**The Limitations of Social Constructivism in STS**

**Critical Reading of "The Social Construction of Scientific and Technical Realities" in *Introduction to Science and Technology Studies***

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## The Limitations of Social Constructivism in STS

Sergio Sismondo argues in Chapter 6 of *An Introduction to Science and Technology Studies* that social constructivism provides three important assumptions for science and technology studies (STS). Sismondo mentions that these social constructions do not come with a single interpretation and each with come with their different implications. I argue that social constructivism in STS is problematic. Sismondo does not address key limitations and critiques of social constructivism that arise considering relativism. The whole notion of discrediting realism cannot be feasible as we uncover some of the limitations in STS. I will address each of Sismondo's three assumptions to help us understand why social constructivism is problematic. Firstly, Sismondo reminds us that STS is inherently social hence nature usually cannot speak for itself. We will understand the importance of nature and why social constructivists are limited in natural explanations. Secondly, Sismondo argues that STS is active, which we fully agree with. However, anthropocentrism and the assumption that scientists are realists will serve to help us understand why social construction is flawed. Lastly, we will address that products of STS are not themselves natural. We use the flaws of social constructivism and take a combination of a critical realist and a pragmatist view to see that the social construction of nature is flawed.

## Nature Speaking for Itself

Social constructivism itself tends towards anthropocentrism. Somehow, we as humans are the most important beings and all of nature is irrelevant to our success in the STS fields. Sismondo and constructivists make the wrongful assumption for the truth to always be dependent on social factors. Sometimes, it is much easier to explain things how they are, rather than interpretations. Sismondo claims that STS and reality is a social construction. The term wilderness is a stable unproblematic category of nature among environmentalists.[1] "Taming the Wilderness Myth" has been argued by Arturo Goméz and Andrea Kaus that the notion is problematic as such wilderness does not exist.[2] They argue virtually all the Earth's surface has been touched by humans in some form. To the social constructivist, the word wilderness is problematic. For environmentalists, the wilderness itself has nothing to do with humans. The questioning of untouched land is quite irrelevant in our scientific study of wilderness and social factors should be cast aside. As we can see, nature can only speak for itself because the truth is right there. No further interpretation is required, whether from a constructivist or an environmentalist.

## The Activity of STS

Francis Bacon has been coined as the father of empiricism during his time. He was influential through the Scientific Revolution, thanks to his Baconian method. One key idea Bacon leaves us is his method of induction. The nature of creating theorems, built upon axioms is the basis of induction by Bacon. I argue that STS is fundamentally built off knowns and established, much like the Baconian method. This Baconian method is the beginning of our scientific method.

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[1] James D. Proctor, "The Social Construction of Nature: Relativist Accusations, Pragmatist and Critical Realist Responses," *Annals of the Association of American Geographers* 88, no. 3 (1998): pp. 352-376, https://doi.org/10.1111/0004-5608.00105, 355

[2] Andrea Kaus, "Taming the Wilderness Myth," *BioScience* 42, no. 4 (1992): pp. 271-279, https://doi.org/10.2307/1311675.

The main principles of induction and the Baconian method are important for the iterative nature of research today. STS is indeed active as Sismondo states, but I disagree for the reasons he claims. He attributes STS to be a heterogeneous construction that drives scientific production. Social constructivism is problematic in assuming that scientists are realists. It is important to recognize that they are not. Sismondo claims "If nothing is reasonably solid, then there is nothing on which to build," [3]. This is problematic. Quantum mechanics defy every single part of classical physics, yet we are still building off this idea today. When quantum mechanics was highly contested, Einstein argued that physics should look at the "really existing objects" or to be local realism theory.[4] "Do you really think the moon is not there if you are not looking at it?" is a famous quote by Einstein during this time. Einstein and company are not realists. Social construction fails to explain why quantum mechanics work where brute facts are essential. Sismondo's argument for lack of building, or inactivity is contradictive if STS is to be active. Regardless of social construction, STS has been active. We can see why STS from a non-constructionist perspective is more intuitive. Most modern knowledge such as quantum mechanics did not rely on social structures to be active.

