The Social Construction of Scientific and Technical Realities

The core of this chapter is the explanation of the Social Construction in many sectors of interest, such as Science and technology.

Science and Technology are both social and active, social because they are related to human society, and active because they are
characterized by energetic work, participation and action, because they always change. These changes are affected by many different factors.
There are many different "social constructions" in Scientific and Technical Studies, the ones that are treated in this chapter are the following:

- *The social construction of social reality*

- *The construction of things and phenomena*

- *The scientific and technological construction of material and social environments*

- *The construction of theories*

- *Heterogeneous construction*

- *The construction of kinds*

- *The construction of nature*

Constructivism is the study of how scientists and technologists build socially situated knowledges and things. Such studies can even show how scientists build good representations of the material world, in a perfectly ordinary sense. Science gains power from its ability to manipulate nature and measure nature's reactions, and its ability to translate those measurements across time and space to other laboratories and other contexts. So laboratory and other technologies contribute to objectivity and objective knowledge.
 Moreover, the products of science and technology are not themselves natural, they do not take nature as it comes.

In the construction of reality, the most interesting subject is the fact that structures and institutions come to exist because of people's actions and attitudes.

For example, the rules of polite behavior, have real effects because people use them as a custom and they act on them with respect.

Regarding the scientific and technological construction, we can say that science and technology contribute to the construction of many environments. The effects of technology can be enormous, as well as those regarding science. Science and technology shape the world, but the world as well shapes technology and science. Science, as well as technology, contributes to the construction of our environments.

Heterogeneous construction:

heterogeneous construction is the simultaneous shaping of the material and social world.

Builders of technology do heterogeneous engineering that consists in building simultaneously artifacts and environments in which those artifacts can function. Technologists need to combine raw materials, skills, knowledge , and capital, and to do this they must enroll any number of actors, so these activities tend not to be done on their own, but in group instead.

Also the scientific work is heterogeneous. The Actor-network theory is a theory of "technoscience," in which scientists and engineers are separated only by disciplinary boundaries.

Genders, emotions, identities, and political movements are only a few of the things to which social construction talk has been applied.

The Social construction of technology for example, is a theory within the field of Science and Technology Studies that affirms that technology does not determine human action, but that rather, human action shapes technology. The same theory could be applied in all the fields of interest, there will always be a reciprocal influence in all of those subjects.

TERMINOLOGY:

- **Actor network theory** – (ANT is an approach to social theory and research, which treats objects as part of social networks. (searched on Wikipedia http://en.wikipedia.org/wiki/Actor%E2%80%93network_theory) + studied deeper about it in the article http://www.homepages.ucl.ac.uk/~ucessjb/S3%20Reading/sismondo%202004.pdf

- **SCOT** – Social construction of technology – the reading of this was helpful to understand how technology is embedded in its social context. http://en.wikipedia.org/wiki/Social_construction_of_technology

- **SOCIAL CONSTRUCTIVISM** - Social constructivism is a sociological theory of knowledge that applies the general philosophical constructivism into social settings, wherein groups construct knowledge for one another, collaboratively creating a small culture of shared artifacts with shared meanings. (Searched on Wikipedia http://en.wikipedia.org/wiki/Social_constructivism)

- **TECHNOSCIENCE -** technoscience is the technological and social context of science. (Wikipedia http://en.wikipedia.org/wiki/Technoscience)

- **CONSTRUCTIVISM -** Is a theory of knowledge that argues that humans generate knowledge and meaning from an interaction between their experiences and their ideas. It has influenced a number of disciplines, including psychology, sociology, education and the history of science.

  (Wikipedia http://en.wikipedia.org/wiki/Constructivism_%28philosophy_of_education%29)

Other terms/words I searched for to discover the meaning:

1) Unbiased – Used a translator to discover the meaning of this term (new for me).
2) Cumbersome - Used a translator to discover the meaning of this term (new for me).

3) Penny – Farthing (Wikipedia http://en.wikipedia.org/wiki/Penny-farthing) Discovering the meaning of this word was helpful for me to understand what type of vehicle was being compared to the chain driven bicycle in the article explaining Social construction of technology.

Moreover, the link that was present on the dropbox page contained a link for the Chapter 7 of Sismondo's book "An introduction to Science and technology studies", I searched the web and downloaded the correct chapter from this link: (CHAPTER 6)
https://www.google.it/url?sa=t&rct=j&q=&esrc=s&source=web&cd=3&cad=rja&uact=8&ved=0CDoQFjAC&url=https%3A%2F%2Flearnit.itu.dk%2Fpluginfile.php%2F93200%2Fmod_folder%2Fcontent%2F0%2FSismondo%2C%2520S.%2520%25282010%2529%2520-%2520An%2520Introduction%2520to%2520Science%2520and%2520Technology%2520%25282nd%2520ed.%2529.pdf%3Fforcedownload%3D1&ei=0FayVJOEHMmrygP03oCYCQ&usg=AFQjCNFNR1K6GhwidGew6qdwNVWLociGQA&sig2=yVKnnp7X5oq5uRWXMePRzw)