What are the unique characteristics of sign languages that make them so interesting? How is linguistic theory enriched by research on sign languages? *Sign Languages: A Cambridge Language Survey* tries to answer these questions. It is a collective work for which the whole is much greater than the sum of its parts. Differences among sign languages and Deaf communities will be described in its chapters as well as the common themes that point to convergence in the field. This volume addresses three areas of crosslinguistic study involving the family of sign languages: “transmission” of sign languages from one generation to the next, “shared crosslinguistic characteristics” and “variation and change.” The study of sign languages is still relatively young, and while the majority of scholarship on these languages has come from just a few of them, a great effort has been made to represent as full a range as possible in this book. More than forty sign languages are treated in this volume. Among the sign languages represented in this volume are older sign languages, including British, Italian and American Sign Language as well as younger sign languages such as Israeli, Al-Sayyid Bedouin and Nicaraguan Sign Languages. Sign languages from developing countries as well as economically more advanced countries are included. A wide range of geographic locations is also represented: Latin America, Asia, the Mid-East, Africa, as well as Northern, Southern and Eastern European countries. Naturally the set represented here is not all-inclusive, due in part to concerns for space, but also due to the fact that the sign languages of many parts of the world have not yet been studied.

*Sign Languages* highlights three related areas of linguistics to which sign languages have contributed, and each is represented by its own part in this book. The first addresses how sign languages are transmitted from one generation to the next in different parts of the world, and how transmission is influenced by sociopolitical-cultural factors. The languages in this section were chosen because there is little known about them in the existing literature. Probably the most common assumptions about sign transmission comes from American Sign Language, British Sign Language and French Sign Language (LSF), which were not included in this...
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section precisely because there is an existing literature. These languages have been transmitted primarily through the schools for the Deaf – not necessarily because a sign language was a language of instruction, but because the school environment provided a community within which grammaticalization could take place. We will see in the sign languages represented in this section of the book that the school environment is not the only way that sign languages are transmitted. Factors internal to the Deaf community, such as identity, cohesiveness and stability, and those external to it will be considered.

The matter of language transmission is relevant to cultural studies and anthropological linguistics. It also has a profound effect on linguists doing fieldwork, insofar as the users of a language in decline may begin to lose the sense of what and what is not grammatical. The second part of the book highlights those crosslinguistic characteristics of sign languages that are stable and unique to this language family. Here we will see such issues as iconicity and modality addressed cross-linguistically in, for example, systems of aspect and verb agreement. These examples were chosen because similar results across several sign languages have been found. The third area of scholarship to which sign languages have made a great contribution is language variation and change. Here we address synchronic variation but also how sign languages change in historical time, examining not only the effects of time on a stable sign language, but also how such languages emerge from gesture systems to become sign languages.

In the next sections of this introduction, I will describe a small selection of the chapters and orient the reader concerning some of the ways in which such work has contributed to the study of culture and language more generally. In trying to encapsulate why all linguists might want to become familiar with work on sign languages, allow me to summarize three reasons why sign languages present a unique perspective on the study of language. The first is communication modality; that is, what properties of structure are motivated by the visual/gesture nature of the phonetic systems that are used to produce and perceive them? Since sign languages are minority languages and visual (as opposed to auditory), linguists who study them help to shift focus of discussion from one where the facts of the spoken language “channel” are taken for granted to one where both the auditory and the visual channels can be considered. This matter is crucially important in phonology because recognition of modality differences exhibited in sign languages leads back to a reconsideration of the impact of these channel differences on spoken languages. No doubt the effect of the visual/gestural modality on sign languages is no less than the effect of the auditory/vocal modality in spoken languages, yet relatively little spoken language work addresses the question of how much of the auditory/vocal communication modality of spoken languages is present in their
phonological architecture; for example, in the organization of syllables. Work on sign language phonology opens up a space for linguists working on spoken languages to address such questions.

