forms of the third person anaphoric pronoun are frozen. Nouns were restricted to one gender. Adjectives could be inflected in more than one gender.

Verbs were inflected for tense, mood, number and in part for person. There was no inflection for person in the plural.

The history of inflection in English indicates a gradual reduction in the categories and forms differentiated. The reduction of verbal inflection is particularly instructive in study of morphological change in language; it will be presented here in its broad outlines.

In Old English, the two large categories of verbs, weak (with tense marked by a suffix) and strong (with tense marked by internal change) had various classes.

1. Three classes of weak verbs were distinguished by differing stem vowels, e.g.

	<u>Infinitive</u>	<u>Preterite Sg.</u>	<u>Preterite Participle</u>	
I.	nerian	nerede	nered	'save'
II.	lōcian	lōcode	lōcod	'look'
III.	libban	lifde	gelifd	'live'

1.1. In early Middle English the vowels of weakly stressed syllables fell together, so that there was no distinction between the endings of nerede, lōcede; nered, lōced. Assuming that these are representative forms of the two verb classes, indicate the effect of this phonological change on the Middle English verb system.

1.2. In the infinitive, the endings fell together, so that the three verbs were: nerē(n), lōke(n), live(n). In Old English, verbs of the first weak class had no stem vowel in the preterite if the stem was long, e.g.

dēman	dēmde	dēmed	'deem'
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Because in Middle English there was no longer any distinction in the infinitive, such verbs were now classed with live(n), livde rather than with nerē(n), nerede, and two classes may be set up:

I. Those with no stem vowel in the preterite, e.g.

live(n)	livde
dēme(n)	dēmde

II. Those with a stem vowel in the preterite, e.g.

nerē(n)	nered
lōke(n)	lōked

There was no phonological basis for the classification.

In some Middle English texts, preterite forms like dēmed are attested. How do you account for them? In giving the explanation, set up the forms as follows:

$$\frac{\text{nere(n)}}{\text{nered}} = \frac{\text{lōke(n)}}{\text{lōked}} = \frac{\text{dēme(n)}}{\text{x}}$$

Conversely, forms like lived are attested; account for them.

Given a form like Middle English luved 'loved', can you indicate the class to which it belonged?

1.3. A smaller set of preterites has two unstressed vowels, e.g. lufede 'loved'. How do you account for them?

1.4. In contemporary English, there are two past forms of dream: dreamed [driymd] and dreamt [dremt]. How do you account for them?

1.5. There were earlier weak verb forms with shift of vowel between the infinitive and the preterite/preterite plural stem. In class I verbs with long stem, -i- was lost in the preterite in pre-Old English, and accordingly there was vowel modification in the present but not in the preterite forms, e.g.

tācean	tāhte	getāht	'teach'
ðencean	ðōhte	geðōht	'think'

(an before i > en; an before h > āh > ōh)

How do verbs of this pattern increase the possibility of weak verbs with differing stem vowels in the infinitive and preterite, like dream dreamt?

1.6. Discuss the role of sound change in the reduction of the three Old English weak verb classes to one of contemporary English, using only the forms cited here. Discuss the role of analogical change.

2. There were seven classes of strong verbs; four forms must be given for each verb, for in all verbs except those of classes VI and VII the preterite singular was distinguished from the plural by internal vocalic differences, e.g.

	<u>Infinitive</u>	<u>Preterite Singular</u>	<u>Preterite Plural</u>	<u>Preterite Participle</u>	
I.	bītan	bāt	biton	biten	'bite'
II.	clēofan	clēaf	clufon	clofen	'cleave'
III.	bindan	band	bundon	bunden	'bind'
IV.	beran	bær	bæron	boren	'bear'
V.	biddan	bæd	bædon	beden	'bid, pray'
VI.	sceacan	sc(e)ōc	sc(e)ōcan	sceacen	'shake'
VII.	feallen	fēoll	fēollon	feallen	'fall'

(The initial consonant of sceacan was OE /ʃ/, though spelled sc; the following e in the preterite was often used to indicate this pronunciation.)

2.1. In Old English, weak verbs were more numerous than were strong verbs. Moreover, two classes of strong verbs, VI and VII, failed to distinguish between the preterite singular and the preterite plural. Indicate the potential effect of analogical leveling on the system.

2.2. In noting the reduction of the strong verb system, it is useful for some verbs and classes not only to give

the contemporary forms, but also the forms which might have developed from the Old English forms if sound changes had yielded the modern forms. To assist in determining the potential contemporary forms, additional verbs are given which indicate some of the possible developments of the Old English forms. For other verbs, Middle English forms will be given, as for class II.

I.	bītan	bāt	biton	biten	'bite'
Modern English forms	_____	_____	_____	_____	
Potential forms		*_____			
cf.	rīdan	rād	ridon	riden	'ride'
Modern English forms	_____	_____	_____	_____	
Potential forms			*_____		
II.	clēofan	clēaf	clufon	clofen	'cleave'
Modern English forms (archaic)		_____	_____	_____	_____
cf.	flēogan	flēah	flugon	flogen	'fly'
Note: ME flīen, Inf. is based on OE 3d sg. flīehþ					
Modern English forms		fleu		flowen	
	_____	_____	_____	_____	
III.	bindan	band	bundon	bunden	'bind'
Modern English forms	_____	_____	_____	_____	
Potential forms		*_____			
cf.	singan	sang	sungon	sungen	'sing'
Modern English forms	_____	_____	_____	_____	
Potential forms			*_____		



IV.	beran	bær	bæron	boren	'bear'
Modern English forms	_____	_____	_____	_____	
Potential forms	_____	* _____	* _____	_____	
cf.	brecan	bræc	bræcon	brocen	'break'
Modern English forms, King James	break brake	brake	brake	broken	
Modern English forms, contemporary	_____	_____	_____	_____	
V.	biddan	bæd	bædon	beden	'bid'
Modern English forms, Shakespeare	bid	bade	bade	bidden	
Modern English forms, contemporary	_____	_____	_____	_____	
cf.	etan	æt	æton	eten	'eat'
Modern English forms	_____	_____	_____	_____	
VI.	sceacen	sc(e)ōc	sc(e)ōcan	sceacen	'shake'
Modern English forms	_____	_____	_____	_____	
VII.	feallan	fēoll	fēollon	feallen	'fall'
Modern English forms	_____	_____	_____	_____	

2.3. Note the verbs in classes I to V in which:  
 the preterite is based on the Old English preterite singular;  
 the preterite is based on the Old English preterite plural.

