The Multilingual Internet

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Introduction

Welcome to the Multilingual Internet

A GLOBAL NETWORK

In recent years, the Internet has become a truly global communication network. According to a late 2004 compilation (Computer Industry Almanac, 2004), approximately one billion people—one-sixth of the world's population—are now online. Internet services have become so common that the city of Budapest has installed an "@" sign on a central street to inform locals and visitors of the presence of a cybercafé (figure 1.1).[1]

Table 1.1 lists the top 15 nations using the Internet as of 2004. The United States has the largest proportion of users, 20% of the total. This reflects not only its large population size and advanced technological infrastructure, but also the fact that the technology that makes the Internet possible was created in the 1960s in the United States (Hafner & Lyon, 1996; O'Neill, 1995). Notably absent from the list are regions with a high concentration of small languages, such as Africa and Oceania.

Many scholars have expressed concern about the dominance of world English, and the Internet as a new arena for its spread (Dor, 2004; Mair, 2002; Nunberg, 2000; see chapter 18). A 2002 survey found that more than 56% of all webpages were in English.[2] Also, in July 2000 more than 94% of links to pages on secure servers were in English (OECD, 2001). Some view the spread of English as a "natural" or benign extension of globalization (Crystal, 2001, 2003; Fishman, 1998; Fishman, Conrad, & Rubal-Lopez, 1996). Others take a dimmer view, writing of "linguistic imperialism" and its threat to the status
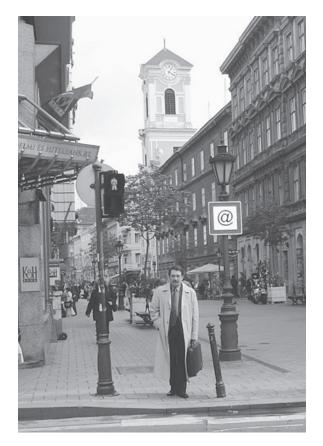
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FIGURE 1.1. "@" sign in central Budapest, informing pedestrians of the cybercafé ahead. Photograph by Brenda Danet, April 2005.

of smaller languages (Pakir, in press; Phillipson, 1992; Phillipson & Skutnabb-Kangas, 2001).

Regardless of one's position in this debate, when taken out of context statistics highlighting the prevalence of English on webpages or secure servers can be misleading. Already by 2003, roughly two-thirds of users were not native speakers of English (CyberAtlas, 2003). In only 4 of the 15 top countries online in 2004 (the United States, United Kingdom, Canada, Australia) was English the official or dominant language (table 1.1). China and Japan together accounted for nearly another fifth of the total. Moreover, growth in the next few years is predicted to accelerate, especially in China and India.[3] Thus, hundreds of millions of people are already participating online today in languages other than English, in some form of nonnative English,[4] or in a mixture of languages, and this trend is projected to continue in the years to come.

Academic research published in English on language use in computer-mediated communication (CMC) has only recently begun to take account of

TABLE 1.1. Top 15 countries on the Internet, year-end, 2004.

Country	In thousands	Percent
United States	185,550	19.86
China	99,800	10.68
Japan	78,050	8.35
Germany	41,880	4.48
India	36,970	3.96
United Kingdom	33,110	3.54
South Korea	31,670	3.39
Italy	25,530	2.73
France	25,470	2.73
Brazil	22,320	2.39
Russia	21,230	2.27
Canada	20,450	2.19
Mexico	13,880	1.49
Spain	13,440	1.44
Australia	13,010	1.39
Top 15 countries	662,360	70.88
Worldwide total	934,480	100.00%

Source: Computer Industry Almanac, September 2004, http://www.c-i-a.com/pr0904.htm; retrieved December 15, 2005. Reproduced with permission.

this complex empirical reality. Most researchers publishing in English venues have generalized about the language of computer-mediated *communication*, whereas in fact they were describing computer-mediated *English,* sometimes in a single CMC mode (see, e.g., Ferrara, Brunner, & Whittemore, 1991). Exceptions are publications by Naomi Baron (2000) and David Crystal (2001, 2004), which contextualize English-based CMC within the history of the English language.

In recent years, researchers have turned their attention to other languages on the Internet, often their native languages. This book is devoted to that research, presented in English in order to be accessible to a wide audience. As native speakers of English, we have both enjoyed the benefits of reading and writing about CMC in our first language, which, conveniently, is the lingua franca of scientific and academic publishing (Ammon, 2001). In the long run, however, this state of affairs can breed insularity. In a review of David Crystal's *Language and the Internet* (2001), the German scholar Dieter Stein (2003) observed that "a large body of research is simply not represented: research that is not in English . . . there is a danger . . . of misrepresenting the state of the art. There is by now a large body of linguistic and communicational studies of Internet language in German" (pp. 162–163).[5] In recognition of this bias, in this chapter we survey some of the work on CMC that has been reported in languages other than English. However, a full review of that body of work for English-language readers must await a future time.

Our perspective on multilingualism is both microsociolinguistic and macrosociolinguistic. The chapters in this book focus mainly on microlevel

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patterns of use in a variety of languages and language combinations and in a variety of digital media. A number of chapters are also concerned with issues of language choice, linguistic diversity, and developments regarding specific languages online, including the use of English as a lingua franca in non-English-dominant contexts.

Media analyzed include instant messaging (IM), bulletin board systems (BBSs), email, and chat.[6] A chapter about French mobile phone communication is also included, since cell phone and Internet-based communication have converged and since asynchronous SMS (short message service) and synchronous IM share many constraints and features (Baron & Ling, 2003). All of these media are interactive and text based, text being the most popular form of CMC in use today, even in graphical chat environments (see chapter 16). Communication in all these media can be characterized as "interactive written discourse" (Ferrara et al., 1991).

This book is a considerably expanded version of a special issue of the online *Journal of Computer-Mediated Communication* that we published in 2003 (Danet & Herring, 2003). That was, to our knowledge, the first major publication in English about multilingualism online. Soon after, a UNESCO-sponsored team published another special issue about multilingualism online (Sue Wright, 2004). Their emphasis was macrosociological, and the authors were members of the same team: All papers were based on the same survey of students of English in 10 countries (Tanzania, Indonesia, the United Arab Emirates, Oman, France, Italy, Poland, Macedonia, Japan, and Ukraine). In contrast, the authors in this book and in our earlier special issue responded to an online solicitation for proposals or were invited to contribute based on their previous work, with the goal of representing a diversity of languages, methods, and CMC types.

In this introductory chapter, we first describe our theoretical approach. Thereafter, we review literature on multiple language use and the use of languages other than English online, as a backdrop for the 17 research studies in this book and as our own contribution to the emerging area of Internet language study. In this introduction, as in the remainder of the book, we group this research into five thematic sections: writing systems, linguistic and discourse features of CMC, gender and culture, language choice, and linguistic diversity. Finally, we summarize the book's contents and contributions and outline what research remains to be done.

LANGUAGE, CULTURE, AND COMMUNICATION: THEORETICAL APPROACH

The concept of culture has long proved elusive in many academic disciplines (see Duranti, 2003). Globalization, increased interconnectedness across international boundaries via electronic media, and hybridization of cultural content and identity further problematize the notion of culture (Hannerz, 1996; Holton, 2000). Our approach is consistent with Clifford Geertz's (1973)

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view of culture as shared ways of life and webs of meaning, with a focus on language as a repository and transmitter of culture. Just as it has traditionally been in offline interactions, in today's dynamic, mediatized world language is "a cultural resource and . . . a social practice" (Duranti, 2003, p. 323). Indeed, language choice and language use are the primary means of signaling cultural identity in text-based CMC, which transcends geographical boundaries and in which physical and social cues are reduced (Herring, 2004a). At the same time, online interlocutors live in the physical world and are grounded in offline cultures, defined by national, ethnic, religious, and other boundaries.

