Routledge Handbook of Linguistics

Edited by

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Chapter 1
What is linguistics?

Keith Allan

This chapter serves as an introduction to the Routledge Handbook of Linguistics. The handbook is primarily intended as a key resource for undergraduate and graduate students of linguistics, communication studies, and disciplines such as anthropology, computer science, language studies, legal studies, philosophy, psychology, sociology, speech/language therapy, and translation studies. It should also be of value to academics, lay persons, and media reporters who wish to refer to some aspect of the study of language. The style adopted in both the book as whole and this introductory chapter is therefore somewhat equivocal between addressing the reader new to linguistics and one who already has a basic knowledge of linguistics.

The chapter has two complementary parts. The first describes what linguistics is understood to be about and what linguists do; the survey is brief, leaving greater depth and detail to be garnered from other chapters in the Routledge Handbook of Linguistics. The second part presents a short history of linguistics to serve as background to the material presented by other contributors to the handbook. It focuses on the Western Classical Tradition that forms the basis for present day linguistics, but in addition notes the existence and current relevance of other traditions. There is assessment of the beliefs of those who have practised linguistic analysis and been enthused by the scholarly investigation of language and languages from ancient times through to today.

Key words: human language, the study of language(s), grammar, social interaction, history of linguistics

1. Linguistics studies language and languages

Linguistics is the study of the human ability to produce and interpret language in speaking, writing, and signing (for the deaf). All languages and all varieties of every language constitute potential data for linguistic research, as do the relationships between them and the relations and structures of their components. A linguist is someone who studies and describes the structure and composition of language and/or languages in a methodical and rigorous manner.
1.1 Human language

Linguistics inquires into the properties of the human body and mind which enable us to produce and interpret language (see chapter 19). Human infants unquestionably have an innate ability to learn language as a means of social interaction (see chapters 2, 13, 14, 17 and 20). Most likely it is the motivation to communicate with other members of the species that explains the development of language in hominins. It follows that linguists study language as an expression of and vehicle for social interaction. They also research the origins of human language (see chapter 2), though there is controversy over when language first became possible among hominins. Neanderthals (*Homo sapiens neanderthalensis*, c.300,000 to 30,000 years BP) almost certainly came to have the mental and physical capacity to use language naturally. No extant non-human animal has a communication system on a par with human language. Some creatures learn to respond to and even reproduce fragments of human language, but they never achieve what a human being is capable of. The so-called ‘language’ used within some animal communities may have a few identifiable meaningful forms and structures, but animal languages lack the depth and comprehensiveness of human language.

Human language is the most sophisticated means of communication among earthly life forms. It is a kind of interaction with our environment; and it is intentionally communicative. Inorganic matter interacts with its environment without intention, e.g. moving water reshapes land. Plants interact with their environment as individuals, e.g. many plants turn towards a light source and some insectivorous plants actively trap their prey, but this interaction does not result from intention. Non-human creatures often do intentionally communicate with each other, for instance when mating or food seeking, but only in very limited ways. Humans interact with their environment in many ways, of which human communication using language is the most sophisticated and results from intentional behaviour.

1.2 Some general characteristics of language(s)

Language has physical forms to be studied. You can hear speech, see writing and signing, and feel braille. The forms can be decomposed into structured components: sentences, phrases, words, letters, sounds. These language constituents are expressed and combined in conventional ways that are largely (if not completely) rule-governed.

Chapter 3 examines gesture and sign as used in place of and along with spoken language. Gestures of various kinds accompany most spoken language (even when the speaker is on the telephone). Sign languages of the deaf vary from nation to nation, though each national sign
language is also a complete language largely independent of the language spoken in the signer’s community.

Speech precedes writing both phylogenetically and ontogenetically. The creation of a writing system around 5000 years BP, see chapter 4, is the earliest evidence we have of linguistic analysis: all writing systems require the creator to analyse spoken language into chunks that correspond to words, syllables, phonemes or other phonic data in order to render them in a visual medium. Although writing systems usually begin with a pictographic representation, this very quickly becomes abstract as representations of sounds, syllables, and/or elements of meaning come to replace pictographs. Thus did writing become more symbolic than iconic.

Chapter 5 discusses the phonetic inventory of sounds that can occur in human languages and reviews the character of human speech mechanisms. Phoneticians research the physical production, acoustic properties, and the auditory perception of the sounds of speech.

Less than a quarter of the sounds humans have the ability to make are systematically used within any one language and chapter 6 focuses on properties of the various phonological systems to be found in the world’s languages. Phonologists study the way that sounds function within a given language and across languages to give form to spoken language. For instance the English colloquialism pa ‘father’ in most dialects is pronounced with initial aspiration as [pʰɑa] but in a few dialects without aspiration as [paa], which doesn’t change the meaning.¹ In Thai, however, the word [pʰaa] means ‘split’ whereas the word [paa] means ‘forest’, so the difference between [pʰ] and [p] makes a meaningful difference in Thai, but not in English. This is just one instance of different phonological systems at work and there is, of course, much more.

