Introduction

Spaceships are hard to build. After all, that really *is* rocket science. As far as anyone knows, spaceships have been successfully built by exactly one civilisation in the entire history of the universe: by post-1957 humans (the Space Age actually happens to coincide exactly with my lifetime, although I had nothing to do with it). We're pretty justified in thinking ourselves rather clever to build machines that can get us off our own planet.

Coming closer to home for a moment, my cat Clover (who will pop up here and there in the chapters to follow) is extremely clever, too, in his feline way. But the idea of him and his furry friends building a spaceship is completely absurd, of course. Chimps, who allegedly share around 98 percent of their genes with us, also show no interplanetary ambitions. What's in the other 2 percent of our genes that makes this vast difference?

Think about space travel for a minute: what depth and breadth of knowledge made those journeys possible? It requires knowledge of physics, maths, the human body, the cosmos and so much more. Where does all of this knowledge reside and how is it transmitted? It's mostly in the heads of scientists, and they transmit it by teaching each other. Our 2 percent extra special non-chimp genome must make all of that knowledge, and its successful trans-mission, possible. Moreover, a great deal of that knowledge is quite new; it didn't really exist before the mid-twentieth century. Where did it come from? Ideas in people's heads, obviously. Clever people, these rocket scientists, but people nonetheless; not (as far as we know) extra-terrestrials, Gods or computers and certainly not chimps.

Our extra 2 percent makes us extremely good – by the standards of everything else in the known universe, unbelievably,

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extraordinarily, *cosmically* good – at generating, storing and trans-mitting knowledge. How do we do it? With *language*, mostly. In fact, almost everything we do – and everything that makes us different from chimps – we do with language. Try to imagine the world without language. Try to imagine the chimps' language-less world, or Clover's: no names, no descriptions, no way to store, transmit or receive ideas. No wonder they're so hopeless at space travel.

It's a reasonable assumption that whatever gives us the biological capacity for language is in the chimp-free 2 percent of the human genome, although I'm not going to speculate here about 'language genes' or 'grammar chromosomes' and whatnot. Neither am I going to say anything about the evolution of language, as far too little is known about that topic.

Instead, I want to introduce you to what I think is our greatest gift as a species: our ability to make noises and influence people. We are mostly as blissfully unaware of the intricacies of the structure of language as fish are of the water they swim in. We live in a mental ocean of nouns, verbs, quantifiers, morphemes, vowels and other rich, strange and deeply fascinating linguistic objects. I want to introduce you to this amazing world and help you to reflect on it. That way, you reflect on what you really are – the 2 percent of you that isn't chimp, that is.

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The book's ten chapters each deal with an area of linguistics where there is by now a reasonable body of knowledge. Of course, all scientific knowledge is a work in progress, and there are as many loose ends, false trails, blind alleys and leaps in the dark as there are metaphors to mix. But my goal here is not to set a received body of knowledge about language in stone but to try to impart the fascination, wonder and, at times, the mystery of the worlds of language.

So we begin with the noises themselves: the study of the sounds of language, or **phonetics** (I present the main technical

terms in **bold** when I first introduce them; the Glossary at the end of the book gives brief definitions of them). Then we move on to the ways in which those sounds are organised in languages; in language, what you hear isn't always what you get. Moreover, some people can't hear: deaf communities the world over use **sign languages**, and one of the big discoveries of recent linguistics is that sign languages are full languages in all respects, even having phonetics and phonology (see the note at the end of this section for more discussion). This study of sound patterns in languages is known as **phonology**. After this, we go on to word structure, or **morphology**. Here we'll see how to divide words up into little packets of meaning and form known as **morphemes**. We'll also see the different ways morphemes can combine to form words of varying complexity. Then we come to the big two: **syntax** and **semantics**. Syntax is the real engine of language, at once the most abstract and the most central piece of the whole picture. Syntax tells us how to match sounds and meanings over a limitless range of possible sentences. Semantics is where the tyre hits the road: it's about how we actually express ourselves, how language and non-language hook up and how the infinite forms created by syntax can be given meaning. Syntax and semantics are hard, possibly the hardest parts of this book.

In language, what you get is often more than what you hear (or see, in the case of writing or sign language). **Pragmatics** tells us how even very simple utterances can be given a much richer meaning in context than what they appear to really wear on their sleeve. The interaction of pragmatics with semantics is very intricate and subtle, as we'll see.

Then we move on to the wider fields. Next is **historical linguistics**, the study of how languages change over time and how language families can be established. Here we'll see how we can re-invent, or reconstruct, lost languages.

Socio- and **psycholinguistics** take up the next two chapters. As their names suggest, these are hybrid fields where linguistics

meets sociology and psychology respectively. In the sociolinguistics chapter, I'll concentrate on how a person's language can reveal much about their social class, age or gender and how people's acute intuitive awareness of these issues can be investigated. Psycholinguistics is a huge subject, dealing as it does with all of the questions relating language, mind and brain. One really important and absolutely compelling question comes up here: how do very young children learn their first language? We'll see that this simple and innocent-looking question makes contact with centuries-old philosophical debates. Finally, we'll look at **language typology**, the study of ways to classify the world's languages. Here we'll look at some of the ways in which the languages of the world vary, and we'll touch on the question of whether and how they may all in some way be the same: the vexed question of language universals.

As I mentioned above, some of the chapters are a bit more difficult than others. I haven't shied away from presenting some rather technical material here and there, and I hope it won't seem too dull. The thing to remember if and when the going gets a bit tough is that we're trying to understand something truly amazing: our ability to invent, store and transmit new thoughts – what makes it possible for us to build spaceships (after all, you've got to be able to think about them first). But if you find certain passages a bit off-putting, skip them. You can always come back to them later. My goal here is above all to try to show you how we can approach an understanding of the wonders of language and to pique your curiosity about the ideas that linguists have been developing about those wonders. Inevitably, some chapters are a bit more technical than others, but feel free to dip in and out. This isn't a whodunit, so you won't miss out on any crucial plot details if you don't read everything in sequence.

I truly hope you'll enjoy reading this book. Fish will never understand the water they swim in; but, precisely because you have language, you can begin to understand your linguistic habitat. You are smart enough to be able to be a fish out of water.

A note on noise: language is mostly expressed through speech, or more precisely through the oral/aural channel. Hence my talk of noises here and below. But of course language doesn't have to be expressed this way. One of its amazing properties is that it can be transmitted in several different ways, through quite different channels, and yet it is fundamentally the same in all of them. So, right now, you're probably reading this silently (and I'm writing silently except for the occasional sotto-voce imprecation aimed at my laptop). It's fairly clear that writing is parasitic on speech: it's learned later (or not at all), and it's a much more recent invention, being about 5,000 years old as far as we know (while speech is estimated to be anywhere from 50,000 to over 100,000 years old).

But there's another channel for language that has assumed increasing importance in linguistics in recent years: sign. Sign involves transmission of language through the gestural-visual channel. As mentioned above, one of the more significant discoveries in linguistics in recent decades has been that sign languages (of which there are very many, all over the world) are languages in every sense of the word. They show all the structural features of oral-aural languages, including, strikingly, phonetics and phonology. Ineptitude and lack of space combine to mean that I won't say anything more about sign here, but if you're interested, see the suggestions in the Further Reading section at the end of the book.