CMC and Speech Communities

Drawing on conceptualizations from the ethnography of communication (Bauman & Sherzer, 1989; Gumperz, 2001; Saville-Troike, 1989), sociolinguistics (Hymes, 1974; Labov, 1989; Romaine, 1982), and linguistic anthropology (Duranti, 1997, 2004), we view Internet users as members of one or more *speech communities* who bring to their online encounters shared knowledge, values, and expectations for linguistic interaction (for extensions of these notions to online contexts, see Baym, 1995; Cherny, 1999).

Geographical boundaries do not coincide neatly with linguistic ones. Whether residing within a country or living abroad, participants online share sociolinguistic norms acquired originally in a face-to-face context, which are not static but themselves change over time. Individuals may belong to more than one speech community. Thus, for example, a native of Greece who came to the United Kingdom at age 21, and has a good command of U.K. English, is a member both of the global Greek-speaking speech community and of a subgroup of immigrant, nonnative speakers of English in Britain. The email of this person to other Greek immigrants in the United Kingdom may reflect her membership in both speech communities (Georgakopoulou, 1997).

Context

Two further concepts that are pertinent are *context* (Duranti & Goodwin, 1992; Giglioli, 1982) and *performance* (Bauman, 1992). In the physical world, context includes demographic characteristics of speakers, their communicative competence and repertoire, the physical and social setting, relationships among speakers, and general cultural norms and expectations, as well as norms pertaining to language use itself (Hymes, 1974).

In CMC, identifying context can be problematic: In chat rooms where participants are geographically dispersed and whose identities are heavily masked,[7] context is largely emergent from online interaction. However, when participants belong to groups clearly located within specific real-world cultural and institutional settings—as in Sandi de Oliveira's study of online

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communication at a Portuguese university (chapter 11)—offline culture can often be shown to play an important role. Cultural context, however, is not always relevant. In Jacques Anis's study of French SMS (chapter 4), it is not French culture but rather the transcultural properties of the medium that condition linguistic strategies.

Performance

Digital writing often takes on characteristics of artful, playful, stylized performance, thereby partially resembling traditional oral genres (Bauman, 1992; Edwards & Sienkewicz, 1990; Finnegan, 1992). Performance aspects are salient in synchronous and even asynchronous modes (Baym, 1995, 2000; Danet, 1995, 2001), In this book, performance figures prominently in Taiwanese BBS language (chapter 3 by Hsi-Yao Su) and in emoticon use by Japanese housewives (chapter 12 by Hirofumi Katsuno and Christine Yano). Before discussing these and other behaviors in textual CMC, however, we start with the basics: the writing systems and fonts through which online communication is represented.

WRITING SYSTEMS AND ONLINE COMMUNICATION

ASCII Encoding and Its Unintended Consequences

Because early planners of the Internet were North American and sought only to facilitate communication in English, they did not anticipate problems encountered by speakers of other languages trying to communicate online. The text-transmission protocol on the Internet is based on the ASCII (pronounced AS-kee) character set (figure 1.2). ASCII is an acronym for "Ameri-

	!	"	#	$	%	&	'	(	)	*	+	,	−	.	/
0	1	2	3	4	5	6	7	8	9	:	;	<	=	>	?
@	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
P	Q	R	S	T	U	V	W	X	Y	Z	[	\	]	^	_
`	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
p	q	r	s	t	u	v	w	x	y	z	{	|	}	~	

FIGURE 1.2. The ASCII character set. *Source*: http://www.cs.tut.fi/~jkorpela/chars.html, retrieved December 15, 2005.

can Standard Code for Information Interchange"; established in the 1960s, it contains 128 seven-bit codes (unique combinations of 1's and 0's), 95 of which are available for use as graphical characters. This character set is based on the Roman alphabet and the sounds of the English language. "Plain text," as in email and chat, is often understood to mean text that contains only basic ASCII characters, whether written in English or in some other language.

The ASCII character set has privileged English online. Whether it concerns HTML (the markup language for webpages), domain names on the Web (URLs), email addresses, or the content of instant messages, email, discussion list postings, and chat, speakers of many languages have faced varying degrees of difficulty. Speakers of languages using the Roman alphabet but with only a few characters missing, such as the Scandinavian languages, suffer least, although the consequences may be embarrassing. ASCII does not include the last three letters of the Swedish alphabet, *å*, *ä*, and *ö*. The URL of a Swedish town called Hörby is http://www.horby.se. Swedes must live with the fact that without the two dots over the "o," the name of this town means "fornication village"[8] (Pargman, 1998). Another example is Hawaiian, which is written in Roman characters with additional use of macrons.[9] Warschauer and Donaghy (1997) note that "incorporation of diacritical marks is crucial, since they define meaning in Hawaiian; for example, *pau* means finished, *paÿu* means soot, *paÿü* means moist, and *päÿü* means skirt" (p. 353).

Speakers of languages with non-Roman writing systems, such as Greek, Russian, Arabic, Hebrew, Chinese, Korean, and Japanese, have been especially disadvantaged, being dependent on special character sets for word processing and online communication.[10] In 1998, the editors of *Foreign Policy* claimed that "English remains the only language that can be used without distortion on virtually every computer in the world" (cited in Fishman, 1998, p. 34). Since then, the situation has improved. Nevertheless, many people today still cannot assume that their interlocutors will be able to read messages containing characters other than basic ASCII, even if their own computers accommodate their non-English language needs.

Problems engendered by the dominance of the ASCII character set online might lead some to speak of "typographic imperialism" as a subcategory of linguistic imperialism (Pargman & Palme, 2004). More neutrally, we ask, How have people communicating online in languages with different sounds and different writing systems adapted to the constraints of ASCII environments? What problems have they encountered, what progress has been made in solving these problems, and what remains to be done?

Ad Hoc Improvisation by Users

Elke Hentschel (1998, n.p.) describes how speakers of Serbian, German, and other languages have compensated for the limitations of ASCII (and the ISO Latin eight-bit character set[11]) in Internet Relay Chat (IRC):

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> German IRC users write ae, oe, ue and ss for ä, ö, ü and ß; Serbian IRC'ers just
> write the basic letter without the diacritic sign; Russian users . . . make use of the
> English transcription of the Russian letters, and the Japanese use special ANSI
> escape control sequences to represent the Kanji signs.[12]

For speakers of many languages, the solution has been to write in their language but using the Roman alphabet, rather than its conventional script. One of the first to document romanization was John Paolillo (1996), who in the mid-1990s studied the Usenet newsgroup *soc.culture.punjab* in which Punjabi (normally written in either an Indic or Arabic script) was written in Roman characters. Similarly, in emails of Chinese students in the United States, writers represent Chinese characters in the Roman alphabet, inserting numbers next to syllables to indicate tone (Gao, 2001).[13] Romanization has also been documented for both email and chat in Greek (Androutsopoulos, 1999; Androutsopoulos & Hinnenkamp, 2001; Georgakopoulou, 1997, 2004) and Assyrian (McClure, 2001a).[14]

Other research problematizes romanization. Spelling has been inconsistent in languages for which transliteration norms have not yet emerged, including Punjabi, Greek, and Assyrian. Theodora Tseliga (chapter 5) finds substitutions based both on similar graphic shape and on sound. The use of "Greeklish" (romanized Greek) is hotly contested in Greece. Dimitris Koutsogiannis and Bessie Mitsikopoulou (chapter 6) identify three trends in the Greek press: a retrospective trend that views Greeklish as a serious threat to the Greek language, a prospective trend that argues that Greeklish is a transitory phenomenon that will disappear as technology advances, and a resistive trend that points to the negative effects of globalization.

