Online Course in Science Journalism

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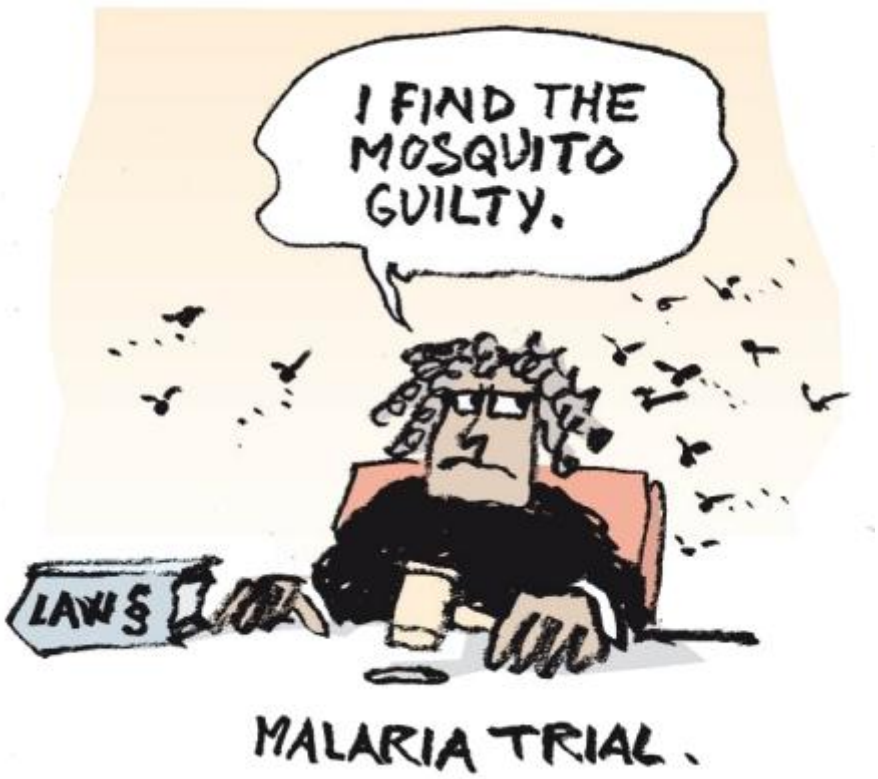


# Lesson 7 - Reporting on Science policy

by Hepeng Jia and Richard Stone

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## 7.1 Why should you care about science policy?

China's first lunar spacecraft sends back a stunning first image of the moon. But questions about the image's authenticity soon appear on the Internet. Is this freedom of expression or, as one Chinese scientist put it, an "attack on the nation?"

A malaria expert calls the delay in delivering bed nets to Africa "one of the shocking crimes of our time." But are bed nets a universal solution to this deadly scourge?

A UN panel of 2000 scientists has determined that greenhouse gases from human activity are the primary driver of recent global warming. Have we started a slow-moving but relentless avalanche of change-and if so, how should society act?

What do these stories have in common?

They all touch on science policy. **And to report and write with authority on these and similar developments in the world of science, you must have command of the basics of science policy.**

In this lesson you will get a good idea where to find news about science policy, who you should interview for a policy angle, how to organize and balance a policy story, and how to deal with challenging issues, such as angering government officials. If you are persistent enough, you might just get accused of revealing state secrets! It's a badge of honor.

## 7.2 What is science policy?

Scientists don't work in a vacuum or in a laboratory divorced from the real world. The grand pursuit and accrual of knowledge that we call science is inextricably linked to society.

For starters, scientists have to get their research money from somewhere. **Taxpayers pay a large share of the research in most countries**. And while curiosity might be the inspiration for many projects, the resulting findings often have consequences for society. Science shapes our world, and it shapes the (sometimes seemingly irrational) decisions of politicians. And politicians (sometimes seemingly irrationally) have a big say in what kinds of research are permitted and receive funding.

The importance of science policy, and the depths to which you will need to plumb it, depends upon who your readers are. If your readers are scientists, you must probe the societal forces that influence their ability to conduct research. If your readers are lay people, you must probe the motivations behind political decisions that affect science and how research findings, in turn, affect your readers.

