Introduction

The inclusion of a chapter on fieldwork in the *Routledge Handbook of African Linguistics* might suggest to some readers a uniqueness in African languages and their multifarious settings that requires adopting a fundamentally different approach to doing linguistic fieldwork than is used in other parts of the world. I don’t find this necessarily to be the case; the concerns addressed in numerous textbooks, manuals and anthologies on linguistic fieldwork (e.g., Bowern 2008; Crowley 2007; Newman & Ratliffe 2001; Samarin 1967; Thieberger 2016; Vaux & Cooper 1999; as well as articles too numerous to mention in journals such as *Language Documentation and Conservation*) are, for the most part, equally applicable to the practice of fieldwork on African languages, though with a few notable exceptions their authors are neither Africanists nor have they worked in Africa. (The exceptions include a number of the contributors to Newman & Ratliffe.) It is not my aim in this chapter therefore to recapitulate the content of these sources or that of others referred to below. There are, however, certain aspects of a linguistic situation found often in Africa that, in my view, suggest a particular focus or focusses may be useful or desirable when doing fieldwork in Africa. That is to say, in general and with few exceptions, languages in Africa are underdescribed or, in far too many cases, simply (totally) undescribed. Linguists may know of their existence, or may not. It is still not unusual for a language hitherto unknown to linguists to be ‘discovered’. Nigeria, as a case in point, has seen its count of known languages rise from approximately 250 in the 1970s (Hansford et al. 1976), to over 400 in the 1990s (Crozier & Blench 1992), to a recent count of 550 (Blench 2014). Of these 550, Blench reports that for 231 (42 percent) there is no available data. This suggests the basic importance of not just collecting wordlists, grammatical paradigms and texts as a starting point in describing a language, but of also discovering exactly what the language is: where it is spoken, who speaks it, when they speak it (and what other languages they speak), what languages it is related to, etc. In other words, whenever such information is not known, a sociolinguistic survey that leads to an understanding of the ecology of the language in question should be part and parcel of fieldwork on the language. Such surveys help to ascertain the basic parameters of a language and its ecology; this is the subject of the second section. Other topics covered that may be somewhat particular to the African context, and their associated research methods, include: aspects of phonetic fieldwork (the third section), especially with respect
to tone (the fourth section); consideration of nominal classification (the fifth section); investigation of ideophones (the sixth section); and questions of work on extremely endangered languages (the final section). Overall the approach advocated is largely informed by recent developments in the field of documentary linguistics and a concern for language endangerment. There are no doubt topics that readers may feel should have been discussed; the topics included and the space devoted to each is inevitably to some extent a personal choice. Issues such as how to prepare for fieldwork (e.g., health-related concerns) and appropriate ethical behavior that are well covered in numerous publications, including many of those already mentioned, are not discussed here.

Surveying language knowledge and use

Background

Knowledge and training

The first question that may come to mind is whether one needs specific training in sociolinguistics in order to do survey work. It would seem obvious that a sociolinguist, by dint of his or her training, may be better equipped to prepare and carry out a survey, and afterwards analyze its results. However, anyone who has prepared themselves adequately for their fieldwork in the first place – i.e., taken the time to learn about what they are doing (including having read reports of other survey work), the setting in which they are working (e.g., the cultural background), and especially the people with whom they are working, will be able to design and carry out a survey – though not necessarily on their own – and get useful information from the results. That said, a sociolinguist, or at least a sociolinguist of a certain ilk, may get much more out of survey than others.

The utility of surveys of language knowledge and use

The utility of a survey depends on several factors, among them the questions included, the systematicity with which it is carried out, and the range and number of participants in the survey. Some possible practical uses include the following: first and foremost, valuable information is gained about the linguistic, social and ethnic make up of a community. To the extent that such information is available, it allows for better procedures and better interpretation of data in the more ‘strictly linguistic’ phases of the fieldwork. Information on how the possible various groups that comprise a community interact is also gained, which, apart from being of interest in its own right, again provides insights that may allow subsequent aspects of the fieldwork to be better conducted. Information concerning language innovation and change, and language shift can also be gleaned; this is of obvious importance when doing fieldwork on a threatened language. More generally, survey results can also be of use to local language committees, government, and non-government agencies, to inform language planning policies, education policy, etc.

Questionnaires

Questionnaires designed to access and ascertain aspects of language knowledge and use are of three general sorts: those that assess the linguistic and general characteristics of a community; those that essentially constitute a language census; and those that look for more detailed information about individuals and their linguistic habits.
Linguistic research in the African field

The community profile questionnaire

As the name suggests, the community profile questionnaire is intended to give an overall assessment of the linguistic and social setting of the community (see Vossen 1988, ‘Village Profile Survey’). It should be conducted prior to individual interviews as information gleaned from it may help to fine-tune the questions included on a survey of individuals. It would normally be conducted with the village head or others knowledgeable of all aspects of the community life, and would seek to answer questions ranging from what ethnicities comprise the village population and what language(s) are in general use or known by the population (are used for education, as a lingua franca, etc.), to questions the answers to which are descriptive of the village; its location, patterns of residence, available amenities, typical occupations of inhabitants, relations with other villages, a brief description of village history, etc.