Can you account for the selection in any class on the basis of the vowel in the preterite participle? Indicate from the weak verbs why there may have been a tendency to

have the same vowel in the preterite and preterite participle of strong verbs.

2.4. In the reduction of strong verb forms, which type of change was more prominent, sound change or analogical change?

2.5. In early Modern English, span was the preterite of spin, as in the rime:

When Adam dolve and Eve span  
Who was then the gentleman?

Account for the later form of this rime--When Adam delved and Eve did spin . . . .

2.6. In the nursery rime:

Tom, Tom the piper's son  
Stole a pig and away he run...

account for the form of the Old English verb rinnan (class III). Account for the contemporary preterite.

Semantic Change

1. Shrewd underwent the following semantic changes, not all of which eliminated previous meanings. Discuss the various types of semantic development and check the references in the Oxford English Dictionary to support the various meanings.
  - a. evil, accursed (Chaucer: The backbiter will turn all this goodness upside down to his shrewd intent)
  - b. scolding, shrewish (Shakespeare: As curst and shrewd as Socrates' Xantippe)
  - c. annoying, troublesome (Bacon: An ant is a wise creature for itself. but it is a shrewd thing in an orchard or garden)
  - d. sharp, biting (Rossetti: The sea [is] shrewd and salt)
  - e. sly, cunning, spiteful (Shakespeare: You are that shrewd and knavish sprite)
  - f. smart, sharp (No student was as shrewd as he in choosing courses which presented current material and theories)
2. The following etymology is given for cell: ME celle, from Lat. cella 'small room, hut'; compare Lat. cēlāre 'to hide'.

The following etymology is given for hell: ME helle, OE hel, = Icel. hel, Germ. Hölle, meaning formerly 'that which hides'. Compare OE helan, Lat. cēlāre. Comment on

the history of cell and hell, pointing out phonological and semantic changes.

3. Film 'a thin skin' is from OE filmen, which is related to Lat. pellis, Gk. pélla 'a skin'.

Pelt 'a skin' is a shortened form of ME peltry 'skins' which is derived from pelleterie 'trade of a skinner'; pelleterie is made with suffixes from OFr. pel, which in turn is from Lat. pellis 'a skin'.

Discuss the relationship of film and pelt.

4. The following etymology is given for pastor 'minister'; ME pastour 'shepherd' < OFr. pastour < Lat. pastor 'shepherd' (literally 'feeder', cf. Lat. pascere 'to feed').

The following etymology is given for foster; OE fōstrian 'nourish', cf. OE fōstor 'nourishment', fōda 'food' (ultimately from an Indo-European root pā- 'feed').

Comment on the relationship of pastor and foster, food, pointing out various phonological and semantic changes in their development.

5. Bureau 'government agency' is derived from Fr. bureau 'a desk (covered with brown baize)', this from OFr. buire 'dark brown', < Lat. burrus 'reddish' < Gk. purros 'reddish', cf. Gk. pûr 'fire'. Interpret the semantic development.

6. Pettitoes '[small] feet, usually those of a pig' formerly meant the 'heart, liver, lungs' and other parts of animals that were discarded. It comes from Fr. petitos 'giblets of fowls', which is from petitoes, pl. of OFr. petite oe 'giblets of a goose' [literally 'little goose'; OFr. oe is from Lat. auca 'goose']. Point out various linguistic processes according to which the word was modified.
7. Otter, an animal living near water, is from ME oter, OE otor, and eventually from PIE udros, fem. udrā, which developed in Lithuanian to údra, Gk. húdra 'a water-snake', Skt. udras 'a water animal'.  
  
Hydra 'a water-snake' is from Lat. hydra which was borrowed from Gk. húdra. Discuss the relationship of otter and hydra, noting differences in form and meaning.
8. Trade 'business' formerly meant 'path'; compare ME trede 'a tread, step', OE tredan 'to tread'. The former meaning survives in trade-winds 'winds that blow in the same direction'. Interpret the semantic development.
9. Modern English pickax developed from ME pikois 'mattock', < OFr. picois which is cognate with OFr. piquer 'pierce, thrust into'. Discuss the changes of meaning and of form.
10. The word tweezers is derived from tweese, a former name for a surgeon's box of instruments. Tweese itself was

formerly twees, the plural of twee or etwee. 'a surgical case'; etwee is an English form of Fr. étui 'case'.  
 OFr. estuy 'sheath, case', which was taken over from  
 MHG stūche 'a short and narrow muff > case'. Discuss the phonological and semantic changes.

11. In dealing with the word sirloin Johnson's Dictionary refers to the fifth meaning of sir where Johnson says that sirloin is a 'title given to a loin of beef which one of our kings knighted in a good humor'. Richardson in his dictionary identified the king as James I. Yet an account from a century before James I contains the entry: a surloyn beeff. Discuss the inconsistency, noting how Johnson could have been led to his statement.
12. Hickwall 'woodpecker' is derived from a form of 'hack' and 'wall'. It is found in various forms: equal, heighaw, hewhole, highhole, highholder. Account for each of these variants, indicating the processes involved in their formation.
13. Yellowhammer, the yellow bunting, is also found in the variants yellowhumber, yellowomber, yellowammer and others. The second component is from OE amere, cf. OHG amero, NHG ammer 'a bunting'. This is probably connected with Germ. amsel, OE ōsle, NE ouzel, ousel 'blackbird, thrush'.

In the United States the name yellowhammer is not used for a bunting at all but rather for the flicker, the golden-winged woodpecker (also called highholder).

Discuss the phonological and semantic changes which the word has undergone.

