Leopoldina
Nationale Akademie
der Wissenschaften

Curriculum Vitae Professor Dr Angela D. Friederici

Image: Uta Tabea Marten, fotografa/Berlin | MPI CBS

Name: **Angela Dorkas Friederici**
Date of birth: **3 February 1952**

Research Priorities: Cognitive science, psycholinguistics and neurolinguistics, language development, language architecture, temporal structure of language processing

Angela D. Friederici is a German linguist, psychologist and neuroscientist. She researches how humans learn language and represent language in the brain on multiple levels. The scientist uses various imaging methods, such as functional magnetic resonance imaging (fMRI) and electrophysiological methods, in order to understand how the brain processes language. Her research is particularly focused on the role of the Broca and Wernicke areas processing the interaction between these two brain regions during language.

Academic and Professional Career

since 2004	Honorary Professor, Charité – Universitätsmedizin Berlin, Berlin, Germany
since 1997	Honorary Professor, Department of Philosophy II (today: Department of Linguistics), University of Potsdam, Potsdam, Germany
1996 - 2007	Director, Centre of Cognitive Sciences (ZfK), Centre for Advanced Studies (ZHS), University of Leipzig, Leipzig, Germany
since 1995	Honorary Professor, Faculty of Biosciences, Pharmacy and Psychology (today: Faculty of Life Science), University of Leipzig, Leipzig, Germany
since 1994	Founding Director, Scientific Member and Member of Board of Directors, Leipzig Max Planck Institute of Cognitive NeuroScience (since 2004: Max Planck Institute for Human Cognitive and Brain Sciences), Leipzig, Germany
1993 - 1994	Executive Director, Institute of Psychology, Freie Universität (FU) Berlin, Berlin, Germany

1991 - 1994	University Professor for General Psychology, FU Berlin, Berlin, Germany
1989 - 1991	University Professor for Psychology (specialising in cognitive sciences), FU Berlin, Berlin, Germany
1988	Research Stay, Center for Cognitive Science, University of California San Diego (UCSD), La Jolla, USA
1986	Habilitation in Psychology, Justus-Liebig-Universität Gießen, Gießen, Germany
1984 - 1985	Université René Descartes, Laboratoire de Psychologie Experimentale, Paris, France
1980	Diploma in Psychology, University of Bonn, Bonn, Germany
1979 - 1989	Max Planck Institute for Psycholinguistics, Nijmegen, The Netherlands
1978 - 1979	Postdoctoral Fellow, Department of Psychology, Massachusetts Institute of Technology (MIT), Cambridge, USA and VA Medical Center and Department of Neurology, Aphasia Research Center, Boston University School of Medicine, Boston, USA
1976	PhD in German Philology, University of Bonn, Bonn, Germany
1975 - 1980	Degree in Psychology, University of Bonn, Bonn, Germany
1974 - 1978	Research Associate, Psychiatry, psychotherapy and neurology for children, adolescents and adults, Rheinische Landesklinik für Sprachgestörte, Landschaftsverband Rheinland (LVR)-Klinik Bonn, Bonn, Germany
1970 - 1976	Degree in German Philology, Romance Philology and Linguistic Sciences, Bonn, Germany and Lausanne, Switzerland

Functions in Scientific Societies and Committees

2021 - 2022	Member, Commission, Kavli Prize in Neuroscience, Norwegian Academy of Sciences and Letters, Norway
since 2018	Member, Einstein Center for Neurosciences Berlin (ECN), Charité – Universitätsmedizin Berlin, Berlin, Germany
2016	Scientific Board “Crossing Boundaries in Science 2016”, German National Academy of Sciences Leopoldina, Germany
2014 - 2020	Vice President and Member of Senate and Executive Committee, Max Planck Society for the Advancement of Science (MPG) Munich, Germany
2012 - 2015	Chairperson, Scientific Commission, The Einstein Foundation, Berlin, Germany
2011 - 2012	Vice Chairperson, Scientific Commission, The Einstein Foundation, Berlin, Germany

