

Presidential Column: Reaching for Relevance

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Twenty-five years ago, when I was in graduate school, my advisor received a phone call from a newspaper reporter. My advisor had just received a large grant from the National Institute of Mental Health to support his basic research on language comprehension and the reporter, alerted by the university's press bureau, had developed his own curiosity surrounding what language comprehension had to do with mental health. My advisor adeptly addressed the conundrum, ably explaining the critical importance of basic research, and we all went back to the lab.

A couple of years later, when I was writing my own first NIH grant, I consulted my senior colleagues about what I should write for those last two lines of the face-page description — the lines that specifically request the applicant to “mak[e] reference to the health relatedness of the project (i.e., the relevance to the mission of the agency).” My senior colleagues, pioneers and mainstays of the cognitive revolution, persons for whom a fifteen millisecond effect could adjudicate a complex theory, explained simply that I need only make allusion to the potential for future application. I followed their sage advice, and to my great fortune I was awarded the grant.

As we all know, times have changed. Psychological scientists feel the crunch of funding cuts, the burden of congressional accountability, the threat of prioritizing applied over basic research. Therefore, psychological scientists are now reaching for relevance — often, it appears, to the point of gratuity. Nowhere is this more apparent than in recent press releases issued to promote publication of basic scientific research. Consider the following three examples.

Visual Object Recognition

This nationally distributed press release began with the following claims: “Neuroscientists at [University A] have discovered one way that humans naturally recognize objects. The work, reported in [Journal X] may have implications for artificial vision systems and provide insight into problems in visual recognition that are often associated with dyslexia and autism.” Do autistics¹ have “problems with visual object recognition?” Nothing could be farther from the truth.

A superior ability to disembed perceptually a visual object from its complex visual background distinguishes autistics from non-autistics three times more powerfully than the most studied aspect of social cognition, “theory of mind” (Pellicano et al., 2006). A heightened orientation to visual objects during the first year of life identifies infants who will subsequently be diagnosed as autistic from those whose development will be either typical or atypical in other ways (Baranek, 1999). Autistics of all ages can scan a complex array for a target object demonstrably faster than non-autistics, with dramatically less interference from the number of and similarity with distractors (O’Riordan et al., 2001; 2004; O’Riordan & Plaisted, 2001; Plaisted et al., 1998). Superiority in visual object recognition is a hallmark, not a deficit, of autism (Dakin & Frith, 2005; Motttron et al., 2006).

Socio-Emotional Attachment

This nationally circulated press release, titled, “Love May Be a Lateralized Brain Function, Like Speech; Links Seen to Stalking, Suicide, Clinical Depression, Even Autism” began by stating, “You just can’t tell where you might find love these days. A team led by a neuroscientist, an anthropologist and a social psychologist found love-related neurophysiological systems inside a magnetic resonance imaging machine. They detected quantifiable love responses in the brains of 17 young men and women who each described themselves as being newly and madly in love.”

While also claiming that their results demonstrated that “romantic love was more powerful than sex” and that their study explained “the second half of Darwin’s puzzle,” these authors, under the subheading “fMRI confirms major predictions, yields ‘remarkable implications’ – autism link” claimed that “our data even may be relevant to some forms of autism. Some people with autism don’t understand or experience any sort of emotional attachment or romantic love.”

The scientific fact is, as my colleagues and I protested in a letter published in *Science*, in response to a mu-opioid knockout mouse model also gratuitously claiming to represent the autistic phenotype, every laboratory experiment to empirically quantify autistics’ socio-emotional attachment has demonstrated unambiguously that autistic children are as securely attached to their mothers as are their peers (Gernsbacher et al., 2005). Therefore, such a claim — that some autistics don’t understand or experience *any sort of emotional attachment* — epitomizes hyperbole.

Economic Game Theory: Long Distance

This nationally circulated press release heralding “a new milestone for neuroscience” reported the results of simultaneous fMRI scanning, across two university campuses, achieved by participants on each campus interacting long distance while playing an economic game. The research was billed as bearing “implications for further understanding the evolution of the brain and social behavior,” and, in vogue, as leading to “new insights” into autism (as well as schizophrenia and borderline personality disorder), which “may ultimately guide new treatments.”

Exactly what aspect of the experiment was relevant to autism? The fluidity with which the participants accomplished their long-distance interaction? No; autistics thrive on just the type of long-distance, internet-based communication the experiment showcased. Indeed, almost a decade ago Bloom (1997) predicted that “the impact of the Internet on autistics may one day be compared in magnitude to the spread of sign language among the Deaf,” and every indication suggests that Bloom’s prediction was right on the mark.

Was the relevance the rapidity with which the participants developed insight about whom to trust (despite the fact that “the game is anonymous, and it is further assumed that the players will never meet each other, in order to keep other artifacts of social interaction from coming into play”)? No; one of the earliest descriptions of autistics characterized accurately their perceptiveness and keen eye for trust. Asperger (1944) wrote, “Just as these children observe themselves to a high degree, so they also often have surprisingly accurate and mature observations about people in their environment. They know who means well with them and who does not, even when he feigns differently.” Asperger’s characterization most likely explains why autistics are rarely fooled by experimenters’ efforts to fake distress in a

laboratory setting.

The above examples are just three of a bevy I've collected over the past couple of years. It's possible that these mischaracterizations are the workings of zealous university press agents, and my intent is surely not to single out these three research groups; they simply illustrate a trend.

Admittedly, I have a dog in this fight – a dog that could well be apparent through all my presidential columns. I am mother to an incredibly wonderful, light-of-my-life, engaging and eccentric autistic son. I am actively involved in several federally funded projects empirically investigating various aspects of autism. I also believe strongly that whenever we, as researchers, write about autistics or Jews or women, we must be cognizant that we are discussing and describing members of our society.

Indeed, I submit that whenever we write for the public, we must be more not less circumspect. We can't depend on stereotype, a Hollywood movie, or a casual conversation with a colleague to provide us with knowledge of the phenotypes that NIH cares about. Instead, we must research the implication of our findings with the same rigor that we research our basic phenomena. Relevance is a prized commodity these days, but let's not buy relevance at the cost of scientific inaccuracy and societal stigma.

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1 For background on my respectful use of the term "autistic" rather than "person with autism," please refer to Sinclair's (1999) essay "Why I Dislike Person-First Language" (http://web.syr.edu/~jisincla/person_first.htm).