statistics based on the full quantile regression process. There have been several proposals dealing with generalizations of quantile regression to nonparametric response functions involving both local polynomial methods and splines. Extension of quantile regression methods to multivariate response models is a particularly important challenge.

## 7. Conclusion

Classical least squares regression may be viewed as a natural way of extending the idea of estimating an unconditional mean parameter to the problem of estimating conditional mean 'functions,' the crucial step is the formulation of an optimization problem that encompasses both problems. Likewise, quantile regression offers an extension of univariate quantile estimation to estimation of conditional quantile functions via an optimization of a piecewise linear objective function in the residuals. Median regression minimizes the sum of absolute residuals, an idea introduced by Boscovich in the eighteenth century.

The asymptotic theory of quantile regression closely parallels the theory of the univariate sample quantiles; computation of quantile regression estimators may be formulated as a linear programming problem and efficiently solved by simplex or barrier methods. A close link to rank based inference has been forged from the theory of the dual regression quantile process, or regression rankscore process.

Recent nontechnical introductions to quantile regression are provided by Buchinsky (1998) and Koenker and Hallock (2001). Most of the major statistical computing languages now include some capabilities for quantile regression estimation and inference. Quantile regression packages are available for R and Splus from the R archives at http:// lib.stat.cmu.edu/R/CRAN and Statlib at http:// lib.stat.cmu.edu/S, respectively. Stata's central core provides quantile regression estimation and inference functions. SAS offers some, rather limited, facilities for quantile regression.

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# Linguistic Anthropology

'Linguistic anthropology' is an interdisciplinary field dedicated to the study of language as a cultural resource and speaking as a cultural practice. It assumes that the human language faculty is a cognitive and a social achievement that provides the intellectual tools for thinking and acting in the world. Its study must be done by detailed documentation of what speakers say as they engage in daily social activities. This documentation relies on participant observation and other methods, including audiovisual recording, annotated transcription, and interviews with participants.

As an interdisciplinary field, linguistic anthropology has often drawn from and participated in the development of other theoretical paradigms. Some of its own history is reflected in the oscillation often found among a number of terms that are not always synonyms: linguistic anthropology, anthropological linguistics, ethnolinguistics, and sociolinguistics. Its main areas of interest have changed over the years, from an almost exclusive interest in the documentation of the grammars of aboriginal languages to the analysis of the uses of talk in everyday interaction and throughout the life span (Duranti 1997, Foley 1997). This article provides a brief historical account of linguistic anthropology, and highlights important past and present issues, theories, and methods.

## 1. Linguistic Anthropology within the Boasian Tradition

In the holistic tradition established by Franz Boas (1858–1942) in the USA at the beginning of the twentieth century, anthropology was conceived as

comprising four subfields: archaeology, physical (now 'biological') anthropology, linguistics (now 'linguistic anthropology'), and ethnology (now 'sociocultural anthropology'). This vision of anthropology differs from the one found in the European tradition, where linguistics and social anthropology remained rigidly separate disciplines for most of the twentieth century, despite the emphasis on the use of native languages in fieldwork among UK anthropologists, and the theoretical and methodological influence of Bronislaw Malinowski (1884–1942), who wrote about the importance of linguistic research for an anthropological understanding of human societies. In the 1950s, the adoption of the term 'ethnolinguistics' (reflecting the European preference for 'ethnology' over '(cultural) anthropology') for those studies that merged linguistic and anthropological interests signaled the intellectual recognition, at least in some European academic circles, of the importance of an 'ethnological side' of linguistic studies (Cardona 1976), but the institutional recognition of such a discipline within European anthropology has been slow to come. European scholars with research interests similar to those of North American linguistic anthropologists are thus more likely to be found in departments of linguistics, foreign languages and literatures, folklore, communication, sociology, or psychology.

To understand the special role given to the study of languages in the Boasian tradition, we must go back to the time when anthropology became a profession in the USA, in the period between the last decades of the nineteenth and the first decades of the twentieth century. In that time, the study of American Indian languages emerged as an essential part of anthropological research. John Wesley Powell (1834–1902), the founder of the Bureau of Ethnology, later renamed Bureau of American Ethnology (BAE), supported, through grants from the US government, linguistic fieldwork, in the belief that by collecting vocabularies and texts from American Indian languages, it would be possible to reconstruct their genetic relations and thus help in the classification of American Indian tribes. Boas himself had become fascinated by the grammatical structures of Chinook and other languages of the American northwest coast early on in his fieldwork, and seized the opportunity to work for the BAE and edit the *Handbook of American Indian Languages* (1911).

