After 11 years in existence, the CCN Patient Database program has moved to new headquarters! Our offices are now located in the Goddard Laboratories at 3710 Hamilton Walk. Research studies continue to be conducted in our testing location at HUP, as well as our new location at Goddard. When research appointments are scheduled, the coordinators can give directions to both university locations.

Our Phone Numbers have changed too
Patient Coordinator: 215-573-8485
Normal Control Coordinator: 215-573-7093
The Right to Name Actions*

Eileen Cardillo, D.Phil.¹, Gwenda Schmidt, Ph.D², Matthew Lehet, B.A.¹, 
& Anjan Chatterjee, M.D.¹

¹University of Pennsylvania, ²Hope College

By most accounts, the critical contribution of the right hemisphere to language processing is restricted to complex interpretive tasks that require extending meaning beyond the literal senses of individual words or sentences (e.g. figurative language, narratives, inferences, and emotional tone). Neuropsychological studies consistently reveal impairments in these high-level language skills following right hemisphere injury while reports of comprehension or production deficits at the level of single words are exceedingly rare. The report of Neininger and Pulvermuller (2003) then that damage to right frontal cortex results in significantly impaired verb processing is especially surprising. The purpose of the present study was to re-examine the assumption that the language-dominant left hemisphere is necessary and sufficient for normal naming abilities by following up on this study with a more sensitive and rigorous approach. We tested thirty-four focal lesion patients (half with unilateral left hemisphere injury and half with unilateral right hemisphere injury) on the Object and Action Naming Battery (Druks, 1992) and conducted Voxel-based Lesion Symptom Mapping (VLSM; Bates et al., 2003) analysis to identify areas where damage significantly impaired naming accuracy. Results of the VLSM analysis confirm that an intact left hemisphere is insufficient for accurate action naming. Even in the absence of clinical aphasia, lesions to the right prefrontal and premotor cortex were associated with mild but significant impairments in the ability to accurately name everyday actions. Results are discussed in terms of possible deficits at the level of verb retrieval or semantics.

*Poster Presented at the 2011, 18th Annual Meeting of the Cognitive Neuroscience Society, San Francisco, CA.

Studies of Memory

Ingrid Olson, Ph.D.¹,²

¹Temple University, ²University of Pennsylvania

The Olson lab has been doing studies on a particular type of memory that allows us to remember information over very short delays, such as remembering a list of a few items wanted at the supermarket. They are particularly interested in the role of one brain area, the hippocampus, in this function. Research shows that the hippocampus is involved in long-term memory retrieval and in the formation of new memories. However, new theories show evidence of hippocampal activation in short-term memory tasks that require the maintenance of information just outside of the focus of attention. This implies that people with damage to this brain area would have problems remembering what was said a sentence ago, for instance. The data they have collected thus far supports this conclusion.

Recent Publications and Presentations

Our research at the CCN would not be possible without the kind participation of our database patients.


LONG-TERM EFFECTS OF POST-STROKE CHANGES IN SENSORIMOTOR EXPERIENCE ON MANIPULATION JUDGMENTS INVOLVING COMMON TOOLS*

EVANGELIA G. CHRYSIKOU, PH.D.1, DANIEL CASASANTO, PH.D.2, 3, 4, & SHARON L. THOMPSON-SCHILL, PH.D.1

1University of Pennsylvania, 2Max Planck Institute for Psycholinguistics, Nijmegen, The Netherlands, 3Donders Institute for Brain, Cognition, and Behaviour, Radboud University, 4Department of Psychology, The New School for Social Research

Theories of embodied cognition suggest strong relationships between sensorimotor and cognitive systems. This study explored possible effects of post-stroke changes in sensorimotor experience on conceptual knowledge about common tools. Premorbidly right-handed patients experiencing right- or left-hand paresis due to unilateral stroke saw pictures of graspable everyday items that were oriented either for a right- or left-handed grasp. They identified verbally the type of grasp they would employ (i.e., clench or pinch) when using each object for its typical function. Analyses of voice-onset latencies were consistent with the prediction that right-paresis (left stroke) patients would be faster in these manipulation judgments when the objects were oriented to the left, whereas left-paresis (right stroke) patients would show the reverse pattern. The results are discussed in the context of the body-specificity hypothesis, according to which people who interact with their physical environments in systematically different ways form correspondingly different mental representations.

