Actuality and Potentiality of Ethical Reflections for Reconstructing Biotechnology

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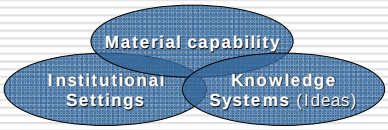
Session I-F
Reconstructing Genomics Knowledge Systems for Development: Counter Politics in Agenda Setting?

1. Introduction

- Reconstructing knowledge systems
  - Technology development does not occur in a social vacuum. It is mediating and mediated by not just scientific knowledge, but also economic interests and institutional settings
  - Knowledge system, underlying the process of technology development, is not just the structure of cognitive process, but also the structure of social process, in which knowledge and information is constructed, disputed, and even manipulated
  - **Need to understand how the present knowledge system function to formulate the actuality and potentiality of biotechnology/genomics**

1. Introduction (continued)

- Hegemony [Gramsci]
  - Knowledge system as a part of hegemony
  - Force + Consent to the specific social order
  - Politics in terms of three sets of relations of force



  - **Ethical discourse of "biotechnology for the poor" as a discursive tool for hegemony (Biotechnology Project)**

2. Backgrounds

- Hisano (2002)
  - Political economy of GM crop commercialisation
- Hisano (2004)
  - OECD model of biotechnology regulation
- Hisano (2005)
  - Multilayered hegemonic strategies employed to legitimise the interests of biotech development
    - By force or political pressures
    - By forming institutional networks
    - By ideological/discursive tools
- Hisano (2007/08)
  - The role of biotechnology ethics in terms of the hegemonic project, and potentially, counter-hegemonic projects

3. Biotechnology Push by Ethical Terms

- Ethics
  - Expected to bring researchers and policy makers into critical reflections on their activities
  - ***If applied instrumentally, however***, it is likely to be used by proponents of a certain technology to justify the application and commercialisation of the technology

Limitations of biotechnology ethics (Hisano 2007/08)
End-of-pipe commitment
Narrow utilitarian framing
Personal moral responsibility
Empirical weakness

3. Biotechnology Push by Ethical Terms

- Pew Initiative (2004)
  - "The topic of global hunger has become a prominent backdrop for the worldwide debate over GM crops. The possible use of biotech to boost food production and quality in developing countries has become a focal point both for advocates and critics"
- Some examples
  - C.K.Prakash (1999)
  - N.Borlaug (2000)
  - F.Wambugu (2001)

Biotechnology Project

➔ "**biotechnology for the poor discourser**" (Hisano 2005), "**Poor Man's ethics**" (Sandøe & Madsen 2007), "**crisis narrative**" (Smith 2004), etc.

3. Biotechnology Push by Ethical Terms

- In a convincing way, whether deliberate spins or innocent voices…
  - So that even those with moderate/nuanced stance would find it difficult to keep distance from the biotech push
  - If it could be argued that wide acceptance of GMOs is the way to help starving people in the developing world, even the resistance against GMOs would dwindle
- *But*, empirical weakness of biotechnology ethics…
  - Sometimes contains testable and disputable statements presented as "fact"
  - **We need to critically examine the quality of knowledge and information used as a source of moral judgement**

4. Critical Interrogation of Ethical Arguments

- Narratives of "biotech for the poor" discourse
  - World population is increasing…
  - Agricultural production is not keeping pace…
  - Alternative approaches are ineffective and unproductive…
  - Therefore, using GM crops is **the logical (and morally imperative) choice**…

If we take a closer look into the details, **key assumptions of these narratives turn to be problematic**

1. Agrarian development narratives
2. Bt cotton narratives
3. Alternative agriculture narratives
4. Golden rice narratives

4. Critical Interrogation of Ethical Arguments

- What is needed for agrarian development?
  - UNESCAP (2008)
    - What is holding back agriculture includes: inequality of local ownership, insufficient human capital development due to limited access to health & education, and inadequate rural infrastructure
  - World Development Report 2008 (World Bank 2007)
    - Innovating agriculture through S&T is necessary, but…
    - Management and systemic technologies such as soil & water management and agroecological approaches
  - Technology is important, but needs to be applied and managed **in the actual socio-ecological context**

