Editorial

For a little more than a year now, new submissions to *Perception & Psychophysics* have been arriving by email at <pandp@msu.edu>, *P&P*'s official electronic mailing address at Michigan State University. There *P&P*'s extremely able Editorial Assistant, Jennifer Wood, puts them into process and lets me know that an Action Editor must be assigned. I choose from among seven people: me, or one of the Associate Editors: Richard Abrams, Jim Hoffman, Mari Reiss Jones, Mark Pitt, Todd Maddox, and Allison Sekuler. Now that the first issue of *P&P* with our names on the masthead is being published, it is time to make a public statement about our goals for the journal and our approach to the job of editing. Much of what could be said is very routine, since the mechanics of operation are much the same from one journal and one editorship to another. This raises the question of what's worth putting into print?

In preparing this editorial, I began by reading those of the editorials written by the two preceding editors. At one point Neil Macmillan spoke of his publication history, in which *Perception & Psychophysics* has a prominent place. Like Macmillan, my first publication as a cognitive psychologist appeared in *P&P*. Unlike Macmillan, I haven't published in *P&P* for many years. This seems very odd, given that I am now taking over Neal's place as Editor of this journal, but there are reasons. In some cases my work did not seem topically appropriate. In other cases, though the topic seemed to fit, but my collaborators and I nevertheless chose another journal—*JEP: Learning, Memory, and Cognition* and *JEP: General* for long multi-experiment papers on Stroop interference and the automaticity of word recognition, *Developmental Psychology* for a study of the development of early versus late selection in visual attention. Finally, there were cases in which *P&P* was topically appropriate but did not seem methodologically appropriate—an ERP study of the functional anatomy of word recognition and an fMRI study of the functional anatomy of visual attention both went to *Journal of Cognitive Neuroscience*.

These judgments about submitting papers to journals from my own recent past raise three issues that I would like to address: What IS an appropriate topic for *P&P*, why would someone choose any other journal for a topically appropriate piece of work, and where should *P&P* position itself with respect to the rapid ascendance of cognitive neuroscience in the study of perception?

What Is an Appropriate Topic for *P&P*?

In his editorial published in 1994, then-new editor Myron Braunstein said that the journal's topical coverage was "exactly as the title indicates." He went on to explain that "All areas of perception are included, ranging from the earliest processes in a sensory system that can be studied by psychophysical methods to areas such as speech perception and object recognition. All rigorous scientific approaches are welcome, from basic psychophysics to computational to ecological."

When Neil Macmillan took over in 1999, he resurrected Clifford Morgan's original statement of the journal's coverage, which was made in 1966. Macmillan said that *P&P* would "provide an outlet for excellent research articles on perception and psychophysics in the broadest sense." His description of appropriate topic areas began with the ones originally listed by Morgan: sensory processes, psychophysics, perception, and judgment. To Morgan's list he added the study of attention, which he said was accounting for 15–20% of new submissions at that time.

There is a certain amount of consistency here, suggesting a longstanding historical precedent for what's an appropriate topic for a *P&P* paper: sensory processes, perceptual experience and perceptual judgments, including psychophysics per se, perceptual identification and recognition, and the selective processes of attention. There is never any specific mention of one sensory modality being more appropriate than another, so all of the senses are seen to fall within *P&P*'s purview.

That's the theory. How have actual submissions compared against these "mission statements"? The categorical breakdown for 2000 and 2001, according to information I received as a candidate for the editorship, went something like this: 35% visual perception, 23% attention, including a heavy dose of visual search, 15% audition, 10% time perception and related forms of perceptual cognition, 10% psychophysics, and 7% studies of other sensory systems—haptics, somatosensation, the vestibular system, the chemical senses. So in the recent past *P&P* has been a heavily visual journal, the importance of studies of attention noted by Macmillan has continued attention has continued to be important, and topics neither visual nor auditory have gotten rather short shrift.

This pattern reflects large parts of the field—which is heavily biased towards vision as a modality and which pays lots of attention to the processes of attention—and it reflects the biases in my own research. Most of the stimuli I present to subjects research participants are visual, and I'm often interested in processes of selective attention and/or executive control.

