Questions raised after presentation

1) Sanjiv democratization of science
   - accessibility of the technology at the grassroots level

2) from south africa
   - contrast in the presentation
   - public policy : power relations in society
   - victims vs. survivals (empowering)
   - power of science : how can you take the science and use in empowerment
   - bureaucracy : difficult to penetrate, failures on the side of activists
   - ph.d in science

3) 백도명
   - how environmental risk can be stronger player than the occupational risk?
   - how the risk is perceived by the public and the activists?
   - uncertainties?
From the introduction of Harvard Kennedy School Program on Science, Technology, and Society

scientists community, innovation policy, science and technology are important in many social and political problems

1) the nature and practice of science and technology
2) impact and social control of science and technology

History, philosophy and sociology of science + anthropological approaches
According to nice review of Deborah Lupton, there are several different approaches to study risks in social sciences. These differences originate from how each approach see the relationship between the scientific aspects of risks and social, political, and cultural aspects of it.

So on the one hand,
- **Realist approach**
  - risk is objective fact and its scientific aspects has no relationship with the social and political aspects.
  - the reason why there are political struggles is that risk is misunderstood or distorted by different group of people.
  - in this approach, they believe that science on the one hand, and politics and culture on the other are separated and can exist independently.

On the other hand,
- **Constructivist approach (weak)**
  - "Risk is an objective hazard, threat or danger that is inevitably mediated through social and cultural processes and can never be known in isolation from these processes."

- **Strong constructivist approach**, too, who believes in every risks are cultural product, rather than it really exists.

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### Different Approaches to Understand Risks in the Social Sciences

<table>
<thead>
<tr>
<th>Realist approach</th>
<th>Constructivist approach (weak)</th>
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<td>- &quot;Risk is an objective hazard, threat or danger that exists and can be measured independently of social and cultural processes, but may be distorted or biased through social and cultural frameworks of interpretation.&quot;</td>
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By taking the constructivist approach, I ask this question: Why asbestos matters in 21st century South Korean society?

In fact it is the initial question I had when I began my dissertation research about three years ago.

It reveals several assumptions I had before I began this research.
1) asbestos is an old problem. By saying “Old” I mean the long history of usage and problems. it is not only just old, and well known carcinogen. Which connects to my second assumption that
2) proper scientific knowledge guarantee proper management and regulation

But it turned out not, as the Indian case presented earlier tells there is a gap between the knowledge of risk, and proper management.
So when does a risk, like asbestos exposure, become the risk within a society?
My conclusion is, …

I should say this is unique of Korea: correct me if I was wrong, but I didn't see a case study where asbestos as an environmental risk attracted more concern than asbestos as an occupational hazard.

Evidence of my research suggests that one material can be identified differently and its risk can be constructed and re-constructed at different historical settings.

→ It is I think one aspects of asbestos problems in Asia. Not only the regional characteristics, but its historical background gives a completely different setting on conflicts surrounding asbestos problems in Asia.

→ This supports the constructivist approach to risks: that hazard of the risk is very real, but it is mediated through the political and cultural settings that are different at different historical moments.

Research Question

WHY asbestos matters in 21st century South Korean Society?

→ Because asbestos has re-characterized as environmental risk through scientific, and social-political processes.
Research Question

WHY asbestos matters in 21st century South Korean Society?

—> Because asbestos has re-characterized as environmental risk through scientific, and social-political processes.

How and by Whom?

- My dissertation research project is to follow how and by whom this re-characterization of asbestos process occurred.
- For this research, I examine scientists, medical experts, (occupational hygiene experts, radiologists), social activists, and patients. Today I will focus on the social activists, and the previous presenter Yeyong Choi and try to evaluate and understand his activities historically and sociologically.
Roles
- social activism largely based on asbestos measurement in many places, among many others activities including assisting patient organization, political demonstrations and law and policy-making.
- in 2009 only they published 12 asbestos investigation report conducted in public buildings, public schools, asbestos mining regions, baseball fields, urban re-development areas. This made their argument very persuasive.
- I pay attention to how they conducted this investigation.

Standard
- light microscopes / transmissive electron microscope (TEM)
- in a way to best guarantee the quality and stability in measurement in different institutions by adopting very well established methods mainly from US regulation, and some EU countries
- in standard methods, the concentration of asbestos in the air or bulk materials is important

Activists
- SEM Scanning electron microscopes: as far as I researched, occupy very minor position globally. I found two established method from Britain and Germany for SEM analysis.
- This gives a strong incentives to the activists not only because it provides good measurement including its chemical composition, but also because it provides a good picture of asbestos.
- In addition the way they sample asbestos, it is not number one purpose to see how high the level of pollution is. It is more important to detect the asbestos fibers.
By closely looking at the different approaches and technologies adopted by the government agency and the activists, I came to conclusion that different measurement technology embodies different values and ideas on what is risk, pollution, and environment.

- **Risk**: risk assessment
  - \(\rightarrow\) to evaluate probabilistically the relative size of risk in different exposure scenarios

- **Pollution** \(\rightarrow\) when does a pollution become matters?
  - threshold: under the threshold it is not really a problem.
  - homogenous distribution: sampling methods \(\rightarrow\) to make sure sampling at even distances

- purist approach
- heterogenous distribution

- **Environment**
  - unpredictable: measuring concentration of airborne asbestos sometimes does not make sense considering easily changing environmental conditions

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<th>Activists methods</th>
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<td>purist understanding</td>
</tr>
<tr>
<td>environment</td>
<td>-</td>
<td>unpredictable</td>
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Conclusion

* How we understand Risk, and \textit{when does a risk become a real risk}
* \textbf{Risk} is shaped within the society through the interaction between science of hazard, technology of measurement, understandings of risk, environment, pollution, and different values different groups of people have.

* To conclude the presentation with a open question,
* the activists’ measurement: how to evaluate the activist’ scientific expertise? what is it? is it equal to that of university-trained scientists? what are the values?

Phil Brown: sociology, studied epidemiological studies in Woburn, Massachusetts: on causal relationship between local leukemia cases and groundwater pollution from the nearby factories.
* important 1) directing gov scientific investigations 2) reveal different values exist within the society 3) politically represent the minority (patients) in scientific societies.
Thank you

http://stp.kaist.ac.kr
Making Asbestos an Environmental Risk

2) Patients: Becoming biocitizens
Making Asbestos an Environmental Risk

3) Government-Medical Experts: Health examination and the search for the patients