Arab countries are characterized by *diglossia* (Ferguson, 1972)*:* high-prestige, written, literary, classical Arabic coexists with a low-prestige, local spoken variety, that is ordinarily not written. When people type local colloquial Arabic online, they resort to romanization (Berjaoui, 2001; Palfreyman & Al Khalil, chapter 2; Warschauer, El Said, & Zohry, 2002; chapter 13). Some users in Dubai "script switch," alternating between conventional, right-to-left Arabic script and Arabic rendered left to right in the Roman alphabet. As in Greek, Arabic Internet users also use numerals to represent sounds of Arabic that cannot otherwise be represented in the Roman alphabet.

In chapter 3, Hsi-Yao Su identifies four creative uses of writing systems on Taiwanese BBSs: rendering the sounds of English in Chinese characters, rendering Taiwanese (normally not written) in Chinese characters, writing Taiwanese-accented Mandarin in Chinese characters, and recycling a transliteration alphabet ordinarily used in elementary education. There is a strong component of playfulness in the use of these systems. Patterns of adaptation are quite different in Hong Kong (chapter 8 by Carmen Lee). Whereas Taiwanese users play with Chinese characters, Hong Kong users prefer using the Roman alphabet to represent Cantonese elements.

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Beyond Ad Hoc Improvisation: The Search for Solutions

Over time, developers expanded character sets to eight-bit profiles that facilitated use of specific languages and/or groups of languages online. Thus, the extended ASCII character set (ISO Latin 1, alias ISO 8859–1) added enough characters, including letters with diacritics, to accommodate many European languages (figure 1.3).[15]

Globally, however, ISO 8859–1 was still unsatisfactory. Eventually, the Unicode Standard was established (Anderson, 2004; Consortium, 2003; Everson, 2002; Paolillo, chapter 18). Unicode is "the universal character encoding, maintained by the Unicode Consortium (http://www.unicode.org/). This encoding standard provides the basis for processing, storage and interchange of text data in any language in all modern software and information technology protocols."[16]

Whereas the original ASCII character set employs only seven bits per character, in Unicode each character has a unique 16-bit profile. The vision behind Unicode is that ultimately there will be one encoding for all the scripts in the world. Developments in Unicode are now greatly expanding the possibilities for multilingual word processing and communication online, reducing the need for improvisation.[17]

In its latest version (4.1.0), Unicode can accommodate more than a million characters; at this writing, 97,000 different characters have been defined.[18] As of August 2004, Unicode included 50 scripts, seven of which accommodated hundreds of the world's languages. The Roman alphabet serves more languages than any other script. As of early 2005, more than 80 scripts awaited encoding (Anderson, 2005).

FIGURE 1.3. The ISO (International Standards Organization) Latin 1 character set (alias ISO 8859-1). *Source*: http://www.cs.tut.fi/~jkorpela/chars.html#latin1, retrieved December 15, 2005.

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LINGUISTIC AND DISCOURSE FEATURES OF CMC IN LANGUAGES OTHER THAN ENGLISH

English-based research over the last decade shows that CMC tends to display both speechlike and writinglike features, as well as distinctively digital ones (Baron, 2000; Crystal, 2001; Danet, 2001; Herring, 1996b, 2001; Yates, 1996a). These features, and their frequency of use, vary considerably according to CMC mode. Synchronous modes tend to be more "speechlike" than asynchronous ones (Baron, 2000; Cherny, 1999; Herring, 2001, 2004c; Ko, 1996; Werry, 1996; Yates, 1996a). However, many features are shared across modes: the emoticon or "smiley face;" abbreviations (*LOL*, "laughing out loud"), rebus writing ("*c u*" for "see you"), and a tendency toward "speechlike" informality.

Research on other languages has observed similar phenomena. Summarizing features of chat, Androutsopoulos and Ziegler (2004) write:

> In German, as well as in other languages, typical vernacular features include:
>> the graphic representation of colloquial standard pronunciation or non-standard accents
>> typical syntactic patterns of spoken language, e.g., for German, the deletion of clause-initial subject pronouns
>> discourse markers, colloquial and slang vocabulary." (p. 101)[19]

In a local IRC channel called #*mannheim*, they also found evidence of the representation of regional dialect features.

These features of CMC are generally thought to result from two constraining forces: a tendency toward reduction in the number of keystrokes typed, to increase speed and efficiency of communication, and a tendency toward expressivity and creativity, to convey social and affective meanings (Anis, chapter 4 this volume; Cho, in press; Herring, 2001). This latter tendency often manifests itself in language play.

Orthography, Typography, and Playful Performance

In the 1990s, a tendency toward playful performance was documented for many genres of CMC in English (Baron, 2005; Cherny, 1999; Danet, 1995, 2001; Danet, Ruedenberg, & Rosenbaum-Tamari, 1998; Meyer & Thomas, 1990; Reid, 1991; Werry, 1996). There was widespread play with identity (Bechar-Israeli, 1995; Bruckman, 1992, 1993; Danet, 1998; Donath, 1999; Kendall, 1998; Turkle, 1995) and with language and typography.

The flouting of orthographic and typographic norms, and linguistic and typographic playfulness are evident in many other languages: in Greeklish email (Georgakopoulou, 1997), Swedish chat (Hård af Segerstad, 2000, 2005; Sveningsson, 2001), and German CMC (Durscheid, 2000). Beißwenger and Pütz (2001) analyze elements of theatricality in German chat. Online play

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with spelling and typography is also very common in French (Anis, 1999a, chapter 4 this volume; Dejond, 2002; Marcoccia, 2004a).

Second-language learners are playful online (Belz & Reinhardt, 2004; Warner, 2004). Zhao (2002) found linguistic and typographic playfulness in English IRC by native speakers of Chinese. Unintentional misspellings can also produce humorous effects in chat.

In her study of Swedish chat, Hård af Segerstad (2000, 2005) found emoticons (smiley faces), words bracketed in asterisks, play with fonts and colors, extreme use of punctuation, abbreviations and acronyms, ellipsis, and tolerance for deviant spelling. Citing Werry's (1996) study of English and French IRC, Hård af Segerstad (2000, n.p.) concludes, "There is nothing to indicate that the adaptations found [in Swedish] are significantly different [from] online adaptations [in] English or French."

In IM and cell phone text messaging (short messaging service, SMS), two modes that are especially popular with younger users, play with spelling and typography is an apparent mixture of playful expressivity and problem-solving in many languages.[20] Anis (chapter 4) suggests that structural reduction in French SMS language reflects natural linguistic and semiotic processes common to all human languages, triggered by technical, economic, and communicative constraints on text messaging.

It is helpful to situate the typographic and orthographic features of CMC alongside other characteristics of computer-mediated discourse by considering the case of two very different languages: Japanese and Greek.