Morphology (see chapter 7) deals with the systematic correspondence between the phonological form and meaning in subword constructions called ‘morphemes’. A morpheme is the smallest unit of grammatical analysis with semantic specification. A word may consist of one or more morphemes: for example, the morpheme –able may be suffixed to the verb root desire to create the adjective desirable. This adjective may take a negative prefix un– to form undesirable which can, in turn, be converted into the noun undesirable by a process sometimes called ‘zero-derivation’ because there is no overt marker of the nominalization. This noun may then be inflected with the abstract morpheme PLURAL which in this instance

¹ I am ignoring possible variations in vowel quality.
has the form of the suffix –s yielding the plural noun undesirables. Morphology deals with
the creation of new word forms through inflections that add a secondary grammatical
category to an existing lexical item (word) but do not create a new one. As we have seen,
morphology is also concerned with the creation of new lexical items by derivational
processes such as affixation, compounding (chairwoman), truncation (math(s) from
mathematics), and stress change (perVERT [verb] vs PERvert [noun] – where upper case
indicates the stressed syllable).

Syntax studies the manner in which morphemes and lexical items combine into larger
taxonomic structures such as phrases, sentences and longer texts (see chapters 8 and 9). Some
languages incorporate many morphemes into a single word that requires a sentence to
translate it into English. Relationships between sentence constituents can be signalled (A) by
inflection, in which case word order can be comparatively free (as in Latin), or (B) by the
sequence of items – making word order relatively rigid (as in English). Latin dominus servos
vituperabat, vituperabat dominus servos, servos dominus vituperabat are all translated by the
English sentence the master [dominus] cursed [vituperabat] the slaves [servos]. Although
there are many ways of depicting syntactic structure, rooted labelled trees have become the
norm in modern linguistics, e.g. the oversimplified tree in Figure 1. Chapter 9 argues that
syntax should reflect the dynamics of language processing allowing for structural
underspecification and update such that the patterns of dialogue can be shown to follow
directly from the integrated account of context-dependent phenomena.

![Figure 1. An oversimplified tree structure](image)

Language is metaphysical in that it has content; i.e. language expressions have meaning.
Semantics investigates the meanings of sentences and their constituents and, also, the
meaning relationships among language expressions. Linguistic semantics is informed by
insights from philosophy, psychology, sociology, and computer science. Notions of truth and
compositionality are crucial in determining meaning (see chapters 33 and 9). But so too are
the cognitive processes of language users (see chapters 29 and 35). There is a question of
how lexical content corresponds with conceptual content and the structure of concepts. There is controversy over the place within lexical and discourse semantics of encyclopaedic knowledge about referents (things spoken of) and the domain within which a language expression occurs. There is also controversy about the optimal means of representing meaning in theoretical semantics. All these matters are reviewed in chapters 10 and 11.

Every language comes with a lexicon – loosely equivalent to the vocabulary of that language. A lexicon (see chapter 12) can be thought of as the mental counterpart to (and original model for) a dictionary such as the Oxford English Dictionary. Lexical items are stored as combinations of form and meaning, together with morphological and syntactic (morphosyntactic) information about the grammatical properties of the item and links to encyclopaedic information about the item – such as its history and information about things it may be used to refer to. Typically, a lexical item cannot be further analysed into meaningful chunks whose combination permits its meaning to be computed. For instance, the lexical items *a*, *the*, *dog*, *sheep*, *kill* and morphemes like *–s* (PLURAL), *–ed* (PAST) can combine together under certain conditions, but none of these is subject to morphosyntactic analysis into smaller constituents.

The lexicon of a language bundles meaning with form in versatile chunks that speakers combine into phrases, sentences, and longer texts whose meanings are computable from their constituents. The lexical items and morphemes listed above can combine into the sentence in (1), the meaning of which is composed from not only the words and morphemes but also the syntactic relations between them.

(1) The dogs killed a sheep.

(1) has much the same meaning as (2) and a very different meaning from (3).

(2) A sheep was killed by the dogs.

(3) A sheep killed the dogs.

In (1) and (2) the dogs do the killing and the sheep ends up dead, whereas in (3) the sheep does the killing and it is the dogs which end up dead. Notice that the meanings of *dogs* and *killed* can be computed from their component morphemes: DOG+PLURAL and KILL+PAST; similarly for the phrases *the dogs* and *a sheep* and the whole of the sentences (1), (2) and (3).

If you find (1) and (2) more believable than (3), that is because you are applying your knowledge of the world to what is said. These judgments arise from pragmatic assessments of the semantics of (1), (2), and (3).
As said earlier, semantics is concerned with the meanings of, and the meaning relationships among, language expressions. For example, there is a semantic relationship between *kill* and *die* such that (4) is true.

(4) If X kills Y, then Y dies.

In (4) X has the role of actor and Y the undergoer. There are many other kinds of relationship, too. In order to die, Y has to have been living. If Y is a sheep, then Y is also an animal. In English, dogs and sheep are countable objects, i.e. they can be spoken of as singulars, like *a sheep* in (1)–(3), or as plural entities like *the dogs* in (1)–(3). Words referring to meat (such as *mutton, lamb, pork*) do not normally occur in countable noun phrases; the same is true of liquids like *beer* and granulated substances like *sugar, coffee, or rice*. However, these nouns are used countably on some occasions to identify individual amounts or varieties, as in (5)–(7).

(5) Two sugars for me. [Two spoons of sugar]
(6) Three beers, please. [Three glasses or cans of beer]
(7) Two coffees are widely marketed in Europe. [Two species or varieties of coffee]

What this shows is that the grammatical properties of linguistic items can be, and regularly are, exploited to generate communicatively useful meaning differences.