2010 - 2013	Representative of the Human Sciences Section, Scientific Council for Checking the Leadership Capabilities of Scientific Members, MPG, Munich, Germany
2009 - 2011	Vice Chairperson, Committee of Non-university Research Institutions in Health Research, Federal Ministry of Education and Research (BMBF), Germany
2006 - 2009	Member, Senate Committee on Research Planning, MPG, Munich, Germany
2006 - 2009	Chairperson, Scientific Council, MPG, Munich, Germany
2005 - 2007	Vice President, Berlin-Brandenburg Academy of Sciences and Humanities (BBAW), Berlin, Germany
2003 - 2010	Member, Council, BMBF, Germany
2003 - 2009	Member, Intersectional Committee, MPG, Munich, Germany
2002 - 2009	Member, Senate, MPG, Munich, Germany
1996 - 2001	Member, Senate, German Research Foundation (DFG), Germany
1994 - 1998	Member, Board of Directors, BBAW, Berlin, Germany

Honours and Awarded Memberships

2023	William James Fellow Award, Association for Psychological Science, Washington, USA
2021	Huttenlocher Award, Flux Society, Pennsylvania, USA
2019	Justine and Yves Sergent Award, Justine and Yves Sergent Fund, Université de Montréal, Montreal, Canada
2018	Wilhelm Wundt Medal, German Psychological Society, Germany
2018	Order of Merit, Free State of Saxony, Germany
2011	Carl Friedrich Gauß Medal, Braunschweig Scientific Society (BWG), Braunschweig, Germany
2011	Honorary Doctorate, University of Mons, Mons, Belgium
2010 - 2011	Research Fellow, Center for Advanced Study in the Behavioral Sciences, Stanford University, Stanford, USA
2010	Johannes Gutenberg Endowed Professorship, Johannes Gutenberg University Mainz, Mainz, Germany
since 2007	Member, Academia Europaea
since 2000	Member, German National Academy of Sciences Leopoldina, Germany
1999 - 2000	DaimlerChrysler Fellowship, Wissenschaftskolleg zu Berlin, Berlin, Germany
1997	Gottfried Wilhelm Leibniz Award, DFG, Germany

since 1993 Member, BBAW, Berlin, Germany

Research Priorities

Angela D. Friederici is a German linguist, psychologist and neuroscientist. She explores how humans learn languages and how language is represented in the brain on multiple levels. The scientist uses various illustrative methods for this, such as functional magnetic resonance imaging (fMRI), in order to understand how the brain processes speech information. Her research is particularly focused on the role of the Broca and Wernicke areas in the speech process and the interaction between these two brain regions.

Together with her working group, Angela D. Friederici also characterised the special role of the arcuate fasciculus, a nerve fibre bundle connecting the upper temporal lobe to the Broca area. Both of these structures play a major role in processing grammar, while the Wernicke area is responsible for language comprehension. In another experiment, the researchers investigated how many myelin layers were wrapped around the nerve endings of the arcuate fasciculus, They found that during development the degree of myelination of the arcuate fasciculus correlates with the ability to process grammatically complex sentences. The findings support the idea that language capabilities are acquired at intervals in the brain maturation phase spanning childhood and adolescence.

Angela Friederici's research showed that the arcuate fasciculus is more pronounced in all adult brains and varies minimally depending on the language world in which a person grows up. This conclusion supports the linguist Noam Chomsky's concept that there is an innate universal system for grammar. These fibre connections are much less pronounced in monkeys. While chimpanzees and macaques can learn words, they cannot form phrase-like combinations.

The pronounced arcuate fasciculus could also be the reason why humans are especially successful at understanding what others think and how they might react, an ability known as "Theory of Mind" which is acquired in early childhood.

Angela D. Friederici also investigates the genetic foundations of normal language development in order to analyse disorders of these complex processes. In doing so the scientist tracks both individual genes as well as gene networks in order to understand the complexity of speech development.

The role of experiences during language development is also a focus. She researches how children's language acquisition is influenced by the interaction with their environment and their experiences. In this respect Angela D. Friederici is also interested in how children acquire language in multilingual surroundings.

Her multi-faceted research has significantly contributed to a deeper understanding of the complex interactions between the genetic, epigenetic and environmental factors which form the long process of language acquisition. Her research also lays the foundation for a better understanding of

language disorders and possible approaches to counteract them. By means of her interdisciplinary approach as a linguist, psychologist and neuroscientist, Angela D. Friederici has successfully managed to bridge the gap between the humanities and natural science.