Borrowings

1. Numerous borrowings have been made into Japanese from various languages, in recent times especially from English. Since the phonological structure of the two languages differs considerably, the borrowings illustrate changes which elements may undergo as they are incorporated into another language.

The changes made as English words and place-names are introduced into Japanese may be accounted for most readily from a chart which includes all permissible syllables in Japanese. (The symbols selected here are designed to indicate phonetic values; they differ somewhat from the standard transcriptions. The last row, with syllables consisting of consonant plus :, represents sequences which are generally written as doubled consonants. The segments may be classed into phonemes variously; of greater pertinence here are the phonotactic possibilities, including gaps in the system.)

Observe the restrictions on [t t<sup>s</sup> t<sup>ʃ</sup> s ʃ z ʒ d ʒ h ɕ ɸ (f)] and the groupings these may lead to. Speakers of Japanese group [t<sup>ʃ</sup>] with [t], even though they contrast in all positions but before [i:] (they may therefore be combined into one phoneme)\*. Similarly, the elements of columns 6. 7



1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
i	pi	bi	t <sup>ʃ</sup> i	--	ʃi	ʒ/d <sup>ʒ</sup> i	ki	gi	hi/çi	mi	ni	--	ri	--
e	pe	be	te	de	se	ze	ke	ge	he	me	ne	--	re	--
a	pa	ba	ta	da	sa	za	ka	ga	ha	ma	na	ya	ra	wa
o	po	bo	to	do	so	zo	ko	go	ho	mo	no	yo	ro	--
u	pu	bu	t <sup>s</sup> u	--	su	d <sup>z</sup> u	ku	gu	h/øu	mu	nu	yu	ru	--
	pya	bya	t <sup>s</sup> a	--	sa	ʒ/d <sup>z</sup> a	kya	gya	hya	mya	nya	--	rya	--
	pyo	byo	t <sup>s</sup> o	--	so	ʒ/d <sup>z</sup> o	kyo	gyo	hyo	myo	nyo	--	ryo	--
	pyu	byu	t <sup>s</sup> u	--	su	ʒ/d <sup>z</sup> u	kyu	gyu	hyu	myu	nyu	--	ryu	--
p:	--	t:	--	s:	--	k:	--	--	--	--	--	--	--	--
n̄														

and 10. Note further that with its gaps the items in column 5 can be classed with some of those in 7.

In addition to differences resulting from these restrictions, there are phonemes in English which are missing from Japanese and replaced as follows:

English	/l/	Japanese	/r/
	/ŋ/		/n̄/
	/f/		/ø/ or /h/
	/v/		/b/
	/θ/		/s/
	/ð/		/z/

The English vowels correspond in general as follows to the Japanese, though in weakly stressed syllables the English spelling may influence the Japanese vowel.

/i/	/i/
/e/	/e/
/æ a ɔ ə/	/a/
/o/	/o/ (British /ɔ/
/u/	may ~ /o/)

Vowel plus r is taken over conventionally as a geminated vowel. Note that /n̄/ is syllabic, with [m n ŋ] as allophones varying in accordance with the following consonant.

1.1. Account for the following correspondences on the basis of the data given. Note that final consonants must be followed by a vowel in Japanese; generally this is u, with voiceless allophone, but after t d it is commonly o, by which the t<sup>s</sup> d<sup>z</sup> allophone is avoided.

pipe	paipu
Boston	Bosuton̄
table	teeburu
data	deeta
center	sēntaa
zenith	zenisu
cubic	kyuubik:ku
gunwale	gañneru
filament	φuiramēnto
match	mat:t <sup>s</sup> i
news	nyuuzu
yacht	yot:to
resin	reziñ
winch	wiñt <sup>s</sup> i
lute	ryuuto
gang	gyañgu
fuse	φuyuuзу
valley	barii
third	saado
leather	reza

1.2. Give the English for the following borrowings:

Mosukoo

San φurañsisuko

baṅgaroo  
 Koronbiya  
 šisutemo  
 purobabiritšii

1.3. Give the Japanese for the following:

Manila  
 Philippine  
 canvas  
 alibi  
 baseball  
 theory  
 truck

2.1. Around the year 1200 A.D. a great number of French words were borrowed into Middle High German. Examples are, in modern German: Abenteuer 'adventure', Harnisch 'knightly armor', Lanze 'lance', Preis 'prize', Tanz 'dance'; some Middle High German verbs borrowed from French are: feitieren 'adorn, especially for courtly ceremonies', regnieren 'rule'.

What do these borrowings suggest about the relationships between the two languages and the culture of their speakers at the time of the importation?

2.2. At the time of Elizabeth I, there was considerable influence on English from Dutch. Shakespeare, for example, uses the following words of Dutch origin: deck, hold of ship], hull, rover 'sea-pirate', swabber; gilder 'coin', jerkin 'garment', link 'torch', linstock 'match to fire

guns with', wagon, league 'camp'; Ben Jonson uses the word beleaguer 'besiege'. Discuss the indications these borrowings might give us about relationships between the English and the Dutch around 1600.

3.1. English contains a number of words borrowed from American Indian languages, such as moccasin, opossum, skunk, squaw, tomahawk, wigwam, Manitowoc, Susquehannah, Texas, Utah.

3.2. It also contains words borrowed from Arabic, such as the following in the area of mathematics, astronomy, and science, made in the medieval period: alchemy, alcohol, algebra, alkali, cipher, nadir, zenith, zero.

What inferences can be drawn from these borrowings about the relationships between the languages and the cultures of their speakers at the time of the importations? Contrast the different situations for the two sets of borrowings.

4.1. The English word science is spelled with initial sc because of its relationship with Latin scientia. In the seventeenth century, the sc was extended also to scite and scituation. In present-day English the spellings site and situation have been restored. State reasons which may account for the spread of the sc spelling and for its later abandonment in site and situation but not in science.

4.2. Middle English dette, doute and sutil are now spelled debt, doubt, subtle, in keeping with Latin debitum, dubito, subtilis. Middle English avis and aventure are now spelled advice and adventure, on the basis of the Latin prefix ad, with a corresponding effect on the pronunciation. Discuss the situation which led to these changes in spelling, dealing with its effect on contemporary languages generally.