**Simply put, science policy is the nexus of science and society**. It encompasses decisions, big and small, about research, and any plan of action - however wise or misguided.

As a science journalist, if you only focus on the findings, you are often missing the bigger picture.

## 7.2.1 Example 1: Embryonic stem cell research

In theory, embryonic stem cells can develop into any cell type in the body, and for that reason, many scientists think these cells could eventually be used to treat diseases like diabetes and Parkinson's. Their use is controversial because the cells are extracted from week-old human embryos that are destroyed in the process.

Explaining the science of embryonic stem cells is hard enough. It's also a moral minefield, and politics is polarized. In 2001, U.S. President George Bush ordered that government researchers could only work with stem cell lines derived before his decree. Many U.S. researchers felt hamstrung by the regulations, leaving the door open to countries like Singapore, which place fewer restrictions on stem cell research, to take the lead.

**The point is that understanding the science is not enough**. A science journalist must become versed in the politics and moral issues surrounding stem cell research to write authoritatively on this subject.

## 7.2.2 Example 2: Defending Earth from Errant Asteroids

Around 10 million asteroids and comets whiz around our solar system. Every hundred million years or so, Earth gets walloped by a huge rock that triggers a global firestorm, frying most life on the planet. It's now generally accepted that a six-mile wide asteroid or comet killed off the dinosaurs 65 million years ago.

What happens if astronomers were to identify an asteroid with our name on it? Say, hypothetically, one that is going to hit Earth a few years from now?

As a science journalist, you'll be expected to explain the consequences of this asteroid impact, orbital dynamics, and the technical strategies for deflecting or blowing up the rock. Much of this will boil down to explaining complex science in a simple manner-what you are trained to do. But there are huge societal issues as well. How will governments decide to act? Which nation will take the lead? If the asteroid is so big that our only option is a nuclear weapon, who gets to pull the trigger? These are science policy questions.

## 7.3 Cardinal rule

Here is the cardinal rule: **every science story has a policy angle**. (Admittedly, sometimes you have to look hard!). Keep three things in mind:

a. **There is more than one side to every story**. A journalist should seek varied viewpoints, especially contradictory opinions, and reflect the diversity of opinions in an article.
b. **For every story, there is an underlying story**. Given enough time, you must consider, if not investigate, the motivations of the scientists and the organizations you are writing about. Find your inner bloodhound: journalists are trained to follow the money. Money and personality shape research and the decisions that set research agendas.
c. **For every policy decision, there is a scientific angle**. Research findings are used to support or oppose policymaking at every level of government, whether it is your city council or the United Nations. It is important to find out whether the research you are writing about is being used for political ends.

## 7.4 The corridors of science policy

**Here are several venues where a journalist will encounter science policy.**

| Venue | Explanation |
|---|---|
| Government | Science issues and budgets are debated at congressional and parliamentary hearings, and at meetings of advisory boards and regulatory bodies. In the United States, a good resource to track upcoming events is the Federal Register [ http://www.gpo.gov/fdsys/ ]. |
| The campaign trail | Candidates often will touch upon hot science issues in speeches or in party platforms. |
| Scientific society meetings | Societies like the Society for Neuroscience [ http://www.sfn.org/ ] and the European Geosciences Union [ http://www.egu.eu/ ] hold annual meetings with dedicated sessions on science policy issues that affect their research fields. At major scientific meetings, political leaders often make speeches at which they unveil new policies or programs. |
| International negotiations | The United Nations [ http://www.un.org/ ] and other international bodies take a leading role in forging policies on global issues, such as how to mitigate the effects of climate change and how to protect biodiversity. |
| Nonprofit organizations | Citizens groups, professional societies, and activists help shape science policy through their reports and press events. |
| Corporate activities | Large companies support vibrant R&D efforts and seek to influence science-based regulations to their benefit. |
| Science journals | Leading journals like Nature [ http://www.nature.com/ ] and Science [ http://www.sciencemag.org/ ] shape science policy through editorials and policy forums authored by scientists |

## 7.5 Different types of science policy reporting

There are different types of science policy stories, the most basic one being **short news** that reports certain policies being enacted. Other types of policy stories are **features** and **news focuses** that detail the appeals and debate for (or against) certain policies, or analyze the impact of policies for your readers. You need to choose key information.