CMC in Japanese

The use of Japanese online is interesting because of the language's unusually complex writing system (Griolet, 2002; Nishimura, 2003a, 2003b). Four scripts are used: (1) *kanji*, ideograms of Chinese origin; (2) *hiragana* and (3) *katakana*, systems for representing syllables; and (4) *romaji*, use of the Roman alphabet to transliterate Japanese words and to represent originally foreign terms, such as "CD," in otherwise Japanese contexts. *Hiragana* is used for grammatical endings and to represent Japanese concepts and objects for which *kanji* do not exist, whereas *katakana* is used for foreign names and the representation of natural sounds.

In an analysis of private Japanese email, Fais and Ogura (2001) found nonstandard punctuation, fillers paralleling English "um" or "ah," sentence-final particles, use of *katakana* to highlight expressions normally written in *hiragana* or *kanji*, vertical Asian-style emoticon *kaomoji* ("face marks"), and considerable variation in openings and closings. In the Japanese newsgroup *fj.soc.men-women* (Yamakazi, 2002), Western-style "smileys" also occurred, alongside *kaomoji* (e.g., ^–^) and use of sentence-final particles made the discourse conversation-like. However, in TESOL link, an asynchronous forum for teachers of English in Japan, communication was characterized by "the consistent and reciprocal use of formal verb endings, honorifics, and a

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formal address term" (Matsuda, 2002, p. 48). In *lig.soc.men-women,* in contrast to many English-language newsgroups (Kim & Raja, 1990), mature adults discussing serious matters mostly maintained standards of politeness, addressing one another by name with the honorific *san* appended (Yamakazi, 2002).[21]

Yukiko Nishimura (2003b, chapter 7 this volume) finds many similarities between English-language CMC and Japanese BBS communication, but also distinctive differences. Similarities include multiple punctuation, eccentric spelling, all caps, written-out laughter, verbal descriptions of actions, and emoticons. Differences include use of final particles, and insertion of nonface icons such as musical notes for expressive purposes. Analysis of other Japanese BBSs (Nishimura, 2003a) identified further differences: *kanji* punning, in which a *kanji* symbol is used to represent a homonym, and play with script shape similarity to create neologisms. In an investigation of weblogs, Michaela Oberwinkler (2005) found unconventional spelling resembling speech, frequent use of intensifiers, multiple abbreviations, and heavy use of *kaomoji.*

In chapter 12, Hirofumi Katsuno and Christine Yano focus on playful performance via *kaomoji* among Japanese housewives.[22] Whereas earlier *kaomoji* are typographically compact, Japanese women developed feminized, wider, "cuter" ones. The authors argue that expressive use of *kaomoji* online helps Japanese housewives defuse their real-world frustrations and that their use has connections with Japanese popular culture, including *manga* (comics), a cult of cuteness, and a tradition of feminized handwriting. Centuries-old veneration of calligraphy as an art form (Boudonnat & Kushizaki, 2003) probably also fostered the elaboration of *kaomoji.*[23]

CMC in Greek

The Greek language is interesting not only for its non-Roman writing system that has led to the creation of "Greeklish" online (see chapters 5 and 6), but as a language that until recently was diglossic, with a High (Katharevousa) and a Low (Demotic) style. Katharevousa was used in writing and official functions associated with government, education, and religion, and Demotic was used in informal speech and ordinary affairs. Demotic was made the official language in 1976, but many Katharevousa words and grammatical structures remain in the linguistic repertoire of contemporary Greek speakers (Joseph, 2001; see also chapters 5 and 6).

Oral features and play with register are often found in Greek CMC. Personal email by Greeks writing in Greeklish and English is a hybrid communicative genre, having continuities both with letter writing and with oral aspects of Greek culture and communication. In a study of private email by Greeks living in England, openings and closings were absent or highly routinized (Georgakopoulou, 1997). The discourse style was one of informal, playful pastiche. Style shifts and code switches between Greek and English served as contextualization cues (Gumperz, 1982). Some emails contained an incon-

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gruous, humorous mixture of Demotic Greek and Katharevousa. Emailers preferred positive politeness strategies, to cultivate solidarity with fellow Greeks abroad.

Tereza Spilioti (2005) identified continuities in Greek SMS with patterns of communication in Greek face-to-face and mediated communication, including telephone conversations and answering machine messages. Because messages were embedded in close social relationships, openings and even closings were mostly absent; participants again expressed solidarity via affective elements including emoticons. Recounting events in personal email by Greeks also shows culture-specific features. While email stories tended to have letter-writing features, they also reflected narrative norms governing Greek face-to-face interaction (Georgakopoulou, 2004).

GENDER, LANGUAGE, AND CULTURE ONLINE

Gender differentiation is an important aspect of culture that is often reflected in language use. In English-language CMC, men and women use different discourse styles online much as they do offline (Herring, 1996a, 2003, 2004b; compare Bucholtz, 2004; Lakoff, 1975; Tannen, 1990). We know of no studies yet to identify systematic "women's language" and "men's language" features in CMC in other languages. However, a growing number of case studies have examined gender and Internet use in non-English contexts.

Politeness

In a study of gender and politeness in email in India, Asha Kaul and Vaibhavi Kulkarni (2005) analyzed 494 work- and task-related emails. Although all messages were in English, reflecting its use as a lingua franca and language of white-collar professionals, all were written by employees in Indian workplaces and reflect the Indian cultural context. Women were more polite than men, as in studies of gender and politeness in English CMC. However, men used flattery more than women, communicating praise and approval of the recipient's actions—a behavior more commonly associated with women in English CMC (Herring, 1996a). Kaul and Kulkarni (2005, n.p.) suggest that "this could be attributed to the cultural backdrop in which the emails were written where men take on the patronizing role and compliment frequently to motivate the team players/members."

In chapter 11, Sandi de Oliveira analyzes politeness violations on the users' discussion list of a university in Portugal. While grammar and spelling were standard, messages sometimes failed to observe the requirement—of utmost importance in Portuguese culture—to use the appropriate term of address. Thus, a participant entitled by rank to be addressed as *Professor Doutor* [+ first name + last name] should not be addressed as *Senhor* (Mr.) [+ first name + last name]. Although women participated less often, messages

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posted by women were more often treated as transgressions. Men were quick to chastise transgressions, in contrast to English-based claims that men are less concerned than women with maintaining politeness norms (see Herring, 1996a). At the same time, the behavior of the Portuguese men asserted their traditional gender roles as interactionally dominant and representative of "authority."

Turn Taking

Focusing on the mechanics and power dynamics of interaction, Siriporn Pan-yametheekul and Susan Herring (chapter 10) analyzed gender in relation to turn-allocation patterns in a Web-based Thai chat room. They found that females made greater use of strategies like those found in face-to-face con-versation and enjoyed greater power in the chat room, chatting with whom they chose and receiving more responses to their messages, than did males. Flirtatious initiations were infrequent and generally lacking in sexually explicit content. The authors interpreted their findings in relation to the gender demographics of the chat room, the norms of the website, and Thai cultural values of politeness and respect—all of which favor female participation.

Internet Communication and Social Change

These three studies demonstrate that gender interacts with culture online in ways that shape language and communication. It has also been suggested that the Internet has the potential to empower women and members of other traditionally subordinate groups (see Herring, 2003). This potential takes on special significance for women in traditional patriarchal cultures. For example, Katsuno and Yano (chapter 12) argue that expressive use of *kaomoji* online helps Japanese housewives defuse their real-world frustrations associated with meal preparation, child care, and boring husbands.

