

THIS WEEK

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Keep asking the question

Scientists must push to preserve a small part of a large US survey that provides essential information on the ever-changing scientific workforce.

Some 3.5 million households in the United States receive a survey each year with six dozen or so questions from the US Census Bureau. Among enquiries about occupation, income, household plumbing, commute times, ethnicity and more is 'Person Question 12', which asks university graduates what subject they studied. This census question, along with six others, may be dropped from future surveys as part of a push to streamline federal data collection. That would be a big mistake.

Data from question 12 are used by several studies of higher education, to assess, for example, how degree subjects correlate with unemployment and earnings. If the question is dropped, that information will be lost — or produced only at greater cost. *Nature's* readers can help to make sure that does not happen.

The question features on the American Community Survey, an ongoing mandatory survey launched in 2005 to provide timelier data than the more-intense decadal countrywide census. Faced with criticism from some legislators that the annual survey is a public imposition, officials reviewed all its questions to see how much time they required, how difficult or sensitive respondents found them, and how federal agencies used the data.

Asking about degrees posed a minimal burden on respondents, the review concluded. But the question was also deemed to be one of a few not required by statute or by regulatory agencies. (Alongside, for example, a question that asks whether US citizens have a medical facility on their property.) So, it faces the chop.

Why should it be kept? Difficult times for scientists make such data more important than ever. On 10 December, the National Academies released a long-awaited report on the postdoctoral experience. It decried the increasing fraction of PhD-holders taking these positions by default, and on academia's still-increasing treatment of postdocs as cheap labour rather than as trainees. Two weeks ago, this journal described two reports on the plight of postdocs and freshly minted science PhD graduates in the United States and the United Kingdom (see *Nature* 516, 7–8; 2014). Both reached similar conclusions: although an academic career is still presented as the default path, only a tiny minority (perhaps less than 5%) of new science PhDs will go on to permanent academic research positions. These reports stressed the need for more data to keep track of scientific (and non-scientific) careers.

The information that is available on the US situation is most conveniently presented in regular reports produced by the National Science Foundation (NSF). These include the biennial Science and Engineering Indicators and statistics about the participation and attainment of women, under-represented minorities, immigrants and disabled people. The reports reveal trends and disparities, such as the continuing dearth of women in computational science. They also aid international studies of the scientific workforce.

Congressional mandates demand that the NSF produces such reports. Before question 12 was introduced by the census bureau, the

agency had to carry out its own survey to acquire the information that the responses provide. It cost US\$17 million in 2003. Today, that effort would be even more costly and less effective. The workforce is increasingly mobile. People in scientific careers shift jobs so frequently that workforce scholars now refer to career pathways instead of pipelines. Building a sampling pool from the decennial census data would miss the hordes of people moving in and out of relevant fields as well as in and out of the country.

Scientists across the world are starting to realize the power and value of increasing efforts to study and foster its workforce. University offices and funding agencies are discussing how best to track the career paths of their graduate students and postdocs. The aim is to identify, promote and even create viable career paths outside the conventional system. To do so, these institutions need benchmarks — benchmarks that question 12 enables. Scientists and engineers are a rare population in statistical terms, and that means that less-intense population surveys are not big enough to get appropriate samples.

On a survey estimated to take 40 minutes to complete, question 12 requires only nine seconds. There is little to gain in its elimination and much to lose. Scientists and their allies should not only argue to retain the question, but also that the census bureau should recognize it as legally required in light of the NSF's mandates. The call for public comments on its removal ends on 30 December (see go.nature.com/ceqkkl). A robust response could encourage the administration to keep it. ■

"On a survey estimated to take 40 minutes to complete, question 12 requires only nine seconds."

Spin cycle

Pressures in all stages of the news-making process can lead to hype in science reporting.

It has become popular for people to receive, on landmark birthdays, a copy of a daily newspaper from the day of their birth. Someone born today, should they receive such a present in the future, may well wonder what on Earth they have in their hands.

The death of the printed daily paper has been much discussed. But the life of the printed daily paper is a curious thing, too: an entire existence predicated on the lie that the world has changed so much since the previous day that readers must pay for an instant briefing that they can hold in their hands. The same applies the following day, the day after that and so on.

The Internet has changed all of that, sometimes for the better and sometimes not. Yet one cultural legacy of the print-news world still rules: competition. Print readers were the ultimate consumers. Newspapers would compete for their patronage, and to make that happen, newspaper editors would make reporters compete for available space. Reporters would compete with rivals for stories. And anyone with a good story to tell had to compete with a thousand other people to get through to the reporter. The entire news-publishing business was an ever-decreasing circle, with someone on each step in the chain desperate to give the people on the next step exactly what they wanted.