The second element of scholarship to which sign languages contribute is **iconicity** in language, which is one particular type of modality effect. Signed and spoken languages both contain iconicity, but because sign languages are visual/gestural and the visual properties of entities and actions are so readily accessible, they are utilized in abundance in sign languages. How iconicity is used in the emergence of language in creating novel forms and in historical change are questions that can be taken up seriously in sign languages because there is a large amount of data with which to work. The use of iconicity in no way implies that sign language lack “duality of patterning,” one of the fundamental design features of language (Hockett 1966), because as many of the chapters in this book show, it is not the source of structure that makes a system linguistic, but the distribution and use of elements within that system that constitute its grammar. Several chapters in this volume take up topics that involve iconicity in various forms.  

The third body of work on sign languages that helps us better understand our capacity for language is the work on the **emergence** of language; that is, the possibility of tracing the route from gesture to language. Speakers gesture when they talk, have always done so, and while these gestures are important in many ways (McNeill 1992, Goldin-Meadow 2003a), co-speech gesture systems do not possess self-standing grammars. Yet sign languages often begin when a single individual creates a system to use in his/her local environment. Sign language linguistics can study how non-linguistic gestural systems become linguistic over time in a way that cannot be traced in spoken languages. Two intermediate populations that function in between these two ends of the continuum of gesture and language are home sign systems, which are invented by isolated deaf individuals without a language model, and young sign systems that are less than a hundred years old. The opportunity that we have to study the stages of language change from gesture to sign language is extremely useful in understanding how a language can take shape in historical time. Two chapters of the volume address aspects of the system that change over time as language emerges.

In reading all of the chapters included here, I hope that it will become clear that a single theory of language cannot explain everything about this structurally related group of sign languages. Theories that address a wide range of cultural, societal and demographic factors, those addressing general cognitive systems, and those specific to abstract linguistic structure are needed. And perhaps because the set of sign languages studied here comes from all over the world (yet is still relatively small, compared to the number of families of spoken languages), we can see these
theoretical perspectives played out on a smaller stage. Factors “external” to a linguistic system, such as cultural traditions, attitudes about language, the size of the community, the system (or systems) of deaf education, language environment and the cohesiveness of the community, to name a few, play a large role in understanding language transmission; this will be brought out in the first section of the book. Mufwene (2008) calls the contribution of such external factors “ecological” in nature, and he applies an approach of population dynamics to the phenomena of pidgins, creoles, language dominance and language extinction, as well as language transmission. He writes (2008: 182):

No group of speakers passes on a ready-made grammar to a new group of speakers, no individual speaker does to any other speaker (Meillet 1929, Hāgē 1993, DeGraff 1999) … As with the development of any social competence, this (re)construction process … depends on both the learners’ individual skills and on the particular network that he/she has participated in.

With respect to factors that shape languages from within, both cognitive and generative linguistic approaches are represented in this volume. Cognitive linguistics has been interested in general factors that could be responsible for language structure and variation within it; namely, those not specific to language but which are part of our general perceptual, articulatory, cognitive or physiological systems (Givón 1984, Langacker 1987, Hopper & Traugott 1993, Bybee, Perkins & Pagliuca 1994). Engberg-Pedersen’s and Wilcox, Rossini and Pizzuto’s chapters are positioned in this framework. On the other hand, constituent structure at all levels of grammar – phonology, morphology, syntax, semantics – have been prevalent themes in generative linguistics and its predecessors since the early 1900s (Sapir 1925, Trubetzkoy 1939, Jackobson 1941, Hockett 1954, Chomsky 1957, to name a few), and no less in signed than in spoken languages. Sign languages exhibit a set of common characteristics, while still allowing for variation in constraint rankings and parameter settings. The chapters by Neidle and colleagues and Müller de Quadros and Lillo-Martin are representative works in this framework.

