**ACTOR NETWORK THEORY**

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**Introduction**

Actor-network theory refers to an approach to research and social theory that originated from technology and science (Lohr, 2011). It is widely known for its insistence of the existence of nonhumans, and it is also associated with a sharp critique of critical sociology and conventional sociology. The theory was founded by Bruno Latour, Michel Callon, and John Law. The theory makes a connection between what is material and concepts assuming that both the semiotic and material things involve ideas, people and computers which combined form a single large network.

The theory mostly tries to explain how these ideas and things come together and create this system as a whole. For example, the actor-network theory views a bank as a network of ideas and materials and an actor that holds together as a single entity for a particular purpose. Thus, the method looks at the strategies used in connecting different elements of the bank to form a unified whole body that works towards achieving set objectives.

**Actor Network Theory**

The actor-network theory holds that such systems are unstable and for them to remain then the actions that create the relations have to be consistently and repeatedly carried out. For example clerks in banks need to report to work daily, and the computers have to keep running for the bank network to be functional. The theory also notes that there is a chance that the systems do not always flow smoothly ant there might be the existence of conflicts within the networks. Such as having staff members who do not perform their tasks efficiently or having systems that are not compatible, slow or that keep failing. It is also important to note that the theory does not give an explanation as to why a network takes the shape that it has.

It is more concerned with how the networks are formed and how they hold themselves together to function as an entity and how they fail and fall apart when there is a break in the network system.

The theory also notably assumes that every part of a system whether living or nonliving, human or non-human can be defined and described using the dame terms which is referred to as the principle of generalized symmetry. The thought that governs this approach is that the differences that exist between the two entities the non-humans and the humans are generated from the network in relations, and they should thus not be predetermined (Brookshear, 2000).

The theory draws a lot from philosophical resources. It described the existence of actants when it referred to humans and non-humans are known as actors and that actors take the shape that they have due to their place of relations in the network. It also assumes that there is nothing that is set outside the system and as stated above it claims that there is no difference between humans and nonhumans. The ability animals are viewed to be the same ability that technology has to act, and the acts are the source of alliances between different elements. According to this theory, it is the various roles that the actants and actors play that cause them to have differences but the differences in themselves do not exist on their own beyond and before the network forming.

**Actants, Actors, and the assemblage**

In a given story concerning an information technology group and an encampment area the interactions between the hardware and software systems which are the actors that form the assemblage and the people using the systems are the actors. The 4G fiber cables that provide the internet in the surrounding areas cannot service the encampment which is a park since the signal is not as strong thus the people who are using the park are not able to access the internet. The IT group thus decides to create a wireless signal that can service the people who visit the park that is projected from a nearby apartment. They assemble routers and signal repeaters which will provide a stream of data that is reliable to all users. Thus, in this case, the IT specialists and the users are the actants, and the hardware and software systems that are being assembled are the actors and the combination of the routers and signals forms the assemblage.

**Application**

The actor-network theory is relevant when it comes to exploring why scientific theories, technologies, and social endeavors fail or succeed as a result of changes taking place in the network. Latour describes the failure of technology such as the transport means of the automobile described above, as being caused by the breakdown of a given system(Covington, 1991). The theory has also been used to show how objects such as gravity and evolution have been successful due to their secure networks. When being applied to the environment, the theory focuses more on the methodology of systems and their relations rather than individual species, habitats, and people. It also draws the connection and alliances of invasive species, their social structures and how the connections control and manage such species.

Given the approach of the actor-network theory, it is of great use when studying computers and technology. The frameworks and how they function is well explained using the actor-network approach since the computer is a connection of elements that combine to form a whole. The punctualization effect also holds true for computers in that the user who is the actant views it as the entire system until one part breaks down and depunctualization ensues and reification ceases (French, 1996).

**Software Actants**

The theory happens to see humans and nonhumans as being the same, the functioning of the network system being the generator of differences. According to the New York Times, this aspect could be proven to be true in that a computer has been programmed to be able to generate stories and articles without being acted upon by a human being (Lohr, 2011). The computer in question has the ability of what is known to be a distinctly human characteristic which is intelligence. The computer wrote a news brief in sixty seconds concerning a football game held earlier in the month in a very accurate and comprehensible way. The code that was created to enable the computer to have what is referred to as artificial intelligence and was the work of Narrative Science a company that has been dedicated to showing the existence of artificial intelligence. That is the ability of human reasoning to be mimicked by computers. In this instance, the startup company is the actant while the computer is the actor.

Narrative science creates the code for intelligence while the computer generates ideas and reasons. The software set up by the company collects data from different areas such as the sports sector, financial sector and creates articles from the data it has collected. The quality of stories produce are human like in nature in that one cannot tell they have been generated by a computer. The software makes inferences that are based on the sequence of outcomes of past games when it concerns sports and the historical data it has collected (Covington, 1991). To have an edge, it learns different concepts for various articles such as team effort, individual effort, and rankings amongst others. After which the computer decides what is most important for the game at hand, and it becomes the leading factor in the given article. The data collected also determines which vocabulary will be selected. If the article is about finance, then the vocabulary related to finance will be used in the article.

The software also generates original concepts and ideas which are not a duplicate of another making the article more appealing to the reader because it has an aspect of newness (Knuth, 1973).

**Contemporary computing**

The interaction between the software, data and the current events happening in the real world is an apparent show of how the network system works as a unified whole to produce precise results and achieve a specific goal which is generating articles (Brookshear, 2000). The correlations that exist in this networking system are new in the field of science but on the same hand, they are achieving tremendous results. It's a system of interaction between software’s, data, and creators.

The advantage of the software as noted is efficiency, uniqueness and saving on costs of generating current articles that have a broad range of information. The coverage is comprehensive in nature, and the cost of publications is significantly reduced for companies. On the flip side, there is a concern of whether the software will cause unemployment due to computers replacing human workers. In the case of journalism, there is a fear that technology is replacing traditional journalism that is rich in culture. There is also a drop in business such as printing due to the rise of online advertising. Therefore, modern technology has it pro and cons in the modern society, it increased efficiency and the quality of work produced but also endangers the employment of many (French, 1996). As discussed above in any given network for the system as a whole entity to be able to function fully there must be an actant an actor. In the case of the software, someone had to create it and switch it on in order or it to perform its role in the system.

**Appendix**

Software: encoded computer instructions

Problematization: the process whereby a problem that needs to be solved thus delegated are identified to represent a group of actors

Interessement: the process of getting actors to negotiate in their involvement terms and be interested

Enrollment: the process of actors accepting their roles after they have been identified

Punctualization ; a sum of many parts of an item

Token objects: creations of the interactions between social order and the functioning of an actor

Actant: humans in the network

Actors: nonhumans in the network

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