The Discourse on Actor Network Theory

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Abstract
This study sheds light on the evolution of actor network theory and its influence on our society. ANT is evolving rapidly in our lives. At the beginning of its development actor network theory was limited in its range but with time it application are growing. Researchers are rapidly adopting actor network theory and linking relationships between actor such as agency to network such as technologies (which is now available in numberless quantity) and see or experienced how actor network theory practicing between these two agents. In other words actor network theory is a practicing relationship between anthropoid and non-human. The study explores viewpoints as various authors through literature reviews of an articles that ANT act as a methodology and theory both. They consider theory as a mediator and ecosystem of a social reality. There also misunderstandings about it because of the word network.
Keywords: Actor Network Theory, Agents, Actor, Network, Human, Non-Human, Enrollment, Technologies

1. Introduction

ANT was developed in 1980s in the field of science and technology, a hypothetical agenda for comprehending social and technological processes. It aims to define and examine the intricate network of social and material relations that constitutes social phenomena. According to ANT, social and technical systems are composed of interconnected actor networks that both influence and are influenced by one another. The idea of an "actor," which can be any entity with agency and the capacity to act, lies at the core of ANT. Performers can be either human or nonhuman, or both. They might be tangible things like machines or they can be intangible things like ideas or beliefs. In ANT, the role of the actor in the network and how it interacts with other players are more crucial than the actor's personality. The network itself is a living, breathing web of connections between different participants. It is a dynamic network of links that is constantly being formed, severed, and rearranged rather than a static object.

The network is referred to by ANT as a "black box," which is a metaphor for a container that houses players and their connections but is opaque to outsiders and impenetrable from within. Emphasizing the part that materiality plays in forming social and technological systems is one of ANT's major contributions. The ANT movement sees technology as an actor that actively contributes to reshaping social connections rather than as a neutral tool. Instead of being considered a passive item that is acted upon by people, technology is now understood as a material force with agency and the capacity to act.

The term "enrollment" refers to the procedure by which an actor is added to a network, and ANT is renowned for its emphasis on this process. Enrollment develops the relationships and power dynamics that will shape the network, making it a crucial stage in its development. ANT highlights the value of researching the processes by which actors are hired, as well as how their relationships and roles evolve over time. The way ANT views power is one of its main characteristics. ANT sees power as a characteristic of the network rather than something that is controlled by individuals or groups. Power is shared among performers in system and that's a outcome of their interactions and relationships with one another. When actors enter and leave the network, and as their relationships vary, power can therefore move and fluctuate over time. Many social and technological phenomena have been examined using ANT. From online social networks to international financial systems, it has been used to evaluate anything from scientific laboratories. The adaptability of ANT, which can be used to examine almost any social or technological system, is one of its advantages. ANT has come under fire from some quarters despite its contributions. In the eyes of its detractors, ANT lacks a macro-level examination of social structures and power dynamics and is instead overly concerned with the micro-level. They also emphasize how challenging it is to use ANT to explain events that don't fall under the purview of science or technology. The fact that ANT might be challenging to operationalize is one of the drawbacks of utilizing it. It might take a lot of time and resources to apply ANT to large-scale systems because it highlights the value of examining the specific actors and connections in a given network. Making generalizations about social or technological events can also be challenging because ANT rejects pre-existing theoretical frameworks and emphasizes the necessity of developing theory from empirical facts.

It is a beneficial method for comprehending social and technological processes, to sum up. In addition to emphasizing the part played by materiality and agency in forming social systems, it offers a framework for examining the intricate web of relationships that constitute them. Despite its drawbacks, ANT is nevertheless a valuable tool for comprehending the dynamic and always evolving nature of social and technology networks.