4. Critical Interrogation of Ethical Arguments

- Bt cotton "success" stories in India and S.A.
  - Mainstream accounts presume not just "potential, but also "actual" advantages of GM crops
  - Initial studies (eg. Qaim & Zilberman 2003) have been *still* spun for the media and treated as "official" by international organisations, *though* their limitations with the evidence and methodology have been revealed
  - Among scholars, it is largely agreed that the overall balance sheet of Bt cotton is too mixed and variable to be generalised

← Genotype x <u>Ecosystem x Practice x Institutions</u>

These broad structural conditions should be taken into accounts

4. Critical Interrogation of Ethical Arguments

- Alternative approaches available?
  - Biotechnology push is justified on the ground that there is no other effective option (cf. "Crisis narrative")
  - Thus the potential advantage of GM crops are presumed without comparing with alternative approaches. Or, the potential of organic and other sustainable farming is precluded and even denied
  - However, there have been a lot of projects and studies on organic agriculture, showing considerable potential for improving productivity and rural livelihoods
    - Pretty et al. (2006)
    - Badgley et al. (2007)
    - FAO (2007)

4. Critical Interrogation of Ethical Arguments

- Integrated crop management systems
  - A technical input like Bt is no more than an additional option for pest management
    - Bt cultivars need additional pesticide sprays
    - Farmers can reduce the amounts/costs of pesticide and enhance their income through the optimal combination with ICM (IPM) practices
    - Yang et al. (2005)
      - Bt with chem < Bt with IPM (+farmer field school)
      - Bt with chem = non-Bt with IPM (+farmer field school)
  - If support from government, extension services and public research centres is available enough, farmers could benefit from other forms of technologies/practices, even without relying on biotechnology

4. Critical Interrogation of Ethical Arguments

- Golden Rice narratives
  - Hailed as the most effective and desirable solution to the VAD problem (though still some years to come)
  - This project has been criticised on the ground that we already have low-risk and low-cost solutions, such as encouraging farmers to grow indigenous, familiar vitamin A rich fruit and vegetables, a practice that has been wiped out by the GR…

4. Critical Interrogation of Ethical Arguments

- Discussions
  - FAO/Scialabba (2007)
    - Organic agriculture = "**neo-traditional food systems**" in a sense that it uses scientific investigation to improve traditional farming practices
  - It is important not to deny the role of agricultural S&T (some elements of genomics, too) in improving and implementing alternative farming systems
  - The latest ethical discourse = Paarlberg (2008)
    - Organic agriculture = romanticised, backward style!!
    - Critics/opponents against GMO = "postmodern resistance" or "political/cultural turn" against agricultural science!!

4. Critical Interrogation of Ethical Arguments

- GM technology is just one of a number of technologies that agricultural scientists can work on with moral confidence
- It is time to change our focus to these other forms of agricultural S&T (including some elements of genomics)
- Then, most of ethical dilemmas we have been faced might dissolve
  - The ethical issues that face agricultural scientists are **much more broader than "GM or Not GM"**, once we look at the entire complex of agricultural practices and the transition from "production" to "sustainability"
  - There is a plenty of room for ethical choices!!

5. Conclusion

- Ethics as a counter-hegemonic project?
  - Ethics is a process of self-reflection & self-formation
  - In so doing, critically examined knowledge and information is crucial
  - Foucault's concept of ethics = technology of the self
    - To resist the power of domination (disciplinary power), individuals need to understand the self, the situations in which the self is subjugated, and the ways how they can manage to transform the self to be moral subjects and overcome the domination
    - In this process, knowledge as alternative forms of power is expected to play a central role
    - Also, the role of education to stimulate such knowledge

Future research proposal

- …

Thank you for your attention!

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