However, this pattern does not reflect the human being. While specific breakdowns might be pretty hard to establish for sure, I'd guess that the environmental information on which we rely is considerably more than 15% auditory (especially when speech is taken into account) and I'd guess that kinesthesia and other somatosensory

information including balance, plus the chemical senses, make up substantially more than 7% of our information processing. Indeed, I'm typing this editorial (somatosensory feedback as well as visual) while finishing my lunch, which I've rather enjoyed (taste and smell, but also vision and touch). So while my own expertise lies in the domains of visual perception and attention that occupy so much of the journal, I would like to see increased visibility for other domains, and for interactions and integrations across domains. For example, on the argument that one of the major functional constraints on the visual system is that it serves the execution of action, there should be a place for studies that focus on integration of visual information with somatosensory information, auditory information, and/or motor output. There may be self-serving connections here to my own recent research interests in the acquisition of expertise in sensorimotor skills—but I believe there is more than self-service going on. *P&P* can continue to succeed as a journal that caters in large part to the study of visual processes and selective attention. But I would like to pay greater homage both to the journal's historical mission and to the nature of the human being as a largely but not entirely visual animal. So my the Associate Editors and I will encourage a wide range of papers on a wide range of topics. If that means that sometimes we need to learn something very new to us just to understand a paper and a set of reviews, so be it. Since we began receiving submissions in January of 2003, I have already learned more about somatosensation, and also about the vestibular system, than I had learned before in my entire career. I suppose that's small comfort to the authors who no doubt feel that I still don't understand their work very well, but hopefully I will continue to learn.

Who Should Choose *P&P*?

Macmillan's editorial addressed another theme that struck me—he said that papers had grown longer and that he wanted to put them “on a diet”. However, comparing the page lengths of articles in that same issue of 1999 with articles in the August and October issues of 2001—an exercise I did during the editorial search—doesn't show much change in length. Maybe this is because there is only so short a paper can be and still, as Macmillan put it so succinctly and elegantly, “report the finding, provide the best possible account of it, and relate it to past work.”

So why should Macmillan have been concerned to begin with? I suspect that his concern was conceptual, aimed at goals rather than page lengths per se. He said “I believe there has been a trend away from data articles that make a theoretical point toward theoretical papers illustrated by data.” I believe that the distinction made here is very real. *Psychological Review* and *Cognitive Psychology* are journals that are explicitly devoted to theoretical papers illustrated by data. *P&P* and its sister journal *Memory & Cognition* are intended supposed to be devoted to data articles that make a theoretical point. *JEP: Human Perception and Performance* lies somewhere in between, and this intermediate status is reflected both in its editorial policies (including those that characterized it while I was editor) and the length of its articles (shorter than most *Psychological Review* and *Cognitive Psychology* articles but longer than most *P&P* articles). The Associate Editors and I hope to uphold and develop the idea that a *P&P* paper need not necessarily be long, but it must make a theoretical point, and the related idea that it need not necessarily present lots of experiments, but it must present enough experimental evidence so that its data support “the best possible account” in light of its the findings’ “relation “to past work.”

The utility of dustbowl empiricism is long over in cognitive science, but not the utility of relying on data to establish a theoretical point in a rigorous manner and explain nor the utility of explaining that point in an efficient way. We will try our best to help authors achieve these goals. Papers less theoretically analytic than Macmillan's standard would will need to go elsewhere, as would will papers more expansive, more discursive, or further from the data in their theoretical destinations and evidentiary support.

What About Cognitive Neuroscience?

When I began as editor at *JEP: Human Perception and Performance* I had as one goal to try to increase the visibility of cognitive-neuroscientific approaches and data in the pages of that journal. I still believe that cognitive neuroscience is an important direction in which great progress will be made—is being made—in understanding the human mind, and I'm personally committed to it. Just as the utility of dustbowl empiricism is over, so is the hegemony of purely functionalist analysis. Here I'm talking about functionalism in Putnam's sense, focusing on abstract intelligence in the absence of a concern for the constraints imposed by its physical embodiment. It is by now abundantly clear that different computational machinery makes an enormous difference to the structure, strengths, weaknesses, and real-time operating characteristics of the computations. While I wouldn't go so far as Freud and say that biology is destiny, I would say that taking biology into account is an important piece of cognitive science, without which the enterprise will be poorer and less successful. Hence I will encourage taking account of biology in the pages of *P&P*.

Formative Versus Summative Evaluation

I will close with a more general comment on the purpose of a journal and the process of peer review that a journal makes possible. The whole idea is for scientists to help each other improve their work, and in the process to make work public once it has been developed to the point of agreed-upon excellence. I do not hold with the notion that a good journal is by definition a journal with a high rejection rate. A good journal is a journal at which each author has a high probability of being able to do better work on a problem after receiving the reviews and the action letter than he or she was able to do before submitting the paper. The new Associate Editors and I will not always succeed at making *P&P* a good journal in this particularly demanding sense, but we will always try.

—Thomas H. Carr, *Editor*
Michigan State University