HS 312 – Introduction to Science and Technology Studies

Lecture 7

Mahendra Shahare

Norms are shared rules or expectations that guide behavior in a society or group.
Examples:
In many cultures, shaking hands when greeting someone is a social norm.

The actual conduct of science

- Are the norms of science constant through history and across science? Are they distinctive to science?
- Norms can be interpreted differently by different actors
- Universalism, disinterestedness (e.g. rationalism), and organized scepticism are also professed by societies for many activities – not distinctive to science
- Social vs cognitive norms

A cognitive norm is a shared standard or expectation about how people should think, reason, or process information within a particular group or society. Example: Scientific reasoning—accepting conclusions based on evidence and logic is a cognitive norm in scientific communities.

- Science as governed by a paradigm ; normal science is shaped by solidarities built around key ideas
- Immanuel Velikovsky's book on historical catastrophe was termed pseudo-science; Mulkay saw it as violation of universalism and organised scepticism because the criticism was levelled without reading the content

Solidarities: Social bonds that unite individuals within a group based on shared interests, values, or goals.
Example: Workers forming a union to demand better wages.
Historical Catastrophe: A large-scale disaster or event that significantly impacts societies, often altering history.
Example: Great Oxygenation Event (~2.4 billion years ago) – The rise of oxygen in Earth's atmosphere, caused by cyanobacteria, led to the extinction of many anaerobic organisms.

The actual conduct of science

Credulity is the tendency to believe things too easily without sufficient evidence or skepticism.

- What if secrecy, particularism, interestedness, and credulity were common?
- Science research for example is competitive and work is linked to financial stakes
- Ian Mitroff conducted a study of scientist working on Apollo moon project
- Counter-norms – scientists approved commitment and called disinterestedness a myth; claims are valued in terms of who makes them; secrecy is valued; dogmatism allows people to build on previous work

Dogmatism is the tendency to hold beliefs rigidly, without questioning or considering opposing viewpoints.

- So analytical framework of norms does no work if norms and counter-norms exist

Interpretation of norms

- Norms have to be interpreted
- Mulkay observed in Velikovsky case that depending on context norms can be interpreted as violated or adhered to
- Based on previous sensational claims, scientists could be seen as practising organised scepticism
- By creatively selecting contexts, any scientist can use the norms to justify almost any action - norms do not constrain scientists

Norms as resources

A rhetorical resource is a technique or strategy used in communication to persuade, emphasize, or engage an audience.
Example:
Metaphor – "Time is money" (comparing two unrelated things for impact).

- If norms are interpreted flexibly then we must study how they are used
- Einstein's refusal to accept the truth of quantum mechanics, is often seen as being conservative and violation of disinterestedness
- That is to say Einstein was wrong and QM was right – but can we ignore critics of QM?
- Norms are used in this case to eliminate conflicting views (without attention to argument)
- Opponents of QM are apt to see Einstein maintaining a youthful scepticism
- STS hence sees norms as rhetorical resource; shift from structure-centred perspectives to more agent- or action-centred perspectives

Boundary work

- Issue of epistemic authority
- Boundary mandates that some people do not have the authority
- Source of authority for science – rationality, connection to nature/technology/policy
- But it is a result of an effective boundary work – successful effort to define science in terms of rationality
- People, methods, qualifications are used for charting boundaries

The actual conduct of science

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Summary

- Unless flexibly interpreted, norms do not describe the behaviour of scientists
- But the flexibility means that norms do not do explanatory or analytic work
- The idea that science is a unified institution with an overarching goal is contested
- Could an overarching goal for science have any effect on the actions of individual scientists?
- Critics suggest that science is better understood as the combined product of scientists acting to pursue their own goals
- Merton's norms are ideological resources for moral economy of science, and serve as organizational myth

Organizational Myth: A widely held belief or story within an organization that reinforces its values, identity, or purpose, even if not entirely factual. Example: The idea that Apple started in a garage symbolizes innovation and entrepreneurship.
Moral Economy: The shared ethical beliefs and expectations that shape economic practices and fairness in a society.
Example : Labor Rights Protests – Workers striking against unfair wages or unsafe conditions based on the belief that businesses should prioritize fairness over profit.

Sources

- Sismondo Sergio (2010). Questioning Functionalism in the Sociology of Science. Chapter 3, in *An Introduction to Science and Technology Studies;* second edition: Blackwell Publishing, Oxford UK.
- Harry Collins and Trevor Pinch (1998). The sun in a test tube: the story of cold fusion. Chapter 3, in *The Golem: what you should know about science;* second edition: Cambridge University Press, Cambridge UK.

Thank you