The Middle East is another region in which gender roles are traditionally segregated. Deborah Wheeler (2001) studied women's use of the Internet in Kuwait, where access is mainly through cybercafés in which men and women sit in separate sections. Wheeler's evidence suggests that the greater freedom available online to chat with young people of the opposite sex could potentially break down traditional Islamic barriers to mixed-sex interaction. In an Internet kiosk in Essaouira, Morocco (figure 1.4), a young woman wearing the traditional Muslim *hijab* (head covering) and young man are not separated by a barrier, but they are seated maximally far apart.

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FIGURE 1.4. Users in an Internet kiosk, Essaouira, Morocco. Photograph by Brenda Danet, March 2002.

LANGUAGE CHOICE AND CODE SWITCHING

Wherever multilingualism exists, language choice becomes an issue. Language choice online depends on the technological, sociocultural, and political context. One commonality across contexts, however, is the use of English as a lingua franca. English-educated bilinguals often use both English and their national language online (Kelly Holmes, 2004; Sue Wright, 2004).

The Less Developed World

Tanzania is fairly representative of the less developed world in that large areas are not connected to the electricity grid (Mafu, 2004). During British rule, Africans were educated in Swahili while Europeans and Asians were educated in English. After independence, Swahili became the language of instruction, but only at the elementary level.[24] Swahili and English are both official languages today. While Internet use has grown in the last five years, only elites usually have access. Students and professionals interviewed by Mafu (2004) reported some use of Swahili in email, but English predominated, reflecting

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and perpetuating the elite status of users and the functions of English as a language of wider communication. More than a hundred minority languages spoken in Tanzania are unrepresented online and are likely to remain so.[25]

The situation is similar in the Arab world. English is the main language of email among young Egyptian professionals (Warschauer et al., 2002; chapter 13). There is no single standard for communication in Arabic online; many computers lack operating systems that can handle Arabic. As discussed above, many people romanize colloquial Arabic. English is more common in formal email communication, again reflecting its function as a language of wider communication.

Uzbekistan is a newly independent country in Central Asia, formerly part of the Soviet Union. Uzbek is the official language. Between 1989 and 1995, Russian was the officially sanctioned main language of wider communication. In 1993, a law was passed changing the Uzbek script from Cyrillic to the Roman alphabet. As of 2003, not many Uzbekis reported having used the Internet. Among those who did, nearly all reported using Russian, and more than 70% said they used English, while only 13% claimed to use Uzbek online (Wei, 2004). The absence of material on the World Wide Web in Uzbek may explain its underuse.

Language Choice in Europe

The nations of Europe speak different languages and are technologically developed. Europeans online should thus use multiple languages, both in national contexts and in the European community as a whole. The available research suggests that this is true but that local languages often cede to English and regional lingua francas when speakers of different language backgrounds seek to communicate.

Switzerland is an example of a multilingual nation, with four national languages, German, French, Italian, and Romansh, of which the first three are official languages used in government and federal administration. English has slowly gained ground as a lingua franca since World War II (Demont-Heinrich, 2005; Dürmüller, 2002). Mercedes Durham (chapter 14) studied the languages used on a Swiss medical students' list. In less than four years, English went from being used a little more than 10% of the time to more than 80% of the time. The main reason for this development, Durham speculates, is that in Switzerland, English is no one's native language and hence privileges no group of speakers over another.

At the regional level, the European Union currently has 25 member states and 21 official languages. Romania, Croatia, and Bulgaria are due to join in 2007, and Turkey is knocking at the door. With so many languages represented among its membership, the European Union "is committed to the principle of multilingualism and to the fundamental rights of non-discrimination and equality of its citizens. This implies, in particular, equal rights of all citizens for information and access to legal documents in their

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national language" (Ginsburgh & Weber, 2005, p. 2). Accordingly, the European Union maintains a veritable army of translators for all written documents and interpreters who perform direct and relay oral interpretation.[26]

Between July 2001 and October 2004, citizens could also participate in a web-based discussion forum called Futurum about the EU constitution, in languages of their choosing. Ruth Wodak and Scott Wright (chapter 17; Scott Wright, 2004) investigated the languages actually used in the Futurum forum.[27] English was by far the main language; more than 90% of all threads or topics introduced in English were conducted only in English. Threads introduced in other languages—mostly French and German—used a greater diversity of languages, but this trend was minor.

Negotiating Language Choice in Global Forums

How do participants negotiate language choice in global forums where participants hail from many countries, speak many different languages, and there is no overt link to a specific national or regional context, no official commitment to a given language, and no moderator to police language choice? This situation is common; most discussion forums do not specify what language should be used, and many are in principle open to participants from any country. Yet research on language choice in global forums is rare, perhaps because context usually sets a default expectation for language choice even when no explicit language policy is articulated.

An exception is Active Worlds,[28] a Web-based environment that supports text chat in three-dimensional graphical "worlds." Allwood and Schroeder (2000, p. 1) describe the environment as "a potentially multilingual and multicultural setting"; it is popular with users from many countries, and it has worlds devoted to particular language groups and general worlds that are cosmopolitan. However, in a study of AlphaWorld chat involving speakers from mixed language backgrounds, Allwood and Schroeder found that 68% used English only, while only 2% participated exclusively in a language other than English; the remainder alternated between English and another language. Axelsson, Abelin, and Schroeder (2003, chapter 16 this volume) studied efforts to switch languages in Active Worlds and the response to these efforts. English dominated, generally in a nonconflictual manner. Non-English speakers, being generally bilingual, were willing to switch to English even in settings where the majority of the users were non-English speaking.

Language Use in Diasporic Online Communities

Among immigrants to a new country, use of the home language with compatriots may be associated with alienation from the local culture and a desire for cultural maintenance and solidarity. Fialkova (2005) studied online

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discussion forums for Russian Jews living in Israel. Russian dominated in the forums, even in ethnic community sites for Ukrainians and Byelorussians; Ukrainian and Byeloruss were found only in familiar cultural artifacts such as poems and songs. In contrast to situations in which non-Roman scripts were rendered in ASCII characters, the Russian script, Cyrillic, is used in the Israel-based forums; transliteration into Roman script is actively discouraged on some sites (Fialkova, 2005).

John Paolillo (1996) investigated *soc.culture.punjab*, a Usenet newsgroup populated mainly by Punjabi expatriates living in Canada, the United Kingdom, and the United States. In contrast to the situation described by Fialkova (2005), Paolillo found very little use of the home language; English was the unmarked language. Punjabi was the functionally marginalized, marked choice, used primarily for conventional and expressive purposes (e.g., greetings and jokes). Paolillo attributed the dominance of English to the presence of nonfluent second- and third-generation Punjabis in the news-group, widespread use of English in India by the educated classes, and the status of English as the language of Usenet. Having to type Punjabi in Roman characters may also have discouraged its use.[29]

In a third type of diasporic situation, Androutsopoulos (chapter 15) reports that German is the online lingua franca among migrants in Germany. In Web-based discussion forums for Persians, Indians, and Greeks living in Germany, German predominates, although there is much use of migrant lan-guages, too. In this case, the language of the host country serves as the primary lingua franca, rather than English. Androutsopoulos attributes the prominence of German to language shift among second- and third-generation immigrants, its utility as a regional lingua franca, and the language policy of webmasters.

In contrast to the limited Ukrainian and Byeloruss usage on Russian emigrant sites in Israel, or the use of Punjabi on *soc.culture.punjab*, the migrants' home languages on the sites studied by Androutsopoulos alternate with German in locally meaningful ways, in a pattern of code switching. Androutsopoulos noted that written code switching online resembles conver-sational code switching, an observation also made by Jayantilal (1998), McClure (2001a), and Hinrichs (2006).