The household survey

The household survey is like a language census, done door-to-door in the village (or in a representative sample of households). One person responds for the entire household, providing answers to questions pertaining to ethnicity/clan membership (and going back at least one, if not more, generations); village of birth; age of household members; languages spoken (by the respondent, these listed in order of preference and frequency of use); similarly for languages understood but not spoken; languages spoken/known by family members; and a set of questions pertaining to language use, in the home, in the community and in different social settings (Vossen 1988 again provides a sample questionnaire).

The individual survey

The individual survey is similar to the household survey described in the preceding paragraph, though typically more detailed than either the household or village survey and, as its name suggests, its focus is on individuals reporting on their own behavior. It can be done door-to-door or elsewhere that individuals can be interviewed on a systematically sampled basis, for example as a school-based survey (see, e.g., Connell 2015; Schaefer & Egbokhare 1999). It uses a range of age groups or focusses on selected groups. Questions included will aim to solicit personal information (age, sex, religion, occupation, clan, ethnicity); active and passive knowledge of languages; questions pertaining to language use (at home, with parents, siblings, outside the home, in various functional domains); and questions pertaining to attitude. For the latter, answers to specific direct questions can be unreliable, so to get at attitudes toward a language, indirect questions are typically used (e.g., answers to questions such as ‘would you like your language to be used for education?’, or ‘... to be written?’ give an indication as to the respondents’ attitudes towards their language); Adegbija (1994) provides discussion of research into language attitudes in sub-Saharan Africa.

Administering a survey

The practice of administering a survey differs somewhat for the different types of survey, first in choosing or selecting participants or respondents. The village profile survey, as mentioned, will usually involve interviewing the village head and/or other knowledgeable members of the community; selection of participants is thus straightforward. For the door-to-door survey (language census), a decision first needs to be made as to how many households to survey; in
a small village visiting every household may be feasible, while in larger villages or towns, or where this is for other reasons not possible, either a random sample of households or a targeted section of the population may be used. For school-based surveys, again, one must decide whether to use all the students, or selected classes or age groups. Surveys done in the classroom can be done on paper, with the teacher being available to assist in carrying out the survey.

Pitfalls and problems

Reticence

Reticence or lack of cooperation on the part of the community are possible important problems. People tend naturally to be suspicious of outsiders coming and asking questions, particularly questions of a personal nature. Two strategies can alleviate or ameliorate this; one is to give straightforward and honest reasons as to the rationale behind the survey, recognizing that the rationale may seem distant from the concerns and interests of the community, and to present questions in such a manner that respondents recognize they are under no obligation and are free to decline to answer any particular question. The second is to employ a member of the community itself, ideally someone who is known and respected in the community (and who, by the same token, is well familiar with the community) to assist in carrying out the survey. This not only has the advantage of serving to alleviate suspicions or reticence on the part of community members, but to the extent the assistant is familiar with the people responding, she or he will be able to serve as a check on their answers.

Self-reporting

Questionnaire-based surveys of language knowledge and use involve self-reporting: a method, as discussed, in which participants are asked about, and report, their behavior and/or attitudes concerning the object of research. There are a number of factors that can influence a participant’s responses, ranging from their own attitudes to the subject, to forgetfulness, to their mood or being distracted at the time of the investigation. There are various ways (discussed in a substantial literature, e.g., in the disciplines of sociology and psychology) in which the potential negative effects of self-reporting can be mitigated. I mentioned above the desirability of engaging a member of the community itself to conduct or assist in conducting the survey. This may not only have, as mentioned, the benefit of alleviating any suspicions or reticence held by respondents (and at the same time encourage more honest or accurate responses), but a local investigator, in knowing the respondents and their behavior, may also be able to ‘challenge’ answers he or she thinks may somehow be biased.