5. Cicero concludes a letter written from Puteoli to his friend Atticus in Rome on 2 November 44 B.C., inquiring on his best course of action. Octavian, later known as Caesar Augustus, was gaining power, and with his friends Cicero was beginning to fear a renewed tyranny. He concludes his letter as follows: (Greek words in the text are underlined; several sentences have been omitted.)

Brūte, ubi es? quantam eukairían āmittis! ... Nunc tuum cōsiliū exquīrō. Rōmamne veniō an hīc maneō an Arpīnum (aspháleian habet is locus) fugiam? ... Hoc igitur explicā. Numquam in maiōre aporía fuī.

Brutus, where are you? What a fine chance you have lost... Now I ask your advice. Should I come to Rome or remain here or flee to Arpinum (the place has its security)?... Solve this, please. I have never been in greater perplexity.

What inferences can we draw from the Greek terms in the letter about the status of Greek for educated Romans of Cicero's time?

6. The following is the first paragraph from a short account entitled "Der Dän Webster un sei sens" on pages 236-237 of Pennsylvania German, by Daniel Miller (Reading, 1903).

Der Dän Webster war en Yänkee un en arg schmärter Mann. Er war en Lawyer, dann Congressmann un dann Senator. Er wār ah President worre, awer er is net elekt worre. In seiner Zeit hat ihn Niemand biete könne for Spietsches zu mache.

Daniel Webster was a New Englander and a terribly smart man. He was a lawyer, then congressman and then senator. He would also have become president, but he wasn't elected. In his time none could beat him in making speeches.

What inferences can we draw from the text about the status of English for speakers of Pennsylvania German?

7. Among borrowings which are used in an attempt to secure information about sound changes in a proto-language are Germanic names in Greek and Latin documents. By the time Germanic materials are attested all PIE o have become a, as in Goth. ahtau, OHG ahta, OE cahta = Gk. óktō 'eight'. Yet proper names in Greek and Latin texts include o in weakly stressed syllables, e.g. Arionvistus, Charionērus, Langobardi (note that the o in the etymon of the stem syllable lon- shows up as a).

Various explanations have been proposed:

- (1) o remained without change in weakly stressed syllables to the beginning of our era;
- (2) the words were taken over through Celtic;
- (3) the words were recast on the Greco-Roman pattern, in which o is a common element at the end of components in compounds, e.g. Gk. philó-sophos. Lat. philosophus, Eng. philosopher.

The Germanic short vowel system had four members:

i	u
e	o

The Greek and Latin short vowel systems had five:

i	u
e	o
a	

Comment on the situation and the proposed explanations.  
Do these borrowings give us secure evidence for dating the changes?

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With such an analysis t<sup>š</sup>a is taken as a cluster parallel to pya kya etc., and written tya. All diacritics on the chart could then be removed, with tya tyo tyu substituted in column 4. dya dyo dyu in column 5 or 7. sya syo syu in column 6; t<sup>š</sup>i š<sup>š</sup>i d<sup>š</sup>i would then be written ti si di or zi.

Conclusion

1. When we examine the words for domestic animals in English we find some sets structured in the same way, with:

- (1) a generic name;
- (2) a name for the female;
- (3) a name for the male;
- (4) a name for the young;
- (5) a name for the castrated male.

It is of interest to examine these sets and to note their extent, as well as to observe changes of their members in the course of development of English.

Selected sets are:

1	2	3	4	5
cattle	cow	bull	calf	ox/steer
horse	mare	stallion	colt/foal	gelding
sheep	ewe	ram	lamb	wether
swine/hog/pig	sow	boar	pig(-let)/shoat	barrow
chicken/hen	hen	cock	chicken	capon
(duck)	duck	drake	duckling	--
(goose)	goose	gander	gosling	--
(goat)	goat	he-goat/buck	kid	--
mouse	--	--	--	--
camel	--	--	--	--
elephant	--	--	--	--

2. In inflectional paradigms of some of these words we find morphophonemic variation, e.g.



mouse : mice                      cow : kine (literary)  
 goose    geese    cf. also food : feed

What method might we use to determine older forms of the words cited here? Using these eight forms alone, what hypothetical bases might we set up?

3. When we examine cognates of some of these words in other Germanic dialects we find beside

sheep, Du. schaap [sxa:p], but Germ. Schaf [ʃa:f]  
goat, Du. geit [ye:t], but Germ. Geiss [gais]  
 cf. also  
sleep                                      but Germ. schlafen [ʃla:fən]  
hot    but Germ. heiss [hais].

What method might we use to determine older forms of the words cited here? If we were limiting our use of these words to reconstruction of the final consonant, could we be certain of the result posited from them alone?

4. Old English forms for some of the words given above and selected others of similar phonological structure are as follows:

OE	mūs [mu:s]	NE	mouse [maws]
pl.	mȳs [mi:s]		mice [mays]
	gōs [go:s]		goose [guws]
pl.	gēs [ge:s]		geese [giys]
	cū [kū]		cow [kaw]
pl.	cȳ [ki:]		kine [kayn]
	bār [ba:r]		boar [bowr], often bohr'
ME	beem [bæ:m]		beam [biym] cf. OE bēam bæ:əm]

OE gāt [ga:t]	:	goat [gowt]
spǣce [spe:ce]	:	speech [spiyc]
ME est [æ:st]	:	east [iyst] cf. OE ēast [e:ast]
OE fōda [fo:de]	:	food [fuwd]

Discuss the development of the Old English long vowels to Modern English as illustrated in these examples, setting up formulae indicating the changes.

5.1. Of the Old English short vowels, the lowest have been the subject of considerable discussion. By one position /æ/ and /a/ are separate phonemes, for minimal pairs are attested, as in West Saxon

græf 'style'      graf 'dig' (second sg. imperative).

