



Hearing Through the Smoke and Mirrors

Poppy Crum, Ph.D.

Research Scientist

Department of Biomedical Engineering
Johns Hopkins Medical School

Making sense of the natural world often leads us to live in a constant state of illusion. For example, if one hears a crying baby in a noisy environment or rustling leaves in a forest as a bear lumbers nearby, the brain has a daunting task. It must determine which frequencies of the acoustic waveform belong to the baby or nearby grizzly, identify where these auditory events are located, integrate this information with cues from other sensory modalities – such as the visual location if available, and finally determine what sort of action is required (e.g. both require some worry and likely generate a shift in one's heart rate, but reacting inappropriately in one instance could have much more complicated consequences!) The problem of scene analysis in a busy visual and acoustic environment is complex, and offers many possibilities for our sensory systems to get it wrong. But, maybe getting it wrong is a way of making sure we get it right when it matters most – and the grizzly bear is left foraging for his berries.

This talk will focus on how we have evolved to experience a non-veridical world and the contextual fluidity of perceptual hearing.

Poppy Crum is a research scientist in the Department of Biomedical Engineering at Johns Hopkins Medical School. Her work investigates neural circuits in the auditory cortex involved in hearing in a complex acoustic environment. Dr. Crum completed her

PhD at the University of California Berkeley with an emphasis in neuroscience and psychoacoustics and her masters degree at McGill University with an emphasis in auditory scene analysis. She also holds a degree in violin performance through studies at the University of Iowa and McGill University. During this time she spent many hours involved in the recording arts as both a performer and engineer. In addition to her scientific research, Dr. Crum frequently presents lectures at national and international conferences that offer an understanding of psychoacoustic phenomena through an integration of the underlying anatomy and physiology of the auditory system.

**Saturday, March 20, 2010
1:30 pm**

National Science Foundation
4201 Wilson Blvd, Room 110
Arlington, VA 22230
(Ballston Metro stop)

Enter NSF from the corner of 9th N & N Stuart Streets.
www.nsf.gov/about/visit/

**FREE admission – Everyone welcome,
members and non-members**

For more information, call the 24-hour NCAS
Skeptic Line recording at 301-587-3827.
ncas@ncas.org
www.ncas.org



National Capital Area Skeptics Public Lecture Series

20/20 SINCE 1987




Shadow of a Doubt

The Monthly Calendar of the National Capital Area

MARCH
2010

Mark Your Calendars: Ray Hyman and D.J. Grothe

Be sure to join us at 1:30 p.m. on Saturday, April 24 at the National Science Foundation when NCAS presents its 2010 Philip J. Klass Award for outstanding contributions in critical thinking and scientific understanding to Ray Hyman, Professor Emeritus of Psychology at the University of Oregon. Hyman was a founding member of what is now the Committee for Skeptical Inquiry and is considered a leading skeptical expert regarding parapsychology. His scholarly publications and his consultations about psychic research (most notably for the U.S. Department of Defense) have enlightened both the public and public policy for decades. Special guest D.J. Grothe (president of the James Randi Educational Foundation, former host of the weekly radio show and podcast *Point of Inquiry*, and now host of the new podcast *For Good Reason*) will interview Hyman following presentation of the award. 

NCAS Night at the Theatre

From Orchids to Octopi: An Evolutionary Love Story

Please join us at the Bethesda Theatre (7719 Wisconsin Avenue) on Monday, March 22 at 7:30 p.m. for the world premier of a new play in which “Surprises erupt as a muralist’s work is derailed by hallucinations, pregnancy, and dinosaurs in this witty take on how we understand—or do not—the theory of evolution. Charles Darwin comments on it all.” Following the close of its world premiere shows in Bethesda, this NIH-commissioned play will head to the Boston area, so be sure to catch it while you can.

From Orchids to Octopi, written by award-winning playwright Melinda Lopez and produced by the Catalyst Collaborative at MIT in consultation with scientific experts from MIT and Harvard, is part of a celebration of the 150th anniversary of Darwin’s *On the Origin of Species*.

Following the performance, audience members are invited to join an open conversation with scientific experts and cast members.


Full-price tickets are \$22.75 including fees, but NCAS has a limited number of group-rate \$15 tickets. Please contact us at ncas@ncas.org or 301-587-3827 to reserve your seats.

One pair will be given away to a lucky NCAS member (sorry, offer limited to NCASers only!) at our March 20 event. More details at

<http://tinyurl.com/yzwdte8>

<http://ncas.org/DarwinPlay>

NCAS Board Elections Coming

Are you an NCAS member who wants to take a leadership role in the skeptics movement? The NCAS annual board of directors election is fast approaching. Send a bio sketch by email to ncas@ncas.org for the ballot by March 31. 

Latest Issue of *Skeptical Eye*

Be sure to check out the latest issue of the NCAS newsletter *Skeptical Eye*, available online at ncas.org/eye.html. (Webless? Give us a call at 301-587-3827 and we’ll mail you a hardcopy.) 