A more common way of providing a check on participant responses is use of a follow-up investigation, involving actual observation. Connell (2009) provides one instance, in which data from a survey of the sort described above indicated an age-related difference as to the use of French in a market in rural Cameroon; younger respondents reported greater use of French and older respondents greater use of Fulfulde (as compared with the language of the village). This finding seemed plausible, however a follow-up study, which involved observation of actual language choice/use in the market, revealed no difference between age groups and in fact French was but little used (Fulfulde was used in 42 percent compared with French in 7 percent of transactions). Younger speakers, presumably viewing French as having greater prestige, saw themselves as using it more than they in fact did.
Investigation of language use in market settings, such as that referred to in the previous paragraph, is an interesting means of obtaining information bearing on the multilingual nature of a community, language attitudes, and language shift. Many investigations, such as those conducted in the markets of major urban centers of eight African countries: Mali, Côte d’Ivoire, Togo, Benin, Cameroon, Gabon, Congo, and Zaire (now Democratic Republic of Congo), reported in Calvet (1992), have been questionnaire-based and involve self-reporting. Others have used a form of participant or non-participant observation, in this instance termed ‘transaction analysis’ in Connell (2009).

To my knowledge, the first study of this nature in Africa is that of Cooper and Carpenter (1969, 1976), which involved the observation of language use in interactions between traders and their customers, and reported results of a survey of 23 markets in eight towns, which was conducted as part of the larger language survey of Ethiopia. The eight towns surveyed were chosen as representative of the various geographical regions of Ethiopia. The method involved using ‘enumerators’, who observed transactions in the market on a single day and recorded details of language use during the transaction. The main finding reported in Cooper and Carpenter showed that use of a particular language was predictable based on the percentage of the population of a town who claimed that language as their home language. Deviations and discrepancies in the data were attributed to the fact that markets are not only visited by townspeople themselves, but also by people from the surrounding countryside, where the home language may have been different from that of the town.

To date, virtually all surveys of language use in a market setting have been conducted in urban markets, presumably in part because of the assumed multilingual nature of urban African markets. There is of course no reason why research of this nature would not be of interest in rural markets, which are very often similarly multilingual. A variation of Cooper and Carpenter’s method was used in the study reported in Connell (2009), in a market in a relatively remote, rural region of Cameroon. The study was intended in part as a follow up to a questionnaire-based survey of the sort discussed above, one question in which pertained to language use in the market. It was also, however, designed as a stand-alone study of language choice in the market in its own right. In this study, five commodities were selected as representative of the market as a whole, for the particular season. Local assistants, young men who were born and raised in the village, were engaged as enumerators. They were asked to record the language used, the sex of the customer, and to estimate the age of the customer. In addition, the first language of the trader and any assistants he or she had were noted. The enumerators were asked to note the use of any languages they did not recognize, and to describe any bilingual exchanges, i.e., situations where the trader and client switched language part way through the exchange. They situated themselves relative to the trader in such a way that they would be able to accurately observe and record their observations but remain unobtrusive (having obtained the permission of the trader to monitor their business for the day), so as not to impinge on the trader’s business; no questions were to be asked of either traders or customers by the enumerators. In the subsequent analysis, the age estimates as recorded by the enumerators were organized into groups: younger than 18, 18–34; 35–50; older than 50. This allowed for several comparisons: differences according to sex or age, as well as, e.g., according to commodity. Detailed results and discussion are presented in Connell (2009).

It should be pointed out that the different types of survey discussed in this section are not mutually exclusive but can be combined in different ways. While the illustration presented may suggest observation as a follow up to a questionnaire-based survey, as a check on self-reporting, observation studies are most often used in their own right.
Phonetics in fieldwork

The importance of training

There are two aspects of fieldwork to be considered in relation to phonetics; one will be brought to mind by the heading of this section, ‘phonetics in fieldwork’: what kind of phonetic data need to be considered and collected, especially if one has in mind to document the phonetics of a language. The other is more fundamental, if perhaps more prosaic, in the minds of many: the kind or degree of training in phonetics one should have before undertaking fieldwork.

Many, if not most, current fieldwork manuals or textbooks offer little in the way of guidance or encouragement with respect to practical phonetics – ear training and transcription practice. Bowern (2008) for example, whose chapter entitled ‘Fieldwork on Phonetics and Phonology’ offers basic information as to the use of different levels of transcription, and steps involved in designing phonetic experiments, appears not to recognize the importance of appropriate training in practical phonetics before leaving for the field. Crowley (2007) offers even less discussion. These may be compared with the treatments found in Samarin (1967) or Kelly and Local (1989), as different as these two are in themselves from each other. Samarin was writing at a time in which fieldwork (and training in practical phonetics) was still relatively common. Kelly and Local post-date that period, but simply take an uncompromising view on the importance of phonetic accuracy and detail. Both Bowern and Crowley, on the other hand, presumably write in recognition of the relatively low priority placed on ear-training and practical phonetics in most linguistics programs today, itself at least in part a result of the diminishment of the importance of field linguistics in the generative era, and at the same time the increasing use of instrumental techniques in phonetics. Bowern at one point goes so far as to recommend using, ‘a spectrogram program to check the accuracy of your transcription for voicing etc.’ (2008: 37), and I have known colleagues not to trust their ears but to check via spectrogram whether a vowel was nasalized or not. Vaux and Cooper (1999: 89) offer a similar dispirited view regarding tone: ‘people’s judgements of pitch contours are wrong as often as they are right. It is much better to rely on either the intuitions of native speakers, or instrumental measurements’. It used to be said that a phonetician’s (and a field linguist’s!) most important tool was his (or her) ears. This is nonetheless true in the 21st century and for the field linguist there is still no substitute for solid training in practical phonetics. There is no technological fix; if deprived of such training in their undergraduate or graduate programs, prospective field linguists should take it upon themselves to find it. The accuracy of one’s transcriptions in the field establishes the foundation for all further analyses. The ability to hear voicing distinctions and nasality, and distinguish pitch contours and height is innate, though it takes practice to develop these abilities to overcome the ‘phonological filter’ of one’s own language (and what may amount to the habits of a lifetime).