1 Language transmission

Looking closely at the transmission of sign languages from one generation to the next in a given country is like checking in on the basic health of the Deaf community, similar to taking its pulse. In the case of spoken languages, researchers who have worked on endangered and dying languages have long observed that if a language is no longer transmitted in the home from parents to children and if the
cultural environment that is central to its use no longer exists, the language has little chance of surviving (Fishman 1991). Sign languages are not typically transmitted in the home, except for the small percentage of Deaf children born to Deaf parents. Approximately 1 in 1,000 live births results in a deaf child, but less than 10 percent of these (i.e., less than 1 in 10,000) is likely to be born into a culturally Deaf home, one where sign language is a daily presence. And it is “sign language that plays the major role in developing Deaf identity … [t]herefore further research into sign transmission, dissemination, and preservation are critical activities that need to be undertaken if [these] minority sign languages are to survive” (Lule & Wallin, this volume: p. 118, p. 130).

The chapters contained in this volume describe how practices of sign language transmission differ in diverse areas of the world, and in so doing tap into how much power the Deaf community has over its own destiny in these locations. This is because control over language transmission is a way of ensuring that the most important manifestation of “Deaf culture” has a future. By “Deaf community” and “Deaf culture” I want to include all of the potential ways that this might manifest itself – historically as well as today. The pressures and tensions surrounding the practices of language transmission are the expression of different power relations, and the work of Michel Foucault captures their interplay in a general way, aptly applied here to language transmission (2001: 1006):

We cannot then speak of power if we want to undertake an analysis of power, but we have to speak of powers and try to localize them in their historical and geographical specificity … A society is not a unitary body in which one and only one power would exert itself, but it is in reality a juxtaposition, a connection, a coordination, a hierarchy, also, of different powers, which nevertheless remain in their specificity … Society is an archipelago of powers.

Reading the chapters of this volume, we see a set of sources of power emerge that is relevant to the issue of language transmission. Crucially, none of the factors mentioned below is considered positive or negative on its own; every factor must be studied with respect to its own local network. Some specific factors internal to Deaf communities that influence language transmission are:

**size**: How large is the Deaf community relative to the surrounding spoken language community?

**proximity**: Is it relatively easy for Deaf community members to stay in contact with one another?

**cohesion**: Is there an infrastructure for the Deaf, such as associations of the deaf, sports clubs, artistic traditions, or religious organizations? Is there consensus
among Deaf community members concerning important issues, such as what
type of sign language should be taught to deaf and hearing people?
self-awareness: How much do deaf people consider themselves a group separate
from the surrounding spoken language community?
longevity: How long has the community been aware of itself as a group?

Some specific factors external to Deaf communities that might influence lan-
guage transmission are:
economic situation: What is the general state of the economy in the country?
mono- vs. multicultural environments: Is the surrounding spoken and signed language
community homogeneous or heterogeneous with regard to culture and ethnicity?
educational intervention: What are the mechanisms for educating deaf children and
what are the related educational policies?
governmental intervention: Is there official or unofficial recognition of sign language
as a minority language? Are there explicit or implicit policies of eugenics
concerning "human perfection"?
availability of technology: Is technology, such as the Internet and video technology,
readily and inexpensively available so that it can provide a surrogate community
in cyberspace?
medical intervention: What degree of influence does the medical community have in
matters related to deafness?
availability of interpreters: Is interpreting a viable profession? Who pays for their
services? How are interpreters trained?

There is a complex interplay between internal and external factors regarding
practices of language transmission in each community represented in this volume. Let us look at just a couple of cases in some depth here. Schools, especially residential schools, have long been considered important in sign language transmission because, regardless of their communication policy, they provide a community for the language to grow and be passed to the next generation of signers. Some well-studied Deaf communities have had schools for the deaf since the period between 1750 and 1850. We will look at two of these countries – Sweden and Poland. Each is situated differently with respect to language transmission today. Three more examples discussed here are communities where schools currently play relatively little role in the transmission of the language – Mexico, Uganda and the Arab World – again with different ambient situations based on the interplay of internal and external factors regarding language transmission.

