Editor's Note

Dear Friends,

It’s hard to believe the holidays are here again. After such a beautiful Summer and Fall, I am not ready to bring out the sweaters and gloves just yet! But, the colder weather also brings with it our holiday party, scheduled for December 12th this year. We always look forward to this event and hope that many of you can join us for the occasion.

The last 6 months were busy for us in the Center. Our Wednesday group has grown bigger with the addition of a number of new friends, and we enjoy seeing everyone around the table each week. We are very happy to have Ariel’s help with the group these days. And of course, we enjoy visits from Francesca’s baby, little Carlo, who was born on July 17, and always brings a smile with him.

In terms of our research, we are excited to be on the cutting edge with some of the work we are doing, and to be asked to present our results at numerous conferences around the world. Nearly all of us presented papers at the 50th anniversary meeting of the Academy of Aphasia this Fall, and we were proud to have a good showing there. As always, this is thanks to all of you who have helped us understand more about aphasia and your remarkable spirit for recovery.

We wish you all a wonderful holiday season with all the best to you and your families!

Yours truly,

Nina Dronkers, Ph.D.
Director, Center for Aphasia & Related Disorders
Neural Correlates of Reading and Writing

by Juliana V. Baldo

Reading and writing are relatively recent human developments, and the neural basis for these abilities has been a source of inquiry and controversy. In previous studies, reading has been associated with both the rear, bottom portion of the left temporal lobe (the so-called “visual word form area”) as well as more upper brain regions such as left parietal cortex. Writing has also been associated with left parietal cortex but also with left sensorimotor cortex and frontal lobe regions. In the current study, we investigated the neural basis of both reading and writing in a large group of 112 individuals who had had a stroke. Reading and writing performance was measured with the Western Aphasia Battery. The reading measures included single word and sentence-level reading, word-picture matching, letter discrimination, and spelling recognition. The writing measures included a written picture description, writing to dictation (letters, words, numbers and sentences), and copying a printed sentence. Results are shown in the Figure, with areas critical for writing abilities shown in blue and areas critical for reading shown in red. Brain regions that were specific to reading included the left temporal lobe and occipital lobe. In contrast, writing was centered in the left parietal cortex. These findings suggest that reading and writing are in part mediated by distinct neural processes in left temporal and parietal cortex, respectively.

Figure. Brain regions critical for writing shown in blue, and regions critical for reading shown in red.
Role of White Matter Brain Pathways in Language
by And Turken

The brain areas responsible for language are interconnected by an intricate system of fiber pathways. Long-distance fiber pathways carry the information that is necessary for coordinating core language functions. For a long time, only one of these pathways, the arcuate fasciculus, was thought to be essential for language. Our recent work and studies by other scientists suggest that at least five major fiber pathways play critical roles in understanding and producing language. Figure A shows the older view of how language regions are connected, and Figure B shows the current view of the brain circuits for language. We used brain imaging data from 189 stroke survivors, as well as their language assessments, in order to examine how fiber disconnection due to brain injury affects language abilities. One of our questions was whether each fiber pathway plays a specific role in a particular language function. We used digital brain atlases to relate the locations of fiber pathways and brain lesions, as can be seen in Figure C. We also used voxel-based lesion-symptom mapping to delineate brain regions that are critical for speech fluency, for repeating spoken words and sentences, for auditory comprehension, and for recalling words or names. This way, we could identify which pathways are disconnected by the brain lesions that result in different speech and language impairments, as shown in Figure D. For instance, the arcuate fasciculus, shown in blue in Figure D, is the most critical pathway for fluency, and the inferior occipito-frontal fasciculus, shown in green, is the most critical pathway for comprehension. Each fiber pathway was found to contribute to more than one ability, underscoring the importance of intact neural connections to speech and language. Our ongoing studies use advanced MRI brain imaging techniques to examine these fiber pathway connections in more detail so that we can understand their functions better and improve the diagnosis of patients with brain injury.
Stroke Recovery Resources in the Bay Area

**Project Recovery**
This is an adaptive physical exercise program for those with physical disabilities including moderately self-ambulatory, ortho-multi-handicapped, and other health impairments. The program will increase fitness, balance, strength, and range of motion.

Mon/Wed: 1:30-2:30 pm or 2:30-3:30 pm
Tue/Thur: 2:00-3:00 pm or 3:00-4:00 pm.

**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:**
Mt. Diablo Medical Center
Concord, CA 94520
or
John Muir Medical Center
601 Ygnacio Valley Rd.
Walnut Creek, CA 94596

**Mailing Address:**
Ann Dzuna
1174 Alta Mesa Dr.
Moraga, CA 94556-2042

**Contact:**
Ann Dzuna, B.S., MBA
(925) 376-6218
adzuna@comcast.net

**Aphasia Center of California**

**Location:**
200 Grand Ave.
Oakland, CA 94610

**Mailing Address:**
Roberta Elman, Ph.D., CCC-SLP, BC-NCD
Aphasia Center of California
3996 Lyman Rd.
Oakland, CA 94602

**Contact:**
Roberta Elman, Ph.D., CCC-SLP, BC-NCD
(510) 336-0112
relman@aol.com

**Website:** http://www.aphasiacenter.org

**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

**Cal State University East Bay Aphasia Group**

**Location:**
California University - East Bay
Speech, Language & Hearing Clinic
MB# 1097A
Communicative Sciences and Disorders
Hayward, CA 94542

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Hayward, CA 94542-3065

**Contact:**
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(510) 885-4762 or (510) 885-3233
ssimrin@csuhayward.edu

**Stroke Club San Francisco**

**Location:**
Stonestown Family YMCA
Senior Annex
3150 20th Ave.
San Francisco, CA 94132

**Contact:**
Kathy Orsi
(415) 242-7117
Happy Holidays from the Aphasia Center!
Stroke Support Group

Annual Holiday Party!

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

Where *(Please note new location)*
Administration Building 2 (AB2) at the Martinez VA.
Address: 150 Muir Rd, Martinez, CA, 94553
This is the same space where the group meets on Wednesdays.

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

Questions? Call Juliana (925) 372-4649
Game Zone

Winter Word Search

Word List:

MITTENS  COLD  SNOWMAN  WINTER  SLED
SNOW    ICE    HOLIDAY  COATS  HATS
Aphasia News
Center for Aphasia and Related Disorders
150 Muir Road 126 (s)
Martinez, CA 94553

http://www.ebire.org/aphasia

Newsletter Information
If you would like to receive this newsletter or you have comments/suggestions, e-mail Juliana at juliana@ebire.org, call her at (925) 372-4649 or write to:

Center for Aphasia and Related Disorders
VA Northern Calif. Health Care System
150 Muir Road 126 (s)
Martinez, CA 94553

We welcome your comments and questions!

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We would also like to thank the members of the Stroke Support Group, all of our research participants and their families, and the VA Speech Pathology staff.

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