Both /æ/ and /a/ are derived from pre-Old English /a/, by the following rearrangements: pre-OE /a/ > OE /æ/ in closed syllables (with some exceptions) and in open syllables when followed by a front vowel; pre-OE /a/ > OE /a/ elsewhere (in open syllables before back vowels; in closed syllables before some long consonants and some clusters, and before nasals; OE /a/ = Lat. /a/ in borrowings).

We find then in Old English paradigms like that of 'dæf' and 'stæf':

Nom., Acc. sg.	dæg	stæf
Gen. sg.	dages	stæfes
Dat. sg.	dage	stæfe
Nom., Acc. pl.	dagas	stæfas
Gen. pl.	daga	stæfa
Dat. pl.	dagum	stæfum

We also find forms like Nom. Acc. pl. dægas. How do you account for them? Discuss the possible split of early Old English [æ] and [a] into two phonemes on the basis of forms like dægas.

5.2. Pre-Old English /a/ was also the stem vowel of strong verbs of class VI, e.g. dragan 'draw', faran 'go', gravan 'dig', hladan 'load'.

We find the following present, imperative and preterite participle forms for faran:

Present indicative		Optative	
1 sg.	fare		
2 sg.	færest	sg.	fare
3 sg.	færeð		
pl.	farað	pl.	faren
Imper. 2 sg. fær (Anglian)			
2 pl. farað			
Pret. ptc. faren (West Saxon)			

The /æ/ of færest and færeð is in keeping with the statement given above, for the pre-Old English endings were -isi, -ipi. Further, /æ/ in the second singular imperative was regular because it was found in a closed syllable. In West Saxon, however, the predominant form came to be far.

In the past participle there was variation between the forms færen and faran, though the suffix vowel in pre-Old English was high, and in an open syllable /æ/.

should have resulted. Yet in late West Saxon the stem vowel is consistently /a/. By this time the vowels of weakly stressed syllables, such as the final syllable of the past participle, were probably [ə], whether from pre-OE /e/ or /a/. Discuss the effect of such merger of the conditioning element on the conditioned vowel.

Discuss further, briefly, the interrelationship of the changes effected by the extension throughout the paradigm of one root vowel, and those resulting from further sound changes, such as OE [e] > [ə], with their effect on the morphological system of class VI verbs.

5.3. Discuss also the problems involved in positing an Old English vowel system with two low short vowels /æ a/ but a Middle English system with only one low short vowel /a/. In your discussion note the restricted patterns of occurrence of Old English /æ/ and /a/. Note also the complex dialect situation in both stages of the language and the lack of continuity between the dialects in which our literary materials have been transmitted.

6. A further inflection which was simplified is that of OE cū. This in Old English is:

Nom. Acc. sg.	cū	Pl. cȳ
Gen.	cū, cūe, cūs	cūa, cūna
Dat.	cȳ	cūm

If these forms had been transmitted directly to Modern

English the paradigm now would be:

cow [kaw]	[kay] or [čay]
[kaw] or [kawə] or [kawz]	[kawə] or [kawnə]
[kay] or [čay]	[kawm]

Comparing this paradigm with that of OE dæg, given under 5, explain briefly the modern forms cow and kine.

7.1. When we examine the sets of animal names given above we note that various changes have taken place. Presumably there was a word for 'livestock' in Proto-Indo-European, for we find widely distributed the term we have in fee, OE fēoh, Lat. pecus, Skt. paśus 'herd, cattle'. We may then assume that the five member set given above was established relatively early.

The etymon for 'sheep' cannot be traced back earlier than the West Germanic period; we find different generic terms in Gothic, lamb, and in the North Germanic languages, e.g. ON sauðr 'that which is seethed (boiled)'. It is sometimes assumed that the expansion of the set for 'sheep' indicates intensification of sheep raising at the time of West Germanic.

In contemporary English, generic terms for the domestic fowl have been taken over from terms for the female and the young. The generic term for Equus caballus is in origin descriptive, for it is related to Lat. currere 'run', Skt. kūrd- 'jump'. Discuss the development of

such terms in these two sets as examples of filling semantic sets. Discuss the absence of development of such sets for goat.

Indicate your generic terms for duck and goose, noting their relation to the generic terms of the first five sets within their sets.

Give as many terms as you know to fill the potential sets for elephant and camel. Arabic has a great number of terms for 'camel'; Sanskrit has a great many for 'elephant' (not of the pattern of the English sets). Discuss the poorly represented sets in English as compared with those in Arabic and Sanskrit.

7.2. The term mṛgas 'wild animal' is used in Sanskrit in classifying 'elephants' and also means deer. Deer itself is in origin 'wild animal', the meaning its cognate Tier still has in German. Discuss briefly the change of meaning in these words.

Compare with the changes in deer and Skt. mṛgas those in hen and chicken when used as generic terms.

7.3. The word 'gelding' means 'castrated animal' but has come to be used primarily for Equus caballus rather than for any animal whatsoever. Discuss briefly this type of meaning change.

Compare with it the change of meaning in ewe, which formerly meant 'sheep', not simply 'female sheep', as is clear from its cognates Lat. ovis, Gk. óis. Compare also

'cow', which formerly was used for male and female of the genus Bos, as is clear from the Greek cognate boûs 'ox, cow', pl. 'cattle'.

7.4. The word 'duck', ME doke, duke, is in origin a descriptive term meaning 'diver'. It has replaced the older term, OE ened, the cognate of which is still the common term in Germ. Ente and is related to Lat. anas. Discuss the change in meaning of duck.

In Swedish we find a compound of these two segments, duk-and, for the 'sea duck'. Compare with this the probable course of development in English duck.

Compare further the development of meaning in horse from 'runner, jumper'.

7.5. Change of meaning is also exemplified in Eng. fee < OE fēoh 'cattle', cf. Lat. pecus. The word cattle (also chattle) itself is from OFr. catel < Late Lat. capitale 'capital, property'. An obsolete word for 'cattle' is NE neat < OE nēat, cf. ON naut and Lett. nauda 'property'. Discuss the changes exemplified in fee, cattle, neat.

