Forensic Linguistics

Advances in Forensic Stylistics

Gerald R. McMenamin

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For Marguerite,

¡*me regalas las flores de la esperanza*!

The Author

Gerald McMenamin lives with his wife, Marguerite, on a small Tivy Valley citrus ranch near Sanger, CA. He benefited from an intense elementary and secondary education at Salesian schools in California and New Jersey. In 1968, he received a B.A. in philosophy, with minors in classical languages and English, from the University of California at Irvine, and in 1972 an M.A. in linguistics from California State University, Fresno. In 1978, he received his doctorate in Spanish linguistics from El Colegio de México. Part of his doctoral program was 2 years study of linguistic variation at the University of Pennsylvania. His other study and research venues include the University of California at Santa Cruz, the UCLA Medical Center, and Oxford University.

Dr. McMenamin has taught a variety of courses in English and Spanish linguistics in positions at the Universidad Autónoma de Guadalajara, the University of Delaware, and UCLA. Since 1980 he has been a Professor of Linguistics at California State University, Fresno, and is a former chair of the CSUF linguistics department. His interest in linguistic stylistics began in 1976 with an authorship study of the picaresque novel, *Lazarillo de Tormes*; this experience quickly extended to forensic applications. Since that time, Dr. McMenamin has taught various courses and special training seminars in linguistic stylistics and has worked on more than 250 civil and criminal cases of questioned authorship. He is the author of several publications in forensic linguistics, including the 1993 book *Forensic Stylistics*.

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Introduction

The first questions I am presented with on direct examination are always to describe and explain what I do. This requires a series of brief and clear responses defining the theory and the nested array of analytical tools used in cases of questioned authorship: language, linguistics, linguistic variation, forensic linguistics, style, stylistics, and forensic stylistics.

Consequently, I have used these questions to define the aims and structure of this book: to provide an introduction to *language*, *linguistics,* and *linguistic variation* for nonlinguists (e.g., attorneys) who need to understand what linguist-witnesses do; to introduce the discipline of *forensic linguistics*; and to situate *forensic stylistics* as a field of language study and forensic analysis within the discipline of forensic linguistics. Chapters 1 through 6 will approximate this sequence.

Although the linguistic study of language is well established, linguistics is something new for many jurors, judges, attorneys, and other forensic specialists. In addition, many linguists must learn how to talk about what they do in nontechnical terms, something accomplished to some degree here, I hope.

Forensic linguistics is not a new field, but over the past few years it has become more structured and better defined within the academic and forensic communities. Is it the accused killer's voice on the 911 recording reporting the crime? What exactly does it mean to die by accident, e.g., is sudden infant death an accident? Is it a request for drugs if a kid asks an undercover police officer, "What's chillin?" Does it make any sense to say that someone did not commit genocide, just acts of genocide (*The New York Times,* August 26, 2001)? Who did, or did not, write that ransom note found in the JonBenét Ramsey home? If a detective asks a suspect, "… do you want to speak with us about why you were arrested?" is the suspect waiving his right not to speak by answering, "Yes, I would like to know why I was arrested"? Does McDonald's own the *Mc* at the beginning of my last name (Liptak, 2001:10)?

These examples illustrate a few of the questions for forensic linguistics: *phonetics* (911 call), *semantics* (meaning of *accident*), *pragmatics* (intended meanings of "What's chillin'?" and *genocide*), *stylistics* (authorship of the ransom note), *discourse analysis* (suspect waiver of rights), and *trademarks* (McDonald's *Mc*).

An understanding of language, linguistics, and the field of forensic linguistics will enable the reader to develop a more informed understanding of recent advances in the theory and method of forensic stylistics for authorship identification. Style is a reflection of individual and group variation in written language. Linguistic stylistics is the scientific study of individual style-markers as described for the idiolect of a single writer and of class style-markers identified for language and dialect groups. Forensic stylistics is the application of the science of linguistic stylistics to forensic contexts and purposes.

"Advances" in forensic stylistics refers to the progressive development of a deeper understanding of why and how present approaches work, as well as changes being made in the application of style analysis to cases of questioned authorship. Such advances have several sources: recent casework, new federal requirements for scientific evidence in the U.S., reexamination of the theory of style and its application to the forensic context, and critical response to documented approaches such as those presented in *Forensic Stylistics* (McMenamin, 1993). Advances in forensic stylistics are the matter of Chapters 7 to 11. Chapters 12 to 15 reflect new work in the stylistics of languages other than English.

Clarification of the theoretical underpinnings of stylistic analysis is an important step forward because, first, it helps explain and reduce differences between practitioners (linguists) in the forensic application of stylistics, and second, it provides a stronger theoretical foundation for the actual forensic application of stylistics to authorship questions.

Although linguists will not need the chapters of this book that outline the basics of language and linguistics, the chapters on forensic linguistics, authorship identification, and forensic practice are meant for linguists, as well as others. One goal of this book is to convince more linguists to "come in from the outside," i.e., become involved in the actual casework of forensic linguistics, or what Roger Shuy (2000:1) refers to as "insider linguists":

> … I will divide this work that forensic linguists do into two types: work that is done without becoming involved in specific litigation, which I will call outsider work, and work that is carried out within individual law cases, which I refer to as insider work.

The discipline and science of forensic linguistics will not develop the way it should from "outside" study, commentary, and observation. Linguists must take some of Shuy's hints about how to immerse themselves in the problems presented by actual cases, then develop their linguistic and forensic perspectives based on that work.

Many colleagues have helped me during the preparation of this book. While any and all deficiencies in my work are my sole responsibility, I would

like to acknowledge and thank those who have worked through this project with me. First and foremost, my wife Marguerite, is a safe harbor of constancy and encouragement. She says that she missed me during this project but seems to have enjoyed single handedly finding a diesel-powered lift and painting our big barn under the wide-eyed and very solicitous supervision of half a dozen neighboring farmers. Karen Mistry read the typescript, combining the mind of a perceptive linguist with the eye of a meticulous reader and editor. Ray Weitzman prepared the phonetics demonstrations in Figures 4.1 and 4.2. Cecilia Shore sent me references on individualization in the acquisition of writing. A Forsyth and Holmes (1996) article directed me to the 1817 words of Coleridge: "Every man's language has, first, it individualities; second, the common properties of the class to which he belongs; and third, words and phrases of universal use." Roger Gong, Merlyn Price, Kerala Serio, Alan Shows, and, especially, John Telles joined their skilled forces to keep me alive and well, at work, and (almost) on time. Zachary Scheufele and Chasse Byrd frequently reminded me of other things in life. Deans Luis Costa and Vida Samiian of the California State University (CSU) Fresno School of Arts and Humanities provided periodic financial assistance for research.

Roger Shuy evaluated my initial prospectus and also provided me with the written version of his Georgetown University Round Table in Linguistics (GURT) 2000 keynote address so that I would not have to depend on my notes for reference. Fred Brengelman, Duane Dillon, and Roy Huber also took the time to comment on the initial plan of this book. Kristina Perez did the identification of variables from the as yet undigitized corpus of written American English, reflected in Chapter 10. Shannon Bills classified and counted the variables from the 80 authorship cases reviewed in Chapter 11. Alejandra Herrera analyzed the Spanish language data from student e-mails reported on in Chapter 12. Rekha Dayalu did the research necessary for me to understand the field of software forensics outlined in Chapter 4. CSU Fresno Librarian Jan Byrd patiently and efficiently ordered and returned books in the continuous year-long flow of interlibrary loan materials needed to complete this project. Lynnette Zelezny provided a critical review of Chapter 8, and Phyllis Kuehn a statistical perspective on parts of Chapter 10.

All my associates in the Southwestern Association of Forensic Document Examiners, especially the late professor Dean Ray, have provided me with nearly 20 years of training in forensic science, and individual document examiners have provided help with cases and issues reported on here, namely Martha Blake, Lloyd Cunningham, Bill Flynn, Sandy Homewood, Dave Moore, Janet Masson, Sue Morton, Dave Oleksow, Howard Rile, and Peter Tytell.

I am particularly indebted to the contributors of this volume who generously provided reports of their own research in the style analysis of languages other than English and Spanish: P. J. Mistry for Gujarati, from Northern India (Chapter 13), Dongdoo Choi for Korean (Chapter 14), and Wakako Yasuda for Japanese (Chapter 15). Another contribution is the insightful essay found in Appendix 2, *Expert Testimony*, by Susan Morton of the San Francisco Police Criminalistics Laboratory, wherein she shares with forensic specialists what she has tried to make me understand for years.

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Table of Contents

Language

1

GERALD R. McMENAMIN

1.1 Overview

The purpose of this chapter is to present an introduction to language for the nonlinguist. Perhaps the most difficult task for specialists in any field is to provide a brief, but clear and simple, description of the object of their scientific study. Expert witnesses, including linguists, are asked to do this almost every time they testify. Linguists must be able to successfully answer the question, "What is language?" for everyone in the courtroom, i.e., judges and juries (triers of fact) and all attorneys involved in a case, as well as observers. This is no small task, given the usual time constraints, varying individual levels of prior knowledge about language, and the expert's need to avoid technical descriptions that may be incomprehensible to everyone else.

The ability of speakers and writers to use language does not usually correspond to much of an understanding of the inner workings of the linguistic system that they possess and so easily apply. The use of language, driven as it is by unconscious knowledge, is analogous to how one does many things, such as driving a car without understanding its internal electromechanical systems. Yet, someone needs to understand them: a mechanic must know, evaluate, and maintain the car's under-the-hood systems to keep it running; a doctor knows enough about under-the-skin systems to keep one alive and well.

