

Language comprehension

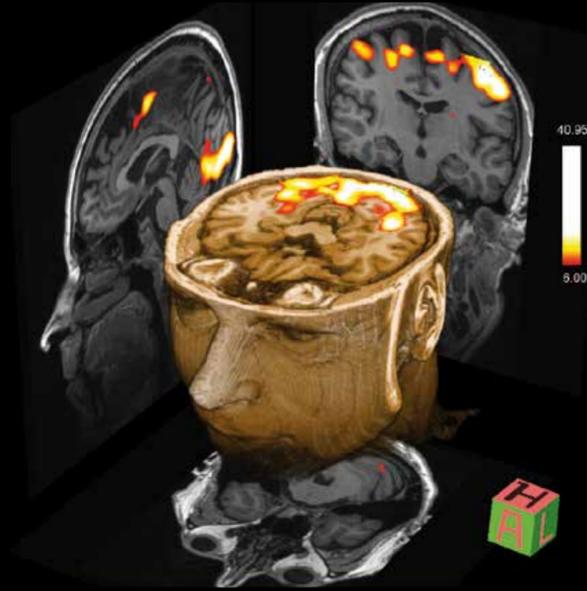
How do we understand spoken language?

Language comprehension, or the understanding of language, has traditionally formed the central research area of psycholinguistics. Most comprehension research at the institute involves spoken language. In our daily lives, we listen more than we speak and listening to our native language usually feels quite effortless. Yet, when someone speaks to us in a foreign language, we start to realise how difficult it is to recognise individual words. It almost seems impossible to know where one word ends and the next one begins.



Anne Cutler

Speakers produce utterances as a continuous stream of speech. They give listeners no clear indications of the relevant sound, syllable or word boundaries. In order to understand spoken language, we have to recognise the individual words, then analyse the structure of sentences, and extract the overall meaning. How can we find the individual words in speech so easily? And how can this decoding process proceed so rapidly? These are central questions in our language comprehension research.



Language production

How do we produce speech?

Peter Hagoort

'In order to understand how humans speak, we need to understand the language of the brain'

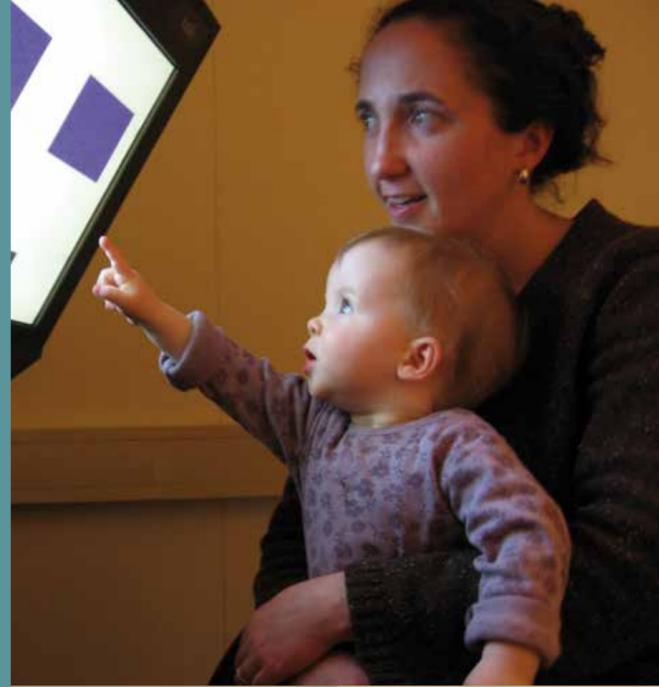


Talking is one of our favourite pastimes. Most of us spend large parts of the day in conversation and if we are not talking to others, we are likely to be talking to ourselves. With one hour talking per day, we produce some four million words per year! The ability to speak is universal to our species and it is the basic tool in human society.

Speaking is an astoundingly rapid process. When we speak, we intend to convey a message to our listener(s). Therefore, we have to retrieve appropriate words from our mental lexicon - a kind of inner dictionary that contains tens of thousands of words. In normal conversation we select words at a rate of two to three per second! Surprisingly, we hardly ever make an error in selecting intended words.

Many processing components are involved in the generation of speech. Yet, how come speech can be so fluent? One of the central questions in current research is how the brain supports these processes. How does it bring together the different types of information in the speech planning or decoding process so incredibly fast? These are everyday scientific issues for our researchers on the neurobiology of language.

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Language acquisition

How do we learn a first or second language?

We all are born with the capacity to learn a language, and normally, we do that in childhood. This process takes several years, so, it is long and complex, though without apparent effort.

But as a rule, it ends in natural and fluent mastery.



Wolfgang Klein

'Understanding is an illusion created by language'

Most people also learn a second language, and sometimes a third or fourth one. But very often, this requires much more effort than the acquisition of the 'mother tongue', and usually, it is less successful - especially when it begins in adulthood. What is the underlying human language learning capacity, with which our species is endowed? How does it work, and why does it change with age and knowledge? To what extent are course and success of the acquisition process determined by general principles, and to what extent do they depend on the particular type and amount of input to which the learner is exposed? These are some of the key questions that underlie the language acquisition research at the institute.

