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PENN STATE CENTER FOR LANGUAGE SCIENCE

By Brittany Jean-Baptiste

The Penn State Center for Language Science is breaking down barriers. Fifteen years ago, it was a challenge to study bilingualism in a location where almost everyone was monolingual. Now the Center for Language Science (CLS) is internationally recognized as a world-class center for the study of bilingualism and related issues in language science. The broadly connected Center is leading the way in establishing strong networks on campus, with other U.S. institutions, and around the globe.

Judith Kroll, Distinguished Professor of Psychology, Linguistics, and Women's Studies and Director of CLS, was a recipient in 2009 of the W. LaMarr Kopp International Achievement Award, an honor accorded in large part for her work in establishing CLS. In the past fifteen years, Kroll, in conjunction with faculty colleagues and graduate students, has established research partnerships in many countries that have resulted in numerous joint publications, successful academic grants, and conference presentations. They have also created precious opportunities for students for research abroad.

The leadership of Penn State's language scientists in fostering international research collaboration and student exchange was evident in the creation of the Center for Language Science in 2006. The CLS brings together scholars from six departments (psychology, Spanish, German, classics, applied linguistics, and communication sciences and disorders) from the Colleges of the Liberal Arts and Health and Human Development.

In addition to trips abroad to meet and work with international colleagues, the CLS staff has hosted a stream of international scholars who have further enhanced the scientific environment at Penn State. The presence of international visitors provides Penn State students with an opportunity to interact and collaborate with a range of international scientists, including distinguished faculty, postdoctoral fellows, and graduate students from the Netherlands, Spain, Poland, the United Kingdom, and China.

Researchers within the CLS investigate a range of topics related to typical and atypical language development in the first and second languages, the effects of language contact across communities of different language speakers, language processing in skilled bilinguals, and the neural basis of language use and its development. A key insight is that bilingualism provides a unique tool to examine aspects of language and cognition that are otherwise obscured in speakers of only a single language. CLS faculty and students use a range of research methods, from field work to laboratory experimentation, computational modeling, and the recording of brain activity.

How has the CLS become a major hub of research activity when our location in central Pennsylvania doesn't easily provide a context for research on bilingualism? Kroll describes the transformation of the CLS as an "organic" process whereby a set of new faculty hired after 2000 recognized that they shared research interests that would benefit from collaboration and increased interaction. Together, they first established the Language Science Research Group in 2003 to meet weekly for the purpose of giving talks, discussing research papers, and hosting visiting speakers. In 2004, they were awarded a facilitated research grant from the Child, Youth, and Family Consortium at Penn State to encourage cross-disciplinary collaborations. In 2006 they became the Center for Language Science.

At first, traveling abroad was seen as a necessity to allow faculty and students to collect data for projects on bilingual speakers who were otherwise unavailable at Penn State. But what started as an effort to compensate for the absence of a diverse population of bilinguals in State College, quickly took on a life of its own. Students who traveled abroad to collect data also had a range of experiences that enhanced their professional development. They met new students and faculty, gave research presentations abroad, gained training that complemented their training at Penn State, and learned to function in a lab culture different from the one to which they were accustomed. These networking experiences allowed students to become active participants in the international research community at an early point in their careers that would otherwise have been impossible.

Janet van Hell, professor of language development and second language learning at Radboud University in Nijmegen, the Netherlands, is also a visiting professor of psychology and linguistics at Penn State each fall semester. When she was pursuing her doctorate at the University of Amsterdam in 1995, van Hell was the first international visitor to Kroll's lab. In 2006 she was a sabbatical visitor to Penn State and since 2008 she has spent one semester of each academic year at Penn State. In the interim, she has hosted CLS students and faculty at Radboud University in Nijmegen and launched many productive research collaborations with colleagues here. Her research is focused on language learning and bilingualism in both adults and children and in populations whose language development is atypical, such as children who are deaf or dyslexic.

A recent addition to the faculty is Ping Li, professor of psychology, linguistics, and information sciences and technology. Li's research uses computational modeling and neuroscience methods to investigate first and second language

Imaging Center (SLEIC) provides ready access to imaging facilities. Jing noted that the professors associated with CLS are insightful, encouraging, and supportive and the research network provides her with a number of valuable assets that she would not otherwise have.

Paola (Giuli) Dussias is associate professor of Spanish, linguistics, and psychology and associate director of the CLS. Her research interests include psycholinguistics, bilingualism, sentence parsing, code-switching, and second language acquisition. Dussias explains that she takes a cross-disciplinary approach to the study of bilingual



Judith Kroll

language processing using converging methodological tools from linguistics, experimental psycholinguistics, and second

acquisition. A particular focus in his work concerns the dynamic changes that occur in the language learner and the dynamic interactions that occur in the competing language systems over the course of learning. An important context for this research is the comparison between languages that have different characteristics; for example, his work shows that proficient bilinguals have different brain responses to Chinese words vs. English words.

To achieve a comprehensive picture of bilingual behavior, partnerships with colleagues investigating these issues in different languages is essential. "We have a sister lab in Beijing, China, where we investigate similar research questions with similar research methodologies but with different language populations," Li says. "Student and faculty exchange and visits become the norm, and we recognize how important these activities are for productive scientific collaborations." These collaborations provide mutual benefits for students and faculty in both locations.

An early career language scientist, post-doctoral fellow Jing Yang, is studying how children and adults learn their first and second languages. In particular, she uses neuroscience and behavioral methods to study normal reading as well as reading disorders. She feels privileged to be able to work with Ping Li and because the new Social, Life, and Engineering Sciences

language acquisition. Much of her research exploits the sensitivity of a method called eye-tracking in which the eye movements that readers or listeners make are monitored while they process language as it is read or spoken. To illustrate, bilinguals often code switch with one another, changing language in mid-sentence. A speaker has to plan what he or she will say in advance but for a listener or reader, a switch of language may be unexpected. Dussias and CLS faculty colleague Chip Gerfen, with support from the National Science Foundation, examine this process of code switching in proficient Spanish-English bilinguals. Dussias has been instrumental in developing a partnership with Teresa Bajo's lab at the University of Granada in Spain. Dussias worked closely with Bajo and her students to create a sister laboratory that is fully compatible with the laboratory at Penn State. This allows researchers on both sides of the ocean to benefit from the presence of a different set of language users available at each site.

Jorge Valdes Kroff, a Ph.D. candidate in Spanish, Italian, and Portuguese, believes he is fortunate to conduct research with Dussias. If he had not decided to study at Penn State, a location that is strongly monolingual, he would have missed the opportunity to gain expertise in research on bilingualism. His research interests include sentence (continued on page 18)