*2010 PROCEEDINGS OF THE 51ST ANNUAL MEETING OF THE PSYCHONOMIC SOCIETY. AUSTIN, TX: PSYCHONOMIC SOCIETY PUBLICATIONS.

HOW MOTOR FLUENCY SHAPES ABSTRACT CONCEPTS OF GOOD AND BAD*

DANIEL CASASANTO, PH.D.1, 2, 3 & EVANGELIA G. CHRYSIKOU, PH.D.4

1Max Planck Institute for Psycholinguistics, Nijmegen, The Netherlands, 2Donders Institute for Brain, Cognition, and Behaviour, Radboud University, 3Department of Psychology, The New School for Social Research, 4University of Pennsylvania

Right- and left-handers implicitly associate positive ideas like goodness and honesty more strongly with their dominant side of space, the side on which they can act more fluently, and negative ideas with their non-dominant side. Here we show that righthanders’ tendency to associate ‘good’ with right and ‘bad’ with left can be reversed due to both long- and short-term changes in motor fluency. When patients were righthanded prior to unilateral stroke, those with disabled left hands associated good with right, but those with disabled right hands associated good with left, like natural lefthanders. A similar pattern was found in healthy right-handers whose right or left hand was temporarily handicapped in the laboratory. Even a few minutes of acting more fluently with the left hand can change right-handers’ implicit associations between space and emotional valence, and reverse their usual judgments. Motor experience plays a causal role in shaping abstract thought.


To Read More about This Study Online:
http://www.eurekalert.org/pub_releases/2011-03/m-ago03101

Dr. Lila Chrysikou and Dr. Sharon L. Thompson-Schill would like to thank all the patients who participated in their recent studies on language and object use. With your help we were able to understand better the relationships between sensorimotor and cognitive systems. Specifically, we were in the position to examine how changes in bodily experience due to stroke influence not only how people think about specific objects (e.g., hammers, cups, pens), but also how they think about abstract concepts (e.g., ideas of ‘good’ and ‘bad’). Thank you so much again for all your help!
**RESEARCHER UPDATES**

Dr. Alexander Kranjec has accepted a position as Assistant Professor in the Department of Psychology at Duquesne University in Pittsburgh. We will miss Alex here at the CCN, and we wish him all the best in his teaching and beginning a new research laboratory.

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**RESEARCH study for Patients**

Dr. Alex Kranjec and Ms. Bianca Bromberger thank everyone who participated in their space and language study. They are still looking for participants. To enroll, please contact the Patient Coordinator at 215-573-8485.

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**CALL for PATIENTS**

The Kable Lab at the University of Pennsylvania is looking for participants with frontal lobe brain injury for a psychology study about decision-making. The study takes approximately 2 hours, and participants will be compensated for their time.

For more information and to sign up, please contact the Patient Coordinator by calling 215-573-8485.

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**PATIENTS NEEDED**

If you are interested in the following study, please contact the Patient Coordinator at 215-573-8485.

Dr. Anjan Chatterjee and Dr. Vidya Kamath are currently recruiting patients with frontal lobe injuries for participation in a study on smell function, cognition, and emotion processing.

Your help is greatly appreciated!

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**WE NEED YOU!**

Non-brain-injured subjects are needed for our cognitive research studies. Subjects receive the same tests as the patients, and they help us to learn how individuals without brain injury perform on the same tasks. Payment is $15 per hour plus mileage and parking.

Call the Normal Control Coordinator at 215-573-7093 for more information.

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**YOUNG STROKE SUPPORT GROUP**

Penn’s Young Stroke Support Group provides a chance for stroke patients to meet and talk with others facing similar challenges. Guest-speakers are invited to address issues relevant to younger adults.

Meetings: 3rd Thursday of the month, 6:30 p.m.
Ravdin-6 Conference Room, HUP (34th & Spruce Streets)
For more information and to confirm meeting times, contact Jeanie Luciano, MSN, CRNP (Stroke) at 215-614-0175 or jeanie.luciano@uphs.upenn.edu.