The goal of the linguist is to understand units of language, their possible rule-governed combinations, and the conditions for how language is used, as well as the norms of correct and appropriate language for a given speech community. The objective of the forensic linguist is to do the same within the narrower context of the court, i.e., to examine what language users know and do, and make everyone in the courtroom a good "backyard mechanic" of language for the duration of a case.

Therefore, another more practical purpose of this chapter is to ask and answer the questions on language asked at trial, usually during direct examination: What is grammar? What is language? How is language acquired? Are there individual differences in language acquisition? What is linguistic variation? What is written language? How is written language acquired? Are there individual differences in the acquisition of written language? The focus on written language surfaces in questioned-authorship cases. What follows reflects this series of typical questions and provides responses that will hopefully

become the basis for understanding the goals, methods, and outcomes of forensic linguistics and forensic stylistics.

1.2 Grammar

Linguists recognize that the word "grammar" is used in different ways, and they purposely use its multiple meanings to identify three objects of scientific inquiry. Grammar$_1$ cannot be found in a book because it refers to the internal system of language that every native speaker acquires and uses. Grammar$_2$ is the systematic study and description of that internal system of language, a "descriptive grammar" that is documented in a book. Grammar$_3$ is a set of rules and examples of the do's and don't's of a language and is the type of prescriptive grammar reflected in library reference works and school texts directed to prescribing the correct and appropriate use of language, i.e., speaking and writing well.

The purpose for explaining the three uses of grammar is to specify that asking and answering the question, "What is language?" takes place mostly within the context of grammar$_1$, the internal system of language that allows speakers and writers to automatically use language. See Figure 1.1 for a summary of the meanings of grammar in the outline of "What is language?"

1.3 Language

Language is a system of communication. In this broad sense, human language is a code that communicates meaning, as do other types of communication systems such as animal sounds and movements, Morse code dots and dashes, traffic control signs and lights, human gestures and body language, and even computer source code.

More precisely, human language is a system of communication that combines sounds with meanings to produce what people know and use as natural language. This narrower definition of natural language distinguishes human language from other communication systems such as those mentioned above. The speaker of a language acquires the ability to combine one or more sounds into words, and words into larger structures, which the speaker and listener then mutually associate with meanings specific to that particular language and social context.

Furthermore, language can be studied on the two complementary and inseparable planes of form and function. Form corresponds to the structure of language, defined as a linguistic system. Function relates to a focus on language use, defined as an integral part of human social interaction. The

Grammar and Language

THREE MEANINGS OF "GRAMMAR"

1. *The internal system* of language that every native speaker acquires
2. The *systematic study and description of that internal system* of language: descriptive
3. *A set of rules and examples* for correct and appropriate use of a language: prescriptive

LANGUAGE FORM

Phonetics is the study of speech sounds:
segmental sounds: consonants and vowels; *suprasegmental* sounds: stress, intonation, tone, intensity, speed

Phonology is the study of how a language arranges sounds in predictable patterns:
inventory of sounds: "phonemes"; *distribution* of sounds: word position, syllable structure, consonant clusters, processes of sound change; *spelling*: sounds and letters

Morphology is the study of word formation:
morphemes: building blocks of meaning; *analytic* vis-à-vis *synthetic* languages; *roots* and *affixes*; *allomorphs* of roots and affixes; *word-formation processes*; *function* words: articles, conjunctions, etc., vis-à-vis *content* words: nouns, verbs, adjectives, adverbs

The Lexicon is the collection of word-parts and words that combine into larger units: word-parts into words, and words into utterances

Syntax is the study of how words are combined into longer sequences:
phrase and sentence structure; basic sentences vis-à-vis transformed sentences; grammatical categories: 1. relate language to situation of utterance (person, number, case, tense, mood), 2. parts of speech (noun, verb, adjective, adverb, article, conjunction, preposition, pronoun, interjection), 3. elements of sentence-function (subject, predicate, complement, adverbial, (in)transitive, auxiliary verb, active/passive)

Semantics is the study of meaning in words and sentences:
meaning in words: *sense* (words vis-a-vis other words, e.g., synonyms, antonyms, etc.), *reference* (words vis-a-vis things/situations/action in the world; meaning in sentences: the sum of parts vis-à-vis the arrangement of parts

LANGUAGE FUNCTION

Discourse Analysis is the study of language units beyond the sentence:
units of speech and writing as they relate to communicative events; as they relate to their cultural and social contexts of use; *conversation*; *narratives*

Pragmatics is the study of intended meaning:
intended meaning; *speech acts* and *performative verbs*; how to do things with language; *(in)directness*

Figure 1.1 What is language?

functions of language relate to how language is used in the contexts of speaking and getting things done through communication.

Note that linguists routinely break language up into the various components laid out in Figure 1.1. Such compartmentalization makes language easier to study and describe, and it is often useful to separate the components of language study to better understand language. On the other hand, language itself simultaneously incorporates all these components together in speakers and writers.

1.3.1 Language Form

Phonetics is the study of speech sounds. Human speech sounds are studied in three ways: articulatory phonetics focuses on how sounds are physically formed in the human vocal tract; acoustic phonetics studies the physical characteristics of the sounds as they are transmitted from the speaker; and auditory phonetics studies sound characteristics as they are received and perceived by the hearer. For practical purposes, such as describing language sounds, articulatory descriptions are often the most useful, but acoustic means are frequently used to study units of sound and how they are produced, perceived, described, and analyzed in forensic contexts.

Languages have two types of sounds: the segmental sounds of every language are its consonants and vowels, and the suprasegmental sounds of a language are phonetic elements that occur on and around vowels and consonants, such as stress on vowels, intonation on sentences, tone on words, intensity (loudness), and speed of speech.

Consonants are described in terms of three articulatory variables: point of articulation, manner of articulation (e.g., air flow and relative mouth opening), and voicing (vibration of the vocal folds). The consonants of English can be described this way (see Figure 1.2).

Note that English sometimes has more than one spelling for a single consonant sound, e.g., /k/ in ***ca****k**e*** and ***k****ick*, or more than one sound represented by a single consonant spelling, e.g., /s/ and /z/ in *ga****s*** and *wa****s***. (Symbols like /k/ inside diagonal bars refer to the sounds of language, not their spellings.) Figure 1.3 relates sounds to spellings for English consonants.

The vowels of English are described in terms of the vertical and horizontal position of the tongue in the mouth. The tongue is simultaneously in one of the vertical positions (high, mid, or low), and in one of the horizontal positions (front, central, or back), as may be seen in Figure 1.4.

Note also that English sometimes has more than one spelling (letter) for a single vowel sound (e.g., /i_1/ in *b****ee****t* and *b****ea****t*), or more than one sound represented by a single vowel spelling (e.g., /i_1/ and /e_1/ in *m****ea****t* and *gr****ea****t*). Other sounds vis-à-vis spellings of English vowels are listed in Figure 1.5.

Manner of Articulation		Point of Articulation						
		BILABIAL	LABIODENTAL	INTERDENTAL	ALVEOLAR	PALATAL	VELAR	GLOTTAL
STOPS	Voiceless →	/p/ pear			/t/ tear		/k/ care	/ʔ/ uh-oh
	Voiced →	/b/ bear			/d/ dare		/g/ gap	
FRICATIVES	Voiceless →		/f/ fair	/th/$_1$ theory	/s/ Sarah	/sh/ share		/h/ hair
	Voiced →		/v/ very	/th/$_2$ there	/z/ zoo	/zh/ leisure		
AFFRICATES	Voiceless →					/tsh/ chair		
	Voiced →					/dzh/ jar		
NASALS	Voiceless →							
	Voiced →	/m/ mare			/n/ near		/ng/ ring	
LIQUIDS	Voiceless →							
	Voiced →				/l/ lair /r/ rare			
GLIDES	Voiceless →							
	Voiced →	/w/ wear				/y/ year		

Figure 1.2 The consonant sounds of English.

CONSONANTS	Single-Letter Regular-Spellings[1]	Double-Letter Regular-Spellings[2]	Exceptional Spellings[3]
STOPS			
/p/	**p**ear	a**pp**le	hiccou**gh**
/b/	**b**ear	co**bb**le	
/t/	**t**ear	ta**tt**le	kiss**ed**, dou**bt**, de**bt**, **pt**omaine, ya**cht**
/d/	**d**are	la**dd**er	rais**ed**
/k/	**c**are, a**c**t, chi**c**, **c**omi**c**, **k**itten, ma**k**e, tan**k**	ki**ck**er, ki**ck**	**ch**aracter, bouti**que,** /ks/: e**x**cellent, /kw/: **qu**ick
/g/	**g**ap	gi**gg**le	**gh**ost, **gh**oul, bur**gh**
FRICATIVES			
/f/	**f**air	co**ff**ee, pu**ff**	**ph**otogra**ph, ph**ilosophy, lau**gh**, cou**gh**
/v/	**v**ery, e**v**er, mo**ve**, sto**ve**		o**f**
/th/$_1$	**th**eory, **th**ink, e**th**er, ba**th**, wrea**th**		
/th/$_2$	**th**ere, **th**e, ei**th**er, ba**th**e		
/s/	**c**inder, **c**ellar, **s**ister, i**c**e, ca**s**t, ca**s**e	ki**ss**ing, mi**ss**	**ps**ychology, **sc**ience
/z/	**z**oo, ro**s**e, advi**s**e, inci**s**e	fu**zz**y, bu**zz**	kisse**s**, sci**ss**ors, **X**erox, i**s**, wa**s**
/sh/	**sh**are, a**sh**en, wi**sh**, na**ti**on, ra**ci**al, mi**ss**ion		**s**ure, o**ce**an, **ch**agrin, musta**che**, **sch**nitzel
/zh/	lei**s**ure, vi**s**ion, deci**s**ion		**g**enre, a**z**ure, fi**ss**ion, gara**ge**,
/h/	**h**air		**wh**o, **j**alapeño
AFFRICATES			
/tsh/	**ch**air, tea**ch**er, bea**ch**	pi**tch**er, ca**tch**	fu**t**ure, righ**t**eous
/dzh/	**j**ar, **g**em, ra**g**ing, pa**ge**	ju**dg**ing, ju**dge**	resi**d**ual

Adapted from Brengelman (1970), *The English Language*: *An Introduction for Teachers,* Prentice-Hall, Englewood Cliffs, NJ. With permission.

