

A transdisciplinary-translation matrix is posited as a new direction reflected by the work presented in this and the two previous special issues. In fact, the demands inherent in this matrix suggest that a revolution in health research is in the works. Potential barriers and future directions of the matrix are suggested.

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**THE TRANSDISCIPLINARY-
TRANSLATION
REVOLUTION**
Final Thoughts

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The Director of the National Institutes of Health (NIH)'s Center for Scientific Review, Toni Scarpa, recently wrote about the emerging trends in NIH research funding (Scarpa, 2006). Dr. Scarpa noted that the scope, pace, and complexity of biomedical research has increased dramatically in recent years, and the needs of the research community have changed significantly. An exciting and innovative idea can quickly become dated, and researchers now have less protected time to write applications, to mentor new investigators, or to serve on peer-review groups. I would like to expand on his statements by adding that although funding budgets allocated to explicitly stated translation research is very small compared to other funding efforts, health research, in general, is taking on much more of a transdisciplinary-translation focus. A quick purview of the articles provided in this Special Issue demonstrates the increasing complexity of research being generated by the emphasis on a transdisciplinary-translation matrix (Sussman, Valente, Rohrbach, Skara, & Pentz, 2006).

Instead of researchers' grappling with little pieces of the health puzzle, they are being asked to cross disciplines, and envision applications, from the onset of their research. The disciplines being crossed stem all the way from the biomedical-molecular level to the social-molar level, as was noted in several of the articles in this three-part Special Issue (Ames & McBride; Gold, Glynn, & Mueser; Pentz, Jasuja, Rohrbach, Sussman, & Bardo; Reynolds & Spruijt-Metz). In addition, concurrent with demands for increased breadth of expertise, researchers are being asked to anticipate applications of findings and maximize the external validity of findings obtained (Green & Glasgow, 2006; Rohrbach, Grana, Sussman, & Valente, 2006 [this issue]). Recognition of the limits of everyday life may force researchers to consider encapsulating complicated findings into rather brief and simple interventions (Werch et al., 2006). However, at the same time, researchers are asked to match findings to specific populations as opposed to developing one-size-fits-all-type programming (Solomon, Card, & Malow, 2006). In addition, researchers are asked to think about institutionalizing changes in policies to expand the context within which programs can be applied, as well as change programs to fit current settings (Fiefer et al., 2006; Simons-Morton & Winston, 2006). Furthermore, researchers are being asked to anticipate and promote feedback informational loops between basic research and applied research

(Ginexi & Hilton, 2006 [this issue]). This is a very tall order, to say the least, and quite frankly may be unrealistic without consideration of growth pains in the transition period. Although no one can predict the future, several potential consequences of this emerging model of health research can be anticipated. In particular, if these trends continue, investigators who are most likely to survive in this new research climate may be those that (a) think in transdisciplinary-translation terms, (b) can link people from different disciplines together, or (c) are so prolific in their own research domain that others will want to keep them going and take on, themselves, the role of transferring obtained results to applications. Other types of researchers may very well fall through the cracks. Of course, there will always be a role for very good scientists who engage in very specific research pursuits that at first glance may seem to only address a narrow question within a single discipline. If such science is not conducted, then there would be no solid data for the research “giants” to integrate, and the speed of translation would slow down.

The design of university curricula and training of new researchers are now beginning to be shaped with multiple traditional disciplines in mind. However, it is a truism that different people have aptitudes for different tasks and informational domains. Many students would find such integrative learning rather difficult. The length of time for students to graduate from new programs would of necessity greatly lengthen, unless one assumes that there are enormous overlaps across fields. Lengthening the time to graduate would slow down the time for new researchers to begin independent research—again slowing down the speed of translation.

Those persons that can best envision or communicate across disciplines could capture the most academic power. It is possible that if power-sharing strategies do not develop, fewer persons will control even more of the research dollars. The democracy and cooperation, and freedom, often sought for in academia may fade. Of course, such fears were present when people were afraid of massive loss of jobs because of the advent of the computer age. It is not clear what will happen. As jobs in certain areas diminish, new jobs may be created in other areas.

So how can researchers tackle this Tower of Babel and survive? Perhaps, researchers that rely on the “silo model” of academia will die off (Kuhn, 1962). I don’t think so, though. My belief is that we travel on an academic pendulum that swings to extremes with

change and then levels off over time. I believe that there will be room for everyone, from the silo lover to the integrator, from the pure philosopher to the tree fall observer. We will need to gather useful data however we can, which will rely on specialists at times. In addition, as each transdiscipline matures, each will develop its own silo. Its novel terms and methods will become traditional. Again, we will await the next scientific revolution. This Special Issue has presented many of the dilemmas now encountered in the health professions. It is hoped that we have provided the beginning of an exchange of information that will help build better problem-focused research and practice. It will be interesting to watch what will happen in the next 20 years.

REFERENCES

- Ames, S. L., & McBride, C. (2006). Translating genetics, cognitive science, and other basic science research findings into applications for prevention. *Evaluation & the Health Professions, 29*(3), 277-301.
- Feifer, C., Ornstein, S. M., Jenkins, R. G., Wessell, A., Corley, S. T., Nemeth, L. S., et al. (2006). The logic behind a multimethod intervention to improve adherence to clinical practice guidelines in a nationwide network of primary care practices. *Evaluation & the Health Professions, 29*(1), 65-88.
- Ginexi, E. M., & Hilton, T. F. (2006). What's next for translation research? *Evaluation & the Health Professions, 29*(3), 334-347.
- Gold, P. B., Glynn, S. M., & Mueser, K. T. (2006). Challenges to implementing and sustaining comprehensive mental health service programs. *Evaluation & the Health Professions, 29*(2), 195-218.
- Green, L. W., & Glasgow, R. E. (2006). Evaluating the relevance, generalization, and applicability of research: Issues in translation methodology. *Evaluation & the Health Professions, 29*(1), 126-153.
- Kuhn, T. S. (1962). *The structure of scientific revolutions*. Chicago: University of Chicago Press.
- Pentz, M. A., Jasuja, G. K., Rohrbach, L. A., Sussman, S., & Bardo, M. T. (2006). Translation in tobacco and drug abuse prevention research. *Evaluation & the Health Professions, 29*(2), 246-271.
- Reynolds, K. D., & Spruijt-Metz, D. (2006). Translational research in childhood obesity prevention. *Evaluation & the Health Professions, 29*(2), 219-245.
- Rohrbach, L. A., Grana, R., Sussman, S., & Valente, T. W. (2006). Type 2 translation: Transporting prevention interventions from research to real-world settings. *Evaluation & the Health Professions, 29*(3), 302-333.
- Scarpa, T. (2006). Policy forum—Research funding: Peer review at NIH. *Science, 311*, 41.
- Simons-Morton, B. G., & Winston, F. K. (2006). Translational research in child and adolescent transportation safety. *Evaluation & the Health Professions, 29*(1), 33-64.
- Solomon, J., Card, J. J., & Malow, K. T. (2006). Adapting efficacious interventions: Advancing translational research in HIV prevention. *Evaluation & the Health Professions, 29*(2), 162-194.

- Sussman, S., Valente, T. W., Pentz, M. A., Rohrbach, L. A., & Skara, S. (2006). Translation in the health professions: Converting science into action. *Evaluation & the Health Professions*, 29(1), 7-32.
- Werch, C., Grenard, J. L., Burnett, J., Watkins, J. A., Ames, S., & Jobli, E. (2006). Translation as a function of modality: The potential of brief interventions. *Evaluation & the Health Professions*, 29(1), 89-125.