The chapter by Bergman and Engberg-Pedersen describes the case of the Swedish Deaf community, which may appear small (8–10,000), unless it is considered as a
The proportion of the population as a whole, which is also quite small (approximately 9,000,000). The Swedish Deaf community is relatively old: there is evidence of Swedish Sign Language in 1759, even before the direct and indirect influence of the French across Europe after the founding of the first Deaf school in Paris in 1761. There are six special schools for deaf and hard-of-hearing children, and the first of these appeared in 1809. More recently, in the 1960s, a member of the Swedish Parliament became the president of the Swedish Deaf Association, and in the 1970s there was an alliance established between parents of deaf children and the Swedish Deaf Association. This alliance has created a larger group that has been able to influence government policies. At first these policies introduced a general notion of “sign language,” and the type of sign language taught to parents was more like Signed Swedish, with the signs following Swedish word order rather than that of Swedish Sign Language. But Swedish Sign Language was officially recognized by the Riksdag (Swedish Parliament) in 1981 in a declaration stating deaf people’s right to be bilingual, and a bilingual curriculum was adopted as well. Qualified interpreters and interpreter training are available, as is technology, and the economic situation is relatively strong. Currently Swedish Sign Language is largely taught by Deaf instructors; it is one of the languages offered in the regular school system for hearing pupils, and it is the third most popular choice among language options after French and Spanish, English being obligatory for all children. Approximately 100,000 hearing people are considered to have some signing skill. The universities in Malmö and Stockholm have two to three semester programs in Swedish Sign Language as a “foreign” language. We can conclude from this sketch that the internal and external factors that contribute to language transmission are working together in Sweden to provide a favorable environment for the future of Swedish Sign Language.

The second example is the case of Polish Sign Language transmission. Wojda (this volume: p. 146) writes in his conclusion:

The [Polish] deaf community tends to lack group cohesiveness. The slogans about “Deaf culture” are not often reflected in everyday experiences. They are understood by only a few individuals who mainly acquire their understanding and meaning of culture from the surrounding Polish spoken language community … For a deaf person in Poland, learning a spoken language is often a primary concern. Thus, dividing the Deaf community into those who are culturally Deaf vs. all others remains problematic.

As in Sweden, the first school for the deaf in Poland was established in the early 1800s – 1817 to be exact – but as recently as the 1990s, artificial hybrid communication
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systems, similar to Signed Polish, have been used in deaf classrooms, taught to hearing sign language students and even used to promote bilingual education. The confusion stems, in part, from the policy set by the Polish Deaf Association, which controls sign language teaching. It had been decided that it would be extremely difficult to describe the grammar of Polish Sign Language sufficiently to teach this language, so instead an artificial system thought to be more comprehensible to hearing people was taught, which uses the word order of Polish and can include the mouth movements of Polish words. This state of affairs has existed for decades, and it has affected deaf people as well, because teachers of the deaf learn this type of signing and then use it and ascribe high status to it in the classroom. Since the hybrids are often considered “cultured” signing, some native signers have adopted this style of signing. This creates an environment in which it is difficult to determine what Polish Sign Language really is, because it has altered signers’ judgments about what constructions are grammatically acceptable. Sports clubs have fostered social cohesion, but the community has not mobilized itself to establish the unique status of Polish Sign Language. The external factors of the Polish Deaf community are quite encouraging—a good economy, a well-established national Deaf association, the existence of schools for the deaf—but the lack of self-awareness (an internal factor) contributes to a language transmission situation that puts Polish Sign Language in a precarious position.

Ramsey and Quinto-Pozos (this volume) describe a situation in Mexico where a residential school did exist but was closed in the 1960s. Many members of the community are somewhat distant from one another, so there is lack of cohesion among community members, and few have access to computers or the Internet. Language transmission of Mexican Sign Language has therefore migrated to other spaces—to church groups, for example—and sometimes to a type of mentorship situation that takes place when a skilled signer (padrino) works with a young signer to improve his/her skills. Alejandro López, one of the Deaf lay teachers at a church with a strong Deaf presence, commented that, to his dismay, there are now “eight or nine kinds of signing” in Mexico. He elaborated on this, saying that “in the past we only had one way to sign but since then things have gotten bad. It’s all mixed up now” (p. 59). There is little support from external sources (government or international Deaf groups), and the lack of internal cohesion creates a difficult language transmission situation in this country. A healthy situation of dialectal variation may result from such a situation, but the worry is that without access to a large number of strong language models of any one variety, the language may be in a state of decline.