THE INTERNET AND GLOBAL LINGUISTIC DIVERSITY

The discussion of language choice shows that languages used online form global and regional hierarchies, with English at the top, followed by important regional languages, and finally (if at all) users' local languages (see Graddol, 1997/2000). This raises the broader issue of the effects of the Internet on linguistic diversity worldwide, including the fate of small and endangered languages online, and the status of English in the Internet age.

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Small and Endangered Languages

The number of languages spoken in the world has been in decline since well before the invention of computer networking (Graddol, 1997/2000; Krauss, 1992). Some people claim that the Internet has the potential to support and even revitalize endangered languages (Cunliffe & Herring, 2005; Danet & Herring, in press). Here we are interested in the extent to which speakers of minority and endangered languages use their indigenous languages online.

Several studies have examined CMC involving minority language speakers. Luis Fernandez (2001) reports several discouraging situations involving language choice. The manager of a list discussing the future of Ireland warned those posting in Gaelic (rather than English) that their posts would be removed (Ostler, 1999; cited in Fernandez, 2001, p. 24). On Leonenet, a current events list in Sierra Leone, when some people posted in Krio, the country's lingua franca, others thought this impolite vis-à-vis non-Sierra Leonean subscribers, or that the practice discriminated against speakers of other ethnic languages (Wright, 1996, p. 24; cited in Fernandez, 2001, p. 25). Fernandez found almost no use of Basque in ostensibly Basque fora, although many users were bilingual in Basque and Spanish or French. Most messages were in Spanish.[30]

In another Spanish-dominated context, Salvador Climent and his colleagues (chapter 9) found that three-quarters of all postings on a Usenet newsgroup based in a Catalan-language university were in Catalan. However, among postings spontaneously responding to previous ones, Catalan speakers were more likely to switch to Spanish than vice versa, a trend that bodes ill for the future of Catalan, according to the authors. Issues of wider intelligibility again arise: Spanish is the preferred language for interacting with foreigners, for example, who are more likely to know Spanish than Catalan. Climent and colleagues propose machine translation as a potential solution to enable minority language speakers to use their local languages online, yet still communicate with larger audiences.

Cunliffe and Harries (2005) analyzed the language and functions of posts to a bilingual Welsh–English Web community, Pen i Ben, created to encourage communication in both languages. However, over time Welsh use decreased, as did the range of functions expressed by Welsh posts, while English use increased. The authors suggest that minority languages may have a difficult time maintaining an online presence without supporting strategies, social as well as technological.

A more successful case is that of Assyrian, a Semitic language spoken by a mainly diasporic community of Assyrians, an ancient people whose homeland is in the Middle East. McClure (2001a, 2001b) collected samples from Usenet newsgroups including *soc.culture.Assyrian*, chat rooms, and online publications, with special attention to the forms and functions of code switching in these media genres (McClure, 2001a). In the 1990s Assyrian was mostly transliterated into the Roman alphabet for online purposes, because of font difficulties. McClure (2001a) reports a good deal of code switching to

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Assyrian in mainly English-based chat rooms and newsgroup postings. Greet-ings and closings were frequently written in romanized Assyrian to express solidarity with others. McClure (2001b) concludes, "Assyrians have found in the Internet a strong tool in the fight for the maintenance of their language" (p. 74).

The Status of English

English has a historical advantage in relation to the Internet and continues to dominate many online contexts (Yates, 1996b). Offline, as well, interest in English as a second language is growing: Globally, more young people are learning English now than at any other time (Graddol, 1997/2000). The Internet alone is not responsible for this growth: Other political, economic, and cultural forces had already made English a global lingua franca (Crystal, 2003). The Internet has, however, facilitated interaction among participants in multilingual nations, regions, and around the world, a number of whom employ English as a language of wider communication. This, in turn, further strengthens the global position of English, online and offline. Thus, it seems likely that the Internet is accelerating the global spread of English, as have previous mass communication technologies such as film and popular music recording.

The question arises, Does the spread of English pose a threat to other languages and, more generally, to language diversity on a global scale? The possibility of a single language prevailing to the exclusion of all others seems remote. Graddol (1997/2000) foresees, instead, an oligarchy of the world's largest languages—Chinese, Spanish, English, Arabic, Malay, Hindi, Russian—each of them dominating in its geographical region, where it also enjoys economic and cultural influence. Graddol estimates that by the year 2050, about 90 national languages will remain, and the number of local and minority languages would continue to decline, consistent with the ongoing trend toward language loss (Krauss, 1992).

Paolillo (chapter 18) also finds that ongoing trends favor large languages, especially English. He addresses the question of linguistic diversity online quantitatively, by developing a diversity index that allows for comparison of the relative diversity of polities with different population sizes. The linguistic diversity of Internet users is considerably lower than that of global linguistic diversity; moreover, the regions with the lowest linguistic diversity, especially North America and Europe, have the largest share of Internet resources. Projected trends suggest that linguistic diversity online is on the rise but that it is leveling off after a period of rapid increase since 1996. Paolillo concludes that the concentration of resources in North America, and the economics of Internet technology development and use, will necessarily mean continued greater use of English than any other language on the Internet in the foresee-able future.

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It is often claimed that Chinese, as the language with the largest number of speakers in the world, will eventually become the dominant language online. Chinese Internet use has been growing rapidly: As of November 2005, an estimated 124 million Chinese speakers used the Internet, second only to English with 310 million speakers.[31] However, Paolillo notes that current estimates tend to be based on the usage of urban, educated Chinese, who represent a relatively small proportion of Chinese speakers. Moreover, for socioeconomic reasons, Internet penetration levels for China will probably be lower than in English-speaking countries, resulting in a leveling off below projected levels (Lin, 2002). In any case, Bruthiaux (2002) argues, the writing system and other features of the Chinese language will prevent it from displacing English globally.

THE CONTENTS OF THIS BOOK

This book contains 18 chapters, including this introduction. The heart of the book is 15 empirical case studies of online communication in a variety of languages and CMC modes. An additional chapter (chapter 6) is a critical analysis of discourse about CMC, and the last chapter is a quantitative survey of language diversity on the Internet (chapter 18).

A range of languages and language varieties are represented, including three varieties of Chinese: Hong Kong Cantonese, Taiwanese, and Mandarin Chinese (chapters 3 and 8, by Su and Lee). Two chapters analyze Japanese, the third most popular Internet language (after English and Chinese): Nishimura (chapter 7) examines Japanese BBS communication, and Katsuno and Yano (chapter 12) focus on *kaomoji* in Japanese chat. Panyametheekul and Herring (chapter 10) report on turn taking in Thai chat. Androutsopoulos (chapter 15) discusses Persian online, as well as Indian languages and Greeklish. The Middle East is represented by studies of Arabic in Egypt and Dubai (chapters 2 and 13, by Palfreyman & Al Khalil, and Warschauer et al.).

European languages discussed include French, German, Italian, Catalan, Spanish, and Portuguese (chapters by Anis, Androutsopoulos, Durham, Climent et al., and Oliveira). Two chapters focus on "Greeklish": chapter 5 by Tseliga and chapter 6 by Koutsogiannis and Mitsikopoulou. The latter chapter is about *attitudes* toward the use of Greeklish; it complements Tseliga's empirical analysis of Greeklish online. Greek is also one of the diasporic languages on German-based websites considered in chapter 15 by Androutsopoulos. Finally, varieties and aspects of nonnative English are investigated by Su, Lee, Warschauer et al., Durham, Axelsson et al., and Wodak and Wright.