**EXAMPLE**

**Chinese science: big ambition or big gamble?** [ http://www.scidev.net/content/features/eng/chinese-science-big-ambition-or-big-gamble.cfm ]

You can also choose to write **opinions** or **editorials**. You should have more analysis-based information, both positive and negative. Try to list the points supporting a policy and then argue against them instead of leaving them untouched.

**Writing opinion pieces on science policy is very often a chance for a science reporter to promote his or her reputation within a news organization. As a beat, science does not always generate editorials or commentaries. Science reporters can seize upon science policy as a golden opportunity to enter the politics pages and programs.**

## 7.6 Finding science policy stories
## 7.6.1 Making the most of meetings

Before going to a meeting, prepare yourself: Who are the key speakers? Which policies will they address? Who else might be there? If possible, talk with meeting organizers or major speakers. Also, it is often useful to talk with other journalists what they expect will be new at the meeting.

Once you're at the meeting, concentrate hard on the speeches of policymakers. Watch out for hints about policy changes or complaints against major policies.

It may be senior officials who refer to a new direction or step in policy, rather than the ministerial leaders, whose speeches tend to be empty and more about principles than specific action, so try to find what is likely to make a difference. **When you hear the most important points of the policy, ask policy researchers familiar with the field to explain the one or two policy proposals being made.** Many of the issues will have been discussed before the new policy is announced. You can also ask stakeholders for their comments on the policies revealed by leaders. If you hear something essential, follow the relevant speakers when they leave the platform.

Whenever possible, participate in small-scale professional meetings related to science policies. You may have to promise the organizers that you will not report anything. But using what you discover as exclusive background information, you can always find an opportunity to write about the topic.

**EXAMPLE:**

**China proposes cooperative renewables research**

[ http://www.scidev.net/News/index.cfm?fuseaction=readNews&itemid=3907&language=1 ]

In his opening speech to the Solar World Congress, China's vice science minister mentioned that his ministry was trying to form an international cooperation framework on sustainable energies. This is a first in China and is important because China faces great pressure to reduce its carbon emissions. While the vice-minister was difficult to pursue for a follow-up interview, there were many VIPs at the conference whose comments were quite important for readers.

## 7.6.2 Research projects

For key research projects, the most important policy aspects are their mission, funding and follow-up measures for commercialization/applications. Commonly these projects do not appear overnight, but develop over time. Try to follow up on them.

**Complaints against problems, appeals for new policies or updates/revisions, and debates for or against certain policies are a major source of science policy stories.** Compared with new policies "incidentally" revealed by the government officials, debates or complaints are easier to hear, so trace selectively those related to really important policies or those that are really new, at least to your audience.

For example, complaints against unfair distribution of science funding can often be heard. These complaints per se are not news, but if you hear that in certain big scientific projects, scientists protest that too much money is spent on useless equipment, they could be worth a big story.

Policy research reported in professional journals and performed by major think tanks are another source of stories. But as these reports are often based on previous case studies, they may not be sufficiently new for a news story. A solution would be to see whether the reports are meaningful in relation to hot topics.

## 7.6.3 Controversies

Unlike other policy areas where debates are performed in open, plain language, science policies and projects sometimes are debated in a more obscure way in professional journals or professional meetings. **In a more hierarchic science system, which is common to many developing countries, open debates are lacking**. Instead, you may have to go to the following sources in order to find controversies:

1. **Academic journals** (but not policy research journals) of the field where the debates are expressed in a rather professional language (which may be appropriate for the target readers, but means that they are less accessible to non-specialist readers)
2. **Foreign journals** and media reports.
3. **Local meetings, that** may throw up scientific debate on certain specific issues. For example the gathering of environmentalists by a river may be the origin of a debate over a big dam project.

   **Small scale** professional meeting, and/or talking with scientists in the field.

**EXAMPLE:**

One example is a feature in Science on China's gigantic water diversion project from south to north. In China, open debate about a big project initiated by top State leaders are difficult to trace, especially once the project is launched. However, screening academic literature may reveal descriptions of the possible problematic areas, which rather than directly challenging the water diversion project instead evaluate related issues, such as the ecology of contributory rivers, the impact of relocating residents, and the distribution of water resources.