Phonetics in language documentation

Many, if not most, fieldwork manuals or textbooks similarly include precious little information about phonetic investigation in the field; why documenting the phonetics of a language is important, what aspects of phonetics are important to document, or what kind of data to collect in order to arrive at a satisfactory documentation remains debatable. Ladefoged (2003), a book-length treatment of phonetic fieldwork, and Maddieson (2001), are notable and noteworthy exceptions to this, though in neither case is their discussion oriented toward documentation; i.e., what constitutes a satisfactory ‘phonetics component’ of a language documentation is not addressed.
When one thinks of language documentation, one tends to think of endangered languages, and when one thinks of endangered languages, especially in the African context, one thinks of languages that are hitherto essentially undescribed. This of course is by no means the only situation we find, but it is certainly a common one, to the extent we may consider it the default expectation. Field research being undertaken towards such a documentation therefore starts from the beginning, or pretty close to it. In order to do a creditable job of collecting the data that will comprise the documentation, clearly the linguist needs to be able to transcribe spoken language accurately and unambiguously. One needs at least to be able to hear and identify new and unfamiliar sounds, and to have the ability to overcome, as mentioned, the phonological filter imposed by one’s own language.

Programmatic statements as to what should be included in a language documentation and how a documentation should be presented, such as those found in Himmelmann (1998), Lehmann (2002), or the various contributions in Gippert et al. (2006) among others, devote little attention, if indeed any, to how the sound system of a language, both its phonetics and phonology, is to be presented. If, however, as Himmelmann says, the aim of a language documentation, ‘is to provide a comprehensive record of the linguistic practices characteristic of a given speech community . . . [which includes] . . . the observable linguistic behavior, manifest in everyday interaction between members of the speech community’ (Himmelmann 1998: 166), information on the sounds and sound system of the language must indeed be included. (The emphasis is in the original; I might add that in many respects current recommended practices in documentary linguistics go well beyond a strict definition of ‘linguistic behavior’.)

With respect to the types of phonetic structures to include in a documentation, the following list (partially following Ladefoged 2003) can be suggested:

- airstream mechanisms
- phonation types and voicing
- places of articulation
- manners of articulation
- differences in consonant length
- differences in vowel quality
- differences in vowel length
- orality and nasality in vowels
- pitch variation at different levels of utterance  
  - syllable, word, phrase
- presence of resonances, prosodies, secondary articulations  
  - e.g., palatality, velarity, etc.

In considering the documentation of the phonetics of a language, there is interplay between phonetics and phonology: before knowing what phonetic structures (as per the preceding list) to document, Ladefoged (2003) reminds us that a minimal description of the phonology of the language in question is useful, e.g., its phonemic inventory, as a guide as to what is most important/relevant to the language. This information is not always available: most languages in Africa remain undescribed (recall Blench’s 2014 finding of some 230 languages in Nigeria alone for which there is no descriptive material available); for many of those that do have some description available, it is minimal, consisting only of a basic wordlist, perhaps presentation of the phonemic inventory and description of other basic features. Such work may be inaccurate, based on few speakers (often one, the author and his/her intuitions) and should always be
verified (cf. Ladefoged 2003: 2). Fieldwork aimed at producing or including a documentation of the phonetics of a language begins at the same place fieldwork has always begun: with accurate transcriptions that can lead to reliable analyses, first to establish the phonemic inventory of the language.

At this point one might ask, ‘why such a focus on the phonetics?’ Transcription from recordings, even a broad transcription, is a hugely difficult task, especially when there is no recourse to native speakers (documentation should proceed from the expectation of a permanent absence of native speakers; cf. Lehmann’s characterization of the primary purpose of documentation: ‘to represent the language for those who do not have direct access to the language itself’, Lehmann 2001: 5); a representative sample of narrowly transcribed texts provides a substantial guide for further work.