When speakers employ language they add additional aspects of meaning. Although this is not obvious from (1), it is observable from the interchange between X and Y in (8).

(8) X: I don’t understand why you are so upset.
    Y: The dogs killed a sheep.

Pragmatics, see chapters 13 and 14, studies the meanings of utterances (an utterance is a sentence or sentence fragment used by a particular speaker on some particular occasion) with attention to the context in which the utterances are made. In (8) the reference of ‘I’ and ‘you’ is determined from context, as is the relevant time at which the addressee is judged upset and also the estimated degree of relevance of Y’s response to X’s statement. Language interchange is one form of social interactive behaviour and it is governed by sets of conventions that encourage cooperativeness in order that social relations be as harmonious as possible. There are competing notions of what constitutes cooperativeness, whether it exists independently of particular interlocutors or whether it is negotiated anew in every encounter, but, nonetheless, cooperative behaviour seems to be the default against which uncooperative behaviour such as insult and offensive language must be judged (see chapter 14). What this
amounts to is that interlocutors are socialized into having certain expectations of and from each other. These expectations are learned in childhood as one aspect of competent language usage; they are part of one’s induction into being a member of a social group. Typically they constitute a part of common ground between interlocutors that enables them to understand one another. Looking again at (8) we observe that Y’s response to X’s question is apparently relevant, because we know that many people get upset when dogs kill a sheep. Y has assumed this knowledge is part of the common ground with X, enabling X to take Y’s response as an appropriate one. This appropriateness is independent of whether or not Y is speaking truly. The default assumption for almost all language interchange is that speakers will be honest, which is the reason why lying is castigated in Anglo communities (and many others).

We see from (8) that spoken discourses have structures and constraints that render them coherent so as to be lucid and comprehensible to others. Were that not the case, the discourse in (9) between a therapist and a schizophrenic patient would not seem abnormal.

(9) THERAPIST: A stitch in time saves nine. What does that mean?
SCHIZOPHRENIC: Oh! That’s because all women have a little bit of magic in them. I found that out. And it’s called, it’s sort of good magic. And nine is a sort of magic number. Like, I’ve got nine colours here you will notice. I’ve got yellow, green, blue, grey, orange, blue and navy. And I’ve got black. And I’ve got a sort of clear white. The nine colours, to me they are the whole universe; and they symbolize every man, woman, and child in the world. (Rochester & Martin 1979: 94f)

Chapter 15 discusses the structures of spoken and written texts and narratives. What linguistics looks at in a text is not its literary or aesthetic quality, but the language used in order to give structure to the text so that hearers and readers can readily follow the speaker’s or writer’s intended meaning. Linguists identify what enables the hearer/reader to recognize the topic of discourse and to correctly distinguish the (animate and inanimate) participants in the narrative/conversation and what happens to each of them as the narrative/conversation unfolds.

1.3 The intersection of linguistics with other disciplines

Language is used within all human communities, many of which have no regular written form for their language, or did not until the twentieth century. Although it is now fairly common for linguists to enter a pre-literate community and attempt to describe their language, for most of the twentieth century it was anthropologists who undertook field work
in such communities with the primary aim of describing their social structures and customs (see chapter 16); to accomplish those goals most effectively, they needed to learn the people’s language. Field linguistics applies the methods of data elicitation and data collection in order to document, describe and analyse languages and language practices in their natural habitat – within the community of native speakers under investigation. The primary mission of anthropological linguistics is to tie forms of language to the social structures and customs of a people.

There is a slight overlap here with the work of sociolinguists (see chapter 17). A principal difference is that sociolinguistics focuses on the varieties of language used among different groups within a particular language community. Sociolinguists also investigate language change through time by plotting the spreading adoption of new forms and the decay of old ones, which is often accelerated during periods of social stress and change. Concepts of politeness and offensiveness (see chapter 14) differ among different social groups, and such social conventions and their correlation with social relations are also topics relevant to sociolinguistics.

Psycholinguistics (chapter 18) draws from linguistics, psychology, cognitive science, and the study of language pathology. Psycholinguists research cognitive and psychological aspects of the perception of categorical similarities and differences among phenomena. They investigate language production on the one hand and language processing and comprehension on the other. Developmental psycholinguistics examines first language acquisition (chapter 20) and psycholinguists also study the acquisition of second languages (chapter 21). Knowing what is normal for human language use enables dysfunction to be recognised and potentially treated. Because linguistic dysfunction usually correlates with other mental dysfunction, language offers a path into (ab)normal cognitive behaviour.

Whereas psycholinguistics focuses on the human mind, neurolinguistics, the topic of chapter 19, focuses on the allied physiological matter of the human brain: the organ that enables the cognitive abilities we associate with the mind. Since the mid-nineteenth century it has been known that trauma to certain parts of the brain causes fairly predictable linguistic deficiencies. Since the development of neural imaging techniques, knowledge of brain function has blossomed; as a result there has been progressive refinement in mapping the functions of different areas of the brain which has revealed the great extent to which different areas of the brain operate together to, among other things, facilitate language use.
1.4 Acquiring language

All normal human beings acquire language, even if they have a very low IQ. There is no doubt that human beings have an innate disposition to learn language, but they need exposure to the society of other humans in order to do so. Furthermore, many children are raised in multilingual situations and acquire two or more languages concurrently and they very quickly learn not to mix them. During the first year of life a child learns to discriminate the significant sounds of their care-givers’ language(s) and they learn how to interact appropriately with people around them (see chapter 20): it is the beginning of encultured socialization. By about one year old, a child supplements gesture and nonlinguistic vocalization with words and later combines words into syntactic structures. The impetus is always to communicate with others.