The article can be read at IUCN's website: [ http://cmsdata.iucn.org/downloads/asia_going_against_flow.pdf ]

## 7.7 Interviews for science policy reporting
## 7.7.1 Preparation and first questions

Before you go to an interview on science policy, get to know the background information, and any previous appeals and debates, Find out who has adopted what position, and identify two or three representative opinions or proposals. Learn the main opinions of other scientists/policymakers/policy researchers besides your interviewee. Get to know the most appropriate policy departments. If you are working on a controversial policy, you need to at least check what and how the government officials have defended their policies in the past.

For short interviews at the sideline of major events at which officials have mentioned something exciting, you quickly need to prepare up to three key questions before approaching the officials.

1. If the officials mention plans to do something great but are too vague, your first question can **force them to be more specific.**
2. If the officials have already mentioned concrete policies or measures, your first question should be **"when?"**
3. Once you have answers to the above two questions you may want to ask: "**how much funding is involved?"** and **"how wide is the coverage of the policies?"**

There are always necessary and meaningful questions on how to implement the policies and what impact the policies may have. They are too long to answer in a short after-meeting interview. Perhaps the most efficient use of the time is to cite a major difficulty and ask whether this can be overcome, or cite some of the possible impacts and ask how to deal with them.

**EXAMPLE:**

**China launches campaign to boost local journals**

[ http://www.scidev.net/News/index.cfm?fuseaction=readNews&itemid=2528&language=1 ]

The writer of the story did a follow-up interview immediately after hearing the speech by a science ministry official, including the questions of When, What and How to overcome difficulties such as scientists wishing to publish more internationally. The interviews took no longer than five minutes, but provided enough information for the story.

## 7.7.2 Digging deep

In a planned exclusive or group interview you should have enough time to ask the same questions as above - covering what, when, how much funding, and how to overcome difficulties - but in more detail. (See also Chapter 3 of this online course "The Interview" [ http://www.wfsj.org/course/en/L3/L3P00.html ]).

1. It is always good to provide the policymaker with **different options to answer**, for example, by going through a list of difficulties or problems, and saying, "I heard that there is difficulty A for the proposed policies, how do you cope with this?"
2. A clever trick in interviews is to **quote someone whose opinions are different** to those of the person you are interviewing, and - politely, of course, ask him/her to respond. (In other situations or cultures it may be better that you, the interviewer, take the other opinion as part of your question - without this being your personal view, of course.)
3. Another tactic - but based on some basic knowledge in the area - is to ask about the **premise of the new policies**. Say, for example: "We all know that this problem has existed for some time (the policymakers should be well aware of this), but so far, no policies have been effective in tackling it. How can you (policymakers) be sure that this policy (or project) will do any better?"
4. At a press conference concerning new policy, always try to distinguish your questions from other more routine questions about the policy itself. A common strategy is to ask about the possible impact and negative effect of the new policy, or some area that you think the policy fails to address. But make sure that the style of your question is not too challenging in the public press conference.

**EXAMPLE:**

A very good example is at a recent meeting of the Center for International Forestry Research (CIFOR), which discussed a CIFOR forest and climate change research initiative. The reporter asked: "The role of forest in fighting climate change is well known, but there has been no action to conserve forest in order to fight global warming. Can you expect your initiative to overcome the barriers that discourage action being taken? And why are you so sure?"

The questions prompted a very specific description of the initiative, enabling readers to understand the situation. This, together with other information, led to the following story:

**Plans to curb deforestation need more consideration**

[ http://www.scidev.net/content/news/eng/plans-to-curb-deforestation-need-more-consideration.cfm ]

## 7.7.3 Policy researchers and other stakeholders

It's always useful to conduct additional interviews with others who are familiar with the policy, such as policy researchers, and/or with stakeholders (companies, NGOs, farmers, doctors, etc.) who might be affected by the policy.

You may need to interview more people affected by the policy than you had expected. But it may not be easy finding a scientist who is willing to comment - they are not politicians and tend to say "no" if you ask them beyond their field of expertise. But you can always ask them to recommend someone else - or to talk "off the record".

If you have interviewed people who are critical of a policy, try to return to people involved in the policy to ask for their response to the criticisms.

