



LETTERS

edited by Jennifer Sills

The Time of Young Scientists

T. BRÜCK *ET AL.* (“EMPOWERING YOUNG SCIENTISTS,” EDITORIAL, 2 APRIL, P. 17) SUPPORT THE formation in various countries of young-scientist academies that younger scientists would be eligible to join, along the lines of the already-formed Global Young Academy. The latter will include an elite group of approximately 200 international young scientists around the age of 35. Although I am a proven advocate of young scientists (1), I found the Editorial to be off target.

The Editorial suggests that most internationally recognized scientists are senior and that “young scientists rarely receive societal recognition for their work.” The reason for this discrepancy is not that young scientists are excluded; it is that most of them haven’t yet produced high-impact work or that their recent discoveries need time to mature and make an impact. There are many examples of scientists less than 40 years old who have won Nobel Prizes or have been inducted into regular national academies. Consequently, there should be no reason or indications for discrimination for age, as speculated in the Editorial.

will be plenty of opportunities for them in the future to play roles in policy and management issues.

I conclude that academies for young scientists are not only unnecessary, but may damage the careers of highly promising young scientists. Necessarily, these promising future stars will need to divert at least part of their activity to conferences, policy, and management issues, which will distract them from creativity and innovation. Such activities could be easily fulfilled by more experienced senior scientists. Let us also not forget that the vast majority of senior scientists have a genuine interest in promoting the careers of younger scientists and not, as hinted in the Editorial, in grabbing their resources or stealing their societal recognition. After all, we are their natural mentors, and the importance of good mentorship has been emphasized repeatedly in this and other journals.

ELEFTHERIOS P. DIAMANDIS

Department of Pathology and Laboratory Medicine, Mount Sinai Hospital, Toronto, ON M5T 3L9, Canada. E-mail: ediamandis@mtsina.on.ca

Reference

1. E. P. Diamandis, *Clin. Cancer Res.* **12**, 669 (2006).

Response

DIAMANDIS HAS RAISED A NUMBER OF IMPORTANT concerns about the role of young scientists in the science-policy dialogue. However, we strongly believe that his message—focus on science—runs contrary to the interests of young scientists and the broader scientific community.

In many countries, particularly less-developed countries, the value of science and scientists is underestimated. Young scientists are particularly vulnerable. The societal recognition we alluded to in our Editorial does not immediately concern the Nobel Prizes or membership in National Academies referred to by Diamandis, which are quite naturally connected with seniority. Of greater concern



Readers’ Poll

The Time of Young Scientists

In their 2 April Editorial,* T. Brück *et al.* suggest that academies for young scientists (~35 years old) can help early-career researchers earn the support and recognition they deserve. E. P. Diamandis argues in a Letter that such societies will distract young scientists from their work at the bench. T. Brück *et al.* respond that the message to focus only on science “runs contrary to the interests of young scientists and the broader scientific community.” In the coming years, there is likely to be a growing focus on science communication; scientists will be asked to explain their science and the scientific process to the general public and policy-makers.

How much time should the next generation of young scientists devote to nonresearch activities?

- Less than 1%
- 1–10%
- 10–25%
- 25–50%
- More than 50%

Vote online at www.sciencemag.org/extra/polls/20100806-1.dtl

*T. Brück *et al.*, *Science* **328**, 17 (2010).

Polling results reflect the votes of those who chose to participate; they do not represent a random sample of the population.



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are more mundane forms of recognition, such as societal leaders understanding and emphasizing the importance of young scientists for the well-being of the country, as well as academic freedom, independence, job security, and decent pay for talented young researchers. The formation of Young Academies is one important step to address and improve these issues.

Judging by the success of the Young Academies of Germany and the Netherlands (*I*), it appears that connecting the brightest across fields (including not only the natural sciences but the social sciences and humanities as well) yields novel modes of communication with society, authentic advice on science policy, and innovation in interdisciplinary fields. The last aspect directly strengthens the core business of the young scientist, which is and remains doing excellent research. The Young Academies movement represents a model of scientific creativity and achievement quite different from that advocated by Diamandis, which more closely resembles top-down learning and rituals of initiation.