Many people are taught a second or foreign language after they have already acquired native ability in their first language (see chapter 21). The requirements for the process of second language learning apply insights from linguistics, and the primary focus of ‘applied linguistics’ is on language teaching. This means developing sound pedagogy that is responsive to research in linguistics. The instruction of phonology, morphology, vocabulary, semantics and syntax is important but so too is pragmatics, because it is not enough to know the grammar of a language: learners also have to know how to use the expressions from within the new language appropriately under any circumstances and in any context.

1.5 Languages through time

Every language has developed over time and most languages are related to some other languages; this is grist to the mill of historical (diachronic) linguistics (chapter 22). All languages change over time and distinct varieties of a language may develop in the different regions where it is spoken. In recent times there has been overlap with sociolinguistics in that historical linguists have researched language variation and the social factors that generate language change at various points in time (synchronic change). Historical linguistics was launched in the nineteenth century by comparing and correlating sound changes in Indo-European languages as a way of identifying which languages belong to that family. Very quickly interest expanded to the cataloguing of lexical, morphological, syntactic and semantic change in Indo-European and other language families. Comparative studies of language contact and genetic relationship have led to well accepted descriptions of relations among different languages and their grouping into families.
There is some commonality between chapter 22 and chapter 23 on linguistic change. All living languages change constantly, but how predictable are the results of the change? Internal changes are driven by variation due to children using language a little differently from their parents and from mutations in discourse conventions. Some changes arise through the grammaticalization of metaphorical extensions or the regularising and standardization of pragmatic inferences: some of what begin as spontaneous novel meaning extensions achieve popularity and lose their novelty to become conventionalised. External influences include a need to create novel expressions for new phenomena, including cultural and social changes. Innovations begin within the dialect of one social group (sociolect) but must spread to the whole community to count as language change. Change that may seem to have been motivated by human cognition because it is so widespread may in fact result from contact between different sociolects, dialects, or languages. Predicting the direction of language change seems to be almost impossible.

Chapter 24 takes up the topic of language endangerment. Languages are fast becoming extinct with the growth of urbanisation and the dominance of linguae francae leading to the abandonment of languages that are spoken by only a small handful of people. Such people usually need to use a more dominant language to communicate with the wider community and their children will typically be schooled in the dominant language. Language documentation has the aim of recording for posterity not only the phonology, grammar, and vocabulary of dying languages but their stories, songs, and the social and cultural contexts in which the language is or was used. The documentation requires audio and video recording and techniques of archiving samples of language interchange and language performance that can be readily updated as technology advances. One strand of this work is to mobilize communities whose language is dying into language management that encourages language maintenance and revitalisation.

1.6 Looking across languages

Cross-linguistic research is the *sine qua non* of linguistic typology, discussed in chapter 25. Languages fall into different types. For instance, there are tone languages like Chinese, Thai, Maa (Nilotic, East Africa), and Yoruba (Niger-Congo, West Africa), stressed timed languages like English, and syllable timed languages like French. More important, however, are the differences in morphological and syntactic properties: a language like Latin has many inflections that indicate syntactic and sometimes semantic relations between the constituents of a sentence; in English and Chinese, word-order does a similar job. In an agglutinating
language such as Turkish, morphemes adjoin to form very complex words such as 
\textit{ceplerimizdekilerdenmiş} = pocket plural our in relativizer plural from dubitative ‘[it]
was supposedly from among those that are/were in our pockets’. An incorporating or
polysynthetic language, like Chinook, has words like \textit{antia lot} = present tense \[a\] + him \[ni\]
+ her \[a\] + I to \[\ell\] + from \[o\] + give \[t\] ‘I gave it/him to her’ where the constituents do not form
morphemes that can regularly stand alone in other constructions. Linguistic typologists look
for what is more probable vs less probable in a human language. There are implicational
universals because if a given type of language has one kind of structure it will usually have
another: for instance, verb-initial languages (like Maa) almost all have prepositions and not
postpositions. So, one result of typological studies is the identification of language universals
to throw light on the nature of human language.

Traditionally, translation has not been of much concern within linguistics, perhaps because
linguistics has been predominantly theoretical whereas translation has been primarily
practical. The typical analysis of a sentence in a linguistics textbook will be of very little
value at all to the practical translator because it is simply too fragmentary and simplistic – not
least because semantic analysis is its weakest aspect. As we see in chapter 26, although we
tend to think of translation as rendering a sentence of the source language into a semantically
equivalent sentence in the target language, this grossly oversimplifies the notion of
equivalence. In fact what needs to happen is that the sentence in the source language has to be
understood with all its cultural nuances and then recast into what a native speaker of the
target language would have said if s/he had spontaneously wanted to utter the ‘same’ thing.
For instance, because Hungarian nouns and pronouns are not marked for gender, \textit{He said yes
and she said no} cannot be straightforwardly translated; on the other hand, the subtleties of the
Hungarian levels of address will often be lost on translating a Hungarian novel into English.
Recasting to take account of such intercultural differences forefronts the translator’s
interpretation of the source utterance which is obviously likely to deviate from it subjectively
and therefore is open to criticism on grounds of accuracy.