Our next example is Uganda. Like Mexico, there is little support from the government, but fortunately the government has not interfered with efforts by
the Deaf community to create a cohesive community. Progress has been made in the last twelve years. The preamble to the Ugandan constitution now states that, “The state shall promote the development of a sign language for the deaf.”

Ugandan Sign Language is also mentioned in some government policies, such as the Persons with Disabilities Act 2006. There is wide linguistic diversity in Uganda with approximately forty-three spoken languages, primarily from the Bantu and the Nilo-Saharan families; however, English is the language that deaf children learn to read and write, and Ugandan Sign Language is what deaf students learn to sign. There is also some interference from Signed English, perceived by some Deaf people as useful for upward mobility in the world of work. Deaf people are very proud of developing a Ugandan Sign Language theatre group as well as an Ugandan Sign Language dictionary, which grew out of collaboration with the Deaf Association of Denmark and the linguists Lars Wallin and Dorothy Lule. The Ugandan Deaf community has an optimistic future and a favorable language transmission situation, thanks to a growing community awareness that has not been diminished by external factors.

Our last case of sign language transmission is the sign languages of the Arab world (Al-Fityani and Padden, this volume). Three factors make the Deaf communities in this area of the world unique: (1) the high level of isolation and large family groups, (2) the high level of consanguinity among these families creating a higher than normal incidence of recessive genetic traits, and (3) large family groups with a higher than normal incidence of deafness means that the schools play a less important role in transmission, and there is a relatively high degree of sign language use within family and community settings. Thus, unlike the situation in the many other parts of the world represented in this volume, in this area of the world where there are large, extended families, there is more opportunity to learn a sign language from birth, and therefore a great chance that sign languages will be transmitted within families across generations. As Al-Fityani and Padden report, there is a wide range of language variation in this region, yet the Council of Arab Ministers of Social Affairs, a committee within the League of Arab States, has encouraged a standard pan-Arab Sign Language. This has been met with wide resistance, in large part due to the fact that when this artificial variety of sign language is presented during interpreted television news broadcasts, Deaf viewers say they cannot understand it. The authors write, “the underlying assumption that sign languages of the region are similar enough to be standardized may in fact be erroneous. It may be risky to engineer a ‘standardized’ sign language in the Arab world, given the difficulty of standardizing languages that are historically unrelated” (p. 452). While it is unlikely that such a move could jeopardize the transmission of sign languages in families and the local
cohesion of these groups, this type of action by a governmental body may have consequences in school settings, and the energy and resources of the various affected Deaf communities may need to mobilize in a cooperative fashion in order to combat it.

In sum, d/Deaf people have many different identities that emerge from their own personal interactions, and these identities may or may not include that of being an active citizen in a Deaf-World. The factors in their external language environments have many different characteristics as well. Each situation can be described in terms of relationships of power, and these relations result in a set of practices used to transmit a sign language. For these reasons sign language transmission is a fascinating field of study, as the chapters of this volume amply demonstrate.

2 Shared crosslinguistic characteristics

In this section the shared properties of sign languages are described. These chapters describe issues that are common to a wide range of sign languages – e.g., word order, the expression of aspect, productivity and changes due to pressures of ease of perception and ease of production. Since this volume is designed to highlight the features of sign languages that make them unique, more attention in this introductory chapter will be paid to those properties not commonly seen nor commonly studied in spoken languages, and which contribute to our understanding of language more generally.

