



Editorial

Preparing for social psychology's future[☆]

This paper is based on closing comments made by Shelley E. Taylor in a symposium featuring the work of her former students: Susan Fiske, Jonathon Brown, Jennifer Crocker, Jim Kulik, and David Armor, in commemoration of Taylor's receipt of the SESP Distinguished Scientist Award from the Society of Experimental Social Psychology.

In science, you produce two things of value. One is your work, which gets used, misused, sometimes abused, until typically it gets swallowed up into the ongoing theoretical and empirical stream. The second and more enduring contribution is your students, who in significant ways represent the greatest gift you can give to your fellow scientists. There are few more satisfying treats than to listen to or read the work of someone you admire, learn something important from it, and relish the privilege of having worked with that person early on in his or her now entirely independent career. At a recent conference, I remarked to a colleague that some of my former students were giving a symposium in my honor to profile their work. He remarked, with a bit of concern, "you know you have no clones," I responded with great pride, "no, I have no clones." When you have been able to work with such talented people as my students have typically been, the best thing you can do as their mentor is to offer a few suggestions and then get out of the way.

This is an amazing time to be in science. A few years ago, I speculated in a talk that perhaps it would not be too long before we could put social behavior together with breakthroughs in genetics, brain science, and the latest developments in immunology and endocrinology. That time is now here, and it has come a lot faster than anyone expected. Whereas social psychology used to be a relatively small field of scholars talking primarily to each other, now we have unprecedented opportunities to collaborate with the other sciences in ways that we would have never imagined even a few years ago. As an example, consider Cohen and colleagues' work in psychoneuroimmunology. In a classic paper, which appeared in the *Journal of the American Medical Association* (JAMA), community volunteers were intentionally infected with a cold virus, and psychological and social factors were studied for their role in moder-

ating the likelihood and severity of an upper respiratory infection. Among other important findings, the research team identified social support as a significant determinant of whether infected individuals went on to develop illness and how serious the illness was (Cohen, Doyle, Skoner, Rabin, & Gwaltney, 1997).

I've emphasized developing ties to the biological sciences, but the movement toward integrative science is evident in other boundary-breaking endeavors as well. Take behavioral economics, which is using insights gained from the study of social inference to identify exactly how and why people make the errors they do when they undertake both trivial and important economic decisions in their day-to-day lives. Could the field possibly have developed without social cognition? It is hard to see how. Daniel Kahneman's receipt of the Nobel Prize in economics was a wonderful day for all of us. So in social psychology's future I offer some easy predictions. Increasingly, we will be part of integrative, boundary-crossing science, and less modestly, we can be the prime movers in this integrative science.

Following a talk in which I ventured these predictions, a fellow social psychologist came up and thanked me for endorsing "big science," the name often given to multi-disciplinary, multi-investigator projects focused on a broad program of problem-focused, interrelated research. I do not see "big science" and "integrative science" as necessarily the same thing. Some "big science" is merely bloated and pedestrian, with too many principal investigators spending too much money. Once when Dick Nisbett and I were discussing "big science," he mentioned his preference to work "one person deep." That is, he found the most exciting kind of research to be generated in a close working team of himself and one graduate student. Although integrative science cannot typically be achieved by one faculty member working with one graduate student, it need not be "big" to succeed. One social psychologist collaborating with an immunologist or endocrinologist and two or three graduate students or post-docs can make enormous headway on a problem. Or a geneticist with an interest in social psychological issues, a social psychologist, a research assistant, and a couple students can get some distance on a new line of work. Integrative science need not be

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“big science,” although it can be and perhaps needs to be at times.

How, then, do we train our students to be a part of this future collective endeavor? *Science* recently had an editorial which argued that most scientific breakthroughs will now come at the intersection of fields and not at their core (Sung et al., 2003). We need to get our students ready to be at those boundaries. Although some will disagree, I do not believe that will happen by training our social psychology students formally in say, molecular biology or classical economics. If we go that route, we may lose what is valuable about our social psychological perspective. Instead, we need to give up the certainty of a modest, well-studied vision in favor of the thrilling uncertainty of a broad collaborative vision. The model of training that we are accustomed to using will need to yield. Currently, we train students whose interests and expertise become redundant with our own. To do integrative science, however, we will need a very different model.