Most of what we know about this comes from the study of a few languages. But by birth, a child can learn Chinese, Tzeltal or Kpelle as well as English, German or French. A characteristic feature of the institute's work on acquisition is that it not only studies various types of acquisition, but also deals with many 'exotic' languages.

Language and cognition

What is the relation between language, culture and general cognition?

Languages across the world vary fundamentally. They do not only differ in sounds and structure, but even in the kinds of meanings words have. Yet, all these different languages - more than six thousand in total! - are supported by more or less identical brains and anatomy. This raises questions about how specific languages and cultures may specialise our minds.

At the institute, current research is focussed on the extent of linguistic diversity. We look at 'small' languages of distinct ancestry around the world. What are the cognitive consequences of these differences? And what are the universal foundations (underpinnings) of language use?

The Language and Cognition group investigates the relationship between language and general cognition, making use of the 'natural laboratory' of language variation. To this end, we maintain over a dozen field sites around the world, where languages are described often for the first time, the semantic categories examined and field experiments conducted.



Stephen Levinson

'Linguistic diversity is the central puzzle for psycholinguistics'



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Design

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Photography

Bert Beelen Fotografie, Nijmegen

Max Planck Institute for Psycholinguistics,

Nick Enfield, Connie de Vos

Print

Drukkerij Efficiënt, Nijmegen

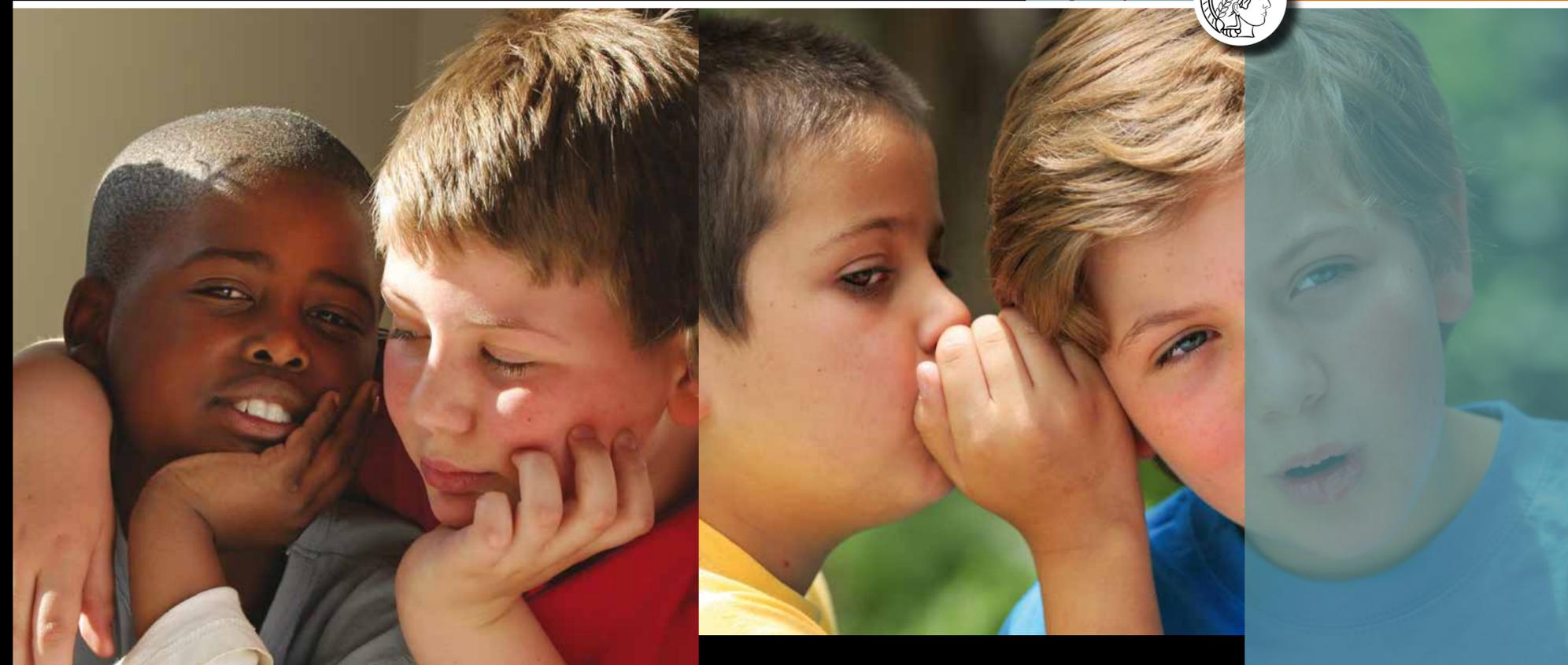
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Nijmegen, december 2008

Unraveling language



**Max Planck Institute
for Psycholinguistics
Nijmegen**



Mission statement

Our institute's mission is to undertake basic research into the psychological and biological foundations of language. The goal is to understand how our minds and brains process language, how language interacts with other aspects of mind and how we can learn languages of quite different types. This involves work on a broad front: psychology and brain science, child development, and comparative linguistics.

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