8. When we examine the words for male animals, we find the following origins:

bull is from the root in 'bellow' and apparently meant 'the bellow';

stallion is related to 'stall', and apparently meant 'the animal kept in the stall';

ram is from the root in the verb 'ram' and apparently

meant 'the butter';

boar cannot be further related, but it too has apparently

replaced an older term, possibly one related to Lat.

verrēs, Skt. vr̥ṣan-, which earlier meant 'male'. not

merely 'male of the swine';

cock is apparently onomatopoetic in origin, based on the

noise of the bird.

Discuss the process by which these words were introduced into English, noting further that he-goat is now widely used for buck and that bull itself is sometimes avoided in speech.

9. The word for 'camel' in Gothic is ulbandus, in Old Norse ulfaldi, in Old English olfend, in Old High German olbanta. Unfortunately there is no attestation of the word for 'elephant' in Gothic, but in Old Norse it is quite different, fīll, ultimately from Arab. fīl 'elephant'; in Old English it is elpend, in Old High German elafant. By Middle English the word for 'camel' in English is camel. in Middle High German, kembel, kamel, beside olbent.

Discuss this situation, especially the use of the same form for different poorly known animals. Although the exact means of introduction of these forms into Germanic is obscure, elephant is borrowed from Gk. elēphas.



eléphantos 'ivory' or a similar source, cf. Egypt āb 'elephant'; camel was borrowed from Lat. camēlus, cf. Gk. kāmēlos 'camel', which was borrowed from Semitic, cf. Hebr. gāmāl. Discuss also the phonological changes in Old Norse ulfaldi, with -l- < -n-.

10. In dealing with the successive stages of a language it is important to note that each stage has a structure in which certain sounds and forms are included and others are not. Yet unfavored or unused entities and sequences in one stage may be favored or used in another. We cannot therefore draw inferences about early forms of a language solely from its contemporary structure. A simple example may be provided from English w.

In the thirteenth century [w] was lost at the beginning of weakly stressed syllables, as in:

forard	'forward'
[gənəl]	'gunwale'
hammard	'homeward'
[nɔriʃ]	'Norwich'
[səðærk, səðæk]	'Southwark'

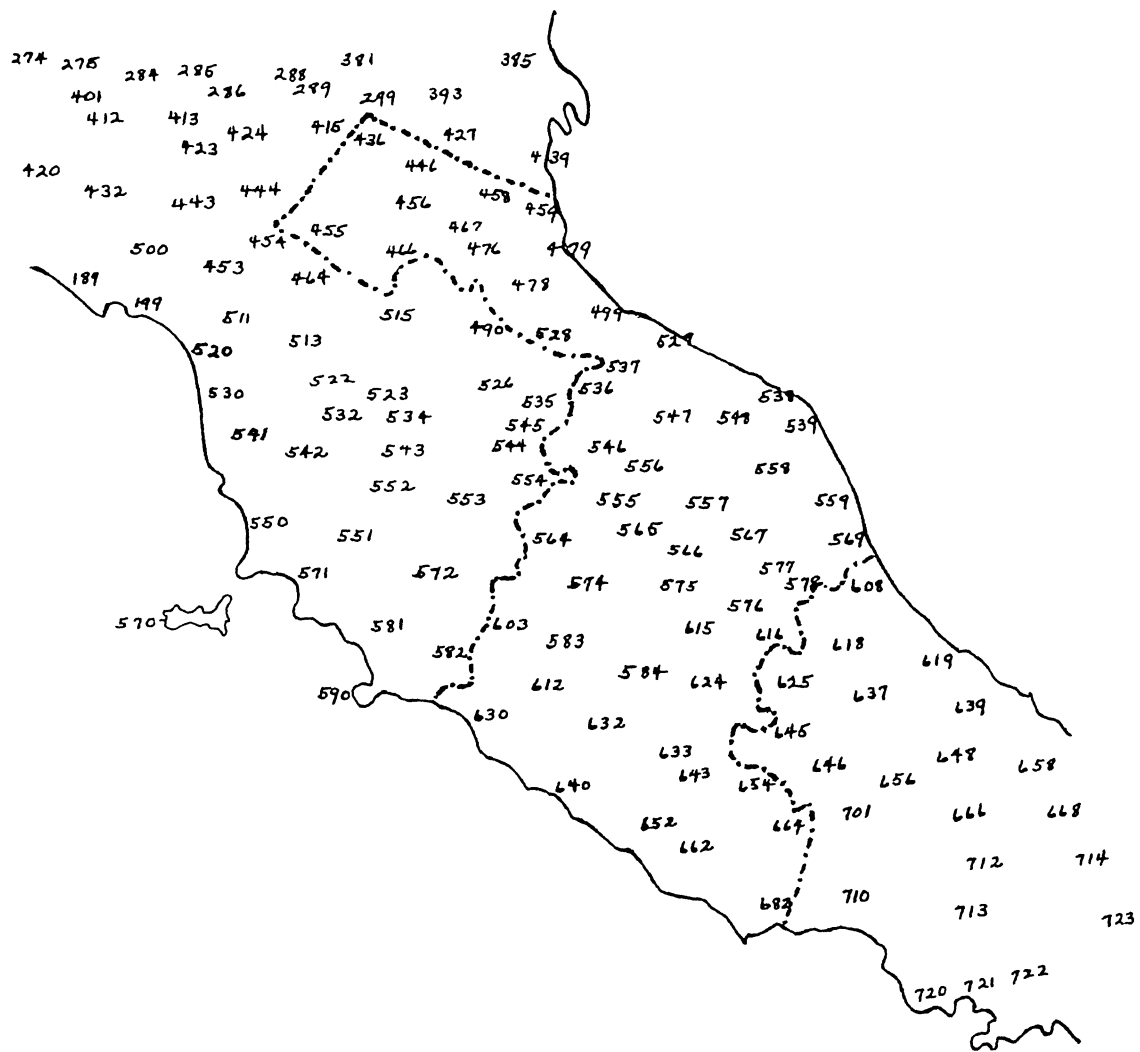
Later the [w] was reintroduced in 'forward, homeward, upward' except in dialects such as that of sailors, but not in proper names.