What they all wanted, of course, was a good story — or more accurately, a better story than the other source, reporter, editor or newspaper was offering. Hence, routine speeches by politicians are often described as the most important of their careers, football matches with little at stake are ‘must-win’ and house prices are perpetually poised between collapse and meteoric rise. Good stories, naturally, are open to a little exaggeration; and a little more at the next step and so on. Newsroom culture demands that the most common phrase exchanged is not “Is this true?” but “Can we say this?”

Here comes the science bit. The reason that any of this matters to *Nature* is that science stories in the news, or more precisely, health and medical-science stories, are known to influence the behaviour of the people who read them. Together with the collective responsibility that many scientists feel for the way that research is communicated in the media (a responsibility that, say, estate agents seem to lack), this makes media coverage of research an important and much-scrutinized topic.

A study that has been heavily discussed over the past week or so focuses on the bottom step in the news chain described above: the information that universities give to reporters about published research (P. Sumner *et al. Br. Med. J.* 349, g7015; 2014). The details appear on page 291 of this issue, but can be summarized as follows:

exaggeration in press reports of published medical-research papers is also present in press releases sent out by universities to promote those papers.

To conflate, briefly, correlation and causation (which the study counts as exaggeration), it seems that blame for media hype of medical research can be placed as firmly at the door of university press offices as on the headline-hungry keyboards of journalists.

“There is a demand for straight, less-conventional ‘news’ about science.”

Some journalists have nobly resisted the temptation to pass the blame in this way, and insisted that their profession must do more to check the claims made by others before handing them on. Others have called for stricter controls on what universities say, and for scientists who have their work promoted to be held accountable. These are all sensible ideas, and *Nature* fully supports the idea that researchers should work closely with those who write and circulate press releases on their behalf.

Exaggeration will persist in the news cycle only if it benefits all those involved — from the scientists who can count press coverage as ‘impact’ to the reporters who bag another high-profile byline and the approving comments of their bosses.

But will it persist? Coming back to the description of newsroom culture, “Can we say this?” is itself giving way to “What else can we say?” as elastic electronic boundaries of news websites replace physical page budgets. The rise (and mass readership) of specialist blogs shows that there is a demand for straight, less-conventional ‘news’ about science. The implicit benefit of exaggeration — to help stories to squeeze through the next stage in the news process — is weakening.

The study suggests as much — there was no link between the amount of exaggeration in a press release and the media coverage that it received. The truth, in other words, does not have to hurt. ■

Honest brokers

Climate negotiations in Lima stumbled on transparency, but there is time to adjust.

The main task for negotiators at the United Nations climate talks in Lima last week was simple: lay out the rules for the emissions pledges that countries will submit over the next six months. Countries had already agreed to put forth plans, each according to its own needs, capabilities and circumstances, and were riding a small wave of optimism after the surprise announcement in the lead-up to the talks that China and the United States had agreed to cut their emissions. The question was how to register and interpret these commitments going into the headline summit in Paris next year.

It is hard to overstate the simplicity of this task, especially relative to the magnitude of the challenge at hand. And yet negotiators went into double overtime fighting old fights, and walked away with something that bears a clear resemblance to nothing.

Negotiators had various options on the table, ranging from a generic registry of commitments to a formal review process in which countries would be expected to provide the relevant data and then defend the adequacy of their pledges. But after days of bickering about what should be required of whom — led by China, which opposed the reviews — they wound up with a text that requires little of anybody.

The final system must allow everybody to evaluate all national commitments and track their progress over time. A treaty that formalizes such an approach would give all countries confidence that their investments are not in vain.

Sure, nations are beginning to take action, but it is the cumulative

carbon emissions that matter. The end goal is a world with essentially zero emissions. That is not possible unless all countries play ball. We are in the middle of a trust-building exercise, and the first step is transparency.

One sticking point is that national commitments can (and will) be assessed in various ways. Wealthy countries will measure actual reductions in emissions; rapidly developing countries might opt for reductions from forecast growth. But commitments can also be assessed in terms of cost, either absolute or relative to economic activity, and even on technical capacity for the poorest nations. Both carbon emissions and investments can be assessed relative to population and per-capita income to get at the question of equity, which is at the heart of most disputes in the climate negotiations. All of these measures are legitimate, and academics are already busy with such analyses. But they all depend on one thing: information, which is what was dropped from the Lima agreement.

Some countries are likely to provide the relevant evidence to bolster their cases, but this process must be streamlined and must be required of every country. Governments, scientists and environmentalists will fill in any gaps as best they can over the coming year, but the challenge will only grow. Next year’s pledges will probably fall well short of what is needed to prevent the worst impacts of global warming, so commitments will need to be reviewed and updated regularly. Once governments can demonstrate progress, the plan is for them to initiate a virtuous cycle in which better policies and cheaper technologies help to push emissions ever lower.

This will only work, however, if governments can be held accountable and independent analysis can identify which policies are working — and which are not. And to do that, the world will need solid data and robust assessments. Simple or not, the treaty to be signed in Paris should recognize as much. ■

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