2.1 The lexicon

One common characteristic across sign languages is the organization of the lexicon, but languages of the world – signed and spoken – have lexicons composed of words with different origins. For example, Itô and Mester (1995a, 1995b) propose a core-periphery model for Japanese that involves several components (Yamoto, Mimetic, Sino-Japanese and Foreign). Brentari and Padden (2001) proposed a three-part lexicon for ASL (see Figure 1.1), which has been extended to many sign languages. In such models, the lexical components are established based on phonological and morphological properties as well as historical origins. Many sign languages share this type of lexical structure in part because of shared historical paths involving the interaction with the written and spoken means of communication surrounding them, and because of the use of iconicity in grammar in classifier constructions (described in more detail later on). The three lexical components of signed language lexicons are core, foreign and spatial, and these three components will be described briefly.
Figure 1.1 *The three components of the ASL lexicon with representative vocabulary items of each: foreign (left); core (middle); spatial (right).*
Figure 1.1 shows ASL examples from each component using the same three handshapes (i.e., \(\text{\textcircled{1}}\), \(\text{\textcircled{2}}\), and \(\text{\textcircled{3}}\); from Brentari & Eccarius, this volume).

In the core component, the three manual parameters of handshape, place of articulation and movement are *phonological* and combine with other elements to form stems – i.e., the parameters *have no meaning*. Examples are TEACH, STRANGE and BENEFIT. The foreign component of the lexicon has forms that have a relationship with the surrounding spoken language or another sign language. Foreign forms include the set of initialized forms, which have a handshape of the manual alphabet as an affix and are built from stems in the core. The handshape as a whole is *morphological* because it *has meaning*; it expresses the meaning of the letter of the manual alphabet. In these signs the other manual parameters are phonological. Examples are OPINION, CAFETERIA, and GET-AN-'F'. Signs borrowed from the gesture systems of the surrounding spoken language or from another sign language would also be members of the foreign component, and all such signs may move towards the core as they obey more and more of the phonological constraints of the language or allow more types of morphological processes.

The spatial component includes spatial signs (UP, DOWN, etc.) and classifier constructions. In classifiers, all of the parameters (and potentially smaller features internal to the parameters) *have meaning*, and this part of the lexicon contains a great deal of visual iconicity. Classifier constructions are polymorphemic complexes with a verbal root – the movement – and affixes that involve place of articulation and handshape. In Figure 1.1, the forms are given for ‘long_thin_round_object’ (such as a round pipe), '[person]_look through_binoculars', and 'long_ thin_ flat_object' (such as a piece of paper or fabric).

### 2.2 Productivity

Iconicity is productive in sign languages, yet it is not equally productive across all components within a given sign language. Brentari and Eccarius (this volume) describe the differential use of iconicity in classifier handshapes, appealing to the systematic morphological possibilities available to different types of classifier handshapes crosslinguistically. Classifier handshapes representing the whole object show more complexity in finger selection, while handling and size/shape specifiers, which show the physical dimensions of the object, show more complexity in the joint configuration of the handshape. And even though iconicity never disappears from sign languages, it is generally weakened over time, both at the word level (Frishberg 1975) and at the level of the grammar as a whole. Forms become more conventionalized, and these grammaticized forms are distributed in a systematic way phonologically.
Engberg-Pedersen (this volume) argues that the degree of iconicity is correlated with the degree of productivity in the analysis of two falling events. She compares a more “typical” falling event with a more “atypical” one. In the more “typical” falling event, a boy falls from a tree. In this case one participant in the event (the tree) is a “ground” (as opposed to figure), stable (not moving) and inanimate, and the other participant (the boy) is the “figure” (as opposed to ground), active and animate. This configuration of participants is a typical one in a two-handed classifier construction (McIntire 1980, Padden 1988, Perniss 2007). Across seven of the nine sign languages analyzed by Engberg-Pedersen, the same handshape – the V-handshape (\(\text{V}\)) – is used to indicate the “boy,” demonstrating that these sign languages have taken the same route towards grammaticization of this form. Also, despite the apparent iconicity of V-handshape indicating a bipedal figure, with the fronts of the fingers indicating the front of the body (and therefore the knuckles would indicate the knees), when the figure expressed by this classifier handshape loses control and falls, the iconicity of the front of the legs and the front of the hand is suppressed. This loss of iconicity is not uniform across the spatial component of sign language grammars, as Engberg-Pedersen shows. She also analyzes an “atypical” falling event with two animate participants (a deer and a boy), where both move and neither is the obvious figure or ground (see Perniss 2007). In this case, there is a greater degree of iconicity overall and a great deal more variation, which is attributed to, among other factors, the various possible points of view taken by the signer.