We believe that all generations can contribute to science policy and management, and involving young scientists early in their career will help improve science's impact on society. For example, in Canada, young scientists have been major drivers behind a number of important recent initiatives at the science-policy interface, including the creation of a new prestigious postdoctoral fellowship program and a national forum on science policy (Canadian Science Policy Centre; <http://sciencepolicy.ca>).

The selection process for membership in the Global Young Academy involves rigorous peer review by both senior and young scientists. Although we share the author's concern that senior scientists may try to pack the ranks with their protégés, we will allow self-nominations to help alleviate this potential problem. The final decision on election depends on broadly accepted standards of excellence, and remains that of the Global Young Academy, not the nominators.

Our success to date owes no small debt to visionary support by senior scientists

like Diamandis. We appreciate his well-documented interest in mentoring and advancing the careers of young scientists, and we hope he'll join us in recognizing and inviting to the table young academicians.

TILMAN BRÜCK,¹ CATHERINE BEAUDRY,²
HANS HILGENKAMP,³ REES KASSEN,⁴
NITSARA KAROONUTHAISIRI,⁵ HIBA SALAH EL DIN
MOHAMED,⁶ GREGORY A. WEISS^{7*}

¹Department of International Economics, German Institute for Economic Research (DIW Berlin) and Humboldt-University of Berlin, Mohrenstraße 58, 10117 Berlin, Germany. ²Département de Mathématiques et de Génie Industriel, École Polytechnique de Montréal, succ. Centre-ville, Montréal, QC H3C 3A7, Canada. ³University of Twente and Leiden University, Faculty of Science and Technology and MESA+ Institute for Nanotechnology, 7500 AE Enschede, The Netherlands. ⁴Department of Biology, University of Ottawa, 30 Marie-Curie, Ottawa, ON K1S 3B5, Canada. ⁵National Center for Genetic Engineering and Biotechnology, Microarray Laboratory, 113 Paholyothin Road Thailand Science Park, Pathumatani 12120, Thailand. ⁶Department of Molecular Biology, The Institute of Endemic Diseases, University of Khartoum, Medical Campus, Qasser Street, Khartoum, Sudan. ⁷Department of Chemistry, Molecular Biology and Biochemistry, University of California, Irvine, CA 92697, USA.

*To whom correspondence should be addressed. E-mail: gweiss@uci.edu

Reference

1. Junge Akademie Magazin (June 2010); www.diejungeakademie.de/publikationen/magazin_db/frameset_02.php?id_mag=13.

The Silver Lining of Language Loss

JUST AS ZOOLOGISTS AND BOTANISTS ARE concerned about the extinction of biological species, linguists are concerned about the rapid loss of languages ["What's lost when languages are," A. Pires, *Books et al.*, 23 April, p. 431, review of (*I*)]. We should, however, view the situation from the user's standpoint as well. In this modern and connected world, we cannot fully realize our potential unless we understand, speak, and write the language of our school, media, government, place of employment, and economic centers of power. If our mother language does not provide these connections (and most languages do not), one alternative is bilingualism or multilingualism, but many people are not able or willing to attain

fluency in more than one language. The problem thus becomes a political one: Either the speakers of such a language maintain the autonomy and capability to promote enduring bilingualism, as the Catalans did, or the language takes the path toward extinction, as is happening to Occitan, Yiddish, and the native languages of North America.

We may, as outsiders, deplore such an evolution, but language is a practical tool. We do not advocate returning to the steam engine, the slide rule, or the logarithmic table. The drastic reduction of the number of languages is natural, unavoidable, and—from the viewpoint of communication and integration into a world community—desirable.

KURT F. J. HEINRICH

Rockville, MD 20850, USA. E-mail: kfjh@verizon.net

Reference

1. K. David Harrison, *When Languages Die: The Extinction of the World's Languages and the Erosion of Human Knowledge* (Oxford Univ. Press, Oxford, 2008).

Losing languages. The number of Yiddish speakers is dwindling.

