

# INsight

News from Notre Dame's **Department of Psychology**

## *The Art of Conversation*

When mom told you to make eye contact during conversation, you may have been getting more than a lesson in good manners.

Assistant Professor Kathleen Eberhard is using eye-tracking technology to explore how we move our eyes to gauge if the other person understands what we're saying. Her research is being driven by a theory of natural language use developed by Stanford University Professor Herbert Clark.

"He argues that conversation is like any joint cooperative social activity," says Eberhard, who is assisted in her lab by graduate student Sarah Boyd and several undergraduates. Such activities are undertaken to reach a common goal, whether that be to dance a waltz or play catch. In the case of conversation, the goal would be the successful sharing of information, meaning speakers should check for listener feedback at various points in their telling of a story.

Eberhard's project to investigate this hypothesis is an innovative one.

"As far as I know," she says, "while there've been a number of previous studies that used videotapes in face-to-face conversations, none of them have used an eye-tracker, and so they don't get a precise measurement of exactly where the speaker is looking."

Each trial of the experiment requires two subjects. The first reads a seven-page Brothers Grimm folktale and, after taking a multiple choice quiz on it, puts on head gear that, thanks to a harmless infrared beam, will track his or her eye movements while telling the story to the other subject. A video camera is also focused on the speaker so that Eberhard can follow eye



*Kathleen Eberhard adjusts the eye-tracking device used in the study.*

movements relative to his or her body language. The listener is asked to take the same quiz to ensure that he or she pays attention to the speaker.

Because the story is organized into very recognizable scenes and sub-scenes, Eberhard says one would expect the speaker to consider the information leading up to these "breaks" to be the most important ideas to convey.

"The question of interest is going to be: Given points where there are major breaks, are we seeing the speaker then look at the listener's face for evidence of feedback, and does the kind of feedback that the listener provides reflect [how crucial the detail is to] the story?"

Boyd has been going through the footage of the conversations, noting every listener reaction, from head nods to "m-hms," and transcribing all the dialogue between subjects. With such a thorough data set, Eberhard also wants to explore if there is any relation between where we look on a listener's face and the feedback

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## Conversation *(continued from page 1)*

we expect to receive, as well as if uttering an “uh” or “um” corresponds with a look away from the person to whom we’re talking.

Eberhard and her team of students presented their preliminary findings at the Third International Workshop on Language Production at Northwestern University in August. Among other results, they found that speakers looked at their listeners’ faces even more frequently than hypothesized—an average of once every three seconds—with approximately 81% of these looks occurring after they conveyed one of the story’s basic points. An average of 73% of the listeners’ acknowledgements of understanding

occurred when speakers looked at their faces.

“These findings support the proposal that, in a narrative dialogue, a primary purpose of a speaker’s look at the listener’s face is to obtain evidence that the listener understands the meaning of the utterance,” Eberhard says.

Once completed, she expects her team’s research to have a number of practical uses, ranging from the development of therapies for patients with brain damage to technological applications. A better idea of how and when we expect others to indicate they understand us would allow designers to get closer to creating computers that respond to dialogue more like humans.

## A Labor of Love

As director of the Department’s Laboratory for Psycho-oncology Research, Professor Thomas Merluzzi devotes his professional energy to helping people with cancer.

Not because he wanted to since he was 10 or because one particular class in college really grabbed his interest. In fact, after earning his Ph.D. in 1975, he spent the first part of his career researching social anxiety.

No, Merluzzi has dedicated himself to finding ways for people to cope with cancer because the disease has affected him, as it does millions of others, in a very personal way.

“You don’t have to be Freud to figure out where [my interest comes from],” says Merluzzi, whose first wife and mother both died of cancer, his wife of breast cancer when she was 38. “It’s not some subconscious thing for me; it’s an active willingness to participate in the process of trying to work on this disease from a psychological perspective.”

The strength and hope with which these two women approached their prognosis made a lasting impression on him.