Notes:

[1] Single-Letter Regular-Spellings = morpheme initial and other environments

[2] Double-Letter Regular-Spellings = between Vs after short/stressed V, and word-final after short V for fricatives

[3] Exceptional Spellings = common as well as uncommon exceptions to the regular spellings.

Figure 1.3 Variable spellings for English consonants.

CONSONANTS	Single-Letter Regular-Spellings[1]	Double-Letter Regular-Spellings[2]	Exceptional Spellings[3]
NASALS			
/m/	**m**are, steam**m**ing, steam, swim	ma**mm**al, swi**mm**ing	autu**mn**, co**mb**
/n/	**n**ear, pla**n**er, ta**n**, pai**n**	pla**nn**er	**gn**ome, **gn**at, **kn**ow, **kn**ife, **mn**emonic, **pn**eumonia
/ng/	thi**n**k, ri**ng**, ri**ng**er		
LIQUIDS			
/l/	**l**et, in**l**et, tai**l**, tai**l**or, tang**l**e	ta**ll**, ta**ll**er, te**ll**ing	ki**l**n
/r/	**r**are, bu**r**y, bea**r**ing, ba**r**	be**rr**y, ba**rr**ing	**wr**ite, **rh**yme
GLIDES			
/w/	**w**ear, t**w**in		q**u**ick, **wh**ere
/y/	**y**ear		**u**nit, f**ew**, f**u**el, f**eu**d, m**u**te, v**ie**w

Adapted from Brengelman (1970), *The English Language*: *An Introduction for Teachers,* Prentice-Hall, Englewood Cliffs, NJ. With permission.

Notes:
1 Single-Letter Regular-Spellings = morpheme initial and other environments
2 Double-Letter Regular-Spellings = between Vs after short/stressed V, and word-final after short V for fricatives
3 Exceptional Spellings = common as well as uncommon exceptions to the regular spellings.

Figure 1.3 (Continued) Variable spellings for English consonants.

Vertical Tongue Position	Horizontal Tongue Position		
	FRONT	CENTRAL	BACK
HIGH	/i/$_1$ b**ee**t /i/$_2$ b**i**t		/u/$_1$ b**oo**t /u/$_2$ p**u**t
MID	/e/$_1$ b**ai**t /e/$_2$ b**e**t	/u/$_3$ c**u**t	/o/$_1$ b**oa**t /o/$_2$ b**ough**t
LOW	/a/$_1$ b**a**t	/a/$_2$ p**o**t	

Diphthongs (two vowels combined into one)

/a/ + /i/ = /ay/ b**i**te
/a/ + /u/ = /aw/ b**ou**t
/o/ + /i/ = /oy/ b**oy**

Notes: Shaded vowels / V / = "long" vowels.
Unshaded vowels / **V** / = "short" vowels.

Figure 1.4 The vowel sounds of English.

VOWELS	LENGTH	Usual Regular-Spellings[1]	Other Regular-Spellings[2]	Exceptional Spellings[3]
HIGH				
/i/$_1$	Long	b**ee**t, b**ea**t, imp**e**de	b**e,** th**ie**f, rec**ei**ve, y**ie**ld	sk**i**, s**ei**ze, k**ey,** p**eo**ple
/i/$_2$	Short	b**i**t	m**y**th, n**y**mph	b**ui**ld, b**ee**n[4]
/u/$_1$	Long	t**u**ne, m**oo**t, t**oo**	d**ue**, d**ew,** gr**ou**p	sh**oe**, wh**o**, d**o**, y**ou**, fl**u**, thr**ough,** t**wo,** t**o**
/u/$_2$	Short	p**u**t, f**oo**t		w**ou**ld, sh**ou**ld, c**ou**ld
MID				
/e/$_1$	Long	b**a**te, b**ai**t, s**ay**	v**ei**n, sl**eigh**	gr**ea**t, br**ea**k, th**ey,** where
/e/$_2$	Short	b**e**t, d**ea**d, **e**bb		s**ai**d
/u/$_3$	Short	**u**p, c**u**t[5]	s**i**r, b**u**rn, w**o**rd, t**ou**gh, y**ou**ng, c**ou**ntry	bl**oo**d, w**e**re, w**a**s, l**ea**rn, d**oe**s, s**o**me, t**o**n, l**o**ve, **o**ne
/o/$_1$	Long	v**o**te, b**oa**t, b**ow, ow**n	b**o**re, b**oa**r, **oa**t, **o**pen, t**oe**, s**o**, b**ow** d**ough**, m**o**st, **o**ld	s**ew**
/o/$_2$	Short	l**o**g	b**ough**t, c**au**ght, b**a**lk	br**oa**d
LOW				
/a/$_1$	Short	**a**t, b**a**t		pl**aid,** l**au**gh, b**aw**l, p**aw**n
/a/$_2$	Short	p**o**t	f**a**r, **o**n, h**a** h**a**, w**a**d, c**a**lm	h**ea**rt, **a**re

DIPHTHONGS				
/ay/	Long	bite	fire, idle, die, by, bye, cycle find, mild, light, sign	guy, buy, aisle height
/aw/	Long	bow, our, hour, trout	hour, out, cow, plough	sauerkraut
/oy/	Long	oil, boil, boys, boy		buoyed

Notes:

[1] Usual Regular-Spellings = spellings found in most words.
[2] Other Regular-Spellings = spellings found in special environments, like before *-r*, word-initial/-final, etc.
[3] Exceptional Spellings = common exceptions to the regular spellings.
[4] Vowel sounds may not match all English dialects, e.g., been may rhyme with "tin" or "ten."
[5] Vowels for *cut* and *sir* will have different sounds in the so-called r-less dialects of English.

Source: Adapted from Brengelman (1970), *The English Language*: *An Introduction for Teachers,* Prentice Hall, Englewood Cliffs, NJ. With permission.

Figure 1.5 Variable spellings for English vowels.

Phonology is the study of how a language arranges sounds in predictable patterns. Such patterns include the actual inventory of sounds (phonemes) for a given language, as well as the distribution of the sounds in that language. The inventory of sounds is the specific and relatively small set of sounds used by a language, taken from the large set of all possible human language sounds. For example, English has the j-sound in "**j**u**dg**e," but most varieties of Spanish do not have this sound.

The distribution of sounds refers to four ways that sounds are positioned. First, the phonology specifies possible initial, medial, or final word positions of sounds, i.e., where in a word of the language (beginning, middle, or end) a particular sound can occur. For example, English has many words that end in *-b* and *-g* sounds, but words in Spanish do not end in *-b* or *-g*. In English, all vowels and consonants except /h/ appear in word-medial and -final positions, and all except /ng/ and /zh/ occur in word-initial position. In contrast, word-final consonant sounds in Spanish are only *-r, -d, -l, -s, -n* (with some exceptions occurring in borrowed words).

Second, vowels form the nucleus of the syllable, and the phonology specifies how and which consonants may group around a vowel to make a syllable. Syllables are divided into two parts, onset and rhyme. The onset consists of any consonants that precede the vowel. The rhyme consists of the vowel nucleus and the coda, i.e., any consonants following the vowel, ranging from none to three. English has 16 possible syllable structures, although some of these do not occur very often. Other languages have very different syllable structures. For example, most varieties of Hmong, a language spoken in the highlands of Laos and now in parts of the U.S., have just two syllable types: CV and CCV. The syllable types of English are listed in Figure 1.6.

Third, only certain consonants will group together into those clusters that occur before and after vowels, and the phonology of a language tells which ones can cluster, in what order, and where the clusters can appear in the word. For example, English allows many words to end in one, two, and three consonants (e.g., *an, ant, ants*), but the consonant limit at the end of a word in Spanish is one. Word-initial sound clusters in English are /pl- pr- py- pw- tr- tw- kl- kr- ky- kw- bl- br- by- dr- dw- gl- gr- gy- fl- fr- fy- th_1r- th_1w- hy- hw- vy- my- ny- sl- sw- sp- st- sk- sf- sv- sm- sn- sl- sr- sw- sn- spl- spr- spy- str- skl- skr- skw-/, etc. Word-final sound clusters in English are /-ps -ts -ks -fs -th_1s -bz -dz -gz -vz -dz -mz -nz -nzh -lz -rz -ns -ls -rs -mp -nt -nd -nk -mps -nts -ndz -nks -nth_1 -mf -ntsh -ns -lp -lt -lk -lps -rst -tsht -sht -pt -sp -st -sk -skt/, etc.