Although Boas, a diffusionist, was quite skeptical of the possibility of using languages for reconstructing genetic relations between tribes—and was against any correlation between language and race—he tried to transmit to his students a passion for the details of linguistic description and the conviction that languages were an important tool for (a) fieldwork, and (b) the study of culture, especially because the categories and rules of language are largely unconscious and thus not subject to secondary rationalizations. Furthermore, Boas was committed to what

later became known as 'salvage anthropology,' that is the documentation of languages and cultural traditions that seemed on the verge of disappearing. This enterprise—a struggle against time due to the great damage already done, by the end of the nineteenth century, to the indigenous cultures of the Americas by European colonizers—produced valuable information on Native American traditions, but it had its methodological and theoretical drawbacks, the most flagrant of which was the inability to see or accept the effects of cultural contact and colonization.

Through his writing and teaching, Boas brought scientific rigor to linguistic description and helped demolish a number of unfounded stereotypes about the languages that were then called 'primitive.' In an 1889 article entitled 'On alternating sounds,' Boas argued that the commonly held view that speakers of American Indian languages were less accurate in their pronunciation than speakers of Indo-European languages was false and probably due to the lack of linguistic sophistication of those who had first tried to describe indigenous languages. Consistent with his cultural relativism, Boas believed that each language should be studied on its own terms rather than according to some preset categories based on the study of other, genetically unrelated languages (e.g., Latin). In his 'Introduction' to the *Handbook* (1911), Boas provided an overview of the grammatical categories and linguistic units necessary for the analysis of American Indian languages and argued against overgeneralizations that would obscure differences across languages. He identified the sentence (as opposed to the word) as the unit for the expression of ideas, and listed a number of grammatical categories that are likely to be found in all languages, while pointing out that the material content of words (the meaning of lexical items) is language-specific and that languages classify reality differently. One language might express the semantic connections among words pertaining to the same semantic field by modifying one basic stem, whereas another language might have words that are etymologically completely unrelated. As examples of the latter type, Boas (1911) mentioned the different words that are used in English for concepts centered around the idea of 'water'—'lake,' 'river,' 'brook,' 'rain,' 'dew,' 'wave,' 'foam'—and four different words for concepts based on 'snow' in Eskimo. These examples were later taken out of context and the number of words for 'snow' in Eskimo (languages) grew larger and larger over the next decades in both academic and popular publications.

It was Edward Sapir (1884–1939) who, more than any other of Boas's students, further developed Boas's interest in grammatical systems and their potential implications for the study of culture, and trained a new generation of experts of American Indian languages (e.g., Mary Haas, Morris Swadesh, Benjamin Lee Whorf, Carl Voegelin). Unlike Boas, however, Sapir was not a four-field anthropologist. He wrote and

lectured on culture and personality, but had no interest in archaeology or physical anthropology, which he saw as being more appropriately housed in museums than in anthropology departments. Furthermore, whereas Boas was skeptical of genetic reconstruction and tended to favor acculturation as a cause of similarities between languages, Sapir was a strong believer in the power of the comparative method, which he used to reconstruct Proto-Athabascan and posit the Na-Déné linguistic group (comprising Athabascan, Tlingit, and Haida).

While he was at Yale, Sapir encouraged his students to go into linguistics rather than anthropology, and it is no accident that they ended up calling themselves 'anthropological linguists.' They thought of themselves primarily as linguists, as demonstrated by their dedication to the study of the grammatical structures of American Indian languages (and other previously undocumented languages). Their emphasis on field-work and their preference for historical and descriptive linguistics kept them separate from the new linguistics of the 1960s, Chomsky's generative grammar. To anthropological linguists such as Mary Haas the advent of this new paradigm was a threat because (a) it seemed more committed to linguistic theory than to languages, and in fact devalued grammatical description *per se*; (b) it was (especially at the beginning) almost exclusively based on English—Chomsky argued that one could posit universals of language by working on one language; and (c) it predicated the need for linguists to work on their own intuitions instead of working with native speakers or inferring grammatical rules on the basis of a corpus of elicited texts (Haas 1987). This last point was particularly problematic for those students of Native American languages who often had only one or two old speakers to work with and could not find younger speakers to train in linguistic theory and methods.