1.7 Approaches to linguistics

It is sometimes said that modern linguistics began with the posthumous publication of
Ferdinand de Saussure’s \textit{Cours de Linguistique Générale} in 1916 (see chapter 27). Certainly
that work inspired structuralist linguistics in Europe, although Leonard Bloomfield’s
\textit{Language} of 1933 was a greater influence on American structuralist linguistics. The
structuralist doctrine is based on relationships of contrast among elements in a language and,
more widely, in a conceptual system. The structure is elicited from the taxonomic distribution of elements within the language system. The structuralist emphasis on contrast led to the development of phonemic theories (see chapter 6). In Europe contrasts of function (chapter 30) were as significant as contrasts of form, but American structuralism focused on contrasts of form to the near exclusion of function and meaning until late in the twentieth century – a position that persisted through Chomskyan linguistics (see chapter 28). Saussure’s dogma on the arbitrariness of the sign has had to be modified since the rise of cognitive linguistics (see chapter 29).

The Chomskyan ‘revolution’ began with the publication of *Syntactic Structures* in 1957. Where structuralism induced language structures bottom-up from the constituent analysis of stretches of language, Chomsky’s theory of syntax was rather a hypothetico-deductive model that proposed top-down analysis of a phrase marker generated from an initial symbol S (sentence) into its constituent phrases and their constituents such that the terminal constituents were morphemes entered from the lexicon. These terminal strings were then phonetically interpreted. In later Chomskyan models the phrase markers were also semantically interpreted. Related structures such as active/passive and declarative/interrogative were related by transformational rules. In the early 1960s Chomsky favoured the ‘mentalistic’ cognitive basis for language as a guiding principle for his grammars (though it is questionable whether he ever sought confirmation of his postulates from psycholinguistic experimentation – which was not forthcoming). Since the 1980s Chomsky has been championing biolinguistics (see chapter 28) which seeks to uncover the neurological origins that underpin the universal human capacity to acquire language. Nonetheless Chomskyan grammars still postulate an autonomous syntax at the core of grammar such that phonological and semantic components of grammar are interpretative of syntax.

Cognitive linguistics (chapter 29) developed as an alternative vision to Chomsky’s notions that syntax is autonomous and that the human language faculty is independent of other cognitive behaviour. For cognitivists, linguistic abilities are embedded in perception, attention, memory, categorization, abstraction, creativity, and symbolic thought. Language is acquired from exposure to contextually dependent utterances on the basis of meaning, so corpora provide the most important source for data. Cognitivists focus on analogy and on the functional significance of metaphor and metonymy in language. In direct contrast with

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2 In truth all grammars combine insights from both bottom-up and top-down analysis but differently emphasize one or the other.
Chomskyan linguists, cognitive linguists argue that syntactic constructions are semantically and pragmatically motivated.

Functionalist linguistics (chapter 30) has a lot in common with cognitive linguistics. Functionalism looks to the functions of language within society as the motivation for language structure and the motivation for the meaningfulness of linguistic elements. In other words, functional linguistics holds that linguistic structures can only be understood and explained with reference to the communicative functions of language, and it is a given that the primary function of language is to be a vehicle for social interaction among human beings. Thus communication influences, but does not necessarily determine, the forms that language takes. Functionalists assume that cognitive and socio-cultural factors explain linguistic phenomena. Syntax is semantically and pragmatically motivated: it exists for people to combine elements of meaning in a variety of dissimilar ways to capture different nuances of meaning. Corpora (see chapter 32) and discourse (chapter 15) are more relevant to functionalist theorizing than are the decontextualized sentences of Chomsky-style linguistics.

Computational linguistics applies machines to model human behaviour by generating, analysing, and interpreting language texts. Computers implement parsers to analyse linguistic structures and computers are also used to generate texts. Ideally these machines would simulate human abilities to produce and interpret language by running procedures that, once set in motion, are devoid of human input yet whose output can be matched against natural language utterances for accuracy – thereby enabling the procedures to be evaluated as modelling human behaviour. In reality such a goal is a long way from being fully realised. Chapter 31 illustrates computational linguistics applying some parsing techniques, undertaking some computational semantics, and demonstrating the machine learning of a process to add linguistic tags that annotate a corpus.

Corpus linguistics (chapter 32) collates corpora of texts. Corpora have become important data sources of language expressions that are actually used by speakers rather than what is intuitively believed to be used; they serve to check the grammaticality/acceptability judgments of native speakers. A corpus may comprise spoken and/or written texts, texts that date from different times, and/or texts that sample many genres and varieties of language or be restricted to just one or two. To aid researchers, a corpus designer may add to the source text metadata, markup, and annotation. Researchers then use computer aided quantitative and qualitative methods to investigate data from corpora, in order to accomplish such things as
establishing the frequency of language items and structures, their collocations and concordances.