“It occurred to me that there was something really powerful happening psychologically,” Merluzzi says of the time he spent caring for his wife, “and perhaps spiritually, that really made

surviving this dreadful disease and its treatments something that people could actually engage in.”

Merluzzi decided to give up his anxiety research and study the psychological aspects of living with cancer, but he soon discovered that research in the field was taking place largely in the absence of a theoretical framework. So he and his colleagues identified theories developed in other areas of study that they thought would be appropriate and began applying them in their work.

What resulted over the course of approximately five years of research was the Cancer Behavior Inventory (CBI), a paper and pencil questionnaire designed to measure the self-efficacy, or confidence, that people with cancer have in their abilities to cope with the disease. Now in its second version, the CBI has been translated into roughly 10 languages.

Using the CBI, Merluzzi found that, after controlling for the presence of metastatic disease, cancer patients with high or moderate degrees of confidence in their coping abilities lived longer than those with low confidence. Exhibiting this positive attitude, however, doesn’t mean those patients don’t have their share of bad days.

“It’s more the bouncing back that

I’m talking about rather than the fact that there are no trials and tribulations,” Merluzzi says. “It’s what you do with it.”

His lab recently received a two-year grant from the National Cancer Institute to study whether the instruments used in cancer research are equally effective in assessing coping and quality of life in African-American and Caucasian-American patients.

Noting that mortality rates are often higher for African-Americans, Merluzzi says his task is to explore possible explanations that can’t be cast in medical terms.

“We’re at the psychological end of that health disparities research, saying: ‘Are these instruments [such as the CBI] measuring the same thing? Are people looking at coping in the same way?’ If they aren’t, then perhaps what we need to do is become more oriented towards finding out what the experience is of African-American patients.”

As always, Merluzzi’s inspiration, the two courageous women he watched fight the disease, is never far from his mind.

“I think when you have something like that that’s driving your work, there’s a passion for it that is a little different than if you’re doing research in an area that has intellectual interest, but there isn’t that kind of passion.”

## Incoming Graduate Students

The Department of Psychology offers doctoral programs in cognitive, counseling, developmental, and quantitative psychology. We would like to welcome all the graduate students who have joined these programs this fall.

### Cognitive

**Adam Biggs**—B.A., McKendree College (2005)

**Gregory J. Davis**—B.A., University of Texas at San Antonio (2006); B.S., Louisiana State University (1996)

**Janine M. Jackson**—B.A., Western Montana College (2006)

**Mark R. Williams**—B.A., Dartmouth College (2005)

### Counseling

**Rae Lundy**—B.A., Xavier University of Louisiana (2006)

**Diane Macready**—B.A., Susquehanna University (2006)

**Errol Philip**—B.A., University of Melbourne (2005)

**Rebecca Schweers**—B.A., University of Notre Dame (2004)

### Developmental

**Andrea Christensen**—B.A., University of Notre Dame (2006)

**Kalsea J. Koss**—B.S., University of Wisconsin-Madison (2006)

**Ryan Kreager**—B.A., Franciscan University of Steubenville (2006); A.A., Holy Cross College (2003)

**Mary Wagner**—B.S., Saint Mary-of-the-Woods College (2006)

### Quantitative

**Zhenqiu (Laura) Lu**—M.A., Temple University (2006); B.S., Beijing Institute of Technology (1996)

**Melissa Mitchell**—B.S., University of Detroit Mercy (2006)

**Stephen J. Tueller**—B.S., University of Idaho (2004)

## Monroe Delves Into the Intricacies of Depression



Scott Monroe needs only to see a television commercial for a depression drug to judge how much society's perception of the syndrome has changed.

"Decades ago depression was a very different beast," says Monroe, who left the University of Oregon to join the Notre Dame faculty this past spring as Warren Foundation Professor of Psychology. "It was more removed from public consciousness. It was more severe in its clinical

presentation.