In the fifteenth century we find spellings like sor for swore, sord for sword and evidence that [w] was lost also before high back vowels, as in swoon, quote, swollen.

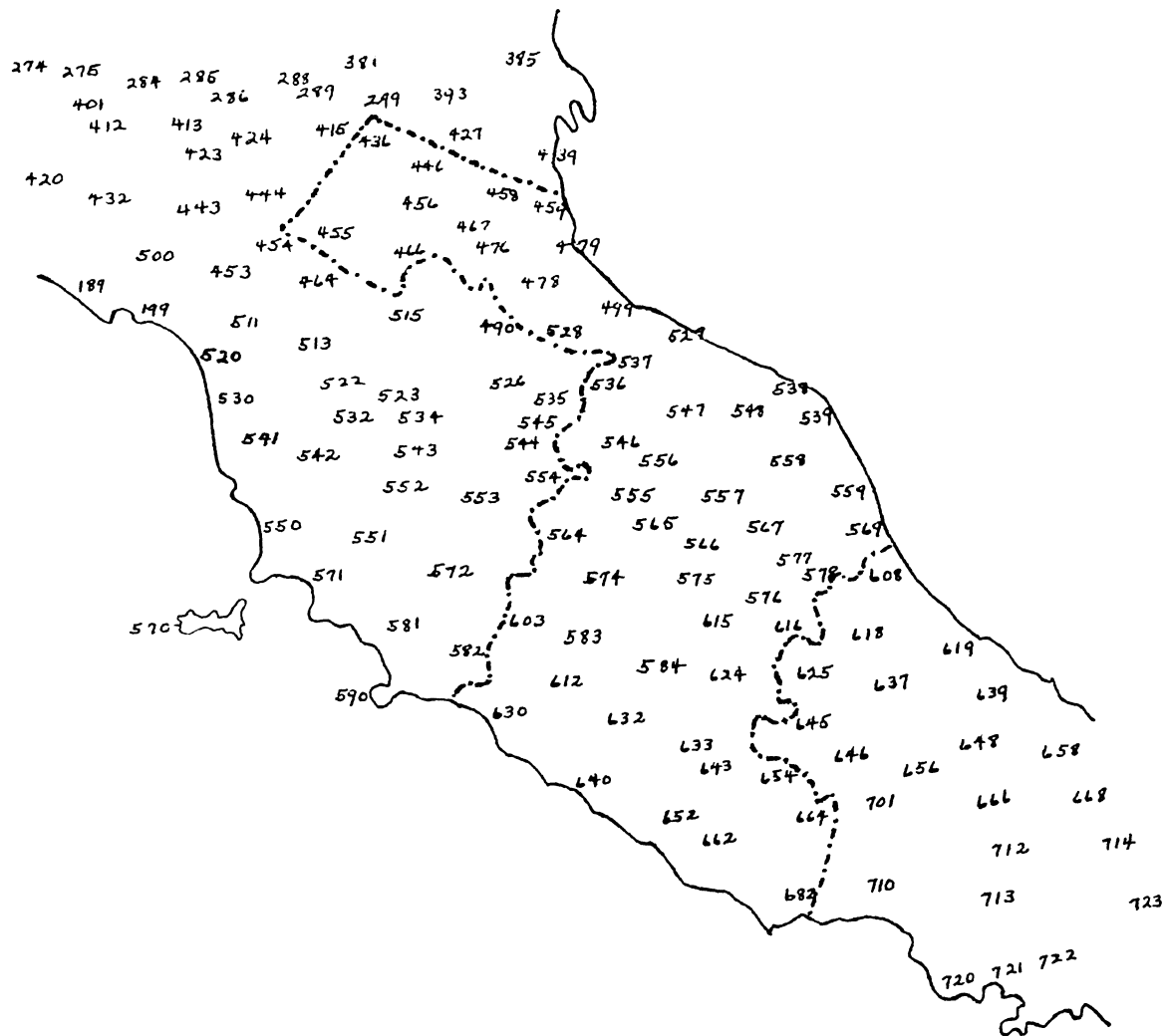
Subsequently [w] was restored in all of these, except for sword. The spelling as well as related forms like swear, swell apparently led to the reintroduction. For further discussion handbooks may be consulted.

On the basis of these simple sets of forms, discuss the necessity of producing a descriptive statement for any stage of a language about which we may wish to make historical statements.