Last, consonants combine with other sounds in and around them, and the phonology of a language describes and predicts the slight changes each sound might undergo in certain predictable contexts. For example, say the words *lip* and *pill*, and notice that the *l*s are slightly different sounds, what

	SYLLABLE			EXAMPLES
	↓			
	ONSET +	RHYME		O | V | C N | O | O S |W| D E | E | A T | L |
		↓		
		Vowel + Coda		
1.		V		| ***a*** |
2.	C	V		*n* | ***o*** |
3.	CC	V		*fl* | ***ow*** |
4.	CCC	V		*spr* | ***ay*** |
5.		V	C	| ***i*** | *n*
6.	C	V	C	*t* | ***i*** | *n*
7.	CC	V	C	*sp* | ***i*** | *n*
8.	CCC	V	C	*spl* | ***i*** | *t*
9.		V	CC	| ***a*** | *sk*
10.	C	V	CC	*t* | ***a*** | *sk*
11.	CC	V	CC	*fl* | ***a*** | *sk*
12.	CCC	V	CC	*str* | ***i*** | *pped*
13.		V	CCC	| ***a*** | *sked*
14.	C	V	CCC	*m* | ***a*** | *sked*
15.	CC	V	CCC	*pr* | ***a*** | *nks*
16.	CCC	V	CCC	*str* | ***a*** | *nds*

Notes:

1. Syllable structure is based on *sounds*, not spelling, e.g., "brought" has a CCVC structure: **/brat/**.
2. Parts of the syllable are these:
   Syllable = two parts: onset + rhyme
   Onset = consonants that appear before the vowel
   Rhyme = two parts: nucleus + coda
   Nucleus = the vowel
   Coda = consonants that appear after the vowel

Figure 1.6 The structure of English syllables.

the dictionary calls the word-initial *light l* of *lip* and the word-final *dark l* of *pill*. In *vowel reduction,* all English vowels sound something like the vowel in *c**u**t* when they are not stressed, e.g., the different pronunciation of *m**a**n-* in *m**á**nly* vs. *-m**a**n* in *firem**a**n*. In *syllabication,* these same vowels tend to be lost when they occur before vowel-like consonants such as /-l, -r, -m, -n, -ng/, e.g., *firem**a**n* sounds like *fire**mn***. In *flapping,* consonants /t/ and /d/ are just a quick d-like flap of the tongue tip in words like *o**tt**er* ands *spi**d**er*. In *aspiration,* the consonants /p, t, k/ expel a slight puff of air when they are word-initial before a vowel, e.g., note the slightly plosive pronunciation of /p/ in ***p**in* but not in *s**p**in*.

Writers, especially those challenged by spelling, sometimes console themselves by recalling comments about the randomness and irregularity of English spelling. There are certainly irregularities and exceptions to rules, but English spelling follows some general principles of sound–letter correspondence. Most consonant sounds have predictable spellings, and vowels are generally predictable in stressed syllables. Writers, however, often encounter problems for a number of reasons. First, there are many more sounds and sound combinations in English, especially vowel sounds, than letters in the alphabet or possible letter combinations to represent them. One recent study (Paulesu et al., 2001) counts 1120 different possible combinations of letters to represent the 40+ basic sounds of English, in contrast to Italian, which uses just 33 letter combinations to represent its 25 sounds. Second, English consonant sounds are spelled differently in word-initial, -medial, and -final positions. Third, unstressed vowels are difficult to spell and, fourth, some writers have simply not internalized the underlying rules of sound–letter correspondences. In other words, they just did not learn how to spell.

The scope of this chapter does not allow a detailed treatment of the English spelling system, but a few examples of the underlying principles of sound–letter correspondence can be given to demonstrate, especially to the spelling-challenged writer, that a system is successfully acquired by children and adults. A good source for understanding the English spelling system, and the source for this summary, is Brengelman (1970).

Some of the systematic spellings for English consonants are as follows:

1. Consonant sounds /v, h, w, y/ do not double and are spelled with one letter: ne**v**er, **h**eaven, **w**in, **y**et.
2. Consonants /th$_1$, th$_2$/ do not double but are spelled with two letters: e**th**er, ei**th**er.
3. Consonants /sh, zh/ do not double and are spelled with one or two letters: **s**ure, wi**sh**, mi**ss**ion, deri**s**ion.
4. Consonants /p, t, k, b, d, g, f, s, z, tsh, dzh, m, n, l, r/ are single or double. They are spelled with one letter in word-initial and -final positions; they are spelled with two letters only if they follow a stressed short vowel within the word, e.g., **p**aper, pe**p,** pa**p**er, pe**pp**er.
5. Consonants /f, l, k, s, z, dzh/ are spelled with one letter in word-initial position and after long vowels in word-final position; they are spelled with two letters only if they follow a stressed short vowel within or at the end of the word, e.g., **f**air, li**f**e, o**ff**er, o**ff**; **j**udge, ma**j**or, ju**dg**e; ea**ch**, i**tch**. /f/ is spelled *ph* and *gh* in a few words: gra**ph**, cou**gh**. /k/ is spelled *k* before *i* and *e* (kitten, keg), and *c* before letters *a*, *o*, and *u*: **c**at, **c**oat, **c**oot. /ks/ is spelled *x* in root words: bo**x**. /kw/ is spelled *qu*: **qu**ick.

6. A single consonant will double if a suffix beginning with a vowel is added, thereby satisfying the conditions for doubling after short vowels, e.g., si**t**, si**tt**er; ca**b**, ca**bb**ie; tu**g**, tu**gg**ing.

Some systematic spellings for English vowels are as follows:

1. Short vowels **/i/**$_2$ b**i**t, **/e/**$_2$ b**e**t, **/a/**$_1$ b**a**t, **/a/**$_2$ p**o**t, **/u/**$_3$ p**u**tt, **/u/**$_2$ p**u**t are usually spelled with one letter.
2. Long vowels **/i/**$_1$ b**ee**t, **/e/**$_1$ b**ai**t, **/u/**$_1$ b**oo**t, **/o/**$_1$ b**oa**t, **/ay/** b**uy, /aw/** b**ow**, **/oy/** b**oy** are usually spelled with a sequence of two letters.
3. Word-final *e* serves one of two purposes: first, when a word ends in a consonant sound, the final *e* signals the preceding vowel is long; the *e* is just the second part of the vowel's multiletter spelling: f**ate**, st**ove**, **use**, r**ose**, k**ite**, m**ouse**, v**oice**. Second, it can make a word-final consonant like the /g/ of hu**g** sound like the *g*-sound /dzh/ in hu**g**e, and the *c* with a *k* sound softens to /s/, e.g., picni**c** vs. ni**ce**.

Some vowels are just hard to spell. Recall that the nucleus of every syllable is a vowel. When English vowels appear in polysyllabic words, the vowels in stressed syllables are clearly pronounced and usually easily spelled, but vowels in the nonstressed syllables end up sounding like a nondescript *uh* sound as in **/u/**$_3$ p**u**tt. Deemphasizing unstressed vowels is a common process in English called *vowel reduction*. Consider the four syllables in the word *catastrophe*: C**A** T*A* STR**O** PH*E*. The second and fourth vowels are stressed; the first and third vowels are reduced to the *uh*, a vowel sound not so easily perceived or spelled as one of the five available vowel letters.

Why is a discussion of English spelling more appropriate to phonology than phonetics? While sound–letter correspondences in an alphabetic language are, in greater or lesser measure, phonetic, recall that phonology is the study of units of sound and the patterned variation of their perception and production in the context of other sounds. Such spoken variation is perceived by speakers and is then very often reflected as repeated and patterned spellings or misspellings in their writing. Thus, at one level, spelling is a matching of phonetic sound to alphabetic letter, but at another level, spelling is a system that reflects some of the intricately patterned rules of the phonology of the language. The writer will produce systematically correct spellings if he or she is able to match the graphic system to the sound system according to both phonetic and phonological rules. The writer may also produce systematically incorrect spellings (misspellings) as a result of mismatching the systems.

Here is an example of how a writer's accurate perception of a voiceless consonant turned into a systematic misspelling. A voiced sound is one with

vibration of the vocal cords, and a voiceless sound is one without vocal cord vibration. A voiced /g/ sound appears in the word ***g****usto*, but the same /g/ may easily be perceived and produced as a voiceless /k/ in the word *dis****g****ust* because the /g/ takes on (assimilates to) the voiceless quality of the preceding /s/. Say the word and notice that the /g/ sound does indeed change to a /k/ sound in this context (after voiceless /s/). The writer in this case repeatedly and consistently spelled *disgust* with a *q*: d-i-s-**q**-u-s-t. This writer's accurate hearing and perception of the /g/ sound as a /k/ probably caused her to spell the *g* as *q* (a letter that only relates to the /k/ sound), thereby replacing any other possible, but apparently unavailable, strategies for correctly spelling the word d-i-s-**g**-u-s-t.

Here is another example that incorporates acoustic information about sounds. The sounds /p/, /t/, and /k/ all share two important phonetic characteristics: they each stop the flow of air for some milliseconds and each is made without voicing, i.e., without vibration of the vocal cords. Thus, they are called voiceless stops. The differences that allow speakers and hearers to discriminate them are their respective points of articulation in the vocal tract: bilabial, alveolar, and velar. However, the /p/ and /k/ sounds are easily perceived to be similar because their respective positions at the front and back of the mouth actually give them a certain acoustic similarity. So, in some varieties of Spanish, for example, speakers will pronounce "Pe*p*si" as /pe**p**si/ or /pe**k**si/. This pronunciation variant appeared as a systematic variable (class feature) in the written Spanish of one suspect-author.