## 7.8 Writing about science policy

Reporting about science policy is not the same as reporting about a new piece of research. **Reporting about policy requires a more complicated balancing of different stakeholder views**, and needs to link between the current situation, the content of the policy and its intended impacts.

A typical SciDev.Net story mentions the policy and one of its major impacts in the lead, or states one of the major goals and then mentions the policy.

**EXAMPLE:**

**China drugs agency must play by new rules**

[ http://www.scidev.net/News/index.cfm?fuseaction=readNews&itemid=3746&language=1 ]

Nearly all policies are dry in their literal expressions. So make them more attractive by providing a streamlined description of the problem, the possible solutions contained in the policy, and new problems or insufficiencies that may arise as a result of the new policies. This also works for radio/TV stories.

**EXAMPLE:**

**Chinese energy ministry on the cards**

[ http://www.rsc.org/chemistryworld/News/2007/October/17100701.asp ]

This story begins by saying that a new energy ministry is reportedly being created, and then summarizes the problems with China's existing structure for energy regulation and governance, providing the rationale for a new ministry. It then reveals that the new ministry is unlikely to solve China's energy dilemma, and will be challenged by existing vested interest groups.

In many instances, policy reporting does not have a final, determined end. Rather, after having balanced different sides of the policy (or debate), the story can conclude with a quote from someone about the future, or a question on the policy's effect.

**EXAMPLE**:

We realize this lesson is geared towards print and online journalism. But the same principles apply to broadcast journalism too. As always with radio and TV, the challenge is finding the images or personalities that make a story come alive. For an example of how this is done for science policy, check out this report on National Public Radio on ongoing concerns about China's massive Three Gorges Dam project.

**Concerns Rise with Water of Three Gorges Dam**

[ http://www.npr.org/templates/story/story.php?storyId=17723829 ]

## 7.8.1 Structuring longer pieces

Storytelling is very important if you are writing a feature (news focus) story. Such reports tend to have much more space and commonly take place some time (at least several days) after the announcement or debate about a new policy. They can focus more on the impact of the policy (or science-related projects).

Here is a suggestion for how to structure a good feature article about science policy (see also Chapter 4 of this online course on "Writing skills":

[ http://www.wfsj.org/course/en/L4/L4P05.html ]

1. A soft lead is not essential but is often used. A common strategy is to describe someone who is, or soon will be, affected by the policy.
2. It is then necessary to provide a transition from describing an individual and new action in the lead (and perhaps one or two following paragraphs), to the wider situation. A typical linking sentence could begin, "XX is one of the group to be affected or waiting for a policy of..."
3. After the transition, there needs to be a summary of the policy or policy debate or appeal, but only the key points rather than a comprehensive account.
4. Following this comes background, key problems to solve, and key steps in the making of the new policy.
5. You can then give further details of the policy and debate around the policy in relation to these various issues.
6. Next, refer to any positive or negative consequences of the policies.
7. Present the arguments for and against the policy or appeals. Or, when reporting a new policy, talk about its insufficiency or difficulties in implementation.
8. Finally, you can go back to the policymakers, letting them explain, defend, or anticipate what follows.

The above structure is not a fixed recipe, but helps new writers to get a sense of the drama, or plot that can be created.

**EXAMPLE:**

An example is a feature in Nature Biotechnology on corruption involving China's drug regulator SFDA.

**China's drug agency under scrutiny**

[ http://www.scidev.net/content/features/eng/chinas-drug-agency-under-scrutiny.cfm ]

For a radio/TV story on science policies, a similar narrative order can be pursued to express the sense of drama, with the advantage that there are more chances for people involved in the story to speak directly, instead of being quoted as in the print media.

## 7.8.2 Controversies and scientific background

In other situations it is important to provide as balanced an account as possible, yet developing a main thread from start to finish, which is often the key problem to be solved.

**EXAMPLE:**

A feature in Science on China's controversial payouts to lure academic 'stars' based abroad back to China is an example of the "natural up and down" style of reporting.

**'Academic moonlighting': China's hunt for glory**

[ http://www.scidev.net/Features/index.cfm?fuseaction=readFeatures&itemid=551&language=1 ]

Reports about science policies do not need to contain the same level of explanation of scientific terms as reports about scientific discoveries, but this does not mean they do not require scientific information. Unlike a political or a business policy, science policies are often based on problems in the research fields, so tapping into related academic literature for background information is sometimes necessary. Unlike a science story, the academic background needs to be more plainly explained.