**Presenting the phonetic structures of a language**

Having arrived at the types of phonetic structures found in a language, and that one might want to include in a documentation, the question arises as to how best to present these structures. While much of the work involved in organizing the documentation may be done after the actual fieldwork period, without knowing beforehand what will or might be included, one will be ill-prepared to achieve the desired goals during fieldwork. In addition to a description in traditional articulatory phonetic terms, a consonant chart (i.e., including allophonic variants, not just phonemes), a vowel chart and/or formant plot, the following, at least, should be considered for inclusion.

**Audio representations**

Audio recordings in standard, uncompressed (typically WAV) format are a key component of any spoken language documentation; these may be in the form of recorded wordlists, grammatical paradigms, monologues, conversations, stories and other texts, as well as the more obvious recordings intended to be illustrative of the structures in question and, for example, of phonemic contrasts, etc.

**Acoustic representations**

A selection of recordings representative of the phonetic structures and features of the language should be chosen to form part of the phonetic documentation. These should show the following: a speech waveform; spectrogram; pitch track; and intensity track, and annotated to give a (relatively) narrow transcription in IPA. These can be presented, for example, as annotated Praat files (Boersma & Weenick 2017), with different levels of transcription on different tiers.

**Palatograms, linguograms**

The techniques of palatography and linguography are not new but remain the most effective way of determining place of articulation and illustrating active and passive articulators. The method has been described a number of times over the years, in publications such Firth (1948), Ladefoged (2003), Anderson (2008), and most recently in a series of YouTube videos (Salffner & Tzika 2012). Details of the technique can be found in any of these publications.
The basic technique involves painting the tongue with a dark substance (typically a paste made of charcoal and olive oil) and having the speaker pronounce a word containing only the consonant under investigation, e.g., ‘tea’ [tʰi]; the paste will wipe off where contact is made, leaving evidence of the place of articulation. This can then be photographed, using a mirror and taking appropriate care to position both it and the camera for best results. The reverse procedure, coating the upper surface of the vocal tract, will leave a trace on the part of the tongue that makes contact. Of the sources mentioned Ladefoged (2003) provides perhaps the most comprehensive discussion of the method and how to derive maximum information from it. An example palatogram and linguogram are shown in Figure 3.1a and b.

Lip positions associated with different consonants and vowels can similarly be documented photographically; a mirror held against the face at a 45° angle will allow both profile and frontal views to be captured simultaneously (Ladefoged 1964, 2003). Examples are given in Figure 3.2a and b. A simple and interesting method of tracking lip movements using video, by placing a small paper circle at each of the corners of the mouth and in the center of each lip is suggested in Maddieson (2001).
Fieldwork on tone

Basic considerations

Linguistic fieldwork in Africa will almost certainly involve investigating tone, all but a handful of languages in sub-Saharan Africa being tone languages, and with a relatively large range of types of tone system and tone inventories being found. Virtually all may be categorized as having register tone (i.e., contrasting pitch height) as opposed to contour tone (contrasting direction and movement; Pike 1948), though this should not be taken for granted. Inventories may range from just one (i.e., a tone contrasting with its absence) or two (High contrasting with Low) tones to as many as four (e.g., Mambila, Connell 2017) or five, as reported in certain varieties of Dan ([dnj] Mande, Côte d’Ivoire; Flik 1977). Tones may combine to form contour or compound tones, so that combinations of the four level tones of Ba Mambila, for example, allow up to 11 surface tone contrasts lexically, with yet others when grammatical tone is taken into consideration. The functions and functional load of tone too varies across languages. Typically, both lexical and grammatical tone may be found in a language, though what grammatical roles are signalled by tone varies widely, as does the extent of lexical contrasts signalled by tone. The degree of mutability of tones, either through phonetic or phonological and morphological processes is similarly variable. And, finally, the domain of tone in a given language needs to be considered, whether the syllable, the morpheme, or some larger unit. All of which suggests one should not approach an unfamiliar language with preconceived notions as to what to expect to find beyond the very basic working hypotheses that tone will be present and that it is likely to function both lexically and grammatically.

Tone is rarely discussed in standard works on field methods (Bouquiaux & Thomas 1992 is an exception), however recent articles by Hyman (2007, 2014) and Snider (2014), and a forthcoming monograph-length treatment by Snider (in prep) fill this lacuna; Himmelmann and Ladd (2008) extend the discussion to prosodic aspects of language more generally. The fieldworker new to tone should become familiar with the recommendations in these sources. Discovery procedures for tone are in many respects the same as those for working on the segmental inventory of a language, with a few important qualifications; the most important difference is the relative nature of tone, e.g., a tone is High only because there is another tone that is lower. In languages with contrasting High and Low tones, it is not uncommon to find a High tone late in an utterance may be lower than a Low early in that same utterance, due to the phenomena known as declination and downstep (see Connell 2011).