Morphology is the study of word formation. The building blocks of words are meaningful segments called *morphemes*. A morpheme is the smallest unit of language that carries meaning. Note that "meaning" here indicates a word or word-part with referential meaning, e.g., *book, run, happy*, etc., or one with grammatical meaning, e.g., *the*, *in*, act*ive,* etc. Content morphemes are those with referential meaning; function morphemes and words have grammatical meaning. For example, at the word level, nouns, verbs, adjectives, and adverbs are content words, but articles, prepositions, and conjunctions are function words.

In the languages of the world, words are formed in many ways, and specific languages are characterized according to how they form words. English is a synthetic language, meaning that it makes words by combining morphemes; in addition to words with just one root morpheme, like *tract*, other words can be formed by combining various other morphemes, like *tract+or*, *tract+or+s*, *con+tract+or+s*, and *sub+con+tract+or+s*. Other examples of synthetic languages are Spanish, Japanese, Korean, Punjabi, and Tagalog. On the other hand, languages like Cantonese, Mandarin, Khmer, Hmong, Lao, and Vietnamese are analytic languages. Their words are formed without combining morphemes; each word has just one morpheme.

The morphemes of English are roots and affixes. As a practical matter, a root may be identified as the morpheme that gives a word its basic meaning. Affixes are prefixes and suffixes that attach to the root. For example, the word *proposal* has three morphemes, pro + pose + al (prefix + root + suffix). Derivational affixes make it possible to derive many different words by attaching to roots. Here are some examples of one root *mit/mis* ("send") with various affixes (in bold): **per**mit, **per**miss**ion**, **per**miss**ive**, **ad**mit, **re**mit, **com**-mit, **sub**mit, **e**mit, **inter**mitt**ent**, **trans**mit, **dis**miss, **re**miss**ion**, **ad**miss**ion**, and **un**-**sub**-miss-**ive**-**ly**. Some of the most common derivational affixes of English, both prefixes and suffixes, are listed in Figure 1.7.

The understanding of English morphology also involves the concept of the allomorph. Morphemes are often spoken and written in somewhat different forms. A variant form of a base morpheme is called an allomorph, a "mixture" of forms. Some root morphemes have various allomorphs, depending on their source and history. Figure 1.8 demonstrates examples of some common English roots with their respective allomorphs. In addition to the allomorphic forms of root morphemes, some frequently occurring Latinate prefixes in English have various allomorphs; some are described in Figure 1.9.

Synthetic languages like English form new words by combining morphemes in various ways. New-word derivation (see above) is common. New words created by compounding are also frequent. A compound word combines two roots into one and can be heard as one word because the new word will have only one primary stress instead of two, e.g., *basketball* or *door stop*. Note that compound words are not always spelled as one word. They can be spelled in various ways, e.g., as one word, hyphenated, or with space between the words, e.g., raincoat, White House, school-bus. In addition to compounding and derivation, other important word formation processes are outlined in Figure 1.10: blending, borrowing from another language (e.g., *espionage* from French), clipping and back formation, acronym and abbreviation, coinage, functional shift, proper naming, and morphological misanalysis.

English also has eight inflectional morphemes, all appearing as single suffixes with grammatical meaning at the end of a word: -s (book**s**), -s (he walk**s**), -'s (Pete**'s**), -ed (he walk**ed**), -ing (he is walk**ing**), -en (he has eat**en**), -er (tall**er**), -est (tall**est**). Of these, the three **-s** morphemes and the *-ed,* also have allomorphs. The *-s* morphemes will sound like [-s], [-z], [-iz], depending on whether the base word ends in a voiceless, voiced, or s-like sound, e.g., [-s] in ca**t**+**s**, [-z] in do**g**+**s**, [-iz] in ki**ss**+**es**. The *-ed* morpheme will sound like [-t], [-d], [-id], depending on whether the base word ends in a voiceless, voiced, or a /t/ or /d/ sound, e.g., [-t] in wi**sh**+**ed**, [-d] in roa**m**+**ed**, and [-id] in wai**t**+**ed**.

Morphology is also related to English spelling in other more general and important ways. First, recognizing the morphemes in a word helps a writer

PREFIXES

Place/Direction:	ab- ad- con- de- ex- in- en- intro- inter- intra- contra- ob- per- pro- sub- trans- ultra- retro-
Time:	ante- pre- re- post-
Negation:	anti- in- un- dis- mis- a- non-
Descriptive:	ambi- ana- mini-
Numerals:	mon- uni- bi- duo- tri- quad- tetra- quin- penta- sex- hex- sept- hept- oct- nov- deca- semi-

SUFFIXES

Verb to Noun:	-ion -ure -ence -ency -ance -ment (e.g., persuade → persuasion)
Noun to Adjective:	-(i)ar -ate -ic -id -ish -less -like -ly -ful -ite -ous -al -some (e.g., child → childish)
Verb to Adjective:	-able -ible -ile -er -or (e.g., like → likable)
Adjective to Noun:	-ity -ness -hood -(i)an -ism -ist -ite -ship (e.g., happy → happiness)
Adjective to Verb:	-ate -ize -(i)fy (e.g., rational → rationalize)
Adjective to Adverb:	-ly -wise (e.g., sad → sadly)
Combinations:	-ate+ion (mutation); -ate+ure (literature); -ify+ic (terrific); -al+ly (finally); -ent+ial (sequential); -a/ence+y (vacancy); -ate+ory (purgatory); -ar+ity (circularity); -ate+ion (termination); -ite+ize (sanitize)

Figure 1.7 Some common affixes of English.

ROOT	MEANING	ALLOMORPHS	EXAMPLES
MIT	"send"	MIT, MISS	per**mit**, ad**miss**ion
CORD	"heart"	CORD, CARD, COEUR	dis**cord**, **card**iac, **Coeur** d'Alene
DICT	"say"	DICT, DIT	ver**dict**, **dict**ionary, e**dit**, ad**dit**ion
FECT	"make"	FECT, FACT, FAC, FIC	in**fect**, **fact**or, sur**face**, **fict**ion
PROB	"test"	PROB, PROV	**prob**ation, **probe**, ap**prove**, **prove**
CLUD	"close"	CLUD, CLUS, CLOS	in**clude**, ex**clus**ion, **clos**ure, **close**
REG	"straight"	REG, RIG, RECT	**reg**ulate, **rig**orous, **rect**itude
DOG	"teach"	DOX, DOC, DOCT	**dog**ma, ortho**dox**, **doc**ent, **doct**or
PED	"foot"	PED, POD, PUS	**ped**al, **pod**iatrist, octo**pus**
VERT	"turn"	VERT, VERS, VERG	re**vert**, re**verse**, in**vers**ion, con**verge**
FORT	"strong"	FORT, FORCE	com**fort**, **fort**itude, **force**
GRAPH	"write"	GRAPH, GRAM, GRAV	**graph**ite, tele**gram**, en**grave**

Figure 1.8 Some frequent Latinate roots and allomorphs of English.

decide between two phonetically good spellings: *ta**x*** is a singular noun, but its homonym *ta**cks*** is a plural noun. In other words, spelling different morphemes that sound alike requires recognition of each word and its context, e.g., the *play**'s*** the thing; the play**'s** second act, the play**s** were interesting, she play**s** a lot (Bryant, Nunes, and Aidinis, 1999:114).

Second, when there is not a discernable sound–letter correspondence, a morpheme is often spelled the same. For example, whatever the pronunciations of the inflectional [-s] or [-ed] endings, their respective spellings are just *-s* or *-es*, and *-ed*. Perhaps the most important example of using morpheme recognition to correctly spell phonetically unpredictable words relates to vowel sounds that are weakened in the unstressed syllables of polysyllabic words like *catastrophe*. Writers often have trouble spelling such words according to how they sound. At this point, the writer's knowledge of English morphology compensates because morphemes tend to be spelled consistently. "… most polysyllables are made up of more than one morpheme, and in English a given morpheme tends to retain the same or nearly the same spelling regardless of changes in its sound," (Brengelman, 1970:91). For example, notice that the vowels in the morpheme *photo-* (meaning "light") are pronounced differently but spelled the same in each of these related words: ph**o**t**o**, ph**o**t**o**graph, ph**o**t**o**graphy.

The lexicon is the collection of word parts and words that combine into larger units, word parts (morphemes) into words, and words into utterances; it is the part of grammar that contains all the different words of the language. Each lexical entry contains details of a word's pronunciation, spelling, meaning, referents, and functions. The lexicon of a language is represented by its

PREFIX	MEANING	ALLOMORPHS	EXAMPLES
AD-	to/toward	AD- AS- AG- AF- AT- AR- AP-	**ad**mit, **as**sert, **ag**gress, **af**fect, **at**tend, **ar**rive, **ap**point
OB-	in front of	OB- OF- OP- OC- O-	**ob**struct, **of**fer, **op**pose, **oc**clude, **o**mit
SUB-	under	SUB- SUF- SUP- SUG- SUC-	**sub**mit, **suf**fer, **sup**port, **sug**gest, **suc**ceed
CON-	with	CON- COL- COM- COR- CO-	**con**tain, **col**late, **com**mit, **cor**rect, **co**-op
EX-	from/out of	EX- EC- EF- E-	**ex**hume, **ec**centric, **ef**fect, **e**gregious or **e**mit
IN-	not	IN- IL- IM- IR-	**in**operable, **il**licit, **im**possible, **ir**regular

Figure 1.9 Allomorphs of prefixes.