Another area where iconicity is evident in sign languages is in movement. Wilbur (this volume) has analyzed the relationship between movement, iconicity, and meaning in many sign languages. She recently developed the Event Visibility Hypothesis, which is a formal account of how iconicity is mapped between the phonology and the semantics in the event structure of sign language predicates, both in the core and in the spatial lexical components. These distinctions are part of the semantic Aktionsart of the event, which include achievements and accomplishments, as well as states and processes (Vendler 1967). Wilbur has argued that these structural components of predicates are one reason why sign languages look so similar to one another.

2.3 Verb agreement

The topic of verb agreement is much discussed in the sign language literature and in this volume, both in the section on shared crosslinguistic characteristics and in the language variation and change section (Mathur and Rathmann, this volume, Padden et al., this volume). The complexity of an analysis of verb agreement in
Sign languages is also associated with iconicity, since the spatial, referential loci (called “R”-loci) may participate in a visual iconic relationship with the transfer of objects in space. While there is variation in the number of mechanisms chosen, most – if not all – sign languages indicate the transfer of grammatical themes, as well as agreement with object and subject arguments using paths in signing space. However, the distribution of these mechanisms, while iconic at their origin, is highly grammaticized. Because R-loci indicate the location of the object and changes from discourse to discourse, the phonological realization of agreement for a given lexical item also changes, even if the agreement system of a given sign language is internally consistent and systematic. This is often referred to as the “listability” problem, which must determine how the infinite number of spatial loci using various types of iconicity is resolved into a set of discrete agreement morphemes. Solutions to the listability problem are outlined in Mathur and Rathmann’s chapter, and they conclude that while, “The phenomenon [of agreement] has several properties in signed languages that make it look different than verb agreement in spoken languages,” agreement is the appropriate mechanism to describe this phenomenon in sign languages. Because of the listability problem, the terms for these verbs vary: “agreement” (Lillo-Martin 1991), “directional” (Baker-Shenk & Cokely 1980, Meier 1982) and “indicating” (Liddell 2000) have all been applied to this phenomenon.

2.4 Simultaneity

Another important issue that must be taken up in the analyses of all sign languages is the matter of increased simultaneity of structure in signed as compared with spoken languages. This is not to say that there is little simultaneity in spoken languages. On the contrary, intonation systems and tonality are highly productive simultaneous elements of spoken languages; however, monosyllabic spoken languages with a large inventory of simultaneous elements are rare. This general difference between signed and spoken languages is due, in part, to the difference in using the visual vs. the auditory modality to construct a language. In general, the visual system is better at processing simultaneous information, while the auditory system is better at processing sequential information. This is a crucial issue from the point of view of research tools, analysis and, ultimately, for investigating just how much this difference in degree affects the phonological representation of signed vs. spoken forms. This issue of simultaneity in sign languages is taken up in several chapters of the volume (Pfau and Quer on nonmanual properties, Jantunen and Takkinen on syllable structure, and van der Hulst and Channon on notation systems).
3 Language variation

Languages exhibit variation over historical time and across communities. Some of the mechanisms described in this section show that despite similar general grammatical mechanisms shared by sign languages, the particular expression of these mechanisms is different across sign varieties.

