



# Department of Psychology Colloquium Series

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mon or ghost that sucks the blood of  
persons asleep; a kind of bat.  
a (vān), *n.* the front of an army or  
fleet; a large covered wagon for  
moving household goods, &c.  
**vanadium** (va-nā'di-ŭm), *n.* a rare  
metallic element.  
**vanadium steel** (van-ā'di-ŭm stēl), *n.*  
steel containing vanadium. The ef-  
fect of adding vanadium to low-  
carbon steel is to raise its tensile  
strength.  
**Vandal** (van'dal), *n.* one of a Teu-  
tonic race inhabiting the south  
shores of the Baltic, noted for their  
destruction and destruction of works  
of art.  
**vandal** (van'dal), *n.* one who is  
hostile to art or literature; one who  
ruthlessly destroys what is  
valuable or venerable.  
**vandalism** (van'dal-izm), *n.* the  
destruction of works of art or litera-  
ture.  
**vane** (vān), *n.* a weather-vane.  
**vang** (vang), *n.* a rope fastened to  
the extremity of the mast, leading  
to the side of a ship.  
**vanguard** (van'gārd), *n.* the  
advance guard of an army.  
**vanilla** (va-nil'a), *n.* the seed pod  
of an orchid, used for flavoring.  
**vanish** (van'ish), *v.t.* to disappear.  
**vanity** (van'i-ti), *n.* the quality of  
being vain; (van'i-tiz), love of im-  
portance; empty pride; empty  
pride; fruitless desire or endeavor;  
show; emptiness.  
**vanquish** (vang'kwish), *v.t.* to  
conquer; subdue; refute in argument.  
**vantage** (van'tāj), *n.* advantage; in  
lawn tennis, the first point after  
deuce.



## The Stories of Two Hemispheres: Language in the Brain

Thursday, November 2, 2017  
2:30 p.m. - 4:00 p.m.  
Tory 340



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Hemispheric functional specialization is a fundamental feature of human brain. Neural networks located in the left hemisphere (LH) sub-serve processing of verbal stimuli and fine motor movements, while networks located in the right hemisphere (RH) dominate in processing of attentional and visuospatial information (Gazzaniga, 1995; Mesulam, 1990). Out of all functional networks, language-related functional cortices show the most pronounced lateralization. About 80-95% of right-handed individuals rely primarily on their LH when processing language. It would be incorrect, however, to state that only one hemisphere contributes to language processing. Although many researchers agree that neural networks located in the RH are also sensitive to language, the role of RH homolog of the language network is unclear (Mitchell & Crow, 2005). In my talk, I will tell you about several fMRI studies that were conducted by me to shed light on contributions of two hemispheres to processing of language. In this research, I took an individual-differences approach. I examined degree of lateralization of language function in three populations with distinct language profiles: (1) individuals with typical language abilities, (2) individuals with impaired language abilities due to autism spectrum disorders (ASD), and (3) individuals with exceptional language abilities (polyglots). Compared to individuals with typical language development, the other two groups (i.e., individuals with ASD and polyglots) showed a significantly reduced degree of lateralization for language, however, mechanisms contributing to this reduction were different in ASDs vs. polyglots. Thus, reduced language lateralization is characteristic of “atypical” language abilities, although it could mean compromised as well as extraordinary ability to communicate linguistically. I hypothesize that the role of the RH in language processing is to provide access to high level conceptual representations via mental imagery rather than verbal input.