Hyman (2014: 526) suggests that, ‘[l]ogically, there are three separate tasks that one must take up in studying a tone system from scratch . . . [these are] necessarily ordered, with each one feeding into the next’:

(i) determine the surface tonal contrasts and their approximate phonetic allotones. This is first done by considering words in isolation;
(ii) discover any tonal alternations present in the language, by putting words together to make short phrases or by eliciting paradigms;
(iii) the tonal analysis itself; the interpretation of what has been found in (i) and (ii), which is typically based on a particular set of theoretical considerations.

It is the first of these that is most clearly tied to fieldwork proper, and the second as well comes into play where such alternations are present. Given the relative nature of tone, standard practice (Bouquiaux & Thomas 1992; Pike 1948) is to work with a frame; to find a word or morpheme of
known, non-alternating tone (via step ii) which can be collocated with nouns (or other words of other classes); a possessive marker or plural marker, for example. To illustrate, in Ba Mambila the plural marker bɔ̀ consistently bears a Low tone, as does the 1Sg Poss marker, mò; the former precedes the noun while the latter follows. Combining nouns separately with each allows for a confident decision as to the tone found on a particular noun. (While bɔ is a general plural marker across most Mambila and Mambiloid varieties, it appears not to be the case that its tone is consistently the same, as is found in Ba; in other varieties, it is suffixed to the noun and its tone may be conditioned by the tone of the root.) A word of caution may be offered about generalizing the nature of tone across even varieties of the same language. The minimal sets in (1) reveal the four contrastive tone levels in Ba Mambila, following IPA marking conventions.

1 baŋ mo [ ˥ ˩ ] ‘my trench’ ba mo [ ˦ ˩ ] ‘my bag’
   baŋ mo [ ˦ ˩ ] ‘my civet’ ba mo [ ˨ ˩ ] ‘my palm (of hand)’
   baŋ mo [ ˩ ˩ ] ‘my wound’ ba mo [ ˩ ˩ ] ‘my wing’

The illustration in (1) is simple, testing for tone in monosyllables. For longer words the frame will need to be modified appropriately; for example, to test for the tone of the first syllable of a bisyllabic word, the frame should precede the test word, and in any case the technique works only where the tone of the test word doesn’t change. For longer stretches of speech, and where grammatical tone is involved (and in the cases just mentioned), being able to reproduce the melody of the tone pattern to the satisfaction of your speaker is important, or having your speaker reproduce the tones on their own, is often useful. Whistling the melody is the technique most often recommended; I have found humming to be more effective.

The phonetic investigation of tone

Phonetic studies of tone have traditionally involved recording speakers in a laboratory setting, whether for investigation of production or tone perception. Such experiments on African languages are much less common than, say, on Asian languages, though this is beginning to change, at least with respect to experiments on production. Current signal processing programs greatly facilitate doing such work in the field. Yet with very few exceptions experimental work on the perception of tone with African languages is an area that remains unexplored.

Tone perception experiments in the field

There are several possible reasons for the relative lack of research on tone perception. One important set of factors is the very nature of tone, that its manifestation is primarily in continuous variations in fundamental frequency, with height and movement of F0 both of potential importance. That tone realization is relative, as discussed above, or, even more obviously, that speakers differ in their overall pitch range, is another compounding factor. Added to these considerations, it is not entirely clear that speakers apportion their tonal space similarly for different tones. This last consideration is especially relevant in multi-level systems – languages with three, four or even five level tones – such as are found in parts of West Africa, with (potentially) the highest and lowest tones of a system having greater leeway, both acoustically and perceptually. Also, while pitch may be assumed to be the primary perceptual correlate of tone, loudness, duration and voice quality may all potentially contribute to tone perception. When these factors are considered together, one concludes that the experimental procedure used for investigating the phonetics of tone must be carefully thought through.
Another important set of factors contributing to the relative lack of research on tone perception, though one of a different nature, is the practical question of access. Of the small amount of perceptual experimentation that has been done on tone, most has therefore been on those few languages with urban populations or with sizable immigrant populations in Western academic centers, for example Yoruba (Bakare 1995; Hombert 1976). Our understanding of tone would benefit greatly from more work on a wider range of languages.

There has, as mentioned, been somewhat more research done on tone perception in Asian languages, particularly on varieties of Chinese. Given the differing characteristics of tone in these two geographical regions, Africa vs Asia, register tone vs contour tone, different methods may serve one type better than the other.

One concern in my own fieldwork has been to contribute to the development of a methodology for the investigation of tone perception that does not rely on sophisticated laboratory facilities, but can be used in the field. My own efforts have been inspired by and are an attempt to build on pioneering work by J.-M. Hombert (Hombert 1988). Here I describe an extension of the method, used for work on tone perception in Mambila. The experimental questions asked were whether the four tones of Mambila, which are reasonably well defined in terms of production, map neatly into four perceptual categories on the basis of pitch height alone, and, to what extent linguistic experience plays a role in shaping the perceptual characteristics of the tonal system.