"Today it seems as if every person in America has a personal understanding of the symptoms and criteria of depression."

Society may be growing more familiar with the syndrome, but actual understanding is still a long way off.

"We don't know what causes depression," he says.

Monroe, who has researched depression since the mid-1970s, initially studied possible genetic causes. He decided to study the impact of stressful life events after he realized that, even for patients with a genetic predisposition, nothing explained why depression struck when it did. Behind his quest is the notion that different causes merit different forms of treatment and that better understanding the causes of depression will lead to enhanced treatments.

In research he began at the University of Pittsburgh and continued at Oregon, working with a colleague from Stanford, Monroe employs a meticulous patient interview process that culls the events that occurred before depression's onset. A recently completed project sponsored by the National Institute of Mental Health reports on this research and is titled "Life Stress and Cognitive Biases in Major Depression."

Monroe's research has introduced him to a fascinating spectrum of patients and patient experiences. Hundreds of heart-rending interviews have taught him that reactions to adversity have many variations.

For those who experience recurring episodes of depression, Monroe's research indicates that the initial bout may be associated with a major life event, though later episodes can arrive seemingly unprovoked by circumstance.

"Sometimes, people who experience multiple episodes of depression just wake up in the morning and know something has changed," he says.

Then there are people "that just get the psychological wind knocked out of them." While a syndrome like depression is often likened to a disease that calls for long-term preventative medication, Monroe is exploring whether treatment should be developed that understands the condition as something more temporary.

His move to Notre Dame will provide him with a more streamlined method of conducting research, as he begins to work with patients at nearby Madison Center. The research Monroe conducted in Oregon drew information from patients being treated at Stanford, requiring him to interact with them via teleconference. The planned growth of the Department attracted him to Notre Dame, as did its commitment to

## New ADHD Intervention Yields Promising Results

Navigating the social and emotional landscape of adolescence can be challenging for even the most adept young teen.

But for children who suffer from Attention Deficit Hyperactivity Disorder, or ADHD, even ordinary routines like getting up and getting ready for school can be a daily struggle.

“Attention is a complex function,” explains Brad Gibson, associate professor of psychology. “It’s not just one ability, but a host of abilities are involved.”

Gibson is working on a study of adolescent ADHD sufferers with Associate Professor Dawn Gondoli and Professor Julie Braungart-Rieker.

“ADHD is thought to be an impairment of the brain’s executive functioning, possibly the working memory,” Gibson says. “For people with ADHD, the ability to hold information temporarily in mind is especially vulnerable to distraction. So organizing behavior across time—like remembering the series of things to do in order to get ready in the morning—requires the ability to suppress distraction,

## Moral Psychology Lab Explores Cheating, Video Game Playing

It’s about as reliable as the sun setting in the west or long acceptance speeches at the Oscars: kids are going to butt heads with their teachers and parents.

For every educator who’s reminded her class to keep their eyes on their own papers, there’s a dad who’s said “Why don’t you give the Xbox a break?”

These common points of contention—cheating and video game playing—are the subjects of two studies in the Department’s Moral Psychology Lab, where undergraduates play a large role in conducting research.

“At the beginning of the semester, undergrads are given choices about what research they would like to participate in,” says Associate Professor Darcia Narváez, the lab’s director. “They can take part in an ongoing project or propose a new project related to moral cognition or moral development.”

According to Duke University’s Center for Academic Integrity, cheating is a widespread problem on college campuses nationwide. Despite its prevalence and negative effect on the academic environment, however, it’s an



Students in Narváez’s lab

issue that has yet to be studied in great depth.

“Little psychological research has been done in this area beyond surveying reasons for cheating,” Narváez says. Her team is examining whether students recognize cheating behavior as cheating, as well as if one’s motive to cheat makes a difference in the act being categorized as such.

While this project is in its early stages, Narváez is already preparing to present results from the video game study—specifically how games’ content affects players’ behavior—at the Association for Psychological Science Conference.