3.1 Diachronic variation

Diachronic change can mean a change from one stage to another of a given language (e.g., Frishberg 1975) or a change from a non-linguistic system to a linguistic one. In this section there are two contributions of the latter type, one from work being done in Nicaragua (Coppola & Senghas), which follows the role of deictic points from their locative use by signers who were the first students at the school in Managua and who communicated primarily in a pidgin form of Nicaraguan Sign Language (“Cohort 1”) to their nominal use by signers who use the creolized form of the language (“Cohort 3”). The distribution of locative and nominal uses changes across cohorts, revealing a way that a form can be extended, grammaticized and made more abstract over time. In the second contribution, Padden and colleagues describe factors that affect the rate of change in two sign languages that are approximately the same age – Al-Sayyid Bedouin Sign Language (a village sign language with a relatively small number of signers) and Israeli Sign Language (a national sign language with a relatively large number of signers). They argue that the degree of different types of iconicity operating in agreement verbs in the two languages is different, and this difference is attributed, in part, to the size of the signing communities involved. Al-Sayyid Bedouin Sign Language makes reference to the body of the signer as the grammatical subject and as one of the R-loci; therefore, agreement verbs are situated along the “Z” axis (from the signer’s body outward). In contrast, Israeli Sign Language, like many older sign languages such as those of Europe, uses the “X” axis (in front of the signer from one side to the other) for representing the R-loci of agreement verbs. These two chapters are important because they demonstrate facts about historical change and rate of change in different types of signing communities, and because they illuminate internal structural principles at work in the grammars of these languages.

3.2 Synchronic variation

The chapter by Lucas and Bayley (this volume) focuses on variation in American Sign Language that are correlated with ethnicity and region (often regions
associated with residential schools for the Deaf), with particular attention to phonological variation – e.g., in one- vs. two-handed forms, and in forms that undergo the phonological process of phonological “lowering.” Lowered signs show a shift in place of articulation from the forehead to a place closer to the cheek/chin. Schembri, et al. (2007), discuss variation in lexical choice, conversational style and use of fingerspelling in the sign language that includes the major portions of Great Britain, Australia and New Zealand, referred to by the acronym BANZSL. Such variation is correlated with such variables as age, gender and region. Besides variation within a single language, there are chapters in this section that deal with variation across sign languages. A lexicostatistical methodology is used to analyze variation in the chapter by Al-Fityani and Padden (this volume) on the sign languages of the Arab world. The degree of phonological variation among lexical items in the sign languages of this region is measured and then used to argue that these are indeed different sign languages. Tang and colleagues (this volume) analyze variation among four sign languages with different historical roots – Japanese, Swiss German, Hong Kong and American Sign – to demonstrate that while the inventory of prosodic cues across sign languages may be the same, the distribution and co-occurrence of these cues differ across sign languages. Fischer and Gong (this volume) focus on the sign languages of East Asia to demonstrate variation in handshape among these sign languages and also to compare and contrast them with sign languages from Europe and the United States. Finally, variation is sometimes exhibited by the lack of a set of structures. Nyst (this volume) observes that in some of the local sign languages of West Africa there are few classifier constructions than can be seen in the older sign languages of Europe, Asia and the Americas.

In sum, this volume is both a thematic and a geographic survey of sign languages, grouped around the themes of transmission, shared characteristics and variation and change. In concluding, let me also briefly explain the impetus for this project. The vision for Sign Languages had its origins in 2001, while I was traveling to ten different countries to collect data for a crosslinguistic project. I had the opportunity not only to address the specific questions of the project, but also to discuss these issues at length with my collaborators (both Deaf and hearing) from each country. From that experience, the idea for this book took shape. It grew by more frequent contact with new communities and the increased opportunity to ask broader questions in subsequent projects. My deepest thanks are extended to all of the contributors to this volume who worked tirelessly to write chapters that distill an enormous amount of material into a few drops of dense, yet accessible essence. It is difficult enough to turn a ton of rose petals into a gallon of rose water, but to get that gallon of rose water down to one drop of perfume takes patience, discipline and focus, and I am extremely grateful for the effort.