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2. Literature Review

Taking into account both nonhuman and human agents, such as technology artefacts, is a fundamental aspect of the theory. Unlike to many other social theories, actor-network theory combines a theory and methodology, which is something to keep in mind. In other words, it not only offers theoretical notions as lenses through which to observe real-world aspects, but it also implies that it is these very same factors that must be tracked in empirical research. As a result, the researcher is compelled to examine and record network components that are both human and nonhuman, as well as procedures of transformation and impression. (Walsham G, 1997)

Latour, in the words of Amsterdamska (1990), abandons any distinctions between humans and nonhumans. The fact that I first view nonhumans as a requirement for the viability of human society makes it clear that n. (Nonhumans I). After that, I'll discuss how nonhumans can engage in three more contexts: as mediators (Nonhumans II), as participants in moral and political organizations (Nonhumans III), and as groups of agents belonging to various temporal and spatial ordering (Nonhumans IV). (Sayes E, 2014)

This theory has been misused a lot due to how frequently it has been misconstrued. Giving it a standard technical definition in the sense of a telephone, railroad, subway, or sewage "network" would be the first error. It's simple to dispel the second misconception: researching social networks has very little to do with actor-network theory (thus, ANT). No matter how fascinating, these studies focus on the proximity, homogeneity, frequency, and dispersion of certain human actors within social relationships. (Latour B, 2019)

Instead of relying on such occurrences as explanations, the focus is on explaining linkages, including power relations and inequalities. It is a tautology, for example, to state that certain people are wealthy and powerful because they have money. Actor-network theorists, on the other hand, want to know how they established that connection and to demonstrate it. Also, in favor of treating everyone, even nonhuman animals, as relational effects. It serves as a binary dualism such as subject and object, inside and outside. (Neyland D, 2006)

In ANT, the concept of social is not gotten as a fundamental characteristic of people, but rather as something that is consciously constructed. Theories often attempt to explain why events occur, whereas ANT focuses more on demonstrating how linkages are established and changed. Probably the simplest way to think of it is as a descriptive approach. It has been referred to by a variety of names over the years, including the sociology of translations, actantrhizome ontology, the sociology of associations, and semiotics. (Jim S. Dolwick, 2009)

By explicitly focusing on hybridity and heterogeneity, ANT stands apart from other scientific ideas. The underlying rejection of social constructionism and pure technological determinism the use of artificial intelligence to the analysis of human-technology interaction and knowledge production, as well as effective or unsuccessful management processes, is known as artificial neural networks, or ANT. In particular, the approach enables the study of the conditions, processes, and requirements of risk and uncertainty management. These conditions, processes, and demands make up the relationships, or networks, of society. (Florian M. Neisser, 2014)

Peuker (2010) has outlined a base about it in his words, including the focus on how processes at the local level produce constancy and permanency of knowledge and technology, classical ANT's queries about how relationships in systems might be strong or damaged to purposefully create link erections, and the last, also known as Post-questions ANT's about assortment, diversity and emergence. (Bencherki N, 2017)

ANT does not make the baseless privilege that substances behave in its place of humanoid performers, even while it may include incorporating aspects that, for want of a better name, we would refer to as nonhumans. Instead, it merely argues that no social science can even start unless the topic of who and what questions in the action is thoroughly investigated first. The goal of ANT is to simply add more players to the list, change their forms and figures, and discover out a way to make them function as a solid unit. (Angga D and Christopher R, 2014)

ANT aims to give agency to materiality and the nonhuman, making them staple, and therefore incorporating them in narratives of the social. This theory is an energy to bond the fake hole among "subject besides its object", which the author claims originates from the modern era. A network is more like an ecosystem than the highway system, where an ecosystem is a collection of diverse relationships that exist in a certain area. (Zantingh M, 2013)

There may be various philosophical shades between complete causation and bare inexistence, according to Reassembling the Society. Things can determine and operate as a backdrop for human acts, as well as approve, give, inspire, permit, propose, encouragement, block, render feasible, prohibit, and so on." As unbiased observer from the external in these grids, ANT enables the yoking of many forms of action into a single web. (Dwiartama A & Rosin C, 2014)

A connection of network is based on the idea that an object is connected more than one connection, emphasizing the amount to which the material of the mortal is eventually devoted from the atmosphere, as it is most fully explained in Bodily Natures. The interchanges and links between different physical natures are aptly illustrated in Wong's poem, which also addresses the frequently unanticipated and undesirable activities of other players such as ecological systems, chemical agents, and human bodies. (Zantingh M, 2013)

This theory deals with diverse networks. Although actor networks also have social elements and relationships among them, it is not a theory of social networks. In his chapter, John Law expresses a worried viewpoint. The theory, which was originally so novel and even revolutionary, has gained admiration. He asserted that it is now necessary to oppose ANT's growth into a multi-national monster. For Law, ANT has achieved too much success, leading to the naturalization of its own presumptions. His main concern is that ANT has been "black-boxed." Clearness, identifying, and making plain what is already known have resulted in the loss of nuanced and diverse thinking? (Jallinoja P, 2000)

