We Need a Living, Breathing System

What connects Oviedo, the capital of the Autonomous Region of Asturias in northern Spain, with the future of the German science system? Such a link, though anything but inevitable, is currently emerging: it is in Oviedo that, this fall, the Max Planck Society will receive an award for its commitment to international cooperation. In the past, the Prince of Asturias Award, sometimes referred to as the Spanish Nobel Prize, has been presented to such renowned organizations as the International Red Cross and Red Crescent, and the World Health Organization. One may well be surprised to find a German research organization mentioned in the same breath as institutions that, by their very name, are destined to play an international role. And yet this honor wonderfully reflects the equally international orientation of the Max Planck Society.

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Internationalism is integral to our mission. Research at the cutting edge can be successfully marshaled only if research institutions – in this case our Max Planck institutes – are able to attract outstandingly talented junior and elite scientists from across the world, and if conditions are created that allow these researchers adequate scope to unleash their creativity. However, it isn't our intention to simply bring the "finest minds" here to our own country – we are also a partner in numerous international research networks. And we are chosen as a partner according to the criteria of optimum contribution, profile and performance. Our involvement in such networks – whether through the establishment of institutes abroad or through instruments of cooperation such as Partner Groups and Max Planck Centers – and our visible presence at the international leading edge constitute an essential contribution by the Max Planck Society to the German science system.

And this is precisely where the Prince of Asturias Award touches on the debate surrounding the German system. The competition between knowledge-based economies is becoming fiercer, and Germany must meet this challenge if it is to sustain and expand its leading position as a center of research and innovation, and thus maintain and grow the basis of its prosperity. Over 90 percent of the global fund of knowledge is mined beyond our borders; almost two-thirds of all the publications that emerge from the Max Planck Society are the result of international cooperation. This clearly illustrates the huge importance of participating in cross-border innovation networks. Our structures, particularly in cutting-edge research, must take account of this; the process of internationalization must be pursued both internally and externally. The discussion regarding the future development of Germany's science system must thus not be conducted solely from a national research policy perspective – that would fall far too short of the mark.

Our science system is characterized by a diverse structure of universities and non-university organizations, R&D companies and research sponsors, etc. Within this structure, we have succeeded in endowing each of the non-university organizations with a mission of their own: the Helmholtz Association, for example, is tasked with putting in place scientific infrastructures for all parties via programmed research; Fraunhofer bridges the gap between science and industry; while the Max Planck

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Society pursues research at the cutting edge. As the German Science Council rightly comments in its recommendations published in July, a "fundamental reform of the system" is unnecessary, since the functional and institutional diversity constitutes a "strength that it is essential to preserve."

This diverse, multifaceted system is indeed greater than the sum of its parts. It

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may be compared with an ecosystem whose ability to provide water and raw materials is profoundly dependent on the extent of its biological diversity. It is the differences between functional groups that ensure that, as their number increases, the available resources are used more effectively and the system becomes ever more productive. Translated to the science system, this means that scientific value can be added to the system only as a whole through cooperation between mutually complementary participants, each with a profile of their own. It is therefore all the more surprising that the Science Council should recommend that, in the future, the universities should be elevated to the role of central organizers. I beg to differ: a university cannot organize the Max Planck Society, any more than Max Planck research projects can be developed locally inside the heads of university rectors. If we are to continue to pursue our aspirations toward cutting-edge research, we must be free to choose our own subjects and locations.

Nevertheless, a functional partnership exists, lives and breathes! For example, 70 percent of the excellence clusters to successfully emerge from the Excellence Initiative involve Max Planck institutes; 80 percent of our Directors are also university professors. And of course, over the past two years, the Max Planck Society has made numerous contributions to the debate about the future of the science system, while internally, our committees have discussed the central issues of science policy in great depth. The development in profile and differentiation that the Science Council is keen to see in the university sector correlates with the proposal put forward in our recent position paper to establish centers of excellence and profile. Encouraging particular locations to adopt distinctive features does not by any means imply that existing research or teaching concentrations should be of lower priority or less deserving of support. Let me emphasize: We need a living, breathing system in which the good rise to the top. It will be a question of fine minds. If one or two outstanding scientists can be recruited in a given field, the way is open for pioneering achievement. The system must allow for interaction.

However, I perceive a lack of instruments to ensure that, within the framework of the Science Council's proposed future pact, the participants do indeed continue to sharpen their profile as they need to. We must take care to maintain and develop the conditions that are conducive to scientific competition and effective institutional governance. For all the dynamism and internationally acknowledged strength of the German science system, developments in recent years have shown that processes in this field are not always science-led. Not every joint venture is structured to prioritize scientific effectiveness, and not every action is a product of verifiable scientific logic. With this in mind, I would welcome an independent system evaluation. This, in my opinion, would be a necessary complement to the development now flagged by the Science Council. The DFG/MPS system evaluation conducted in 1999 showed how such a well-founded external examination can add important momentum. One of the resulting proposals was, within the context of our mission, to specifically extend our cooperation with universities.

With more than 60 International Max Planck Research Schools now successfully established in cooperation with universi-

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ties, consideration might be given, for example, to replicating within Germany the highly successful model of the international Max Planck Centers now being operated as joint platforms in cooperation with world-leading research institutions such as Princeton in the USA and the Riken Institute in Japan. This would involve at least one Max Planck institute, one German university, one partner abroad, and perhaps others, merging in a subject-specific joint venture. In this way, the Max Planck Society could open the door to research networks linking the world's best scientists – and thus fulfill anew its role in the German science system.

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