**EXAMPLE:**

An example is the US Environmental Protection Agency's approval of a chemical that scientists claim is dangerous:

**Chemists challenge EPA pesticide decision**

[ http://www.rsc.org/chemistryworld/News/2007/October/10100702.asp ]

Work with editors carefully to make sure that debates against certain policies are not too politically risky, or challenging. Editors commonly have more sense on this than reporters.

Check those more sensitive quotes with interviewees when necessary. Unlike a story on science, some comments against certain policies could bring harm to commentators. When they are unhappy, discuss with them to make sure similar information can be expressed in a milder or hidden way.

## 7.9 What motivates your sources?

Any good journalist knows the importance of having a long list of sources at their fingertips. You have to be cognizant tha**t your sources have a reason to provide you with information**. Maybe they like you and respect your work-that's great! Maybe they want to see their names in print. So be it, if their quotes are scintillating. But maybe they have hidden motivations. Maybe they want your article to increase their chances of getting research funding, or a promotion. Consciously or not, they want to shape your opinion. Always consider the motivations of your sources, especially when your article transcends the sanctity of research findings and touches on societal issues.

Any good journalist also should have a central motivation: **the pursuit of truth**. Sometimes this collides with the tendency of governments, and individuals, to hide information that puts them in a bad light, or which they consider premature to release to the public. In the United States, the Freedom of Information Act (FOIA) entitles the public to seek specific information from government agencies.

Unfortunately, few other countries have a similar mechanism for obtaining information from reluctant government officials. If you are not sure what you are allowed to do in such instances in your country, discuss the matter with your colleagues. Learn from their experiences, seek advice from national and international journalists' associations, and, when legal issues arise, find out if lawyers can help you.

Sometimes information is deemed classified-a **state secret**-and this may stymie your pursuit of the truth. Some countries have a broad definition of what constitutes a state secret. Governments may insist that certain information is a state secret even if it is already in the public domain, such as on the Internet. That's certainly true in China. Approach a story from different angles-broaden your list of contacts. Try to get information from nongovernmental sources.

## 7.10 Sources for science policy news

There are some science information sources where you might obtain clues about science policies (see also Chapter 2 of this online course, "Finding science stories [ http://www.wfsj.org/course/en/L2/L2P00.html ]").

**EurekAlert!**, which includes not only news releases for important research papers from Science, PNAS, Lancet and other embargoed journals, but also many policy initiatives or news releases about major policy reports:
[ http://www.eurekalert.org/bysubject/policy.php ]

You need to register for daily email alerts and for access to embargoed news.

**Alphagalileo**, which focuses on European research and policy initiatives. As European nations have many development aid programs, you may also find policy clues about these programs.

Visit [ http://www.alphagalileo.org ] and register for the daily updated news releases.

The **Nature** press website is dominated by news releases of research papers published in Nature and other journals of Nature Publishing Group, but there are also commentary articles and editorials relating to science policy. You need to register at
[ http://press.nature.com/press ]

The UK-based Science Media Centre covers both research findings and many policy discussions. Visit
[ http://www.sciencemediacentre.org/ ] frequently to learn more about them.

The websites of UN [ http://www.un.org/ ], WHO [ http://www.who.int/ ], UNDP [ http://www.undp.org/ ], UNEP [ http://www.unep.org/ ], UNAIDS [ http://www.unaids.org/ ], FAO [ http://www.fao.org/ ], OECD [ http://www.oecd.org ], International Energy Agency [ http://www.iea.org/ ], the World Bank [ http://www.worldbank.org/ ], the African Academy of Sciences [ http://www.aasciences.org/ ], and the Third World Academy of Sciences [ http://www.twas.org/ ] are major sources for you to learn about international science policies, but they do not give advance notice of new policies or policy reports, except to provide press releases to registered journalists.