The question of how socio-technological systems (or certain parts of such systems) might function as actors and actively participate in planning practice is one that ANT can explore. These actors can influence how other player's characteristics of socio-technical systems and actors—contribute to formation drill. The ANT itself questions the clear demarcation between normative and critical planning theory. (Rydin Y, 2010)

According to actor network theory, agency only becomes apparent when actors are in a relationship with one another. Material objects exercise agency in a way that is analogous to how people do within this framework. Complication is reflected in ANT. The social world is viewed from a post-structuralism perspective, and a society's associations with the surrounding objects as well as its composition of individuals are also examined. (Dankert R, 2012)

The term actant is used by ANT to set its conception of an actor one who is immersed inside a network of relationships apart from more conventional conceptions (commonly defined by individuality and intentionality). (Dwiartama A and Rosin C, 2014)

Actor network theory is used in geography to recognize cities as urban actor networks and to obtain knowledge of the influence of capitals and the worldwide systems that connect them. An interactional geography charts interactions over time and location. In fact, using actor network theory as the foundation for a research approach requires that interactions be tracked or circulations be followed. Many new concepts have been introduced to the theory, such as how worries of one group are shared by another, how power is used to control resources, and how boundaries are created to divide one commodity from another. ANT is viewed as a manner of narrating tales about networks of actors, both human and nonhuman, and about the method through which technology is developed. (Mcbride N, 2003)

Both healthcare reforms and the adoption of Technology, ANT can be a useful instrument for examining shifting power dynamics. Nurses are becoming more influential, as evidenced by doctors gaining prominent roles in the healthcare industry. Throughout time, the balance of power has changed from "top-down" government-led implementation tactics to more input and choice from regional hospitals and their patients. (Cresswell, Worth & Sheikh, 2010)

The anti-essentialist organization ANT is one of several and does not make a distinction between technology and science (knowledge) (artifact). The divisions between humanity and fauna, reality plus falsity, activity and construction, environment, structure, micro- and macro-level phenomena are also rejected by opponents. Collective action affects reality and fiction as well as nature, society, subjectivity, and structure. According to the relational materialism promoted by ANT. (Couldry N, 2004)

This article discusses the three basic components that make up ANT's architecture. This architecture's initial component, the semiotic understanding of how entities are built, enables us to treat all actors equally, regardless of their traits or social situations. The essence of the second component of the ANT architecture is that by extending semiotics to things, we may employ an empty methodological frame that can assist us in following any sort of actor, unravelling chains of connections, and remaining between descriptive and explanatory forms. The ontological nature of actors and networks makes up the third and final section. (Felski, 2016)

In order to imply culture, establishments, means, and apparatuses are all products of structured linkages of numerous (and not only human) elements, the actor-network theory uses the concept of a heterogeneous network as its central metaphor. (Law J, 1992)

The concept of a heterogeneous, or sociotechnical, network can then be applied to everything. Another significant shift made by ANT is the claim that all things, including people, organizations, technology, nature, politics, and social orders, are products of or effects of heterogeneous networks. (Cressman D, 2009)

We can examine how various human and non-human things originate collected and become stable within broad socio-material systems thanks to the conceptual framework of the ANT approach. (Alcadipani R & Hassard J, 2010)

Without conceptualizing those orders as distinct "domains" or "regions" of a larger, totalizing reality, the development of ANT into a full-fledged social theory has necessitated a multifaceted attempt to account for what is distinctive, special, and empirically striking in various orders of action. (Lezaun J, 2017)

ANT advocates have specifically tackled politics over the past ten years, despite criticisms that it is poor in analyzing cultural imaginations, power dynamics, and scale. ANT presents an alternative understanding of actors, networks, and theory. It has aided in the development of human geography research methodology by highlighting the value of site-specific studies and opening up new avenues for interaction without the dichotomy between local and global, or micro and macro, perspectives. (Gunnar Thór Jóhannesson, Jørgen Ole Bærenholdt, 2020)