Since the time of the pre-Socratic philosophers in Ancient Greece, developments in linguistic semantics and pragmatics have been boosted by influence from philosophers writing about language (see chapter 33). Judgments of truth in the way that language represents things spoken of has exercised philosophers since Plato (428–348 BCE), Aristotle (384–322 BCE), and the Stoics (from c.300 BCE), and there have been echoes ever since among researchers of language. Language philosophy has really flourished since Gottlob Frege’s discussion of sense and reference in the late nineteenth century and Bertrand Russell’s theory of definite descriptions in the early twentieth century. These sparked interest beyond classical truth conditional semantics to investigations of presupposition, intensional contexts, possible worlds and dynamic semantics (see also chapter 11). After the middle of the twentieth century, ordinary language philosophers developed theories of speech acts and conversational implicature that have been welcomed by linguists as crucial to understanding meaning in language (see chapter 13).

1.8 Linguistics in the community

The language in which laws are written represents an area of potential miscommunication between legislators, lawyers, and the lay public, consequently linguistics and the law raises an important topic for any community (chapter 34). The language of the law-makers and courts is significant within the community because the rights and freedoms of citizens are at stake. Police interviews and legal cross-examination are fraught with potential for misunderstanding in the language used by the different parties – even when they all native speakers of the same dialect, the more so otherwise. It has become common for linguists to be called by both prosecution and defence as expert witnesses to comment on such things as the likelihood that a suspect in fact uttered a certain spoken or written text which is evidence in a prosecution; or, when a signed witness statement has linguistic anomalies that suggest the witness has been ‘verballed’ by an overzealous police officer.

Chapter 35 is on political language in the United States, but the hypothesis presented would seem to apply to other nations. The language of politics has in common with the language of advertising that its function is primarily persuasive. Most people are persuaded not by rational argument and reasoned evidence but by their emotional attachment to ideas. The way a topic is framed (presented) affects its acceptability: for example, on one frame taxation is a deprivation of the fruits of one’s labours, on another it is the fee for membership
to a community. Repetitive, comforting, emotionally attractive and morally appealing narratives, metaphors, mottos and mantras are most likely to gain traction with an audience; hence, politicians constantly repeat an emotive phrase such as the war on terror to strengthen neural connections in audience minds that enable them to gain ready community acceptance for curtailment of freedoms and privacy. Hearing those words again and again ordinary people get brainwashed into thinking in a way that suits the politician. So, typically, political language (re)configures neural pathways through repetitive populism rather than persuading us through reasoned argument.

For many people today communication is dominated by social media such as texting on phones, instant messaging on other platforms, and communication via Facebook, YouTube, and the like (see chapter 36). The way these media are used challenges the notion that speech is primary because texters employ language expressions that are close to spoken forms and they frequently include performance phenomena (e.g. lol ‘laughing out loud’) and emoticons (:D ‘laughing’) which comment on the writer’s supposed acts and actions in order to add those behavioural nuances that are typically present in face-to-face interaction but absent from formal written genres of communication.

2. A short history of linguistics

Ferdinand de Saussure has been described as the ‘father’ of modern linguistics through his influential Cours de linguistique générale (1916). There are three reasons for a belief that linguistics is of very recent origin: (1) Linguistics is a human science, and along with anthropology, psychology, and sociology, it developed rapidly during the late nineteenth century and mushroomed in the twentieth century. (2) Towards the end of the nineteenth century technological developments allowed for the recording and reproduction of spoken language so that linguists could at last not only recognize the priority of the spoken over the written medium but study constant, non-ephemeral, data from the spoken medium. (3) The first university chairs in something like ‘linguistics’ were Franz Bopp’s Chair in Oriental Literature and General Language-lore (‘allgemeine Sprachkunde’) at the University of Berlin in 1825 and Thomas Hewitt Key’s Chair of Comparative Grammar at University College London in 1842. The International Journal of American Linguistics dates from 1917; the Linguistic Society of America from 1924, and its journal Language from 1925. Linguistics only became an independent university discipline several decades into the twentieth century: most university programmes in linguistics were established in the second half of the twentieth
If linguistics is a science it is because a linguist studies and describes the structure and composition of language and/or languages in a methodical and rigorous manner. However, prehistoric thought about the structure and composition of language set a pathway towards linguistics proper. As already mentioned, the earliest evidence of linguistic analysis is the development of writing to record events, transactions, agreements, and observations more permanently than is possible in oral transmission. The oldest example known dates from fifth millennium BCE China. Bilingual Semitic word lists existed in the third millennium BCE and tabled equivalences between Sumerian and Akkadian phrases in the eighteenth century BCE. Such events count as early steps in linguistic analysis.

The first writing systems were logographic: the symbol represents a morpheme or word and its referent. Today, ♂ is a logograph for ‘male’, 4 is a logograph for ‘four’. Often, logographs extend to homophones of the original word symbolized, as in a 4 Sale sign that uses 4 in place of for because they sound the same. Once a logographic symbol is associated with phonetic form there is scope for its development into either a syllabary symbolizing the syllables of the language or into an alphabet symbolizing its phonemes. Because they segment the spoken language in order to give it visual and more permanent representation, syllabaries and alphabets exemplify prehistoric phonological analyses of language.