## 1.1 Linguistic Relativity in the History of Linguistic Anthropology

Linguistic relativity is a general term used to refer to various hypotheses or positions about the relationship between language and culture (see *Sapir–Whorf Hypothesis*). Although Sapir and Whorf differed in their discussion of the relationship between language and culture, and never produced a joint formulation of what is meant by linguistic relativity, there is no question that the themes and issues often identified as linguistic relativity are the continuation of the Boasian paradigm. First, Sapir and Whorf followed Boas's intellectual curiosity for the indigenous languages of North America as a way of channeling a more general fascination for alternative ways of being in the world and the desire to make sense of those ways. Second, to the extent to which it started from an emphasis on human diversity, linguistic relativity was related to

cultural relativism, if not a corollary of it. It was accompanied by a concern for the proper representation of grammatical systems that could not be described using the categories of European languages. Third, the same antiracist attitude that characterized Boas's views on human diversity seemed to motivate the lack of value judgment associated with linguistic diversity.

For Sapir, linguistic relativity was a way of articulating what he saw as the struggle between the individual and society (Mandelbaum 1949). In order to communicate their unique experiences, individuals need to rely on a public code over which they have little control. Linguistic rules are usually unconscious, and it is difficult for individual speakers to enter the logic of the linguistic system and alter it to their liking. In this perspective, linguistic relativity becomes a way of exploring the power that words have over individuals and groups. It is thus a precursor to more recent topics in linguistic anthropology, such as language ideologies (see Sect. 4.3).

Sapir never developed the conceptual framework or methodology for testing the implications of these intuitions about the language faculty. This task was left to another important figure in the history of linguistic anthropology, Benjamin Lee Whorf (1897–1941), a chemical engineer who worked as an insurance inspector, taught himself linguistics, and after 1931 entered into contact with Sapir and his students at Yale. Although Whorf started out sharing several of the basic positions held by Boas and Sapir on the nature of linguistic classification, he developed his own conceptual framework, which included the distinction between *overt* and *covert* grammatical categories, and an important analytical tool for understanding what kinds of categorical distinctions speakers are sensitive to—this issue was later further developed in the work on metapragmatics (Whorf 1956). Contrary to popular belief, Whorf was not so much concerned with the number of words for the same referent (e.g., 'snow') in different languages, but with the implications that different grammatical systems and lexicons have for the way in which speakers make inferences about the world. He believed that ways of thinking may develop by analogy with 'fashions of speaking,' a concept that was later revived by Hymes's notion of 'ways of speaking.'

Whorf's work was harshly criticized in the 1960s and 1970s, especially after the publication of Berlin and Kay's (1969) study of color terminology, in which they claimed that lexical labels for basic color terms are not arbitrary but follow universal principles. But more recent studies have given support to some of Whorf's ideas (Lucy 1992), and even the universality of basic color terminology and its innate perceptual saliency have been questioned (e.g., Levinson 2000). Sapir and Whorf's ideas about the unconscious aspects of linguistic codes continued to play an important part in the history of linguistic anthropology, and re-

appeared in the 1980s in the context of a number of research projects, including the study of language ideology (Kroskrity 2000).

## 2. Linguistic Anthropology in the 1960s

In the same years in which Chomsky's generative grammar was becoming popular in the USA, two other important programs were also launched: the ethnography of communication and urban sociolinguistics (see *Sociolinguistics*).

Through his own qualitatively oriented work and his collaboration with Charles Ferguson on multilingualism in South Asia, John Gumperz criticized the notion of 'language' as used by linguists, and introduced the notions of variety, repertoire, and linguistic community or speech community. In the same years, Dell Hymes launched a call for a comparative study of communicative events to capture the ways in which speaking is a cultural activity and should be studied as such. His collaboration with Gumperz produced a new paradigm in linguistic anthropology, one in which researchers were expected to study both knowledge and use of languages through ethnographic methods (Gumperz and Hymes 1964). The object of inquiry was no longer the grammars of indigenous languages, but communicative events and contextual variation within and across speech communities. Although Hymes stressed the need to see linguistics as part of anthropology, and insisted on the name 'linguistic anthropology' over 'anthropological linguistics,' he also helped defined a domain of inquiry that was in many ways independent of both linguistics and the other subdisciplines within anthropology. Whether intended or not, this effort resulted in a type of linguistic anthropology that was much less preoccupied with grammatical description and linguistic reconstruction than the one practiced by the previous generations, and more focused on the performance of language and consequently its aesthetic and political dimensions. This emphasis on the actual use of language allowed for great progress in the understanding of the cultural organization of speaking, but left scholars in other fields worrying about linguistic issues that were still central to anthropology, such as language evolution. While Chomsky was leading an antibehavioristic 'cognitive revolution,' Gumperz and Hymes were trying to develop a paradigm in which language behavior could be fully explored as social activity. In this perspective, the notion of communicative competence was central (see *Communicative Competence: Linguistic Aspects*).

