

**Rethinking the Political Economy of Science,
Technology, and National Development
in South Korea:
“Sociotechnical Imaginaries” Perspectives**

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Sociotechnical Imaginaries

◆ East Asian PE Literature

- Challenges neoclassical economics
 - Developmental state (Johnson, Wade, Amsden, etc ...)
 - Technological innovation
 - National Innovation System (NIS)
- Still, S&T treated as given, rather than problematized

◆ Sociotechnical Imaginaries

- “Imagined forms of social life and social order reflected in the design and fulfillment of nation-specific scientific and/or technological projects”
- Not simply sets of ideas and visions held by certain influential social groups, but collectively shared, deeper notions that are simultaneously descriptive and normative.

Case I: Nuclear Power

◆ Trajectories

- Long-term plan for research, development and use of Nuclear Power (1969)
- Plan for “technological self-reliance for nuclear power plants” (1984)
- Korean Standard Nuclear Power Plant (1992)
- KAREI Vision 2020 → Nuclear G5 by 2010 / G3 by 2020 (2002)
- Atoms for peace and for war ← Distinction not so important in the Korean context (→ Atoms for national development)

◆ Debates

- Democratization and the rise of anti-nuclear movements
 - Failed to effectively challenge the imperative to secure the nation’s future through domestic ownership of S&T.
- Potential environmental and health risks
 - Constantly weighed against the risk of failing to develop, and tolerated, if not dismissed, often with public consent.

Case II: hESC Research

◆ Trajectories

- Genetic Engineering Promotion Act (1983)
- Biotech 2000 (1994) → G7 biotech capabilities by 2007
- The world's seventh largest bio-economy by 2010 (2001)
- 21st Century Frontier R&D Program (2001) → “future core” tech
- Biomedicine & bio-organs as “next-generation growth engines” (2002-7)

◆ Debates

- At stake was the development of world-leading technologies, which many Koreans saw as one of the keys to national development
 - “Health” and “welfare” → more of a site for biocapital generation
- Critics (many of whom were from the political left)
 - The government's rush to stem cell research exemplified an unhealthy and undemocratic alliance between science, technology, the state, and commercial interests.
 - Distinctions between red and green biotech, and between biosafety and bioethics issues → Not so important

Case III: Nanotechnology

◆ Trajectories

- 21st Century Frontier R&D Program (2001) → “future core” tech
- Korea National Nanotechnology Development Plan (2001)
 - One of the world’s five most advanced nanotech nations by 2010
- Nanotechnology Development Promotion Act (2002)

◆ Debates

- Similar to biotech debates
 - Progressive civic NGOs are suspicious of the close alliance between science, technology, the state, and industry.
- Article 19 of Nanotechnology Development Promotion Act
 - Legal basis for assessing the social, ethical and environmental consequences of nanotechnology, and for incorporating these results into policymaking
 - ← Lack of trust from NGO activists

Dominant Sociotechnical Imaginaries and Their Discontents

	Dominant Imaginaries	NGO Critics?
Future vision	Advanced industrial nation (G7?)	More just & democratic Korea
Pressing societal needs	Developing / Catching up	Deepening of democratization
Risks	Falling behind	Being dominated by developmentalism
Development	Power-centered and instrumental view of development	Alternative, reflexive, or post-development?
S&T	Form of power / Instrument to achieve a wealthy and strong nation	True potentials of S&T suppressed by developmentalism
State	Developmental state / Competition state / Workfare state – though increasingly its neoliberal variant	Should be transformed into a kind of green welfare state?
Expert	Serving the nation	Serving the people
Public	Dutiful members of the nation → should serve the national interest	Informed citizens → backbone of democratic society
Ethics	Zero-sum game / Should not undermine national interest	Protection of human rights / justice
Market	Useful device for national development / Increasingly becoming the model for society	Threats to the public interest