Eleven studies analyze various forms of asynchronous CMC, as used by different populations of users. Two discuss personal email, among Hong Kong students (chapter 8 by Lee) and Egyptian professionals (chapter 13 by Warschauer et al.). Three chapters deal with asynchronous CMC among

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students, in a recreational context in Taiwan (chapter 3 by Su), and in academic or professional contexts, among computer science students in Catalonia (chapter 9 by Climent et al.), and Swiss medical students (chapter 14 by Durham). Other varieties of asynchronous CMC studied include a faculty/ staff forum at a Portuguese university (chapter 11 by Oliveira), a European Union citizens' discussion list (chapter 17, Wodak & Wright), discussion lists and a newsgroup in Greek (chapter 5, Tseliga), electronic BBSs in Japan (chapter 7, Nishimura), and Web-based discussion forums for migrants in Germany (chapter 15, Androutsopoulos). In chapter 4, Jacques Anis discusses SMS messages circulated among French students and young people.

Six chapters discuss synchronous CMC, one-to-one modes such as IM and ICQ ("I See You"), as well as public group chat. Palfreyman and Al Khalil (chapter 2) and Warschauer et al. (chapter 13) investigated IM use by students and young Arabic professionals. Lee (chapter 8) analyzes ICQ chat by young people in Hong Kong. Panyametheekul and Herring (chapter 10) and Katsuno and Yano (chapter 12) investigated Web chat among Thai young people and Japanese housewives, respectively. Finally, Axelsson et al. (chapter 16) examine text chat in the three-dimensional graphical environment Active Worlds.

Table 1.2 summarizes the case studies in this book by CMC mode, the populations studied, the language(s) investigated, and the linguistic phenomena that are the research focus.

CONCLUSIONS

Despite its broad scope, the coverage of this book is limited in several respects. Most chapters are case studies of a single language in a single online context. Of the approximately 190 countries in the world, fewer than 20 are represented here. In geographical terms, no indigenous languages from Central America, South America, or outlying areas such as New Guinea are included; also missing are major languages such as Russian and Malay.

The book includes more asynchronous than synchronous studies, and no chapter that addresses the currently most rapidly growing mode of asynchronous CMC, weblogs.[32] Finally, the language use analyzed in this collection is textual, rather than audio or graphical, (with the exception of Active Worlds as studied by Axelsson et al.) mixed modality.

Summary of Findings

The above limitations notwithstanding, certain generalizations can be made from the studies in this collection, considered together with the research summarized in this introductory chapter. Many of these point to commonalities associated with CMC in different languages.

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TABLE 1.2. Classification of case studies by CMC mode, population and languages investigated, and research focus.

Synchronicity/CMC Mode	Population	Language(s)	Focus	Chapter author(s)
Asynchronous				
Personal email	High school, university students	Cantonese, English	Code mixing, representations of Cantonese, romanization	Lee
Personal email	Young professionals, 24–36 years old	Classical, colloquial, Egyptian Arabic, English	Language choice	Warschauer et al.
BBSs	University students, young people	Taiwanese, Taiwanese-accented Mandarin, English	Writing systems, dialects, language play	Su
Discussion list	Medical students	English, French, German, Italian	Language choice over time	Durham
Discussion list	University faculty, staff	Portuguese	Politeness, gender	Oliveira
Discussion list	E.U. citizens, all ages	Multiple, English	Language choice, dominance	Wodak & Wright
BBSs on fan websites	Young people	Japanese	Orthography and typography	Nishimura
Local Usenet newsgroups	Computer science students	Catalan, Spanish	Netspeak and Spanish interference in Catalan; issues for machine translation	Climent et al.
Discussion lists, newsgroup	Unspecified, presumably adults all ages	Greek, "Greeklish"	Romanization; uses, features of Greeklish; relation between Greeklish and English borrowing	Tseliga

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TABLE 1.2. (continued)

Synchronicity/CMC Mode	Population	Language(s)	Focus	Chapter author(s)
Web-based, diasporic discussion forums	Adolescents, young adults, migrants, children of migrants to Germany	German, Persian, Hindi, Punjabi, other Indian languages, Greek(lish)	Language choice, code switching	Androutsopoulos
SMS (mobile phone text messages)	University students, young people	French	Orthography and typography	Anis
Synchronous				
Instant messaging	Female students	Arabic, ASCII-ized Gulf Arabic	Orthography and typography	Palfreyman & Al Khalil
ICQ chat	High school, university students	Cantonese, English	Code mixing, representations of Cantonese, romanization	Lee
Webchat	Young people 11–25 years old	Thai	Turn taking, gender	Panyametheekul & Herring
Chatroom	Housewives	Japanese	*Kaomoji* (Japanese emoticons), gender	Katsuno & Yano
Chat	Young professionals 24–36 years old	Classical, colloquial Egyptian Arabic, English	Language choice	Warschauer et al.
Graphical chat (Active Worlds)	Unspecified	English, miscellaneous European languages	Language choice	Axelssson, et al.

First, writing systems influence the linguistic features of CMC. The ASCII bias in textual CMC is not just a limitation for languages that use non-Roman fonts, but also, in many cases, an impetus for orthographic and typographic innovation. This trend goes hand in hand with the tendency for language play in CMC, which has been observed for every language used online, including those written in Roman script.

Considerable evidence has accumulated that distinctive CMC features recur in languages besides English, for example, abbreviations, emoticons, and conversational usage. Shared features may have originated from a single source (e.g., North American English users) and spread through contact, although some may be local responses to technical constraints of the medium, as Anis proposes for French SMS. More generally, online communication tends to be less formal and more oriented toward interpersonal interaction than other registers of writing, especially in synchronous modes.

Gender is reflected in online discourse in every language context studied, typically reproducing offline gender patterns (see Herring, 2004b). This finding runs counter to popular claims that gender is invisible in textual CMC, due to its paucity of social cues (Herring, 2003). The studies in this book show that gender can be indexed through online behaviors including politeness, emoticon use, and turn taking.

In several online multilingual contexts (e.g., chapter 15), language alternation has been observed to resemble face-to-face, conversational code switching. This CMC evidence presents an empirical counterpoint to theoretical claims that code switching is an exclusively conversational phenomenon (see Gumperz, 1982).

Finally, English is often used as a lingua franca in public online contexts, even when no native English speakers are present. Longitudinal studies such as Durham's (chapter 14) lend particularly compelling support to the notion that the Internet is accelerating the global use of English.

Alongside these shared tendencies, variation can be observed across different language contexts. The characteristics of non-Roman scripts will evidently shape how they are adapted in ASCII, for example, whether numerals can be used to stand in for sounds. Acronyms are not universally common (chapter 4); conversely, writing words together in an unbroken string may be more characteristic of CMC in French than in English, which may reflect language-internal preferences, for example, for synthetic as opposed to analytic morphology.

Some apparently culture-based differences are found in the chapters on gender. Thai women (chapter 10) come off better than Portuguese women (chapter 11) in terms of control of, and obtaining positive outcomes from, online mixed-sex discourse. Another intriguing comparison is that between CMC in Hong Kong and Taiwan: Despite similar Chinese/English bilingualism, different patterns of use are evidenced by young people that cannot be explained as differences between one-to-one (chapter 8) and many-to-many (chapter 3) modes of CMC.