### 2.1 From Communicative Competence to Performance

The documentation of variation and the observation of the social life of speech had taught fieldworkers that

Chomsky's notion of ideal speaker-hearer was problematic for many reasons, including the fact that not all members of a speech community have access to the same verbal resources or the same opportunities to use them. In his writings, Hymes shifted the focus from Universal Grammar to linguistic diversity. This change had methodological implications. From eliciting grammatical patterns and speech genres (e.g., myths, traditional stories, proverbs, riddles) from native speakers, linguistic anthropologists shifted their attention to the actual use of language in social interaction. Gumperz and Hymes's students went to the field with the goal of studying how language was being used in different events (e.g., ceremonies, village councils, classrooms) and different places (e.g., at a street corner, market, dinner table). Linguistic performance—the use of language (or its significant absence)—became the starting point of any investigation (Bauman and Sherzer 1974).

Hymes and others reconceptualized performance as a realm of social action, which emerges out of the interaction with other speakers and as such is not reducible to the use of the linguistic knowledge controlled by one individual. The focus on performance allowed fieldworkers to recognize the creative dimensions of any act of speaking, the role of individuals and groups in the reproduction and transformation of linguistic codes and the institutions they support, the responsibility associated with any display of one's verbal skills, and the interactive construction of messages and meanings.

## 3. Context

In an ethnographic approach, language is seen as permeable to social situations and social roles while at the same time helping to define those situations and roles. This means that linguistic anthropologists need analytical tools and units of analysis to define the context of speech. With this goal in mind, in the late 1960s Hymes expanded Jakobson's model of the speech event, and proposed the 'SPEAKING Model,' with each letter of the word 'speaking' standing for a cluster of dimensions of speech events that ethnographers of communication should explore: Situation, Participants, Ends, Act Sequences, Key, Instrumentalities, Norms, and Genre (Hymes 1967 reprinted in Hymes 1974). This list was meant to provide an etic grid for comparative purposes, and although it was rarely used in its entirety or formally adopted by researchers, it helped many to identify dimensions of verbal communication that had been left out of previous investigations. In the meantime, Gumperz refined his analysis of multilingualism and language contact, and became interested in the analysis of face-to-face interaction. He expanded the concept of linguistic repertoire to include the range of resources that speaker-hearers use to make inferences about the ongoing context. This line of inquiry resulted in the

notion of contextualization cues, linguistic features through which 'speakers signal and listeners interpret what the activity is, how semantic content is to be understood and how each sentence relates to what precedes or follows' (Gumperz 1982, p. 131). Typical examples of contextualization cues are intonational patterns, paralinguistic features (e.g., tempo, pausing), choice of code (e.g., English vs. Spanish), use of key words, and formulaic expressions. They can be studied in order to make sense of both successful and unsuccessful communication—'crosstalk' was the name with which miscommunication between people with different cultural backgrounds came to be known (thanks especially to a BBC program centered around Gumperz's research on South Asian speakers of English in the UK).