ANT monitors the effects of the "new" social studies of science methodology, particularly how it violates the internalist-externalist distinction to the dramatic exclusion of all else. It is necessary to rebuild social theory and conceptualize it in a way that simultaneously incorporates humans and things if the social realm of subjects and the domain of scientific truths or things are no longer distinct from one another and can no longer be reduced to one another. As a result, a universal symmetry principle for both human and nonhuman actants is produced (as a term for anything that has force to change things). (Rohracher H, 2015)

Actor networks mobilize rules, resources, and power, including information, to complete tasks, resulting in a web of intentional and unexpected repercussions that span the spatiotemporal limits of the network. Actors must interact recursively with one another, translating and understanding one another's actions in order to keep the network working. Hence, actors and networks function as twins, each presupposing a different feature of the same phenomenon and simultaneously facilitating and limiting activities in both time and space. This means that the main focus is not just on everyday actors, but also on their relative position and power within larger, integrated systems of power and information. (Warf B, 2015)

There are startling parallels between ANT and accumulation intellectual. Both share a relational worldview, in which actions are the outcome of connecting previously dissimilar pieces. Both place emphasis on emergence, the process through which the total is greater than the totality of its chunks. (Muller M, 2016)

This concept is not only a social theory but also a methodological approach for researching social phenomena. You should be aware that using Actor-Network Theory can take a lot of time. Furthermore, when social sciences are performed in the modes that they are, it is seldom obvious precisely in what sense they are empirical. (Bulgacov S, 2014)

ANT, which is particularly relevant to the study of information systems, denies the ontological distinction between mortal and non-human entities. ANT controls the sociotechnical view points and denies about the perception of such distribution. It provides us an interesting information about it. Because the system of knowledge and information and skills are connected to one another and it provides us the information about humanity. (Silvis E, 2014)

Inherent in each other are the artists and the grids. Without a complex, which is made up of other performers, an actor is unable to act. In other words it can be said that actor is dominating thing and has a strong ability to depend any other elements upon themself. This relationship is underscored by this description. The definitions of the actor and the network are always changing; each depends on the other. (Stalder F, 1997)

Regardless of an actor's strength, it is impossible for him to carry out an action on his own, according to the actor network hypothesis. For the activity to be completed successfully, other actors in the network may also regain energy and cooperate. (Guo P & Cai Y, 2020).

3. Misunderstandings about Actor Network Theory

There are several widespread misconceptions concerning actor-network theory (ANT) that are caused by the way the word network is used in everyday speech. To put it another way, the misunderstandings result from popular practices of the word network and the meanings they suggest. The first error would be to interpret it technically, as in the sense of a telephone network, sewage network, railway network, or subway setup. Thus ANT has actual tiny to fix with the revision of shared complexes, which clarifies the second misconception. No matter how fascinating, these studies focus on the proximity, homogeneity, frequency, and dispersion of certain human actors within social relationships.

As Latour argued that, a network is more like an ecosystem than the highway system, with an ecosystem referring to a set of diverse relationships in a particular location rather than a thing that is physically there.

3.1. Is Actor Network Theory a critique?

Law (1999) contends that ANT is currently excessively strategic and that it has been converted into an explicit strategy with a compulsory point of passage with a more or less fixed location. This unfavorable strategic stance leads to additional criticisms of ANT, according to Law, such as issues with otherness, representation, and centering (discussed in Law 1999). (Whittle A & Spicer A, 2008).

4. Research methodology

After reviewing several Google Scholar, MBC, Scrip.org and Jstor research articles, this article provides a sociologically informed critique of Actor Network Theory. Several more subjects pertaining to Actor Network Theory and its effects on social life are studied in order to get the pertinent data.

5. Results and discussions

A theoretical framework called was developed and used to comprehend the intricate social networks that influence the creation and adoption of new technologies. In addition to the significance of physical things and physical environments in influencing common connections, ANT highlights the function in cooperation with humanoid and