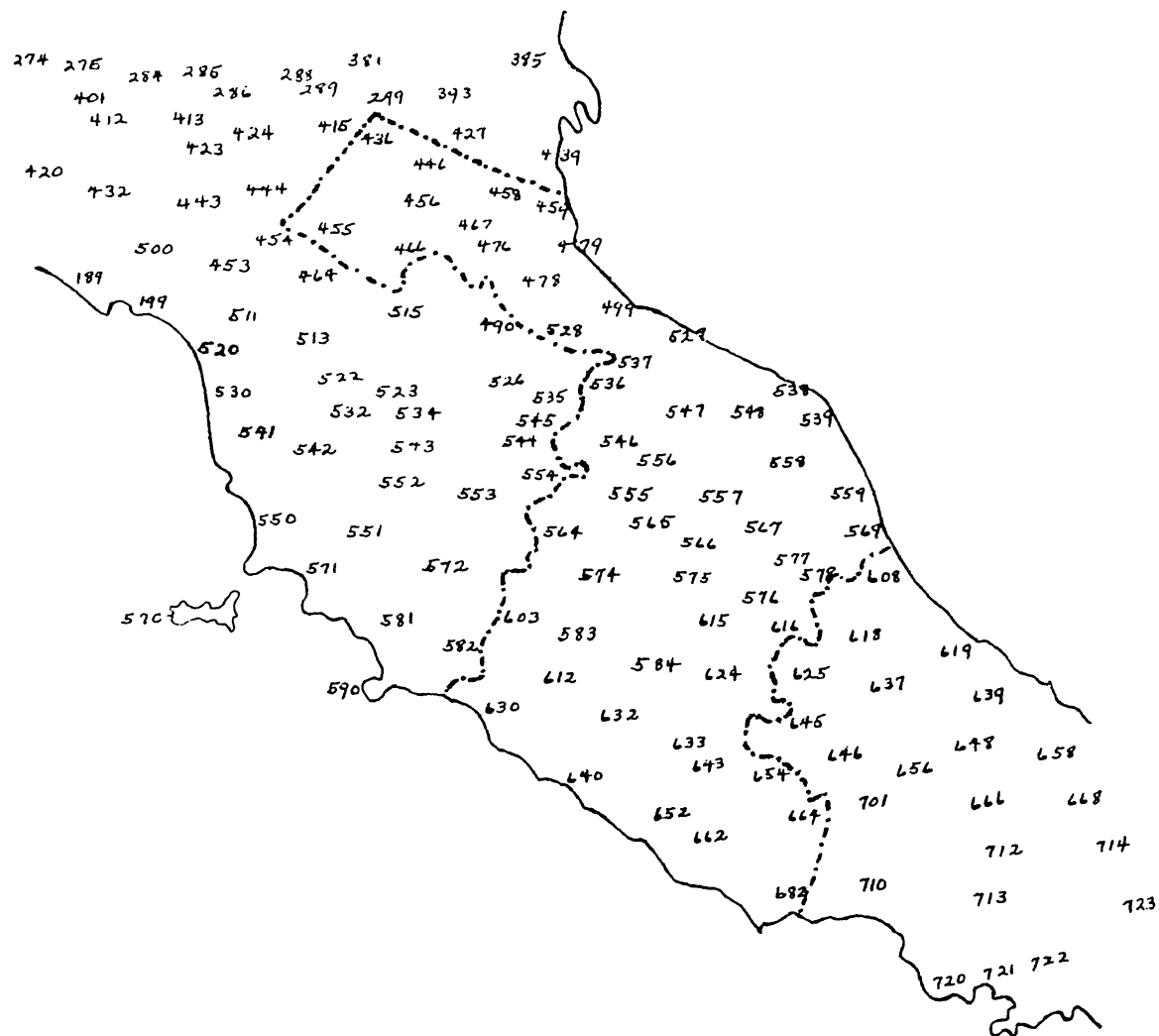
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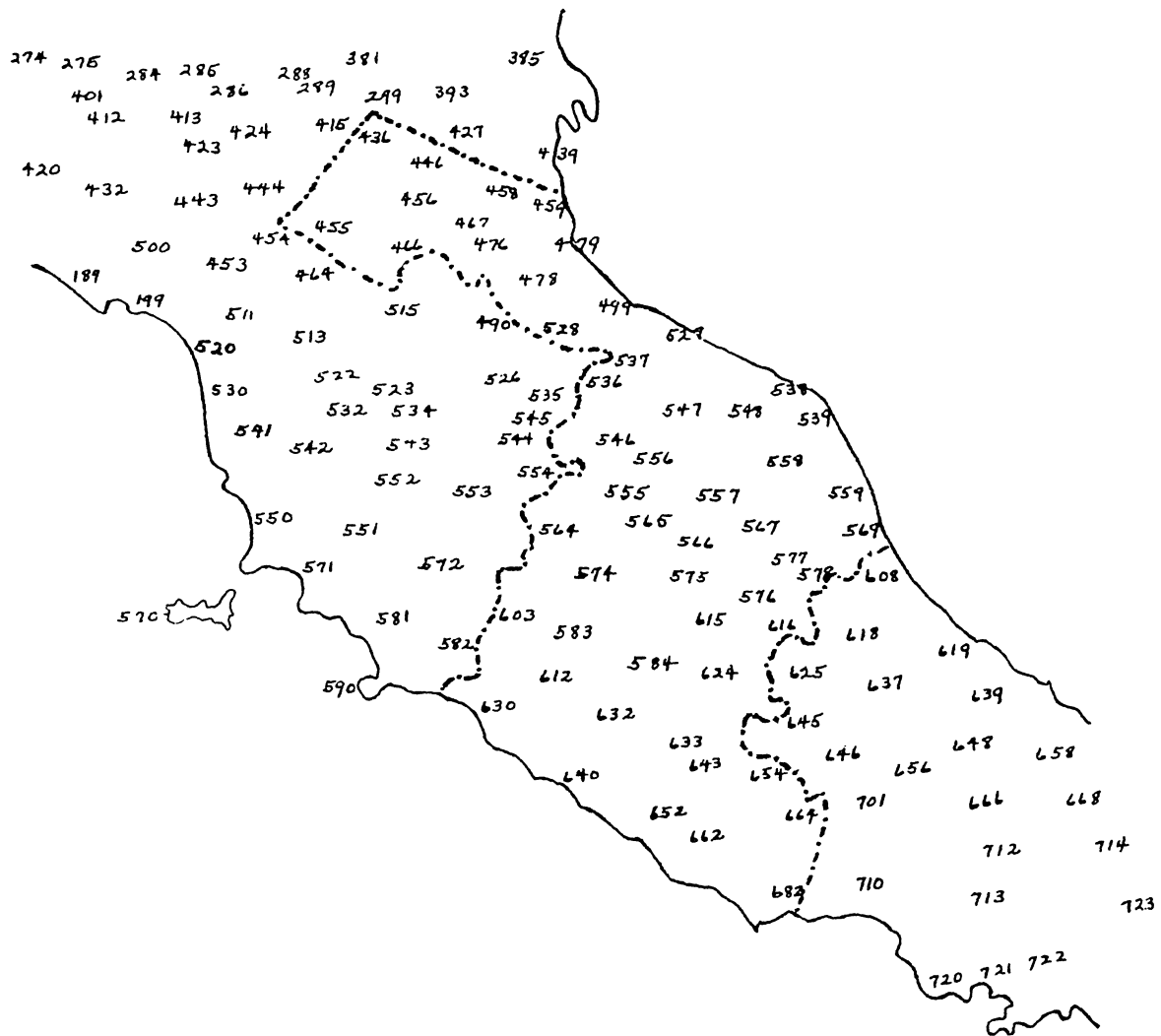












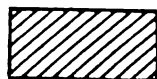
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