“Our team was enthused about the experiment,” says junior Carl MacMichael, who programmed the games used in the study, “because our study would focus not only on the aggression theoretically produced by violent video games, but also on the potential for positive affect derived from ‘prosocial’ games, which seems to be rarely taken into account when it comes to video game studies.”

Using the role-playing video game *Neverwinter Nights*, the research team randomly assigned Notre Dame undergraduates to either a violent or prosocial (saving dying people with medicine) gaming experience. The participants played the game for 10 minutes, recorded their scores, and then were asked to complete three stories.

An earlier study conducted by Brad Bushman and Craig Anderson at Iowa State, which this project aimed to replicate and extend, showed how playing violent video games fosters a “hostile attribution bias,” increasing violent feelings, thoughts, and actions. The goal here was to see if playing a prosocial game has a “prosocial

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and kids with ADHD have trouble with that.”

Based on a similar study conducted in Sweden, which showed that a person’s working memory could be strengthened, Gibson and his colleagues administered a memory exercise to a group of students from a local middle school who had been diagnosed as having ADHD and who were taking medication for it.

Every day for five weeks, these middle school students worked for 40 minutes on a specially-designed computer program involving visual-spatial and verbal memory games. Students had to remember the sequence of a series of numbers or images, for instance, and replicate that sequence.

The results were encouraging.

“We knew we could measure and isolate the working memory, but it was not entirely clear if we could change it,” Gibson says. “But after this training, the majority of students did report improvements in behavior and symptoms of their ADHD, are doing more and can handle more. Their parents also noticed changes and improvements.”

Gibson reports that areas like reading comprehension also improved, allowing students to work at higher levels and maintain their new-found abilities.

Like many research projects, the results shed light on an issue, but simultaneously presented additional questions.

“The range of behaviors that can be affected by the working memory training will be the subject of future studies,” according to Gibson.

If emotion regulation is also affected by the working memory, then, with training, it is possible that the ability to control impulses could be heightened in children with ADHD. Lack of impulse control is often a symptom of the disorder.

An unlikely group also has shown interest in the results of this experiment: the U.S. Army. Men and women who have ADHD are prohibited from taking stimulant medication once they have enlisted. The results of this memory training provide the potential for non-medical treatment of ADHD, opening additional doors not only for children and adolescents, but also for adults.

## Department Welcomes New Faculty

**At the start of the 2006–2007 academic year, three scholars, including a familiar face at Notre Dame, joined the Department of Psychology’s faculty. All three received their Ph.D.s from the University of Wisconsin-Madison.**



**Gerald Haeffel**, who studies cognition and emotion, joins the Department as an assistant professor. He recently completed a year at Yale, where he was a postdoctoral fellow in the Child Study Center. Haeffel’s research focuses on the explicit and implicit cognitive processes that contribute to the development, maintenance, and remission of depression. He has published his work in a variety of journals, including *Behaviour Research and Therapy*, *Cognition & Emotion*, *Cognitive Therapy and Research*, and *Emotion*. As he explores the mind-mood connection, Haeffel hopes his research will lead to improved treatment and prevention methods for depression sufferers, a goal shared by Scott Monroe, who came to Notre Dame in Spring 2006 (see related story on page 3).

A member of the Department’s faculty from 1983–1991, **Dan Lapsley** returns to Notre Dame as a professor of psychology and a fellow of the Institute for Educational Initiatives. Most recently, he served as chairperson of the Department of Educational Psychology at Ball State University, where he was a full professor. Lapsley’s research has focused on a number of foundational problems in adolescent development, including issues related to personality, morality, self, ego, identity, and risk behavior. He is the author or editor of four books in the area of moral psychology and has written extensively on moral stage theory as well as moral and character education. Along with Associate Professor Darcia Narváez, his wife, he is attempting to frame a social cognitive theory of the moral personality.