Cuban Health Care: Consider the Source

I AM WRITING TO PROTEST THE EGREGIOUS misrepresentation of the Cuban health care system presented by P. K. Drain and M. Barry in their Policy Forum, "Fifty years of U.S. embargo: Cuba's health outcomes and lessons" (30 April, p. 572).

The most serious flaw in the Policy Forum is its unquestioning faith in the legitimacy

of Cuban government health data. By basing their conclusions solely on official government sources, the authors imply that the health sector in Cuba can be analyzed apart from the rest of the government apparatus. As a result, the health sector is portrayed as an oasis of humanitarianism and egalitarianism that is completely unaffected by the surrounding problems of authoritarianism, repression of information, and grave human rights abuses that have characterized the Castro regime for most of its 50-year history.

A small but compelling array of recent publications (1–5) in the social sciences, as well as numerous informal reports (6–10) by dissident journalists and physicians, have successfully challenged these assumptions by documenting the myriad ways Cuba's systemic problems have become embedded in the organization and delivery of health care. The results of these inquiries are decidedly unflattering to the Cuban government and reveal a health system rife with corruption, authoritarianism, inequality, falsification of data, and human rights abuses. Any scholarly attempt to assess the true state of health conditions in Cuba, or the health impact of the U.S. trade embargo, should begin with a discussion of the way these systemic problems distort empirical research.

KATHERINE HIRSCHFELD

Department of Anthropology, University of Oklahoma, Norman, OK 73019, USA. E-mail: tkhirschfeld@ou.edu

References

1. O. E. Chepe, *Cuba: Revolución o Involución?* (Editorial Aduana Vieja, Valencia, Spain, 2007).
2. E. Kath, *Social Relations and the Cuban Health Miracle* (Transaction Press, New Brunswick, NJ, 2010).
3. K. Hirschfeld, *Health, Politics, and Revolution in Cuba Since 1898* (Transaction Press, New Brunswick, NJ, 2007).
4. K. Hirschfeld, *Cuban Affairs* 2, 1 (2007).
5. A. Lago, *Can. J. Psychiatry* 39, 129 (1994).
6. M. A. O'Grady, "Cuban doctor pays a high price for truth," *Wall Street Journal*, 31 March 2006.
7. Video testimony from Darsi Ferrer, dissident physician (www.youtube.com/watch?v=jgXP6AFo7lc), in the documentary "Cuba y los Elefantes" (Instituto Político para la Libertad, Lima, Peru, 2009).
8. CNN story on Darsi Ferrer [in Spanish]; www.youtube.com/watch?v=8rOU7u65Td4.
9. D. Mendoza, I. Fuentes, *Dengue!* (Center for a Free Cuba, Washington, DC, 2001).
10. Generation Y blog (www.desdecuba.com/generationy).

Letters to the Editor

Letters (~300 words) discuss material published in *Science* in the previous 3 months or issues of general interest. They can be submitted through the Web (www.submit2science.org) or by regular mail (1200 New York Ave., NW, Washington, DC 20005, USA). Letters are not acknowledged upon receipt, nor are authors generally consulted before publication. Whether published in full or in part, letters are subject to editing for clarity and space.

Cuban Health Care: Benefits Without Costs

THE SUGGESTION BY P. K. DRAIN AND M. BARRY ("Fifty years of U.S. embargo: Cuba's health outcomes and lessons," Policy Forum, 30 April, p. 572) that Cuba can provide the United States with the know-how to provide high-quality care at low cost is suspect. Cuba's system is specific to a small, centrally controlled country. This is not necessarily translatable to a large, heterogeneous nation profoundly focused on individual liberties, including the personal freedom to eschew preventive care. Many countries can provide medicine and other medical technologies at lower cost than the United States. Missing is the fact that these low-cost generics are based on discoveries mostly made in the United States and a handful of other developed nations. The United States bears the substantial burden of direct development costs as well as the general costs for development of an educational system and an infrastructure that has yielded an astounding array of medical advances over the past several decades. Others, such as Cuba, reap the benefits while avoiding most of the costs. Perhaps the authors would like to speculate on what the quality of health care in Cuba would be were it only based on discoveries and medical advances originating in Cuba.

