Dear Friends,

Season’s greetings! I hope you have been enjoying this lovely autumn and that you’re having a wonderful holiday season so far. We hope to see you at our annual Stroke Group Holiday Party, which will be Wednesday, December 11th from 12-3pm in our NEW LOCATION on the VA campus – Building R4. There is limited parking in front of R4, so you can park in the main patient parking lot and look for the Volunteer Golf Cart that circles the parking lot, and ask them to take you to Building R4. If you have any trouble finding us that day, you can call Juliana at 925-372-4649. More information about the party is on p. 6. Hope to see you there!

In other Center news, we are very happy to welcome two colleagues from Moscow, Olga Dragoy and Maria Ivanova. They are neuroscience researchers at the Moscow Research Institute of Psychiatry, Speech Pathology and Neurorehabilitation Department. Dr. Dragoy received a very prestigious and competitive Fulbright Scholarship to do research at our Center. Drs. Dragoy and Ivanova do research on aphasia and the brain basis of language. We are learning a lot from them about the patterns of aphasia that occur in Russian stroke patients, and we plan to do studies comparing Russian and English aphasia. They are wonderful colleagues, and we are lucky to have them here with us!

At the beginning of November, all of us headed down to San Diego for the Society for the Neurobiology of Language. We presented a number of posters describing our latest aphasia research endeavors that were very well received. It was a great meeting, and we all learned a lot about our colleagues’ latest research in the field as well.

I sincerely hope that this holiday season finds you and your family happy and healthy, and we hope to see you at the Holiday Party or sometime soon in the New Year!

Regards,
Nina Dronkers, Ph.D.
Director, Center for Aphasia & Related Disorders
Past and Present Time Reference: Language Difficulties are not Specific to Aphasia

by Olga Dragoy, Ph.D.

A fundamental issue in aphasia research concerns the extent to which language problems are specific to aphasia. Previous studies have shown that referring to the present versus the past in speech is not equally impaired in individuals with aphasia. Verbs referring to the past (e.g., cooked) are particularly difficult to produce and understand, compared to verbs referring to the present (e.g., is cooking). To test how healthy individuals use the present and past, we used electroencephalography (EEG). This method allows us to detect language-related brain activity and provides a subtle measure of linguistic performance. We presented healthy participants with sentences containing verbs that referred to either the present or past. As soon as participants encountered the present form, their brains signaled with a specific burst of electrical activity. In contrast, when we presented sentences with the past form, no immediate brain reaction was registered, but rather it came much later. These findings suggest that referring to the past versus the present in speech is different. In people with aphasia, this advantage of the present over the past reference shows up in the accuracy of their speech. In healthy people, understanding a reference to the past is delayed. This is an example of how language problems in aphasia are grounded in universal linguistic mechanisms, which are also characteristic of healthy individuals.

Figure 1. EEG-responses of healthy individuals in response to present versus past time reference: significant reaction for the present (dashed on the left), compared to the control condition (solid); no difference from the control for the past (dashed on the right).
Music and Language in the Brain

by Juliana Baldo, Ph.D.

An unresolved question in neuroscience is the degree of neural association between language and music. Previous studies have produced conflicting results, with some studies suggesting that language and music rely on the same brain regions and other studies suggesting that the underlying brain regions are different. To address this question, we recently conducted a study in our lab with 22 research volunteers who had a history of aphasia. They were tested on a music perception task that required them to listen to a series of two melodies and decide whether they were the same or different. The two melodies could differ on things like rhythm or pitch. These same research volunteers also completed a number of language tasks to test abilities such as sentence comprehension. Our main question was whether brain regions critical to language also play a role in the perception of musical structure. What we found was something in between: there was some overlap in the brain regions critical to language and music, but there were also some brain regions that were distinct for language and music. Figure 2 below shows areas of the brain that were most critical for the music perception task (in red) and for language comprehension (in blue). There was some overlap of these two tasks in the left posterior superior temporal gyrus, an area important for hearing. Interestingly, though, language variables such as aphasia severity did not predict music perception scores. These results suggest that music perception may be affected by strokes in left hemisphere brain regions associated with language, but the degree of impairment in these two abilities is not necessarily parallel.

Figure 2. Comparison of regions associated with music perception in red and language comprehension in blue, with overlap in the left posterior superior temporal gyrus.
# Stroke Recovery Resources in the Bay Area

**Project Recovery**  
Adaptive physical exercise program for those with physical disabilities. Includes moderately self-ambulatory, ortho-multihandicapped, and other health impairments.  
Monday/Wednesday: 1:30-2:30pm or 2:30-3:30pm  
Tuesday/Thursday: 2:00-3:00pm or 3:00-4:00pm  
Location: Family YMCA, Mt. Diablo Region YMCA  
Office 395 Civic Drive  
Suite G  
Pleasant Hill, CA 94523  
Contact: Libby Luxemberg  
(925) 687-8900.

**Stroke Support Group of Contra Costa County**  
Location:

**Aphasia Center of California**  
Location:

**Stroke Communication Classes**  
No-fee, non-credit stroke-communication classes offered to the San Francisco Bay Area for over 25 years.  
Location: City College of San Francisco  
1250 Waller St.  
San Francisco, CA 94117  
Contact: Joyce Freeman, M.S., CCC-SLP,  
(415) 561-1005  
jforeman@ccsf.edu

**Stroke Support Group of Contra Costa County**  
Location:

**Cal State University East Bay Aphasia Group**  
Location:

**Aphasia Center of California**  
Location:

**Stroke Club San Francisco**  
Location:

**Contact:**

**Stroke Communication Classes**

**Contact:**
Happy Holidays from the Aphasia Center!
Stroke Support Group
Annual Holiday Party!

When
Wednesday, Dec. 11th, 12:00-3:00 p.m.

What to bring
A dish or drink to share if you are able and an ornament for exchange if you wish.

Where (Please note new building location)
Building R4 at the Martinez VA, 150 Muir Rd, Martinez, CA, 94553.
You can park in the regular, main patient parking lot and ask the volunteer golf cart driver to take you to Building R4 (there is not much parking adjacent to R4). Map of the campus is below. If you have questions or get lost, call Juliana at 925-372-4649.
Unscramble Winter Words

Unscramble the words.

1. otsbo 2. aswnnom

3. carflipee 4. wlspnowo

5. tmesitn 6. tereswa

7. 8. 9. 10. 11. 12. ovglse

Answers: boots, fireplace, mittens, parka, jacket, sled, snowman, snowplow, sweater, scarf, snowflake, gloves
The Center for Aphasia and Related Disorders is supported by the VA Northern California Health Care System, the VA Medical Research Program, the National Institutes of Health, and the University of California at Davis and San Diego, as well as through generous donations from private foundations and individuals. Please feel free to contact Dr. Dronkers at (925) 372-2925 if you would like more information.