In the late 1970s and early 1980s, the notion of context was also being revisited by a number of other researchers within linguistic anthropology. Michael Silverstein (1976) proposed a model of indexicality that could be adapted to the sociocultural study of language in and as context. He identified linguistic signs along a continuum from highly presupposing (i.e., they can be interpreted only on the basis of an existential connection with some independently established aspect of context) to highly creative (i.e., constitutive of their own context). Deictic terms like 'this' in 'this room is cold' are presupposing because it is assumed that the room must exist for the utterance to be interpretable, whereas second-person pronouns (e.g., 'you' in English, *tu* in Spanish) are creative, given that they establish the identity of the addressee/recipient while simultaneously creating the role of addressee/recipient in the ongoing speech event. Languages that have socially differentiated second-person pronouns (e.g., the classic T/V type of distinction of many European languages, French *tu/vous*, Spanish *tu/Usted*, German *du/Sie*, and Italian *tu/Voi* or *tu/Lei*) are more extreme examples of systems in which words are used to activate or establish the relevant social coordinates of equality/inequality, solidarity/power. The study of indexicality has become a major focus of interest in contemporary linguistic anthropology, and has been accompanied by a renewed interest in the role of the human body in the establishment of the referential grounding of most communicative acts (Hanks 1990).

A more recent effort toward the definition of context is Elinor Ochs's (1996) model for the construction of social identities, which is based on a number of situational dimensions established through language use: social acts, activities (a sequence of two or more acts), and affective and epistemic stances.

The 1990s saw a rethinking of the concept of context in part due to: (a) a renewed awareness of the role of theory and methodology in defining the difference between the message and its context (Duranti and Goodwin 1992); (b) the influence of a number of theorists from other disciplines (e.g., Pierre Bourdieu,

Anthony Giddens, Mikhail Bakhtin, Michel Foucault, Clifford Geertz, Paul Ricoeur); (c) the use of the concept of ideology in trying to understand how speakers conceptualize what constitutes appropriate and interpretable language; and (d) the introduction and wider adoption of new recording technologies (e.g., video, digitized images), and their implications for the definition of what constitutes an empirically adequate representation of speaking or, more broadly, communication.

## 4. New Trends

The last two decades have seen the development of several new projects involving the interface between language and other cultural resources. Three of the most important ones are language socialization, multilingualism, and the study of the linguistic dimensions of power and control.

### 4.1 Language Socialization

Although the acquisition of communicative competence was always meant to be an important part of the program in the ethnography of communication, the field of language socialization did not fully develop until the mid-1980s, when Elinor Ochs and Bambi B. Schieffelin (1984) defined it as (a) the process of getting socialized *through* language and (b) the process of getting socialized *to* language, and offered some specific directions for research. By applying an anthropological reading to prior work on language acquisition, they reframed it as embedded in culturally specific expectations about the role of children and adults in Western societies and, particularly, in white middle-class families. Using their discovery that neither one of the two speech communities they had studied (i.e., in Papua New Guinea and in Samoa) have a register corresponding to what is known as 'baby talk' or 'motherese,' Ochs and Schieffelin not only demonstrated that simplification in talking to infants, contrary to what was suggested by some linguists and psycholinguists, is not universal, but also, and more importantly, that simplification in talking to infants correlates with other forms of accommodation to children, and local conceptualizations of children and their place in society.

Although related to child language acquisition studies, language socialization studies examine the cultural implications of what is being done with, to, around, and through talk to children, with the theoretical assumption that learning is a two-way street, and that both experts and novices may come out of routine social encounters with new ways of thinking, acting, and feeling.

Language socialization is conceptualized as a never-ending process because speakers never stop learning

new ways of using language, for example in school, at work, in church, at play. Among the various forms of 'secondary socialization,' literacy has occupied an important role in linguistic anthropology. The work of Shirley Brice Heath (1983) has been very influential in showing the benefits of an ethnographic study of literacy practices in the home, where children are exposed to literacy in ways that may or may not be precursors of the type of activities they will encounter in school.

### 4.2 Multilingualism: New Perspectives on Contact and Change

In the 1980s the writings of Mikhael Bakhtin (and one of his alter egos, Valentin Voloshinov) were particularly influential for their conceptualization of meaning as a joint activity, the attention given to coexisting styles and voices within the same 'text,' and the identification of both centripetal (toward unity and standardization) and centrifugal forces (away from unity and standardization) in language use. The notion of a unitary language then becomes both empirically and ideologically suspect because it hides from us the inequality inherent in any linguistic system, as well as the potential and actual aesthetic effects of the juxtaposition of multiple voices and coexisting language varieties. Bakhtin's work inspired a number of linguistic anthropologists including Jane and Kenneth Hill (1986), who introduced the notion of syncretic language to describe the mixing of grammars that takes place in contemporary Mexicano (Nahuatl) (see *Code Switching: Linguistic*). Even when speakers are no longer considered bilingual, some aspects of their 'lost' language and its cultural contexts are maintained, sometimes in occasional code switches and in a variety of other hybrid constructions. It is the task of the researcher to find out what survives of the old code and under what conditions it reappears in spoken or written discourse. Communities differ in the extent to which they recognize the presence of alternative ways of speaking. Ideological positions based on linguistic purism, enforcement of national identity, and control over ethnic boundaries play an important role in the types of language varieties that are supported or oppressed (Schieffelin et al. 1998).

