Yes we can, but do we?

In recent decades, a curious demographic phenomenon has emerged in US science. A high and increasing proportion of PhD students and postdocs, especially in the life sciences, are drawn from beyond the shores of North America. The reasons for this are undoubtedly complex. One factor is the widespread perception in the USA that a career in academic science is marked by low salaries, poor job security, a growing burden of irksome administrative tasks, and a high probability of failure. This trend is also evident in Europe, although so far has had less impact than in the USA.

Academic success was once recognized as a pinnacle of achievement. Islands of this culture still remain: in Finland, for example, candidates for political office place their CV on their website, with their academic degrees and even a synopsis of their doctoral or master's thesis carrying as much weight as their political platform.

But in America, where careers in the commercial sector are just as insecure, and those in public service offer even more paltry salaries, academia is increasingly perceived as offering a worst-of-all-worlds combination of these drawbacks. The most gifted US graduates no longer regard science as a viable career choice, whereas the most successful young foreign scientists attracted into American academia are able to land faculty positions, often achieving salaries, esteem and job satisfaction far in excess of anything they could have hoped for in their native country. Even those who choose to return 'home', a path which their American peers might consider an admission of failure, typically enjoy a high level of recognition as university professors, clinical and industrial scientists or other professionals. Their experience in American science most often suffices to guarantee them permanent membership of a respected national elite.

Does all this matter? Isn't this simply the 'free market' at work? Doesn't the influx of talented scientists from the rest of the world enrich America's culture and renew its long-standing prowess in thought and innovation? Or does its reliance on foreign brain-power risk that very primacy and herald a long-term decline in its influence and productivity? This is very difficult to answer, not least because there is no obvious parallel upon which to draw. Remarkably, it is a question of only minor concern to most of America's political class. Nor does it arouse much interest among ordinary citizens. Most Americans do not know or care that many Nobel Prizes awarded to scientists based in US universities in the past 25 years went to individuals born, and in many cases educated, abroad. Those who do know this, tend to see in it a source of pride—we attract the world's best and give them the tools to do the job.

America's academic tradition has, for many generations, drawn upon the brilliance of highly motivated immigrants. In fact, this can be considered the cornerstone of its success in general. But it is not guaranteed in perpetuity, as if decreed by an immutable law of history. Several threats to this successful formula can be seen on the horizon.

Although xenophobia, isolationism, anti-immigrant and even anti-intellectual sentiment are nothing new in American society and politics, these trends are growing. Anecdotal evidence suggests that it is becoming increasingly tough for foreigners to obtain fellowships, visas and study places, especially as some of the brightest minds come from countries that are tainted, in the minds of many Americans, by suspicions of complicity in 'terrorism'. Whether or not this is backed up by hard data, the perception that the USA no longer welcomes foreigners can only cause harm in the long term.

Other countries are eager to take up the slack. Many nations whose scientists previously swelled the ranks of US academia are now providing them with enticing opportunities to develop their science back home. The much-touted rise of China not only represents a significant and growing competition to American leadership in science and technology. It is also becoming a model that is increasingly being followed elsewhere. It is only a matter of time before China, recognizing the value of the way science is currently conducted in America, seeks to emulate it by drawing in PhD students and postdocs from third countries, offering them better deals and a more welcoming atmosphere than an increasingly inward-looking USA.

A paucity of home-grown talent, combined with an unwise dependence on a shrinking pool of top-rank thinkers from abroad, seems a recipe for national decline. Combined with the current wave of virtually random cuts in funding for the very programmes that underpin America's scientific success, there must be a serious risk of such a decline gathering pace.

America, as well as those European countries following a similar trajectory, need to wake up to the fact that its most valuable assets could be endangered, risking its economic power and global influence. Leadership is called for, to confront these discomfiting trends, and shift the national discourse onto a more constructive path.

One might argue that, in global terms, it matters little where scientific progress happens. Knowledge is the common property of humanity. Nevertheless, it would be a sad irony if the nation that first institutionalized the concept of free thought and enquiry were to drop out of the top league of science.

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