Eventually, the training for this collaborative vision will come from formal programs, such as graduate concentrations in social neuroscience or behavioral economics, to pursue the two examples offered so far. Before that happens, however, our training for this integrative science will be somewhat haphazard. A course taken here and there in other departments, workshops offered at conferences, a lot of reading, and skills acquired from fellow students who are also undertaking research at scientific boundaries are some of the makeshift approaches we may need to use. For example, a social psychologist interested in psychoneuroimmunology may need to take an undergraduate course in immunology, sit in on a graduate lab in psychoneuroimmunology, and undertake a lot of self-education by reading the literature and pestering his local immunologist to see how the assays are done. Reading *Science*, *Nature*, and *The New York Times* science section (among other sources) is also a good way to keep abreast of what's going on in the other sciences. Often, before a formal curriculum is in place, integrative brown bags that include students and faculty from two or three different disciplines will spring up, and these informal courses can play an important role in training students. My own university, for example, has an integrative seminar series in psychoneuroimmunology and one in behavior, environment, and culture (BEC), that includes psychology, anthropology, and related fields. Both of these have been valuable sources of training and hypotheses for many students in our program. Interdisciplinary centers focused around particular problems rather than disciplines have an important training role to play as well, as students become integrated into the multi-disciplinary research projects that such centers can spawn. Post doctoral training can and must play in increas-

ingly important role in our future. Spending two or three years in the laboratory of someone who is working in the field one hopes to enter is some of the best training for integrative science.

Formal training will go only so far, however, because when one undertakes science at the borders of the discipline, there is only so much one can know. To master two or three fields in depth is an unrealistic goal. Scientists don't like to feel stupid. To do this integrative science correctly, though, we'll need to dare to be ignorant, to use technologies we have only partly mastered, to know that answers will come from our collaborators whose insights we'll have to trust rather than fully understand. As our students seek out questions that lie at these boundaries, they'll need to figure out what they don't know and who does.

Picking one's collaborators carefully may be an even more important skill than having the skills one's self. A friend recently told me with great pride that he had learned how to do his own biological assays for the project on which he was principal investigator. His motive was that he wanted to know exactly what was happening at each stage of the research progress. While I can fully appreciate his desire to be smart about his research, it is also important to realize that there will always be a well-trained technician who can do this task far better than he will. Although I admire his decision, my own preference is to save my time and brain power for what I do well.

To absorb the full implications of integrative science, the traditional norms and institutions of social psychology may have to make some accommodations as well. The apprenticeship system, on which social psychology was historically based but which has eased in recent years, will be an important casualty of the move toward integrative science. It is critical that graduate students receive training from at least two or three different mentors with an openness to each other's interests and ways of addressing problems. Our mentoring needs to be flexible enough to let our students go at the right time, so that they will pick up the skills they will need from others. I envy some of my own students who have had opportunities to take courses from leaders in psychoneuroimmunology or behavioral economics. Like most of my peers, I was trained very traditionally and only in experimental social psychology. What I have learned in order to contribute to health psychology has come, in large part, from haphazard self-education by sitting in on courses and reading.

There are risks involved in this new integrative science. One of them is knowing where to stop. Often a social psychologist is valued primarily for his/her methodological and statistical expertise. Under those circumstances, others may define the target problem, with the result that our conceptual contributions can be

lost. One can be tempted to enter others' fields. Some health psychologists flirt with the idea of going to medical school, for example. As we work at the boundaries of our field, we need to remember what is valuable, insightful, and exciting about our own field, so we do not lose it in the excitement of the new problems and challenges that learning about a different field will provide.

Our journals will have to become more flexible. Scientific journals typically define themselves predominantly as, for a lack of a better term, **heuristic**, that is, profiling articles that are potentially ground-breaking or that pose exciting new directions, or as **archival**, documenting phenomena that are highly replicable. The best science, of course, does both. Our leading journal, the *Journal of Personality and Social Psychology*, has increasingly moved to the archival side of this dimension. Multi-study replications with college student participants, however, go only so far in helping us achieve the integrative science that is in our future. Journal editors and reviewers will need to understand that investigations that incorporate biological assessments (fMRI technology, for example) will not be easily or quickly replicated through multiple investigations, although over the long-term the findings will be. Such papers can, nonetheless, be those that lead the field directly into a new future. If we outsource all our boundary-breaking articles to journals in other fields (e.g., medical papers to medical journals and behavioral economics papers to economics journals), our field will never evolve to meet these new challenges. Opportunities to present this boundary-busting research in our journals are important if we are to play a leadership role in integrative science. Thus, making publication standards flexible to permit a broad array of scientific techniques and forms of inquiry should be an important goal. *The Journal of Experi-*

mental Social Psychology has recently added a short report option, and articles in *Personality and Social Psychology Bulletin* range from the more archival, multi-study paper to the single study that holds more promise than definitive answer. Similarly, *Psychological Science* includes both types of work, as does its model, *Science*. *The Journal of Personality and Social Psychology's* editorial board might well consider this more flexible format as well.

The changes I'm advocating are not all that revolutionary. Social psychology has been moving in these directions for some time. By acknowledging this evolution and its intrinsic worth, we can dignify the brave choices that some of our more adventurous students are making, as they move closer to the borders of related disciplines. This is an exciting time to be a scientist. It makes me wish that I were younger, so that I could be part of this amazing scientific synthesis for longer. But through talented students, one achieves not a legacy, but an extraordinary future to anticipate.

References

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