### 4.3 Power and Control

The study of speaking as a cultural practice cannot be made without encountering the issue of how language can be used to control the action of others. A number of contributions within linguistic anthropology have dealt with this issue.

Building on Goffman's notion of 'face work' and Grice's conversational maxims, Penelope Brown and Stephen Levinson (1987, first published in 1978) presented a theory of politeness as a set of strategies based on rational principles used to mitigate 'face threatening acts.' (see *Politeness and Language*). In this theory, language plays a crucial role in mediating differences in power between speakers.

Other approaches have stressed the lack of control that speakers have over their linguistic resources. For example, the analysis of traditional oratory by Maurice Bloch defined it as a coercing system within which speakers could only reproduce the existing power relations. Earlier work on language and gender also uncovered some of the implications in linguistic codes and linguistic routines that are responsible for defining female speakers not only as different, but as weak, unassertive, or submissive (see *Language and Gender*). More recent work has questioned some of these findings, at least as generalized statements about women, and stressed the importance of careful analysis of face-to-face encounters. Marjorie H. Goodwin (1990) found the girls in her study as assertive and confrontational as boys. But she also discovered that there were some differences in the interactional strategies used by boys and girls. Among girls, offenses were constructed out of reported deeds, and especially reported speech, by absent parties (in the so-called 'he-said-she-said' sequences).

As researchers improve their understanding of the subtle functioning of different language varieties (e.g., codes, dialects, registers, genres, styles) in the definition of social identities (e.g., gender, race, ethnicity), they unveil the active roles that speakers play in adapting existing linguistic resources to their interactional goals, and their ability simultaneously to index multiple social worlds and their associated identities (Hall and Bucholtz 1995, Zentella 1997).

The power of new technologies in the definition of persons and their rights was a central theme of Michel Foucault's historical analysis of the development of asylums and other institutions that dealt with health in France. In a similar vein, but using detailed analysis of face-to-face encounters in which participants communicate through talk, gestures, and the use of material artifacts, Charles Goodwin (1994) identified a series of interpretive procedures (e.g., 'coding,' 'highlighting') which use particular types of inscription techniques to constitute what he calls 'professional vision.'

### 5. Methods

In the last few decades of the twentieth century, there was considerable improvement in the tools used in documenting language use. Whereas descriptions of verbal activities such as greetings, proverbs, insults, and speechmaking used to be based on participant observation or on work with native speakers, today researchers are expected to have recordings of exchanges in which the phenomena they describe are occurring spontaneously. As the technology for visual documentation improves and becomes more access-

ible, we are able to notice phenomena (e.g., synchronization between talk and gestures) which used to be missed in past analysis of verbal communication. At the same time, audiovisual documentation has also increased the level of intrusion into people's lives. This means that researchers must be ever more aware of the social and ethical dimensions of fieldwork. The relationship between researchers and their subjects is as delicate and as important as any other human relationship and as such requires care, mutual respect, and honesty. If the goal of our study is a better understanding of the role played by language in the human condition, we must be guided in our efforts by the desire to improve our communication across social and cultural boundaries. This must also apply to our fieldwork situation and our relationship with the speech communities we want to study.

Fieldworkers' participation in the social life of the community must be recorded as systematically as possible. This is done by writing field notes and by transcribing recordings of social encounters, activities, and events. Field notes are important because they provide researchers with a chance to document important information (which is soon forgotten if not written down) and reflect on what they have just experienced. Transcription is equally important because it allows researchers to fix on paper (or on a computer screen) salient aspects of interactions that can then be interpreted, translated, collected, and compared. Transcription is thus a particular type of what Ricoeur called 'inscription,' that is an abstraction and a fixing of something that by nature is or was moving across time and space. Linguistic anthropologists strive to produce rich transcripts by relying on native speakers who have the necessary cultural background to provide the information necessary to make sense of what is being said. There are many different ways of transcribing speech and nonverbal communication, and it is important for researchers to become familiar and experiment with more than one way before choosing the one that better fits their research goals and needs. For example, those who are interested in grammatical analysis must provide word-by-word glosses; for those who are interested in the relation between speech and the spatial organization of the event, visual representations of the settings become crucial; a transcript that utilizes phonetic symbols is appropriate when writing for linguists, but would be too hard to decipher for anyone else. Similarly, a transcript that tries to cover most of the information available to the participants at the time of speaking would be too cumbersome and equally hard to interpret. More generally, a transcript is always work in progress. It constitutes a first analysis of the data collected. It forces us to make important decisions about what is salient in an interaction and, at the same time, while being produced or once completed, it can reveal phenomena that we might otherwise have missed.