## Critical Realism and Pragmatism on Nature

Sismondo argues that the products of STS are not natural. Constructivism, feminism, and other forms of anti-essentialism are not anti-essentialist enough to overcome essentialism.[5] Grint and Woolgar argue that the problem with constructivism is that it claims to be among the non-discriminatory. The constructivist asks the question who gets the most support, and why? All others are "irrelevant" social groups.[6] Social theorists before like Marx, Ellul, Heidegger, Mumford, and Illich considered the basic commitments of these "irrelevant" groups. For a social constructivist, the truth is always self-evident, and the line of action always follows from it. As a result, "there may, of course, be a pragmatic legitimation of action: doubts about truth claims are fine for the university seminar but are too dangerous for the real world,". [7] Furthermore, social constructionists do not care about morals and ethical values of different courses of action.[8] This

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[3] Sergio Sismondo, An Introduction to Science and Technology Studies (Chichester, West Sussex, U.K.: Wiley-Blackwell, 2010), 61.

[4] Zhi-Han Zhu, "Beyond the Operator Algebra—To Be Nonlocal Realism of Quantum Mechanics," *Science China Physics, Mechanics & Astronomy* 61, no. 5 (2018), https://doi.org/10.1007/s11433-018-9163-8.

[5] Keith Grint and Steve Woolgar, "On Some Failures of Nerve in Constructivist and Feminist Analyses of Technology," *Science, Technology, & Human Values* 20, no. 3 (1995): pp. 286-310, https://doi.org/10.1177/016224399502000302, 300.

[6] Langdon Winner, "Upon Opening the Black Box and Finding It Empty: Social Constructivism and the Philosophy of Technology," *Science, Technology, & Human Values* 18, no. 3 (1993): pp. 362-378, https://doi.org/10.1177/016224399301800306, 369.

[7] Keith Grint and Steve Woolgar, "On Some Failures of Nerve in Constructivist and Feminist Analyses of Technology," *The Gender-Technology Relation*, July 2018, pp. 48-75, https://doi.org/10.4324/9781315041032-3. 302.

[8] Jo-Anne, Kelder; Peter Marshall; and Andrew Perry, "Social Constructionism with a Twist of Pragmatism: A Suitable Cocktail for Information Systems Research" (2005). ACIS 2005 *Proceedings*, 81.

has been reflected in the Information Systems field where the indirect assumption of unethical behaviours is unacceptable. I argue the flaws of social constructivism can be rectified by a combination of a critical realist and a pragmatist perspective. Critical realism recognizes natural forces and the inherent limits of human intervention. Pragmatism aligns itself well with social constructivism as it tries to accommodate many perspectives in any social setting. Both critical realists and pragmatists agree that knowledge is partial, and relativism is impossible to avoid.[9] Together, they recognize that empirical relativism is unavoidable in the so-called social construction of nature. As such, nature and any human intervention are limited by relativism. Such products of STS must be natural. All these products of STS are directly transcendental within natural boundaries that a critical realist and pragmatist would acknowledge.

## Final Remarks

Sismondo makes good points to justify social construction with his various examples on the Pap smear,[10] and laws of genetics.[11] However, we have shown today that nature plays a larger role than humans do. Particularly, it does indeed speak for itself. Sismondo sides with the social constructivists who refuse to see the flip side of an argument of an "irrelevant" social group. This social group might be a group of realist scientists. However, it would be wrong to assume all scientists are realists. Additionally, social construction fails in explaining hard to explain topics like quantum mechanics. As a result of my introduction to critical realism and pragmatism, we can see that social constructionism is deeply flawed. Nature itself is not to be neglected, and this is the downfall of Sismondo's chapter 6.

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[9] James D. Proctor (1998). *The Social Construction of Nature: Relativist Accusations, Pragmatist and Critical Realist Responses*, 352.

[10] Sergio Sismondo, An Introduction to Science and Technology Studies, 64.

[11] Ibid, 59.

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