PROCESS	DESCRIPTION	EXAMPLES
DERIVATION	add derivation to root	c o n f e r e n c e
COMPOUNDING	combine two roots	o v e r c o a t , b y l i n e
BLENDING	fuse two words	m o t e l , b r u n c h , s k o r t s
BORROWING	from another language	espionage, burrito
INITIALISM	say first letters of word	UCLA
ACRONYM	make word w/ first letters	NAFTA
CLIPPING	cut off word "anywhere"	lab (laboratory)
BACK FORMATION	cut off at morpheme break	dorm (dormitory)
COINAGE	create a new word	jello, kleenex, google
FUNCTIONAL SHIFT	make word another part of speech	impact (n.), impact (v.)
PROPER NAMING	make a word with a name	levis, leotard, herz
MORPHOLOGICAL MISANALYSIS	make new word w/ a clipped word	pre+quel, toy+brary, her+story

Figure 1.10 Word formation processes of English.

dictionary. The lexicon of a particular person refers to the set of words and morphemes that that particular speaker and writer knows and uses.

Syntax is the study of how words are combined into longer sequences, such as phrases, clauses, and sentences. The technical focus of syntax is on the internal grammatical structure of sentences. A sentence is a linear string of constituent words that can be isolated and described, one by one, from left to right in English. However, the hearer or reader is immediately drawn to do more than interpret each word of the string as a separate unit. In addition to sizing up the sentence as a linear string, the listener or reader subconsciously decodes it, or the linguist consciously describes it, by identifying clumps of words that naturally group together as phrases, forming nested subparts of the whole sentence. For example, units like subject noun phrase and verb phrase are universal. In the sentence "John kissed the frog," two high-level constituents can be identified: the subject noun phrase "John" and the verb phrase "kissed the frog."

It is important to note that speakers and writers do what comes naturally: they quickly acquire the ability to construct grammatical and acceptable syntactic structures, then they produce utterances which are more or less elaborate sentences. Linguists find ways to observe and understand how language is acquired, analyze what speakers and writers do, and then account for how and why.

The key to meaningful description and understanding of grammatical structure is the analysis of sentence levels and their embedded structures. For example, "John kissed the frog" is the highest sentence level; "John" + "kissed the frog" is the next noun phrase + verb phrase level, and dividing the object noun phrase into its parts of "the" + "frog" is the lowest level of article + noun. Of course, the length and underlying intricacy of a sentence can make it challenging to establish the sequence and hierarchy of all elements in the sentence that correspond to its speaker's or writer's intended meaning. The basic phrase structure of the English sentence contains a noun phrase, auxiliary verb, and verb phrase; some examples are presented in Figure 1.11.

Most linguistic approaches to sentence structure revolve around a two-level description of the sentence. The first is a focus on the basic phrase structure of the language (discussed above), and the second is a study of various ways in which speakers or writers manipulate these basic phrase structures to create an increasing variety of structures, as well as more complex sentences. The speaker's or writer's "manipulation" of basic structures is accomplished by taking the first-generated structures and effecting various transformations on them, i.e., adding, deleting, or moving elements. Linguists model this process by first specifying the basic phrase structures, then defining the various transformations in utterances that result in sentences. Examples of a few commonly used transformations appear in Figure 1.12.

SENTENCE						
NOUN PHRASE	AUXILIARY VERB			VERB PHRASE		
(ART) (ADJ) NOUN SENT	MODAL	PERF	PROGRESSIVE	MAIN VERB	COMPLEMENT	ADVERBIALS
John				snores.		
Mary				slept		there.
The man	might			stop		here.
A tall student			is	studying	math	in the classroom.
His sons	may	have		driven	the car	carefully.
A good teacher	should		be	thinking		clearly every day.
These two noisy birds	could	have	been	looking for	other birds	all night long.
Many students	will			seem	quiet	at first.
Mom's car			was	rolling		down the street.
Her sister				rolled down	the shade	quietly last night.
The player who got hit	must	have	been	hoping	to draw a foul	during the game.

Figure 1.11 Some basic phrase structures of English.

TRANSFORMATION	TYPE	BASIC PHRASE STRUCTURE	CHANGE TO NEW STRUCTURE
Negation	Addition	John may go.	John may not go.
Yes/No Question	Movement	John will go.	Will John go?
Contraction	Deletion	John should not go.	John shouldn't go.
***Do* insertion**	Addition	John loves Mary.	John does love Mary.
Negation	2 additions	John loves Mary.	John does not love Mary.
Wh- Questions	All 3	John will leave now.	When will John leave [ ].
Passive	All 3	John saw Mary.	Mary was seen.

Figure 1.12 Some commonly used transformations of English.

Sentences are made up of words and phrases that, from the earliest grammarians, have been placed into various grammatical categories. Categories of words that relate the language to the situation, time, and place of an utterance are as follows:

Person — first (I/we), second (you), third (he, she, it, they)
Number — singular and plural of nouns and pronouns
Gender — he or she
Case — subject (I, he, she, we, they) or object (me, him, her, us, them)
Tense — past, present, and future grammatical forms that relate the time of the action referred to in the sentence to the time of the utterance of the sentence
Mood — the expression in the sentence of the attitude of the speaker toward the facts of what is said, marking with modal verbs (may, might, can, could, will, would, shall, should, and must) the speaker's wish, intention, necessity, obligation, certainty, and possibility (Mood is not so clearly marked in declarative, imperative, and interrogative sentences.)
Aspect — in English verbs relating to perfect (completed) actions or events (e.g., "I left."), progressive (not completed) actions (e.g., "I was leaving."), and the so-called "stative" verbs (e.g., know, understand, hate, love) that already contain the notion of duration and therefore do not occur in the progressive

The most well known grammatical categories are the parts of speech. Just as with content and functional morphemes, there are the lexical parts of speech, i.e., nouns, verbs, adjectives, and adverbs. Then, there are the grammatical words used to bind together the content words: prepositions, conjunctions, pronouns, and interjections. These word classes are very useful, but they seldom catch nuances or account for the variety of each class. For

example, there are many kinds of verbs, starting with main verb and auxiliary verbs, and proceeding to various subclasses of verbs.

A third kind of grammatical category includes grammatical elements that relate to their function in the sentence: subjects, predicates, complements; adverbials of time, place, and manner; transitive, intransitive, and reflexive verbs; uses of the verb *to be* (existential, possessive, locative), auxiliary verbs; and the active and passive voice of sentences.

Semantics is the study of meaning in words and sentences. Word meaning relates to the sense of a word vis-à-vis other words in the language, e.g., synonymy (words with the same meaning, like synonyms *little* and *small*); antonymy (words with opposite meanings, like antonyms *good* and *bad*); homonymy (words with the same sound or form but different meanings, like homonyms *mail* and *male*); hyponymy (words included within the class of another word, like hyponyms *apple* and *orange* vis-à-vis *fruit*, or hyponyms *fruit* vis-à-vis *plant*); and polysemy (single words with more than one meaning, like the polysemous word *watch* (i.e., see, wristwatch, vigil). Word meaning relates as well to a word's reference to things, actions, and situations in the world, such as *horse, run*, and *happy*. However, understanding a word and its referent is sometimes difficult to do for two reasons: it is not always possible to relate some words like verbs or function words to something in the world, and one cannot always agree on the relationship between a word and its referent. For example, is the White House a house or is the tomato a fruit?

Sentence meaning relates to the interpretation of the whole sentence as a unit of meaning. For example, even though "John kissed Mary" and "Mary kissed John" are two sentences that contain the same words, their meanings are different. Each sentence conveys its respective meaning as not only the sum of its parts but also their arrangement within the sentence.

1.3.2 Language Function

Discourse analysis is the study of language units beyond the sentence. These units of discourse in speech and writing are studied by relating them as communicative events to their cultural and social contexts of use. Such contexts include forms and purposes of talk associated with interviews, negotiations, debates, greetings, narratives of personal experience, and other types of natural conversations. Discourse is studied by observing large samples of natural language used in specific contexts, then describing the language and intended meaning of participants, their resultant success or failure to communicate or comprehend the meaning of what was said, the organization and rules of conversational interaction, and the social and cultural constraints on speech and writing.

An important focus of discourse analysis is on the organization and situational constraints of *conversations*, i.e., characteristics such as openings, closings, feedback, turn-taking, side information, nonparticipants, interruptions, and hearable messages from outside the immediate conversation.

One of the best communicative contexts for observing natural language discourse is within narratives of personal experience, wherein speakers and writers structure their personal experiences in stories that have an overall structure of up to six parts: abstract, orientation, complicating action, evaluation of events, result or resolution, and coda.

Pragmatics is the study of intended meaning. This is distinct from semantics (the study of linguistic meaning) insofar as a given utterance is interpreted based on the intention of the speaker or writer, which may or may not be the same as the overt linguistic meaning of the sentence. For example, "Please open the window," and "It sure is hot in here," may both be requests to open the window, but the latter will be interpreted as such by the listener only within the situational context of the statement.

This example makes it clear that the successful communication of intended meanings (i.e., pragmatic uses of language) depends on reference to nonlinguistic information such as the identity and social relationships of speaker or writer and listener or reader; the place, time, and topic of conversation; the purpose of the communication; the language used, etc. Without this contextual information, the intended meaning of a sentence like "It sure is hot in here" may be misinterpreted or remain unknown.

Speakers' and writers' uses of language to "do things with words" are speech acts. Some of the clearest examples of speech acts are the so-called performative verbs, e.g., assert, ask, order, request, threaten, warn, bet, advise, promise, pronounce, etc. These are verbs whose use in given contexts goes beyond being a mere linguistic event but becomes the act itself. Note the difference between "He pronounced them husband and wife" and "I pronounce you husband and wife." The former use of "pronounce" reports on the event, but the latter actually makes the couple husband and wife, producing situational conditions allow (e.g., desire to get married, the power to marry someone, etc.).