## 7.11 Self-teaching questions

**Exercise One: Finding policy stories**

At which three of these venues are you most likely to hear about a new science policy development?

a. At a political gathering where a candidate delivers a speech
b. At the annual meeting of a science ministry or agency
c. During a courtesy visit by a prime minister to an orphanage
d. In a quarterly journal focused on theoretical mathematics
e. At a news conference of Microsoft about its annual strategy

**Exercise two: finding policy stories**

You've been asked to cover the 50th International Microorganism Conference. In the opening session, the five keynote speakers are the prime minister of the host country, the chair of the International Microorganism Society, the vice minister of health of the host country, the president of the host university, and a prestigious Nobel Prize-winning life scientist. Who are the newsmakers? Make a list of the speakers in the order of likelihood that they will yield a news story for your newspaper, magazine, or TV station. Explain what kind of news might come out of each speech.

**Exercise three: Finding the policy angle**

Suppose you write for a general mass medium and have read the following claims. Which of the claims are most news worthy for a policy story for your outlet and chosen topics?

a. A famous earth scientist complains that the funding for his field has been too small.
b. An epidemiologist warns that without developing a human H5N1 vaccine, pandemic flu is inevitable in her region in the coming months.
c. A life scientist says that stem cell research in her country has been over-restricted and there should not be many ethical constraints.
d. A science minister calls for his country to be more innovation-based.
e. A scientist chairing a big proteomics project complains that funds promised for his project have been appropriated to other research programs.

**Exercise four: Reporting the science angle**

Suppose you are at a small meeting about international science cooperation where you heard from a science ministry official that their ministry is brewing a policy to limit the participation of foreign researchers in locally funded research. Imagine there are various participants in this meeting - policymakers, policy researchers, scientists. Try to find three interviewees and design short questions for them about this policy. Remember your time is very limited.

**Exercise five: Dealing with sensitive information**

A source tells you that many scientists oppose a massive engineering project that costs billions of dollars and may have disastrous environmental consequences. However, no one is speaking openly about this project. Which are the best ways for you initially to track down some critical yet reliable information?

a. Book a formal interview with the ministry officials responsible for the project
b. Search Google Scholar with key words related to the project and its possible impact
c. Read the website of the ministry backing the project
d. Read relevant international media reports
e. Explore the websites of United Nations agencies

## 7.12 Self-teaching questions answers

**Exercise One: Finding policy stories**

At which three of these venues are you most likely to hear about a new science policy development?

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b. At the annual meeting of a science ministry or agency
c. During a courtesy visit by a prime minister to an orphanage
d. In a quarterly journal focused on theoretical mathematics
e. At a news conference of Microsoft about its annual strategy

**Answer**: A, B, E. For answer C, although a prime minister may be a source of key policy decisions, it is unlikely for him or her to reveal this during a visit to an orphanage; For answer D, the journal on theoretical mathematics is likely to be too arcane and appear in print too infrequently to contain newsworthy discussions of policy matters.

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**Reference answer**: One possible order is: vice health minister, prime minister, president of the host university, chair of the International Microorganism Society, and a prestigious Nobel-winning life scientist.

The order is supposing your medium is very general in the host country. Although the prime minister is a high level political figure, the field of science might be too professional. Vice ministers of health commonly take charge of the very concrete affairs related to epidemics of a country, and are very likely to produce news in his/her speeches. A local university president is more news-making than the international society chair because news there is more relevant to the public life than an international academic organization.

But of course this is not the only possible answer. It depends on your news outlet, on the personality of the speakers and other factors.

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Suppose you write for a general mass medium and have read the following claims. Which of the claims are most news worthy for a policy story for your outlet and chosen topics?

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c. A life scientist says that stem cell research in her country has been over-restricted and there should not be many ethical constraints.
d. A science minister calls for his country to be more innovation-based.
e. A scientist chairing a big proteomics project complains that funds promised for his project have been appropriated to other research programs.

**Reference answer**: Whether your news outlet aims at a general or a more scientific audience, it is crucial here to explore the claims that are more specific, more recent than the others. Then, among specific things, you have to choose the topics that are most relevant to people's ordinary life. For this purpose, there is nothing more relevant than the pandemic flu in the claim B. So following claim A and D are too general.

Claim C is thought by many scientists, but few would express it openly, so if the scientist in question has said it, with justification, it could be newsworthy for more professional media.

Claim E is an interesting story if it has not been mentioned before, but commonly its readers should be scientists.