Although not known in the West until fairly recently, linguistic analysis in Ancient India developed to preserve the oral language of the Vedic hymns composed 1900–1100 BCE. From the sixth century BCE, there were systematic analyses of phonetics, phonology, and prosody. In the early fourth century BCE, Pāṇini composed a precise and fairly complete description of late Vedic Sanskrit consisting of lists of lexical and phonological units accompanied by phonetic, morphological, syntactic and semantic rules and conditions, and metarules for rule-ordering, and so on. The topics and methods used in these Ancient Indian works were far closer to practices in modern linguistics than to anything found in the Western Classical Tradition before the nineteenth or even twentieth century.

In Ancient Greece, language study grew out of philosophy on the basis that language enables truth-bearing presentations of the internal and external world and is also a vehicle of persuasion and education. Both Plato and Aristotle believed that language reflects speakers’ experiences of the world and the relationships and structures they find in it. Their interest was aroused because we say such things as X is the cause of Y, and B follows from A, and they
were concerned about the relation between what is said and what actually holds true in the world. To precisely account for the meaning of statements requires a prior account of their structure; and because statements are expressed through sentences, the Ancient Greek philosophers looked into the construction of sentences to establish what constitutes a statement. Thus began a long association between philosophy and language analysis, which revived in the middle ages and flowered in the second half of the twentieth century, leading to significant advances in linguistic semantics and pragmatics. In Poetics and Rhetoric Aristotle discusses language structures which are relevant to the success of poetic and rhetorical effect. In addition to talking about the functions of various parts of speech, he described some phonological aspects of Greek, because in his day, and for centuries after, literature was rarely read silently, but declaimed by actors or poets from the stage, and by pupils in the schoolroom. In Rhetoric he advocated something comparable with Grice’s maxims of manner, quality, and perhaps quantity (Grice 1975, and see chapter 13), though his purpose was different from that of Grice.

In the Western Classical Tradition (see Allan 2010), the work of the early Greek philosophers and grammarians was adapted with little alteration to the grammar of Latin, the language that dominated scholarship in the West until the twentieth century. The basics for the parts of speech can be found in Plato and Aristotle, but it was the Stoics who noted regularities and irregularities indicating underlying rules of grammar and norms of behaviour governing the use of language. The Stoics recognized illocutionary types and under their influence, Apollonius Dyscolus (c.80–160 CE) identified the link between clause-type, mood, and illocutionary force that was not revived until the late twentieth century. In the second century BCE Aristarchus of Samothrace refers to all eight traditional parts of speech and to some of their subcategories; these were propagated in the Tekhnē grammatikē (The Art of Grammar attributed to Dionysius Thrax, c.160–85 BCE) which was a model for the pedagogical Ars grammatica (The Art of Grammar) of Aelius Donatus (c.315–385 CE) – a cornerstone of Latin instruction throughout the middle ages. The Stoics were a major influence on Varro, Apollonius, and Herodian, and – indirectly – their disciple Priscian (c.490–560 CE), whose Institutiones grammaticae (Grammatical Doctrine) is the foundational work on Latin grammar and remained the principal pedagogical source for Latin grammars until modern times.

The Alexandrian grammarians, Dionysius Thrax and Apollonius Dyscolus, were pedagogical grammarians and not philosophers. Their principal motivation was a perceived need to teach the correct meaning, forms, and pronunciation of Homeric and Attic Greek so
that classical literature could be properly read, performed, and understood. This is analogous
to the motivation for the grammars of Ancient India. Donatus described the parts of speech to
be found in Classical Latin literature, although Vulgar (i.e. colloquial contemporary) Latin
was in daily use about him. Priscian adopted the view that language reflects the way the
world is and he explained a number of syntactic constructions on these grounds. For example,
he said that because one cannot imagine an action without presupposing an actor the subject
of a sentence always precedes the verb – i.e. all languages are either S(O)V or SV(O)\(^3\). Many
such assumptions are justified by the grammars of Latin and Greek, but turn out to be wrong
when applied universally; for instance, Maa (Nilotic, East Africa) is VS(O), Malagasy
(Austronesian, Madagascar) V(O)S, and Tohono O’odham (Uto-Aztecan, Arizona) arguably
(O)V S. Priscian’s classical Latin grammar, *Institutiones grammaticae*, was based directly
upon the classical Greek grammar of Apollonius Dyscolus. Dionysius, Apollonius, Donatus,
and Priscian were not philosophers but precursors to applied linguists within the Western
Classical Tradition.

Some 600 years after Priscian, from about 1150 to 1350, grammar became once more
wedded to philosophy. But all along, from the early middle ages to the present day, running
on a more or less parallel track to philosophical grammar, there continued to be a pedagogic
strain manifest in prescriptive grammars for the classroom. For several hundred years,
education in Europe was education in Latin, access to which was through grammars of Latin;
hence *grammar* as a school subject meant the ‘grammar of Latin’. Except during the middle
ages, when the fourth century Latin of the Vulgate Bible displaced the pagan Latin of
antiquity, the best authors were said to be the classical authors; it was classical Latin and, to a
certain extent, classical Greek that came to be regarded as the ideal model for grammatical
construction. English and other so-called ‘modern languages’ were (mistakenly, we would
now say) regarded as debased and corrupt compared with classical Latin and Greek; so
teachers insisted that the best way to write a ‘modern language’ was to follow the rules of
Latin grammar so far as possible. In other words, pedagogues believed that the grammar of
classical Latin provides appropriate rules for the grammars of European vernaculars. Such a
view was properly condemned by linguists in the first sixty years of the twentieth century;
unfortunately, most of those critics rejected not only the excesses of traditional grammar but
its successes too.