Mambila, like many languages in Africa, has no written tradition; it is spoken in an area that is relatively remote and where the general level of education is not high. As a result, the kinds of tests or tasks frequently used in phonetic experimentation, common enough in a Western setting, are unfamiliar. The method used to investigate tone perception in Mambila takes these factors into account and includes an appropriate training session for participants.

The stimuli used were based on the range of F0 values found for natural productions by a male speaker of four target words, near minimal set for tone, pronounced in a carrier phrase. All the words used were common everyday words: breast, bag, palm, wing; the carrier phrase consisted of two T4 words, bɔ̀ mò, giving meaningful phrases ‘my breasts’, ‘my bags’, ‘my palms’, and ‘my wings’. The carrier phrase was intended in part to establish a reference level for the identification of the tones of the target words. A second purpose of the carrier phrase was to help ensure that perception of the stimuli proceeded in a linguistic rather than nonlinguistic mode. The stimuli themselves consisted of a sawtooth waveform for a range of frequencies (ten level frequencies in steps of 5 Hz) with fixed duration and amplitude, such as can be generated by any of a number of commonly used signal processing packages. (A sawtooth waveform was chosen on the basis that, of the options available in the software used, it most closely resembled a glottal waveform.) The resulting stimuli sounded similar to a naturally produced bilabial hum.

Since Mambila is an unwritten language, listeners were given line drawings of objects representing the words containing the target tones (‘breasts’, ‘bags’, ‘palms’, and ‘wings’), and were asked to indicate which picture could be associated with each stimuli. A fifth, blank, option was also provided, to be used for stimuli participants found could not be associated with any Mambila tone. Only one participant made use of this option and only on a small number of occasions. The set of five randomizations was played 10 times for each listener, giving a total of 50 repetitions of each stimulus for each person. Responses were recorded on an answer sheet by the experimenter. Participants were run separately. The experiment took approximately one hour to run, with a break of about two minutes given at the halfway point.

Participants were given training before proceeding with the experiment. The length of training needed varied for each, but, for all, consisted of three phases: listening to and identifying
naturally produced utterances of the target phrases, to ascertain that listeners could accurately identify words by tone alone (the target words constituted a near minimal set); second, having participants repeat the phrases they heard, but hum rather than articulate the target word, to ensure that participants were able to dissociate the tonal content of words from the segmental material. This also helped to reinforce the notion of hummed tones, as would be heard in the experiment. The third step in the training consisted of having the participant listen to the first set of randomized stimuli, to familiarize them with the actual experimental stimuli. Full details, including discussion of the results of this work, appear in Connell (2000).

Nominal classification

Noun classification is often considered (though perhaps inaccurately) a feature particular to African languages, and so bears some mention here. Noun classification systems (or their vestiges/remnants) are common in Niger-Congo languages and the Bantu languages present paradigm examples of functioning systems. In brief, these are characterized by sets of alternating prefixes marking singular and plural nominal forms; marking is extended to other elements of the noun phrase, in some languages featuring prefixes identical to those on the head noun, in others different prefixes. Nouns are grouped into classes based on the prefixes found; whether class membership should be considered determined by the prefixes of the head noun or its modifiers is debated, but essentially a matter of analysis. Indeed much of the work to be done with respect to nominal classification has more to do with morphological analysis than field practice properly speaking. Class membership is often assumed to be based on some degree of semantic coherence, though field workers should remember that the semantic features often assumed (i.e., that might apply in their own culture and to their own language) may not be applicable to the culture and language in which they are working. Because nominal classification in African languages typically deals with singular/plural marking, including the modifying elements in the noun phrase, the basic advice to be given is to collect the appropriate forms – singular, plural, modifying elements – for all nouns, rather than to assume a single plural marker in the language. Other aspects of nominal classification field workers may need to be aware of are the possibility, as is probably the case in the majority of Niger-Congo languages, that a fully functioning system such as those found in Bantu languages probably does not exist, but rather a vestigial or remnant system, and that the affixes used to mark nouns may be the suffixes rather than prefixes. Good (2012) reviewed the possibilities, from fully functioning to remnant, and discusses the importance of considering the overall shape of a system and its components.

Ideophones

Ideophones have long been recognized as an important characteristic of a great many African languages, and only more recently as relatively widespread elsewhere in the world (Doke 1935; Samarin 1965; Childs 1994; Dingemanse 2012). They are, as Dingemanse (2012: 654) points out, ‘easy to identify but difficult to define’. Childs (2003: 118ff) offers a list of (mostly) phonetic/phonological characteristics that allow for their identification, such as use of sounds not part of the regular phonemic inventory, phonation types not otherwise in use in the language, that they are set off by a pause, etc. These tend to focus on the phonologically ‘aberrant’ or marked nature of ideophones. ‘Marked’ of course is a relative term, and will vary from language to language.