LAWRENCE BODENSTEIN

Department of Surgery, Columbia University, New York, NY 10032, USA. E-mail: lb2126@columbia.edu

Response

HIRSCHFELD EXPRESSES A SKEPTICISM REGARDING the validity of Cuban health data. Cuba has been publishing annual morbidity and mortality data by age, gender, cause of death, and geographical region since 1970 (1). These reports, generated from actual data collected within each polyclinic and hospital, have been presented in a timely manner and contain trends that are consistent with expected national and regional variations over time (2). Cuba also performs a high rate of autopsy procedures (3), which helps to complete their morbidity and mortality data. As a result, the rate of deaths attributed to ill-defined causes (0.7%) and estimation of under-registered deaths (2.1%) are both very low in comparison to other Latin American countries (4). Every year, Cuba submits data on 42 national health indicators as well as causes of mortality to the Pan American Health Organization (PAHO) (5). Given the completeness and consistency of Cuba's health data over the past 40 years, regular forgery of their annual reports would seem extremely improbable. By politicizing the dialogue, Hirschfeld does a disservice to all

countries, including Cuba, that collect data to transform health care systems and save lives.

We agree with Bodenstein that the American medical system has yielded many astounding medical advances and discoveries, which have not come cheaply, and globalization has disseminated many of these advances to resource-poor countries, including Cuba. We have not advocated reducing funding of U.S. medical research, but rather providing better access to cost-efficient medical care, as exemplified by the Cuban health care system. For example, a large survey in 2003 found that American adults received only 55% of recommended preventive care or acute care services (6). In addition to providing better access to primary and preventive medical care, the U.S. medical system should also strive to streamline administrative processes, all of which Cuba has been doing well for many years. By shifting part of our focus from disease treatment to disease prevention, low-cost solutions implemented in Cuba could be applied to improve the health of Americans and help defray overall medical costs. Furthermore, eliminating the trade embargo may foster greater collaboration between American and Cuban scientists and physicians, which may lead to future medical advances and discoveries in both countries.

PAUL K. DRAIN^{1*} AND MICHELE BARRY²

¹Massachusetts General Hospital, 55 Fruit Street, GRJ-504, Boston, MA 02114, USA. ²School of Medicine, Stanford University, Palo Alto, CA, 94305, USA.

*To whom correspondence should be addressed. E-mail: pkdrain@gmail.com

References

1. Ministry of Public Health, *Annual Statistical Report on Health, 2009* (Ministry of Public Health, Havana, Cuba, 2010); www.informad.sld.cu/servicios/estadisticas/.
2. R. S. Cooper, J. F. Kennelly, P. Ordunez-Garcia, *Int. J. Epidemiol.* 35, 817 (2006).
3. A. Espinosa-Brito, J. Viera-Yañiz, O. Chavez-Troya, R. Nieto-Cabrera, *Br. Med. J.* 328, 66 (2004).
4. J. Silvi, *PAHO Epidemiol. Bull.* 24, 1 (2003).
5. Pan American Health Organization, Data and Statistics (http://new.paho.org/hq/index.php?option=com_content&task=view&id=2470&Itemid=2003).
6. E. A. McGlynn *et al.*, *N. Engl. J. Med.* 348, 2635 (2003).

CORRECTIONS AND CLARIFICATIONS

News Focus: "Dams for Patagonia" by G. Vince (23 July, p. 382). The caption on p. 384 misidentified the glacier Perito Moreno as a source of water for the Baker River; the glacier feeds into Lago Argentina. Also, Hudson volcano was spelled incorrectly. In the sidebar, El Niña should be La Niña.

Letters: "Bracing for oil" by R. N. Silverstein (23 July, p. 388). Reference 1 was authored by A. H. Knap *et al.*, not by Y. Loya *et al.*

Reviews: "Sea-level rise and its impact on coastal zones" by R. J. Nicholls and A. Cazenave (18 June, p. 1517). In Fig. 1, the range for Rahmstorf (2007) is attributed to the A1FI scenario, but it represents the response to the full range of SRES scenarios.