HS 312 – Introduction to Science and Technology Studies

Lecture 14

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Protagonists are the main characters or central figures in a story, conflict, or situation. Example: Harry Potter is the protagonist of the Harry Potter series.

Interests and rhetoric

- Controversy – claims about the stakes, strategies, weaknesses, and resources of opponents
- Interest models – Why protagonists take unorthodox position? Recognition, monetary gain, passion for challenging orthodoxy?
- What tools do actors employ to further their positions?
- Rhetorical (persuasive) tools are central to convince people of claims; usually a published paper
- Empirical studies are designed with persuasion in mind

Interests and rhetoric

- Rhetoric – Convince a particular audience of some fact(s), legitimacy of one's positions by making one's own work appear more scientific
- The idea of Science itself is most important rhetorical resource i.e. method, data, empirical, falsifiable etc.
- Disciplines are important too e.g. cold fusion case (chemistry vs physics)
- Reputation – brilliant theorist/experimenter, work experience with a respected colleague, affiliation with a large research institution, PI of a large laboratory PI (Principal Investigator) is the lead researcher
- Invocation of norms to delegitimise opponents e.g. financial link and disinterestedness
- Scientific paper – may contain criticisms of assumptions, studies, experiments, or arguments made by opponents in the controversy

Critique: A detailed analysis and evaluation of an idea, work, or theory, often highlighting strengths and weaknesses. Example: A scientist critiques a research paper by pointing out flaws in its methodology.
Plausibility: The degree to which something seems reasonable or believable based on logic or evidence.
Example: The idea of life on Mars became more plausible after discovering water traces.

Resolutions of Controversies

- How are disputes in S&T resolved?
- Critique of observations, experiments, and positions e.g. consistency and plausibility
- New tests and calibration of instruments
- Isolating one position as more scientific or central e.g. solidify agreement amongst core-set of researchers whose opinion counts most
- Showing one position to be more central e.g. ideas become dominant because many researchers can see how to use it, how to build on it, regardless of its validity
- Ignoring deviant viewpoints and data e.g. If position contradicts central beliefs

Heterodoxy: A belief or idea that challenges accepted norms or mainstream views, especially in religion, science, or philosophy.
Example: Galileo's support for heliocentrism was considered heterodox in his time.
Tenable: An argument or position that is defensible, reasonable, or supported by evidence.
Example: The theory of evolution is tenable because of extensive fossil and genetic evidence.

Summary

- While work in STS is sometimes viewed as attacks on legitimacy of S&T, but the point of STS studies is to understand sources and meanings of knowledge
- Symmetrical approach is intended to show that disagreements can be legitimate and heterodoxy is tenable
- Evidence is tied to local culture and contexts – data is given meaning as evidence by the people who make use of it
- But controversy studies also show the unruly process of arguing
- Controversy studies are viewed as supporting unorthodox position
- **The politics of STS** - Risk of being 'captured' / appropriated by participants e.g. Richards (1996) reports that her work on Vitamin C and cancer is viewed as supporting alternative medicine

In Science and Technology Studies (STS), research can be misinterpreted or used for unintended purposes by different groups.
Example:
A scientist studies Vitamin C and cancer to explore its effects, but alternative medicine groups misuse the research to falsely claim that Vitamin C cures cancer, even if the study didn't prove that.

Group Presentations

7	22B1023	Chandrakant Pradhan	Chapter 7		17	210020111	Saatwik Amrawat
	22B1059	Darisipudi Saranya	Set the controls for the heart of the sun: the strange story of the missing solar neutrinos	21-Feb		23B2135	Sabarish S
	22B1063	Dayyala John Joseph				22B1213	Sachi Mukesh Deshmukh
	22B3904	Devtanu Barman				210020114	Salil Singhal
	[illegible]	K Sabita				[illegible]	[illegible]
10	22B1276	Kaushal Deepak Malpure	Additional Reading Bern		20	22B2197	Vaishnavi Arun Kukde
	22B0952	Kukudala Sai Aditya	Lady Lovelace's Objection: The Turing–Hartree Disputes	21-Feb		22B1040	Veebhuti Karthikeya
	22B1060	Kunal Chaudhari				22B0306	Vibhor Sharma
	22B0622	Lalit Meena				210260059	Vishal Kumar

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). Set the controls for the heart of the sun: the strange story of the missing solar neutrinos. Chapter 7, in *The Golem: what you should know about science;* second edition: Cambridge University Press, Cambridge UK.
- Bernardo Gonçalves (2024). *Lady Lovelace's Objection: The Turing–Hartree Disputes Over the Meaning of Digital Computers, 1946–1951*. IEEE Annals of the History of Computing, Jan.-Mar. 2024, vol. 46, pp. 6-18.

Thank you