Pragmatics is, therefore, very much the study of how to do things with language. Think of how many ways one might communicate any of the following in a variety of social contexts: accusing, addressing, advising, announcing, apologizing, asking, asserting, blaming, boasting, claiming, complaining, commanding, congratulating, condoling, convincing, demanding, disapproving, greeting, instructing, introducing, inviting, offering, ordering, pardoning, parting, persuading, praising, promising, recommending, refusing, reporting, reprimanding, requesting, stating, suggesting, telephone talking, thanking, threatening, vowing, etc.

Directness is another important result of the contrast of literal vs. intended meanings. Linguists study the ability of the speaker or writer to fit the message on a continuum between the two, communicating literal meaning with very direct statements and intended meaning with more indirect language. Although it is not always easy to locate various statements at an exact place on the direct–indirect continuum, speakers and writers do use and recognize degrees of directness. Consider these requests to open a window:

1. Open the window.
2. Please open the window.
3. Will you please open the window?
4. Would you please open the window?
5. Would you mind opening the window?
6. The window is shut.
7. Are the windows locked?
8. Is anyone else hot?
9. I must be having a hot flash.

1.3.3 Language Acquisition

Children take in the sounds, words, phrases, and sentences of spoken language and use this input to build an internal grammar of the language. Their grammatical knowledge is implicit, complex, and so quickly and unconsciously acquired that one is led to say that children are innately prewired for language in a way unique to the species. The study of language acquisition examines children's language development in relation to the input they receive, to when and how specific structures and functions of language are acquired, and to how this all jibes with their capacity for so successfully sifting out their own language from their linguistic and social environment.

Understanding language acquisition and use relies on an important distinction that is made in the context of asking what it means to acquire and know a language: competence vis-à-vis performance. *Competence* is the speaker's or writer's implicit knowledge and ability to create, use, and understand grammatical, meaningful, and appropriate utterances in his or her language. "Appropriate utterances" refers to Hymes' (1971) important expansion of linguistic competence to include *communicative competence,* thereby including a speaker's knowledge of the social and cultural constraints on appropriate use of language.

Performance, on the other hand, is a reflection of competence in the speaker's or writer's actual use of language. Since performance is affected by external factors and the variable conditions experienced by the speaker or writer, it is rarely a perfect reflection of competence. In this model, errors

and linguistic variation are sometimes mistakenly explained as "accidental" characteristics of language that are related to external performance factors, not as "essential" characteristics that are related to linguistic competence in a rule-governed, systematic way.

Individual differences in language acquisition: There is significant evidence that individual children acquire language at different rates and in different ways (Nelson, 1981; Shore, 1995). Individual differences are described in four general ways (Shore, 1995:15): referential vs. expressive (child's grasp of language functions); nominal vs. pronominal (child's preference for nouns or pronouns); analytic vs. holistic (child's interpretation and use of words or whole utterances); and risk-taking vs. conservative (child's loose or careful approach to acquisition).

More specifically, in vocabulary children demonstrate differences in acquisition and use of personal social words, content words (like nouns) vs. function words, object naming with nouns, formulaic utterances, and nouns vs. pronouns. In phonology, individual differences arise in order of phoneme acquisition, focus on individual sounds vs. whole prosodic utterances, and willingness to add items to the phonological system. Individual differences in morphology are found in the acquisition of grammatical morphemes such as function words and inflections. The acquisition of syntax demonstrates variability in word-order rules. The acquisition of language functions demonstrates individual preference for information functions or interpersonal functions of language, and variability in the coherence and conversational relevance of utterances (Shore, 1995:17).

1.3.4 Linguistic Variation

Language changes. By its very nature, language is not a static system; this dynamic is first reflected as variation in the spoken and written language of groups and individuals. The most convincing modern-day argument for this theoretical position was articulated by Weinreich, Labov, and Herzog (1968:188) more than 30 years ago: "… all change [in language structure] involves variability and heterogeneity." Since then, this understanding of linguistic variability has been confirmed again and again by hundreds of studies of the analysis of linguistic variation.

This position is in contrast to traditional views of variation, and it is this very difference in theoretical orientation that accounts for differences in approach and methodology in stylistics and authorship identification. Recall the account of variation in Section 1.3.3 as a kind of accidental byproduct of performance factors experienced by the speaker or writer. In this scheme of things, variation is not part of the language user's underlying rule-governed competence. However, the competence–performance distinction makes more

sense if a speaker's or writer's competence is understood to include orderly heterogeneity, and most variation is recognized to be too systematic to be explained away as performance.

All languages, then, demonstrate internal variation caused by internal and external factors. Internal factors include structural and functional effects on linguistic change (Labov, 1994:1). External factors relate to variables that cause relative isolation of groups of speakers and writers, or of individual language users, i.e., their distance from one another caused by separation in time (generation), geography, social class (sex, age, race, ethnicity, education, occupation, income level), and the immediate social context of language use (topic, intended listener or reader, communicative purpose, place, and time).

The linguistic variation that results from such internal and external catalysts for change is usually described in terms of dialects and styles of speaking and writing. A dialect is a form of a language that develops differently due to the geographic or social separation, partial or total, of one group of speakers from another. Geographic dialects are due to physical separation and social dialects are due to social distance. A style is a form of language defined by its context of use. A written-language style is also defined by the individual writer's range of variation, i.e., the aggregate set of variable forms and uses of language, conditioned separately and together as a set by the conscious and unconscious choices the writer makes during the writing process.

The linguistic distance between two dialects or styles of a language is described in terms of their variable differences in pronunciation (and spelling), word formation, sentence structure, word and sentence meaning, larger discourse units, and ways of doing things with language. Linguistic distance is usually most obvious when a given dialect or style is described vis-à-vis the standard variety of the language; for convenience, linguists often describe dialects and styles in terms of the standard. The standard variety is not usually viewed as a regional or social dialect, although there are different regional standards in countries like the U.S. Linguists often use the term *variety* to refer neutrally to a dialect of a language, even though some speakers see dialects as less formal, less correct, or less prestigious forms of a standard variety.

1.3.5 Written Language

Writing systems: The approximately 6000 languages of the world are grouped into about 20 major families, the largest in terms of number of speakers belonging to the Indo–European family. English is part of the Indo–European group. Scholars use internal (linguistic) criteria as well as external (historical, social, cultural, and geographical) criteria for grouping languages into their respective families. The linguistic characteristics used to

establish family relationships among languages are their sounds, ways of forming words, and sentence structures.

The writing systems of so many different languages represent considerable diversity. They vary according to whether their graphic segments represent meaningful content or linguistic forms. In pictographic writing systems, recognizable symbols of shapes and markings represent things, situations, and actions, although languages are no longer written in pictographic writing because it is limiting and inefficient. In logographic writing, each graph represents a unit of linguistic meaning, i.e., a morpheme or a word. Chinese and languages that borrow Chinese characters (Japanese and Korean) are now the only languages that use logographic writing. Various languages use syllabic writing, in which each graph represents a syllable. Japanese, for example, has two syllable collections, or "syllabaries": *hiragana* are used to write Japanese function words and inflections, and *katagana* represent syllables used to write foreign words. In alphabetic writing, vowel and consonant sounds are associated with individual alphabetic symbols (letters); English has an alphabetic system. While many other languages share the Roman alphabet with English, many languages use alphabets different from the Roman alphabet. In alphabetic systems, the fit between sound and letter may be nearly perfect as in Spanish, or far from perfect as in English.

Many languages use some combination of writing systems. Japanese orthography combines Chinese logographs to represent content words, the Chinese *kanji* characters, with Japanese syllable symbols, and the two *kana* syllabaries (Akita and Hatano, 1999:214). Korean writing uses an interesting combination of alphabetic and syllabic. Each written segment contains discrete letter symbols compactly arranged into a syllable, thereby making written segments simultaneously alphabetic and syllabic (Lyovin, 1997:34). Even languages like English, deemed to be completely alphabetic, use iconic symbols like those found at the top of the keyboard: @, #, $, %, &, * .

This very brief treatment of writing systems is perhaps sufficient to give the uninitiated lay-linguist a background in orthography; however, it does not allow for discussion of many of the most interesting and important historical or linguistic aspects. For further study, consult basic works such as Coulmas (1989), Daniels and Bright (1995), and Lyovin (1997, Chapter 2).

Writing: Writing is defined variably in historical, linguistic, developmental, and cognitive terms. All the varied definitions are accurate and useful, at least in part. Writing is a graphic system for representing and communicating information; visual symbols like road signs are nonlinguistic graphic systems, but symbols like letters, syllables, and characters are linguistic. Writing is the process of making visible marks (symbols) on a physical surface like wax, clay, papyrus, paper, or a computer monitor. Writing directly represents information about things and events and what is said about those events,

i.e., utterances made up of sounds, words, and sentences. Therefore, writing is a linguistic-based script systematically segmented into graphs representing things, words, syllables, or sounds of a language. Writing also refers to hand printing or handwriting.

The definition of writing historically most prevalent is that writing is an explicit representation of spoken language, or that writing derives from speech. This view goes at least as far back as Aristotle, extending later into the development of European and American linguistics of the early 20th century. Presently, however, general agreement is that the properties, acquisition, and acts of writing and speaking are different in so many ways that writing is considered to be related to but not derivative of speech (e.g., Chafe, 1986:12; Garton and Pratt, 1998:4; Olson, 1997:4; Wolf Nelson, 1988a:21). In spite of these many observations and research findings, it is not uncommon to see the traditional view of the primacy of spoken language articulated today without qualification. For example, Lyovin (1997:29) says, "Writing is only a secondary aspect of language, that is, it is only a means of symbolizing spoken languages, often a very imperfect means at that."