\(^3\) S = subject, O = object, V = verb.
For several centuries the works of Aristotle were lost to scholars in Europe. But in the twelfth century they once more became available and there was renewed interest in Aristotelian philosophy. In the twelfth and thirteenth centuries in Western Europe, scholars had Priscian’s rules for Latin syntax which, because of the focus on pedagogy, sought no explanation for why the rules operate as they do. Scholastic grammarians adopted the Aristotelian dictum that the world is the same for everyone, believing that language is like a *speculum* ‘mirror, image’ that reflects the world; so their grammars are described as ‘speculative’. The speculative grammarians also followed Aristotle in believing that everyone has the same experience whatever their language; consequently mental experiences are the same for everyone. It led them to claim that what is signified is universal, but the means by which it is signified, the ‘modi significandi’, differ from language to language. Because of their interest in *modi significandi*, these medieval scholastics were also known as ‘modistae’.

During the thirteenth century, the speculative grammarians began to establish the notion of a ‘general’ or ‘universal’ grammar common to all languages.

In the late seventeenth and throughout the eighteenth century, language was the province of rationalist grammarians, whom Noam Chomsky – undoubtedly the most prominent theoretician in the second half of the twentieth century – claimed for his intellectual forebears. Like the modistae, the rationalist grammarians were inspired by Aristotle; the essential difference between the two schools is that the modistae viewed human beings as all having similar experiences because of the nature of the world around them, whereas the rationalists believed that people have similar experiences because of the nature of the human mind. The rationalists were post-renaissance scholars living in an age of exploration which had given rise to grammars of several exotic languages. Scholars in the seventeenth and eighteenth centuries knew that experience of the world differed greatly among different communities of human beings but that all of us possess minds through which to perceive, categorize and assimilate information about the world. On the rationalist view, the nature of the mind is to think; and because almost everyone is capable of being rational, they adapted the medieval notion that there must be an underlying ‘general’ or ‘universal grammar’ to locate it in the human mind. This idea is also found in the late twentieth century grammar of Chomsky. It follows that languages differ from one another only because the common underlying structure of human thought is expressed through different forms – in Chomskyan terms, different ‘parameters’ are switched on.

The traditional view that the structure of the world informs the structure of language is inverted by the ‘linguistic relativity hypothesis’ that arose in the Romantic movement which
spread from Étienne Bonnot de Condillac (1715–80) and Jean-Jacques Rousseau (1712–78) in France to Johann Gottfried von Herder (1744–1803) and Wilhelm von Humboldt (1767–1835) in Germany, to re-emerge with Franz Boas (1858–1942) in America and be instilled into Edward Sapir (1884–1939) and Benjamin Lee Whorf (1897–1941). Known today as the ‘Sapir-Whorf hypothesis’ or, simply, ‘Whorfian hypothesis’, it postulates that the structure of language informs the structure of the world as conceived by speakers of a particular language when they are speaking it. However, it does not impose a mental strait-jacket: the human mind can and does go anywhere.

The eighteenth to nineteenth centuries saw the development of comparative philology arising from the discovery and gradual identification of the Indo-European language family. The early cross-language comparisons used terminology directly derived from ancient Greek statements on phonology. For the most part, however, nineteenth century comparative philology took the Western Classical Tradition in a new direction by focusing on phonological systems. Twentieth century developments in phonetics and phonology and the whole paradigm of Saussurean structuralist and Bloomfieldian mechanistic linguistics were a new direction in, and sometimes a revolt against, the Western Classical Tradition. Nonetheless, linguistics in the nineteenth and early twentieth centuries was a crucial foundation for the post-structuralist linguistics that is the consequence of the so-called ‘Chomsky revolution’. Chomsky’s predecessors had rejected traditional grammar along with linguistic universals, rationalist theory, and semantics. All of these are back in vogue. If modern linguistics began with a hiccup in the Western Classical Tradition, it is now back within the comfortable framework of two and a half millennia of linguistic description.

Modern linguistics developed from the investigations of the neo-grammarians into the origins and interrelations of Indo-European languages, which eventually merged with a mushrooming interest in the non-Indo-European languages of Native Americans and the peoples of Africa, Asia, and Australasia. This interest was partly motivated by a fascination with exotic cultures and languages, and partly by ideas for generating literacy and education in indigenous languages. The development of linguistics was spurred on by technological advances during the nineteenth to the twenty-first centuries that have facilitated detailed study of the spoken medium and of the processes of language interaction.
Acknowledgement

I am very grateful to Jae Song, Kasia Jaszczolt, Mike Balint, and Simon Musgrave for comments on an earlier version of this essay. They are in no way to blame for such infelicities as appear in this version.

Further reading

Akmajian, Demers, Farmer et al. (2010); Aronoff & Rees-Miller (2001); Auroux, Koerner, Niederehe et al. (2000-2006); Brown (2006); Everett (2012); Koerner & Asher (1995); O'Grady, Archibald & Katamba (2011); Pinker (1994)

References