**Exercise four: Reporting the science angle**

Suppose you are at a small meeting about international science cooperation where you heard from a science ministry official that their ministry is brewing a policy to limit the participation of foreign researchers in locally funded research. Imagine there are various participants in this meeting - policymakers, policy researchers, scientists. Try to find three interviewees and design short questions for them about this policy. Remember your time is very limited.

**Reference answer**: To follow this story, ask the speaker when the policy will be introduced, and how long the proposed action will last. If the official refuses to comment, which is very likely, you may need to check with any policy researchers at the meeting who may know more about the proposed policy. Your questions could include how likely it is that the policy will be introduced, and when and how it will affect the research field. Also remember to identify at the meeting any scientists with international links for whom the policy is relevant. Your first priority is talk with the policy researchers, but then you can ask the scientist for his/her comment on the proposed policy.

**Exercise five: Dealing with sensitive information**

A source tells you that many scientists oppose a massive engineering project that costs billions of dollars and may have disastrous environmental consequences. However, no one is speaking openly about this project. Which are the best ways for you initially to track down some critical yet reliable information?

a. Book a formal interview with the ministry officials responsible for the project
b. Search Google Scholar with key words related to the project and its possible impact
c. Read the website of the ministry backing the project
d. Read relevant international media reports
e. Explore the websites of United Nations agencies

**Answer:** B and D are promising first steps to take. For answers A and C, it is very unlikely that the ministry supporting the project can or will reveal any critical information. For answer E, you have to remember that UN agencies are always very cautious to avoid commenting on internal affairs of countries, and their websites are unlikely to highlight critical information on emerging issues of international concern.

## 7.13 Assignments

**Assignment 1**

Go to Google and type in the search terms "science policy Africa." The first URL that comes up is a link to the UNESCO science policy and sustainable development program [ http://www.unesco.org/science/psd ]. Jump to the site for a quick introduction to this and other UNESCO science programs, and you've done a bit of science policy homework.

**Assignment 2: Finding the policy angle**

What is the science policy angle of a story about the impending possibility that an asteroid will strike Earth?

Here is one possible answer:

Although many aspects of the possible impact are grounded in physics or technology, societal issues will be of paramount concern to most readers, especially if you are writing for the general public. If a potential impact is not certain-for example, if the odds of a collision are 1 in 100 - should governments take action? What is a reasonable threshold of unacceptable risk? And what should the action be? Blow up the asteroid, or steer it off course? Relocate people from likely impact sites? Should people be compensated? According to what standard?

On top of that are many other considerations and angles, please think creatively about the possibilities and discuss them.

**Assignment 3: planetary defense**

Let's return to the example of the asteroid impact. You race off to a NASA press conference where an Administrator announces that the asteroid Apophis, 300 metres wide, has a 1 in 37 chance of hitting Earth on April 13, 2015. Nations must act to prevent this catastrophe.

**Task one**: make a list of the purely scientific information you need for a story (Where will it hit? What will be the physical consequences?)

**Task two:** make a list of the science policy issues you need to explore in a story (Will a nuclear weapon be necessary? Which nation will lead the planetary defense effort?)

**Task three:** based on your list of questions, decide which sources you will need to call.

**Task four (optional):** Have some fun! Make up the answers (for this assignment only—not for publication!) and write a several-hundred word story tailored for the audience—the media outlet—of your choice.

**Assignment 4: mock press conference**

Imagine that Peking University is holding a press conference to announce the amazing news that one of its professors has discovered how to forge gold from two lighter elements, cobalt and tellurium. This modern day alchemy was the serendipitous result of routine experiments to bombard a cobalt target with various heavy atoms to see what is produced in the collision.

At the press conference, Peking University is announcing that the process is economically viable and that it has filed a patent for this process of gold production. The university has formed a company to profit from the discovery.

What would you ask the university spokesman at the press conference?

Some issues that come to mind:

Who will own the patent?

How will the university use the profits of this discovery?

Has this experiment been replicated by an independent laboratory?

Who would you call after racing back to your newspaper or magazine? Think of your audience:

What will your readers want to know?

What kind of objective experts will you call? Physicists?

What about a representative of the gold trade organization, who might comment on the potential for a glut of new gold on the market to depress gold prices?

How about jubilant officials from the cobalt and tellurium mining associations?