Chapter 15
Mediated Action and Network of Actors:
From Ladders, Stairs and Lifts to Escalators (and Travelators)

Antonio Díaz Andrade
Auckland University of Technology, New Zealand & Universidad ESAN, Peru

Samuel Ekundayo
Auckland University of Technology, New Zealand

ABSTRACT

Both actor-network theory and activity theory call attention to the coexistence of people and technology. Although both theories provide analytical tools to understand the nature of the reciprocal action-shaping of humans and nonhumans, each puts emphasis on different conceptual elements of human activity. In this paper, the authors examine both activity theory and actor-network theory and present their similarities and differences, limitations, and complementarities. Using the theoretical lenses of both theories, the authors trace the evolution of an ordinary artifact to illustrate how researchers on the sociology of technology and innovations can benefit from these parallel theoretical approaches.

INTRODUCTION

The coexistence of humans and nonhumans characterises our lives. We are immersed in a world made of both social and technical artifacts (Callon, 1986; Latour, 1986). The social world cannot subsist without technical artifacts as much as the latter only exists because of the former (Miettinen, 1999). These parallel assertions come from two realms concerned with the study of the interplay between subjects and objects: actor-network theory and activity theory.

In this paper, we analyse these two – at the same time, similar yet contrasting – approaches. On the one hand, the focus of actor-network theory is on the dynamic and simultaneous interaction of both the social and the technical assuming symmetry between human and nonhuman actors (Callon, 1986; Latour, 1986, 1999a, 1999b, 2005). On the other hand, the dialectic nature of cultural-

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historical activity theory postulates that human activity is always a materially and socially mediated object-oriented practice, whereby the object of activity is constantly modified and the object itself modifies the activity system (Engström, 1987, 1999; Vygotsky, 1979).

Both perspectives provide analytical tools to understand the nature of the reciprocal action-shaping of humans and nonhumans. Using the theoretical lenses of both actor-network theory and activity theory, in this study we examine an ordinary artifact – a device designed to make possible people going and transporting things up and down – and trace its evolution. We trust this analysis illustrates and makes apparent the merits, limitations and complementarities of these two theoretical perspectives for the study of innovations.

This paper is organised in the following manner. In the next two sections, we introduce actor-network theory and activity theory along with their inherent concepts of translation and tool mediation, respectively. Then, we examine the life of an ordinary artifact from the lenses of these two theoretical approaches. Following a discussion on how each of these perspectives examines innovations, we conclude highlighting the merits, limitations and complementarities of actor-network theory and activity theory.

ACTOR-NETWORK THEORY

Actor-network theory rejects the underlying unalterable view of objects and subjects purported by essentialism, which only recognises their fundamental characteristics and ultimate functionalities. Actor-network theory challenges the generalised assumption that humans and technology constitute a stable and predictable system (Latour, 1987). The origins of actor-network go back to symbolic interactionism, which assumes that the meaning humans ascribe to things determines how the former act on the latter. Furthermore, symbolic interactionism also recognises that the ascribed meaning is not immutable but emerges from social interaction and is continuously modified through interpretation. In this sense, actor-network theory recognises a continuous negotiation process between people, technology and their context (Hanseth, Aanestad, & Berg, 2004).

Actor-network theory is fundamentally the study of the association between humans and nonhumans (Callon, 1986; Latour, 1986). It assumes symmetry between the social and the technical, both equally powerful on influencing each other. Moreover, Latour (1999b, 2005) calls attention to the artificial nature of the entity society, which cannot exist by itself. In actor-network theory vocabulary, collective seems to be a better suited word to describe the association of both humans and nonhumans. Actor-network theory stresses the combined nature of the intertwined dyad formed by people and things – both material and immaterial. Latour (1999b) vigorously claims, "we live in a hybrid world made up at once of gods, people, stars, electrons, nuclear plants, and markets" (p. 16). The elements of this hybrid world only exist in the representational space: "no reality without representation" (Latour, 1999b, p. 304).

Latour (2005) illustrates the symmetric characteristics of the network using the case of the traffic system. There is no difference between the car driver who slows down prompted by a road sign and the car driver who slows down because of a speed hump. The first driver's motivation may be altruism, while the second one simply may not want to damage her car suspension. Regardless of the driver's motivation, the absent road designers – who put up the signs and built the speed humps – conditions the driver behaviour. This example shows the association of cars, roads, traffic signs, drivers and road designers forming a network of actors. Thus, not only the drivers and the road designers but also the traffic signs and the speed humps have agency properties since they all have the capacity to act and influence the actions of others. It should be noted here that agency does