Definitions have been attempted from various perspectives, and much of the by now fairly substantial literature on ideophones has some emphasis on their definition; with none
entirely successful. Dingemanse (2012: 655) suggests that ideophones are ‘marked words that depict sensory imagery’, a definition that attempts to be broad enough to be cross-linguistically valid while at the same time permissive of language-specific features. Other aspects of the literature focus on their description, classification and analysis in individual languages. Little attention has been devoted to fieldwork practice: how to discover or elicit ideophones (if they can indeed be elicited in the usual sense). Samarin (1967) gives some guidance, though it is mostly devoted to how to organize and classify them once they have been collected.

Given their ‘aberrant’ nature, discovering ideophones through traditional elicitation techniques is difficult. Dingemanse (2011), however, describes an innovative set of tasks developed as part of the Language of Perception project at the Max Planck Institute, Nijmegen, which proved effective. The tasks included, ‘(1) a texture booklet with ten different textures; (2) a taste kit with the five basic tastes (sweet, sour, bitter, salt, umami); (3) a color booklet consisting of eighty Munsell-validated color chips; (4) a booklet with twenty shapes; (5) a scratch-and-sniff booklet for twelve smells; and (6) a set of ten sound pairs varying in tempo, loudness, and amplitude’ (2011: 80). Speakers of the language under investigation (Siwu [akp], Kwa, Ghana) were presented with the stimuli and asked to name each. Responses were grouped into four categories, one of which was ‘ideophone’. (Being able to categorize words as ideophones depended on having previously determined their characteristic shape in Siwu; in this case they are typically longer than nouns and verbs, and feature otherwise deviant structure.)

Ideophones can also be found through recording of spontaneous natural conversation, again, a method employed in Dingamanse’s work (reported in Dingamanse 2011 and elsewhere), where several hours of conversation covering multiple interactions (a total of 3,000 utterances) revealed roughly one in 12 utterances to contain an ideophone. Video-recorded natural conversations provide not only information as to what ideophones are present and how frequently they are used, but also insights as to their structure and semantics and how and when they are used. Other information, such as whether they are accompanied by gestures, has occasionally been reported, though this is quite possibly more common than the occasional report would suggest. As both Childs (2003) and Dingamanse (2011), among others, note, ideophones are often accompanied by a sense of playfulness or delight.

Salvage linguistics

A topic which is but rarely discussed in works on field methods (Crowley 2007 is perhaps the sole exception) is how one approaches a situation of doing fieldwork on a moribund language; this absence or scant treatment is noticeable even in works that are focussed on fieldwork on endangered languages. By ‘moribund’, I mean a situation in which the language in question has few remaining speakers, is not being passed on to younger generations, and in which those who do still speak the language may no longer have complete mastery (if they ever did) or total recall of the language. That is, they may be semi-speakers or even rememberers. Grinvald and Bert (2011) provide discussion on the importance of recognizing different types of speakers in endangerment situations.

Guidance for fieldwork on endangered languages tends to proceed with an assumed or implicit goal of language revitalization; the expectation may be that one will be working with at least reasonably fluent speakers, and that intergenerational transmission still exists or its reestablishment is possible. Reports of cases of ‘the last speaker’ are of course not uncommon in the literature, and cases can indeed be encountered in Africa. But little to no discussion is found as to actually conducting fieldwork on languages with only very small
numbers of speakers, or how the fieldwork situation of such languages differs from other, more stable, languages. So, the question arises as to how to deal with a situation of extreme language moribundity. Perhaps the biggest differences, and certainly what Crowley focusses on, are with the speakers, and with structural differences that may exist between moribund languages and those with greater numbers of speakers which are more stable. Speakers may be old and lack the stamina and/or patience to participate in detailed fieldwork, especially elicitation sessions. Much of the language may have been forgotten or, as is not unusual, only ever incompletely learned, making it difficult, if not impossible, to produce anything approaching a complete or detailed grammatical description. The language may therefore hold little interest for some researchers, for whom producing a descriptive grammar is the goal. Nevertheless, such languages still merit attention for what they can contribute, for example, to our knowledge and understanding of African history, for which language is one of the most important sources of evidence. So, in such cases, one must be prepared to work with speakers who can only give what amounts to partial data on a language, elicited data or narratives that are freely mixed with material from the dominant language, and gather what material one can. Indeed, the loss of a severely endangered language, without having attempted to get as much of it documented as possible, may represent an irretrievable loss of information, both linguistic and cultural, with an attendant gap in our understanding of African languages, cultures, and history.

References