A specialist in cognitive development, Assistant Professor **Nicole McNeil** is also a fellow of the Institute for Educational Initiatives. Like her husband, Haeffel, she comes to Notre Dame from Yale, where she was a postdoctoral research associate and a project director at the Yale Center for the Psychology of Abilities, Competencies, and Expertise.

With an interest in the mechanisms that propel and constrain the development of problem-solving, quantitative reasoning, and symbolic understanding, McNeil has focused much of her research on the factors that affect how children and adults learn math. Her goal is to contribute to our understanding of theoretical issues related to the construction and organization of knowledge, as well as practical issues related to learning and instruction. McNeil’s work has been published in a number of journals, including *Child Development*, *Cognition and Instruction*, *Cognitive Science*, and the *Journal of Cognition and Development*.

## Children of Teenage Moms Yield Rich Data, Hopeful Findings

Twenty years ago, John Borkowski and Thomas Whitman outlined a research project on adolescent parenting that reflected a hope.

“We wanted to know how to intervene early in the lives of children at risk for developmental delays and their teenage mothers in order to prevent long-term educational and emotional delays. We never thought we’d be going this long,” says Borkowski, Andrew J. McKenna Family Professor of Psychology and co-investigator on a project that has captured the developmental stories of infants born to adolescent mothers.

The oldest children in the project are now 18 years of age. Their once-teenage mothers are around 35, and some are already grandmothers.

“We and our graduate students have stumbled onto a lot of child abuse and neglect we didn’t know would be there,” Borkowski says. “There is also an unusual amount of violence in the lives of children separate from everything else. We didn’t think we would be discovering so much evidence of depression or conduct disorders. Now, it’s a major focus of our work.”

Aided by colleague Scott Maxwell, Matthew A. Fitzsimons Professor of Psychology, Borkowski and Whitman, a professor of psychology, have worked with more than 20 graduate

students, many who themselves are now teaching at research institutions. A book on recent research, titled *Risk and Resilience: Adolescent Mothers and Their Children Grow Up*, will be published next year and is the accompanying volume to *Interwoven Lives: Adolescent Mothers and Their Children*, published in 2001.

Notre Dame researchers, and another group in South Carolina, gather information from both mothers and their adolescent children. Because this project is observational, they don’t intervene in the direction the lives of these mothers and children will take. The findings instead inform public policy and the development of intervention programs.

Two decades of data have identified the risk factors that handicap children, proving beyond argument that help is needed early and continuously. The data also provide some unexpected, even hopeful, findings, particularly about elements that “protect” children from the worst-case scenarios:

- When fathers remain involved in their children’s lives, and almost 50 percent do, their children are less aggressive and perform better in reading and math.
- Mothers who identified themselves as religious—almost half—have higher self-esteem and better job

In support of his research aimed at understanding and preventing child abuse, Borkowski has been awarded more than \$16 million in grants over the past five years. He was recognized with the University’s Research Achievement Award at the 2006 President’s Dinner.

prospects. They suffer less from depression and are less likely to engage in child abuse. The children of religious mothers showed more positive emotional growth and higher academic achievement.

- Churches and organized sports groups serve as buffers between children and their negative surroundings.

The discovery of the importance of religion is particularly helpful, Borkowski says, because it suggests a natural fit between churches and future intervention programs. A cooperative effort among these researchers, working with E. Mark Cummings’ program on marital conflict (see related story on page 7) and the Institute for Latino Studies, aims to forge just such a prevention program.

*\*Story contributed by ND Works*

### Moral Psychology Lab *continued from page 4*

attribution bias,” increasing positive story completions.

“Our initial results suggest that playing a game where help is offered has a priming effect that leads to more prosocial reactions,” Narváez says. “However, in every condition (violent, prosocial, neutral) participants had on average more violent responses, suggesting either a high baseline for

aggression or that just playing a video game primes for a hostile attribution bias. The prosocial condition may reorient aggressive tendencies in a more positive direction.”

