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Profiles

Ed Wasserman, College of Liberal Arts and Sciences

Don't let those boisterous, busy birds in the parking garage fool you. Pigeons are smarter than you might think. Just ask Ed Wasserman, Stuit Professor of Experimental Psychology in the University of Iowa College of Liberal Arts and Sciences.

In his efforts to understand the differences between human and animal behavior and cognition, he has discovered that pigeons and baboons are capable of levels of reasoning that only humans were thought to possess.

*Wasserman, a UI professor since 1972, sat down with **fyi** to discuss his research, along with a few personal details: his "exotic" lunch fare, menagerie of childhood pets, and affinity for race cars.*



Ed Wasserman, Stuit Professor of Experimental Psychology in the UI College of Liberal Arts and Sciences. Photo by Tom Jorgensen.

How did you become interested in psychology?

I was a physics major, but I didn't enjoy it too much. So I made a bold move: I declared an open major. I took three or four psychology courses; one of them was on learning. I had a fine teacher who was interested in both human and animal

learning, and it was captivating. It convinced me of two things: that behavior was interesting, and that it could be scientifically studied. Those two ideas stuck. I try to communicate that message in every course I teach.

A few years ago, you conducted a study on baboons that received a significant amount of media coverage. What did you learn and why did your discovery attract so much attention?

There are many proclaimed disparities between humans and other animals. With each one, a challenge is laid forth. More than 100 years ago, it was asserted that only humans—but not animals—were capable of higher-level cognition. One such claim revolved around learning relations, like larger/smaller or outside/inside or same/different. Research has now proven that animals *can* tell whether two items are the same or different, just as people can. We took this matter a step further, posing the question: Can animals learn the relations *between* relations? For example, the relation between A and A and between B and B is the same. So too is the relation between A and B and between C and D. Same equals same and different equals different. But the relation between A and A and between C and D is different. Using touch screens and visual images, we found that baboons do possess this level of cognition. The newsworthiness of our experiment was that baboons *are* capable of higher-order relational learning. Understanding the relation between relations was previously thought to be a kind of cognition that set humans apart from all other animals.

And in your latest study, you've discovered that pigeons, too, are capable of this?

Yes, my colleague Bob Cook of Tufts University and I repeated the experiment with pigeons. They too learned to peck computer screens to indicate which array involved the same relationship they had previously seen. The discovery that pigeons are also capable of this higher-order relational learning affirmed our belief that we've really established something of broad evolutionary significance.

Why is this type of research important?

Our research hopes to determine how we're the same or different from other species. We've learned that animals are smart. They come equipped with complex, modifiable nervous systems that take into account the richness and complexity of the world in which they live. Why we would

think that humans alone have such capabilities is a peculiar arrogance. What we're really trying to understand is the extent to which cognition is general throughout the animal kingdom. The evidence constantly surprises us, suggesting that we're not alone in many of these abilities. That's why I really enjoy studying the animals, because the smarter we discover them to be, the more humble we should be.

What do you enjoy most about your work and what do you find most challenging?

I'm very enthusiastic about my research, and I enjoy working with my students, particularly in a laboratory setting, which allows more one-on-one instruction and collaboration than a classroom setting does. We're designing experiments, analyzing data, drawing graphs, interpreting results, and facing the slings and arrows of the publication and grant-getting process. The biggest challenge is sustaining research funding. Nowadays, only 5 to 10 percent of grant applications are successful. Even that may be overestimating.

What's a typical day like for you?

I work out at North Dodge Athletic Club for an hour and fifteen minutes each morning. I'm home by 7 and to the office by 9. I teach in the mornings and afternoons on Tuesdays and Thursdays. Lunch is in my office, with such exotic delicacies as an apple, a cup of yogurt, and V8. The other hours are spent grading and providing feedback on student papers and projects; checking the laboratory; touching base with Great Ape Trust in Des Moines, where I'm a collaborating scientist, to see how the bonobos are doing; and keeping in touch with colleagues in Tokyo, Boston, and France.

What would people be surprised to know about you?

I believe people find it peculiar that I enjoy both auto racing and classical music. That juxtaposition is enough to send their heads spinning. I am also a political

A few of my favorite things ...

Food:
strawberries

Drink:
Cosmopolitan

Lunch spot:
my office

Movie: *Body Heat*

TV: *Hardball with Chris Matthews*

Music:
classical,
especially by
composer
Sergei
Prokofiev

Web site:
New York
Times

junkie. I find that all of the elements of sports and melodrama come together in politics.

What did you want to be as a child?

I always loved animals. In the course of growing up I had turtles, fish, frogs, lizards, ducks, chickens, parakeets, and canaries. You'll notice the distinct lack of fur. My mother is a fur phobic, so we couldn't have any animals around with fur. Perhaps it's not surprising that I've done so much work with pigeons.

by Nicole Riehl

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