*See also*: Anthropology, History of; Area and International Studies: Linguistics; Boas, Franz (1858–1942); Discourse, Anthropology of; Ethnography; Ethnology; Foucault, Michel (1926–84); Historical Linguistics: Overview; Linguistic Fieldwork; Linguistics: Overview; Malinowski, Bronislaw (1884–1942); Sapir, Edward (1884–1939); Sapir–Whorf Hypothesis; Sociolinguistics

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# Linguistic Fieldwork

## 1. History

The history of linguistic fieldwork began in the nineteenth century when linguists started to explore the dialects of European languages. The most famous fieldworker of this time was Edmond Edmont who helped the Swiss dialectologist Jules Gilliéron to collect data for the *Atlas linguistique de France*. Cycling to 639 locations, he interviewed 700 dialect speakers (Chambers and Trudgill 1980, p. 20). Non-European unwritten languages were first systematically investigated on a large scale by the anthropologist Franz Boas (1858–1942), who started to do fieldwork on American Indian languages at the end of the nineteenth century. Boas was also the teacher of a number of influential twentieth century anthropologists and linguists, e.g., Margaret Mead, Edward Sapir, and Leonard Bloomfield.

Until recently linguistic fieldwork on unwritten non-European languages did not attract much attention in mainstream linguistics. It is only since the early 1990s that the linguistic departments of universities and the professional societies have become increasingly aware of the need for researching these languages, about 90 percent of which are endangered (Grenoble and Whaley 1998, Krauss 1992).

## 2. Learning and Analyzing Unresearched Languages

Fieldwork on languages which have not yet been described differs from other kinds of linguistic fieldwork in that the linguist comes to the speech community with no or only marginal knowledge of the language (called field language). The process of analyzing its structure and use is therefore closely tied to the process of language learning. This means that the choice of research topics, the sequence in which they are studied, and the research methods and techniques depend on the fieldworkers' progress in learning. The better they understand and speak the language, the higher the quality of their data will be, because they will have to rely less on translation. Although the progress of learning a field language depends on the structure of the language and the talent of the researchers and their teachers, experience shows that the methods which have been developed for learning and analyzing a field language work well for very different types of languages and people.

Since languages are never homogenous systems, but show regional, societal, and situational variation, the linguists and the speech communities they work with have to decide which variety should be the object of their first investigation. Only when they have a good command of one variety can they endeavor to study another.

## 3. Time Plan

Before leaving for fieldwork, the researchers gather as much information as possible about the field language, and the political and sociocultural situation of the speech community they are going to visit. If no information of the structure of the language is available, they should try to access information about related languages in order to get an idea of what to expect. For the work in the field itself, the ideal time plan consists of at least three field trips. The first trip is used for establishing contact and collecting the first samples of data. On the second trip the main body of data is collected, while the last trip will be used for filling gaps and checking what has remained unclear after the analysis and description of the results of the previous trip.

Data collection during the fieldwork is not confined to audio or video recording of spoken language and taking notes during interviews. Rather, all recordings need to be transcribed and translated with the help of native speakers who understand exactly the context of the speech situation and what the people are talking about. In addition, the fieldworker should at least draft a rough analysis of the data, as only analysis and description reveal gaps and unclear items in the data. If for practical and financial reasons it is not possible to visit the fieldwork site several times, the fieldworker has to structure her/his stay into comparable phases of work, so that phases of interviews and recording, translation, and transcription alternate with phases where the researcher steps back from data collection in order to concentrate on analysis and description.

The question of how much time has to be planned for doing fieldwork with the purpose of writing a grammar, compiling a dictionary, or editing a reason-

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