The study was highlighted in a television spot that aired during NBC’s coverage of the November 4 football game against North Carolina. To view the spot, visit <http://cee.nd.edu>.

*Narváez and Dan Lapsley, who joined the Department in Fall 2006, recently coauthored a chapter on character education for the sixth edition of the Handbook of Child Psychology, the definitive reference and classic resource in child development. It marks the first time in the handbook’s 60-year history that character education has been included.*

## Research Application Aims for Happy Couples, Happy Kids



Since the 1980s, E. Mark Cummings has been building rock-solid evidence that the way parents fight affects the well-being of their children.

Two recently published longitudinal studies describe how marital conflict not only damages a child's emotional security but leads to adjustment problems. The latest studies show even teenagers, who may seem tuned out, are tuned in to and suffer from parental conflict.

"If parents realized how much their conflict affects the kids, it may motivate them to change," says Cummings, Notre Dame Professor of Psychology. "And the change might help their relationship. The same things that help kids help parents."

Cummings' message got broad coverage earlier this year, when stories on his latest findings were done by CBS, Fox, sundry newspapers in the United States, and an assortment of news agencies around the world.

The findings of Cummings and his co-researchers are noteworthy because they tend to discredit conventional wisdom, which suggests fighting doesn't affect children if it's done behind closed doors. He has shown that just because children aren't present for a hurtful conflict doesn't mean they're unaware of it.

And though many parents assume a child's well-being is formed by the quality of the parent-child relationship, the quality of the marital relationship also has a deep impact. As for parents who stay unhappily married for the sake of the children, their ongoing misery can actually burden their kids.

Projects developed from Cummings' research, created and directed by current and former graduate students, are forging a model for helping parents learn how to resolve disagreements in a constructive manner.

"Happy Couples for Happy Kids" engages several undergraduates, graduates, and post-graduates in developing this model. Brad Faircloth, a postdoctoral fellow and project director, conceived the education component as part of his doctoral dissertation. Jennifer Cummings, a clinical psychologist, research co-investigator, and Mark Cummings' wife, co-directs. Providing hands-on assistance for families, "Happy Couples for Happy Kids" is also a rigorously designed research project that collects data about parent emotions and behaviors.

In the program, parent-volunteers who have been recruited from a cross-section of Northern Indiana communities sign on for an assessment and four education sessions. The project team works with them to understand

destructive conflict—anger, yelling, and physical violence. Parents learn about how much more attuned their children are to their marital problems than they might have thought. They then are coached on adopting constructive conflict resolution skills, such as expressing support, problem-solving, and compromise.

Volunteers range from those who want to learn better parenting skills to those who know they're in trouble; their children are from four to eight years old. The project focuses on families with younger children in hopes of preventing long-term problems, Faircloth explains.

Mark Cummings' research has shown that marital discord isn't something children get used to; rather, it eats at them.

"Children involve themselves," says graduate student Patricia Mitchell, whose work focuses on helping children understand their emotions and ways they can cope with their parents' conflict. "We teach them to move away from the situation. Although they might be upset by it, we teach them that it's not their problem to fix."

Concurrent with the instruction sessions, the research team gathers evidence of positive outcomes. Findings demonstrate improvement in parents' conflict management abilities and improvement in the emotional state of the children. As the project directors collect this data, they move toward creating an education program that can be disseminated throughout communities and even internationally.

*\*Story contributed by ND Works*

### Intricacies of Depression

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graduate education that emphasizes scientific research as a complement to therapy training.

Currently the president-elect of the Society for Research in Psychopathology, Monroe has written or co-written more than 70 articles, has served as an associate editor of the *Journal of Abnormal Psychology* and the *Psychological Bulletin*, and recently completed a term as a member of the National Institutes of Health grant review panel on Adult Psychopathology and Disorders of Aging.

*\*Story contributed by ND Works*

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