Composing a coherent text is also writing, as is discourse, first with respect to its objectives, i.e., the purposes and functions of writing, then with respect to its features, i.e., the elements, devices, and mechanisms used (Lloyd–Jones, 1977:33). Writing is creating a product such as a poem, business letter, report, etc. Writing is also a process of producing written text: planning, starting, making continuous decisions about language and meaning, reviewing, revising, etc. Writers determine what they want to say and how they wish to say it, given the broad array of available choices for the elaboration of both.

Differences between written and spoken language: The differences between written and spoken language are well documented and important to understand. In physical form, speech is ephemeral (temporary), occurs in real time, aural (requires listening), quick, social, and fragmentary. Writing is durable, occurs in space, visual (requires seeing), slow, often solitary, deliberate, and allows editing during and after. In function, as determined by social and situational factors, speech is conversation, more informal in style, more varied. In manner of presentation, speech has many nonlinguistic and paralinguistic discourse markers for linking ideas, and is subject to more dialect, accent, and slang variability. Writing must use forms of emphasis like the exclamation mark, underlining, capital letters, and italics; it is subject to less variability, and its conventions are more widespread (Garton and Pratt, 1998:4).

Additionally, in spoken language lots of meaning is contextualized, i.e., related to nonverbal context, and is usually face to face in the here and now. In writing, all meaning must be encoded in words or punctuation — not contextualized — and there is usually a greater distance between the writer

and reader, with resulting adjustments in vocabulary and sentence structure (Wolf Nelson, 1988a:21).

In addition to the studies cited already, other good sources characterizing the distinctions between spoken and written language are Chafe (1985 and 1986) and Robbins (1989:114). The breadth of research on speech vis-à-vis writing is documented in McMenamin (1993:124).

Acquisition of written language: Writing requires the progressive development of two kinds of skills: graphic and linguistic. "Handwriting is a mechanical performance skill whose only role is to make writing decipherable. Learning how to handwrite does *not* teach the child how to write, compose language and express ideas, or master writing-as-conceptual-act," (Klein, 1985:33). Garton and Pratt (1998:188) focus on the combined skills in similar fashion: "Learning to write involves mastering a diverse range of skills and understandings … grouped under four headings — early distinctions; letter formation and printing skills; the functions of the written word; putting the message in writing."

Acquisition of the mechanical skills requires small muscle development (fine motor skill), eye–hand coordination, holding a writing tool, basic strokes, letter perception, and orientation to printed language (Lamme, 1979), as well as differentiating between drawing and writing, development of letters and letter-like shapes, and concepts of linearity, uniformity, inner complexity, symmetry, placement, and left-to-right and top-to-bottom motion (DeFord, 1980). Writers of the signs and symbols of various scripts throughout the world and over time, including present-day logographs, syllabaries, and alphabets, demonstrate these same skills for graphic representation (Wann, Wing, and Sõvik, 1991).

Acquisition of writing-as-conceptual-act requires combinations of letters and spaces indicating understanding of units (letters, words, sentences), recognition of isolated words, sound–letter correspondences, writing simple sentences with invented spelling, sentence combinations, and control of punctuation and capitalization, as well as the understanding and use of various forms of discourse (DeFord, 1980).

Children learn to produce language as speaking and writing and, in conjunction with the allied receptive language counterparts of listening and reading, they bring together these skills to create and communicate meaning. Thus, writing acquisition is a process of development in which the child actively constructs the capacity to write by writing, i.e., by becoming progressively involved with the writing process and system, and by understanding the situational purpose of writing, i.e., interacting with the physical, social, and cultural context of writing.

The acquisition process usually requires formal instruction involving basic skills in reading (the alphabetic principle of letter–sound correspondences),

then copying letters, spelling difficult words, and then forms of writing like stories and diary entries (Garton and Pratt, 1998:183). Children's success depends on many factors:

- Their active involvement (writing because they want to) in the learning process
- Knowledge that they have before they start school
- Opportunities and encouragement for writing
- Writing what they say (vs. what others like the teacher say)
- Their grasp of the alphabet, i.e., letters represent sounds, and these are used to form words
- Exposure to print in an environment that results in stimulation of interest in writing
- Opportunities for contact with others whom they can watch writing (Garton and Pratt, 1998:188).

One often thinks of writing development taking place in the young child, yet older youth in the 9 to 19-year-old age range continue to develop their ability to write with "… the gradual acquisition of low-frequency structures and the ability to form unique combinations of structures" (Scott, 1988:50). Such structures include longer sentences and an increase in the type and number of subordinate clauses used. Older youth also begin to expand writing contexts to the setting and occasion, as well as to distinct discourse genres (Scott, 1988:51).

Although sentence length can vary dramatically within the same individual as a function of context and discourse type, sentence length increases in preadolescent and adolescent years. Clause length (mean number of words per clause) also increases with age. Degree of subordination (average number of clauses per terminable (T)-unit, and main + subordinate clauses per T-unit) increases over time and is expressed as the subordination index, the ratio of the number of clauses over total T-units (Scott, 1988:55).

Note that the unit of analysis of written syntax traditionally was the sentence. However, because of difficulties in determining just what a sentence is, the terminable unit or *T-unit* has long been taken to be a more precise measure and is used now to segment discourse in many studies: "… the T-unit consists of a main clause with all subordinate clauses or nonclausal structures attached to or embedded within. All main clauses that begin with coordinating conjunctions (*and, but, or*) initiate a new T-unit unless there is co-referential subject deletion in the second clause" (Scott, 1988:55).

Individual differences in the acquisition of written language: There are significant individual differences in the acquisition of writing. One of the reasons for cataloging skills involved in the acquisition of writing was to demonstrate the many variables that can result in individuation.

Given that all language processes are interrelated, especially the expressive and productive skills of speaking and writing, individual differences in the acquisition of oral language will result in differences in written-language acquisition (Dyson, 1983 and 1985; Klein, 1985; Macintosh, 1964; Moffett, 1973; Possien, 1969; Russell, 1953). For example, Dyson (1985:59) comments that "… the nature of the individual child, the nature of the situational context, and the complex nature of the writing system itself all interact in written language growth, just as they do in oral language growth…. The interplay of these factors suggests that individual differences are to be expected in writing development."

A child's acquisition of writing becomes more and more individualized because the language itself, its expressed and intended meanings, the person of the writer, and the intended reader "become increasingly differentiated, or distanced from one another, and also linked or integrated in news ways," (Dyson, 1985:62). Resulting individual differences in writing are demonstrated by beginning writers and also by youth at later developmental levels (Wolf Nelson, 1988b).

While case studies reviewed by Dyson (1985:118) demonstrate many similarities in children's acquisition of writing, she concludes that "the differences between children were more striking than the similarities." Differences centered on their intentions for writing and ways of approaching writing. Research on individual differences related to memory, fluency, coherence, and revising of writing include Robinson (1984), McCutchen et al. (1994), McCutchen (1996), Swanson and Berninger (1996a and 1996b), Zellermayer and Cohen (1996), and Torrance, Glyn, and Robinson (1999).

Group-specific differences in writing acquisition are also useful in determining "class features" of writers. Recent neurological research focuses on countries that have more people with symptoms of dyslexia than others (Paulesu et al., 2001). PET scans were used to observe brain activity in English-, French-, and Italian-speaking adults to determine language-specific differences in readers while they were connecting language sounds with the letters that spell each sound. Results indicated less neural activity for Italian readers than for the French or English speakers, meaning that certain written languages, like English and French, make the dyslexic condition worse because their spelling is often so different from how words sound. This stands to reason, given that written language is neurologically a relatively new human activity. Matching sounds in a word to the symbols that represent them on the page is more difficult for some readers and writers than for others. For example, the /i_1/ sound can be written ten ways in English (b**ee**t, b**ea**t, b**e**, k**ey**, bab**y**, p**eo**ple, rel**ie**ve, dec**ei**ve, sal**i**ne, keros**en**e), but only one way in Italian or Spanish. Just the English vowel in the "-ough" letter combination can be pronounced at least five ways: /o/$_{1:}$ th**ough**, /aw/: b**ough**, /u/$_1$: thr**ough**, /a/: c**ough**, and /u/$_3$: t**ough**.

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Table of Contents

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ELIMINATION

(did not write) 1. Substantial significant dissimilarities in range of variation 2. No limitations present: individualizing characteristics, quantity of writing 3. There may be nonoccurring variables 4. There may be similarities 1 DEFINITE more than one writer

Figure 6.6 (Continued) Criteria for conclusions on

authorship questions of

resemblance or consistency.

RESEMBLANCE: Questioned vs. Known CRITERIA CONSISTENCY: Questioned vs. Questioned

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Frequent phrase

types: 10 ADJ + type + NOUN (as opposed to ADJ type of NOUN); all + MODIFIER + NOUN (vs. all + of + MOD + NOUN); amounts (not numbers) used with count nouns; VERB + that; NOUN + that; ADJ + that; Please consider … + numbered list; I sincerely + VERB; the next few + a time period; the above + NOUN; Please + Command; attempt to + VERB

Words specific to a

particular

discipline or

occupation: 3 psychological vocabulary; technical ecclesiastical language; sports terms

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