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Even emoticons reflect cultural practices. Two radically different sets of emoticons correspond roughly to Western versus Asian usage, the latter category reflecting, in the case of *kaomoji*, Japanese comic book representation and a popular cult of "cuteness" (chapter 12).

Finally, English does not dominate in every multilingual situation: Russian dominates Internet use in Uzbekistan (Wei, 2004), Spanish dominates in Catalunya (chapter 9), and German is the matrix language among immigrants to Germany (chapter 15). There is also some evidence that the online presence of speakers of (relatively) smaller languages is increasing (chapter 18). Case studies such as those presented here can begin to shed light on what circumstances—linguistic, communicative, cultural, demographic, and technological—condition such variation.

Directions for Future Research

There is a pressing need for systematic cross-linguistic studies that make use of similar methods in similar contexts involving different languages. Studies that assess the actual extent and nature of CMC use in different parts of the world, rather than relying on estimates of number of Internet hosts or numbers of computers, would also be valuable. Given that technology choices determine with whom one can converse (e.g., currently, IM users cannot necessarily chat with people using a different IM client) and that features of CMC technology can shape language use, mapping out who is communicating via what modes of CMC, where, and to what extent is a vital prerequisite to an eventual understanding of CMC on a global scale.

In the meantime, Internet use continues to rise, and Internet technologies continue to evolve. Unicode and new fonts have partially obviated the need for romanization of non-Roman scripts; does this mean that the use of Greeklish, for example, will ultimately disappear? What fonts will be used by speakers of languages that were previously unwritten before being expressed in CMC, such as Sardinian, Romani, and vernacular Gulf Arabic?

Consider, too, the recent rise of weblogs (blogs), a technology that allows individuals to self-publish their thoughts on the Web. How does the public broadcast nature of blogs, and their global audience, affect language choice? Blog publishing is also having a popularizing effect, as seen in its use to challenge the authoritarian character of the current regime in Iran. This challenge is partly linguistic; the deliberately informal, ostensibly illiterate style of some Persian bloggers conflicts with conventional expectations for writing in Persian and has given rise to a "vulgarity debate" (Doostdar, 2004). Such uses, in addition to raising sociolinguistic issues of language prescriptivism and standardization, are culturally embedded and critical in nature, calling for a diverse set of analytical methods.

It is our hope that these observations and those in the following chapters will serve as a starting point for further research on Internet language use that adopts as its premise that the Internet is a multilingual domain.[33]

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Acknowledgment

This chapter incorporates material from Danet and Herring (in press).

Notes

1. This example shows how the meaning of the character "@"—the separator between username and server name in an email address—has come to symbolize Internet-mediated communication in general (see Danet, 2001, pp. 2–3).

2. Internet Statistics: Distribution of languages on the Internet, http://www.netz-tipp.de/languages.html; retrieved December 16, 2005.

3. Internet World Stats, Internet usage in Asia, www.Internetworldstats.com/stats3.htm; retrieved December 16, 2005.

4. See Block (2004) and papers in Sue Wright (2004).

5. See English abstracts for Beißwenger (2001) at http://www.chat-kommunikation.de/chat2001/index.html and Beißwenger's multilingual bibliography at http://www.chat-bibliography.de/, both retrieved December 16, 2005; see also references in endnote 19.

6. On CMC modes, see Herring (2002).

7. See Danet (1998), Donath (1999), and Turkle (1995).

8. *Hor* means "fornication" and *by* means "village." See Pargman (1998) and Pargman and Palme (2004).

9. See http://www.omniglot.com/writing/hawaiian.htm; retrieved December 5, 2005.

10. On word processing in Chinese and Japanese, see Su (chapter 3) and Nishimura (2003b).

11. See the discussion of the extended ASCII character set below.

12. See also Durscheid (2000).

13. This is apparently not spontaneous improvisation. In one method of inputting Chinese characters, typists type romanized syllables and then further key sequences to produce Chinese characters. Evidently, in the United States they stop at the first stage. See Su (chapter 3) and http://www.pinyin.info/, retrieved December 5, 2005.

14. Today Syriac fonts are freely available (McClure, 2001b).

15. ISO stands for the International Organization for Standardization; see http://www.iso.org/iso/en/ISOOnline.frontpage, retrieved December 5, 2005. On pre-Unicode solutions, see http://www.cs.tut.fi/~jkorpela/chars.html, retrieved December 5, 2005.

16. Unicode Home Pages, http://www.unicode.org/glossary/, retrieved December 6, 2005.

17. See http://www.linguistics.berkeley.edu/sei/ and http://www.evertype.com/, both retrieved December 6, 2005.

18. See http://www.unicode.org/versions/Unicode4.1.0/, retrieved December 5, 2005; page last updated March 31, 2005.

19. On German CMC, see also Beißwenger (2001), Beißwenger and Storrer (2005), Durscheid (1999, 2000), Hentschel (1998), Stein (2003), Warner (2004), and Zitzen and Stein (2004). On French CMC, see Anis (1999b; chapter 4) and Marcoccia (2004a, 2004b).

20. Studies of these practices include Thurlow and Brown (2003) on SMS, Baron (in press) on IM in English, Ling (2005) on Norwegian SMS, Baron and Ling (2003) on English IM and Norwegian SMS; Hård af Segerstad (2005) on Swedish SMS, Kasesniemi and Rautiainen (2002) on Finnish SMS, Pietrini (2001) on SMS in Italian, Almela Perez (2001) and Galan Rodriguez (2001) on Spanish SMS, Spilioti (2005) on Greek and Greeklish SMS, Androutsopoulos and Schmidt (2002) and Döring (2002) on German SMS; Anis (2001; chapter 4) on French SMS, and Miyake (2005) on Japanese SMS.

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21. "*San* is used between equals regardless of gender. . . . [It] is the least marked of all address terms for gender or social status" (Matsuda, 2002, p. 45).

22. See also Katsuno and Yano (2002) and Miyake (2005).

23. *Kaomoji* are common in Japanese CMC in general (Fouser, Narahiko, & Chungmin, 2000; Sugimoto & Levin, 2000). Even Japanese professionals and seniors use them (Kanayama, 2003; Matsuda, 2002).

24. Tanganyika and Zanzibar gained independence in 1962 and 1963. In 1964, they became the nation of Tanzania (http://www.african.gu.se/tanzania/weblinks.html, retrieved December 6, 2005).

25. See the discussion of linguistic diversity online in chapter 18.

26. See   http://europa.eu.int/comm/education/policies/lang/languages/index_en.html, retrieved December 4, 2005. Only a "handful" of languages were actually used (Fishman, 1998, p. 29).

27. The forum was closed in October 2004. Futurum debates are archived at http://europa. eu.int/constitution/futurum/index_en.htm, retrieved December 5, 2005.

28. See http://www.activeworlds.com/, retrieved December 5, 2005.

29. On the Punjabi script, see http://www.omniglot.com/writing/gurmuki.htm, retrieved December 16, 2005.

30. See also Arbelaiz (2001) and Uberuaga (2001).

31. Internet World Stats, Internet users by language, http://www.Internetworldstats.com/stats7.htm, retrieved December 5, 2005.

32. On weblogs in English, see Herring, Scheidt, Bonus, and Wright (2004). Japanese and Israeli weblogs are the subject of two current Ph.D. theses (Oberwinkler, 2005; Vaisman, in preparation).

33. For more recent sociolinguistic work on computer-mediated communication using a multilingual perspective, which appeared after this book want to press, see Androutsopoulos (2006).

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