non-human actors in these networks. Most important discoveries is that social networks are not preexisting things, but rather appear from the connections of many different players, including people, organizations, and technological systems. Moreover, ANT contends that rather than being set in stone or predefined, power relations are continuously negotiated and rearranged through these encounters. The analysis of an extensive series of social events, containing the creation of new technologies, the implementation of governmental regulations, and the evolution of scientific knowledge, has been done using ANT since its importance on the contacts between hominid and non-human performers. Few main terms related to ANT are translation, inscription, and mobilization, which explain the procedures by which individuals join social networks, make their acts visible, and mobilize resources for shared purposes. The capacity of ANT to reveal the frequently obscure networks of power and influence that have an impact on social outcomes is one of its key advantages. ANT can assist in revealing the various factors that make up a specific network and the manner in which particular groups or technologies are favored or marginalized in a particular setting. Many authors argued about the concept, its practice in many organizations, misunderstandings about the word network, its demand on many other fields and how it functions in our society. Walsham said that ANT is a theory and a methodology both. He said it provides a theoretical concept about seeing the elements in the real world. Amsterdamska said here is no dissimilarity among human and nonhuman. Latour who gives the life to the word ANT said that network in not a telephone network, but it is an interaction between human and nonhuman actors in the form of technologies. Jim said that ANT theory showing us how association made and transformed. Neisser said that ANT is heterogeneous and hybrid, this characteristics made ANT theory different from other theories. Zantingh said that ANT is not a highway system in physical existing instead it is an ecosystem with the set of relationships in a certain locale. He said that we can recognize the relationship of the theory with the example such as human body nature. Jallinoja argued about the exploration of the theory in other subjects especially in the field of Law. Mcbride discussed about the role of ANT in geography. He take the example of interaction between time and space. Cresswell and his fellows argued about the shifting of power and associate it with actor network theory. Felski discussed about the architecture of the ANT and said it is based on three parts, first is semiotic understanding, second is extending semiotic and last is ontological character. Gunnar Thor argued about the critique of the term separately and said that actor, network and theory is a weak and cannot understand the interaction. White and Spicer provides us a critique and said that ANT is now excessively strategic. This theory demanded in many fields and it should to explore this subject to many other fields because it gives us the example not of in understanding the interaction between agencies and their connections but also explain us the real view of our daily routine life. It tells us how a one person id connected too many other things about which someone is known or not. Fox example in our political parties here voting pattern and parties are linked with a great process. In other words it pays attention to how a first interaction was made between two points and how it should be remained through connections. The purpose of this theory is understand the behavior of elements. Elements could be a society, it could be an individual or it could an organization. It sees how elements shift from one relation to another.

In summary, actor-network theory offers a potent framework for delving into the intricate social networks that influence the creation and application of new technology. The relevance of together anthropological and nonhuman players, these nets is emphasized, and ANT can offer important new perspectives on the social dynamics and power dynamics that underlie technical advancement.

6. Conclusion

In this term paper, I've introduced actor-network theory and argued that it's a relational, process focused sociology that views individuals, groups, and objects as interactive effects. I have briefly discussed some of the processes that lead to these consequences, emphasizing their diversity, unpredictability, and contentious nature. I have argued, in particular, that social structure is better thought of as a verb rather than a noun. The ANT framework rejects a priori structures and places emphasis on the need to understand the materiality of social events as well as the purpose of non-human actors in the expansion of group networks. ANT delivers a distinctive viewpoint on social phenomena by highlighting the significance of looking at how actors interact with one another as opposed to only looking at the actors themselves. This viewpoint emphasizes how social networks are dynamic and always changing, and how the interactions and negotiations between the various factors that make up social reality are ongoing. With its emphasis on the intricate connections between actors and how they shape and influence one another, ANT offers an invaluable framework for comprehending social events. In addition, its focus on materiality and the function of non-human actors offers a useful viewpoint on the interface between technology and society as well as the ways in which technical advancements can influence social networks and social reality. A priori structures were rejected, and the actor network theory placed a strong emphasis on the interactions between actors. At first, it was only used in science and technological studies, but due to its high demand, it quickly spread to other disciplines like politics, education, landscape, and geography. The ANT movement places a strong emphasis on the way that actor interactions constantly

generate and re-create social reality. Actors are regarded as both solitary beings and as a component of broader networks that influence and shape one another. The dynamic and ever-changing nature of social networks, as well as the ongoing negotiations and interactions between the actors who construct social reality, are highlighted from this perspective. One of the complaints levelled towards ANT is that it can become unduly preoccupied with the small-scale interactions among the actors and may fall short in its ability to take into consideration the more significant structural elements that influence social processes. As the word "network" conjures up images of the internet or mobile networks, there is a tendency for readers, especially newcomers, to misunderstand actor network theory. In actuality, however, it refers to the interaction of actors and technology to create a dualistic view of social reality.

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