Data Traffic in Theater and Engineering: Between Technical Conditions and Illusions

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Abstract

This article analyses the encounter of Neo-Avant-garde artists with engineers of the Bell Telephone Laboratories in the *9 Evenings. Theatre and Engineering* (1966) in an Armory in New York. In the process of engineering, the traffic of signals was reinterpreted from information processing to electronic transmission. The *9 Evenings* show exemplarily the importance of artists' work, being part of a new ubiquitous world-order of networking understood as resonance and vibration, signal traffic, feedback and complexity in systems engineering. Hence, the use of media and their performativity should be part of the history of knowledge and of media theory.

Traffic – Systems Engineering – Illusion

In recent years, a new trend has emerged in media research which no longer approaches media from an instrumental perspective of communication or enabling cognition, but by viewing the logistics of transporting goods, signs, and bodies. The advantage of this perspective is that media are seen as a system constituted by different elements and actors. That is to say, that there is no longer a dispute between a technical (Kittler 1993) or sociological *a priori*, but the focus is on the interplay of components and their socio-political power and relevance. Particularly interesting for this trend are the theories of Harold Innis, as he studied the relation between systems of notation and transport with regard to political organization and operations (Innis 1951).

This interplay of components and their logistics as a system will be described in this text which will focus on a specific event as the object of investigation for the analysis of traffic as media theory. In 1966, a group of Neo-Avant-garde artists met

with engineers from the Bell Telephone Laboratories in an Armory in New York for a series of performances entitled *9 Evenings. Theatre and Engineering* (Bardiot 2006). They built a system to send signals throughout the whole Armory and to control their transmission from one component to the other in order to generate sound, video, and performance in real time. The interesting point in this event is that and how the process of engineering reinterprets the traffic of signals. They are changed from their technical constitution as a system of discrete data to the resonance of electric signals. This encounter shows that traffic can be a pure performative construction and that a reinterpretation of technical conditions is an integral part of media theory as data traffic systems. This process glorifies technology as well as introduces an illusion of self and animism into media and traffic. The hypothesis is that this redefinition was seen as appropriate because the traffic of signals has become an important challenge since Claude Shannon's mathematical information-theory (Shannon 1949), as it results in a permanent menace of loss of data and control in a self-reliant world of translation and information processing. In this historical situation, the movement *Arts and Technology* (cf. Cockcroft 1974; Goodyear 2008; Turner 2011)*,* of which the *9 Evenings* were an important part, was launched by the American government and supported by industry and centers of research, in order to generate and ennoble a new ubiquitous world-order. This new order was meant to be founded in a fascination for networking (resonance and vibration), feedback and complexity in systems engineering as a new vision of being, precisely a new American way of life and control (Turner 2008; 2011; Leeker 2012). Thus, the history of knowledge, the use of media and its theatrality should be part of traffic as media theory.

This text was written by two authors coming from separate fields: Electrical engineering and computer science (Michael Steppat) and theater and media studies (Martina Leeker). As the redefinition of technology is central in the media theory of traffic, the technical conditions must be regarded properly. To give a foundation for this analysis, Michael Steppat will start with a precise explication of the kind of data traffic used in David Tudor's performance *Bandoneon!* (*a combine*) (cf. Bonin 2006a), which is paradigmatic for the redefinition of technology and the traffic of signals in the *9 Evenings. Theatre and Engineering*.

Technical Set-up of *Bandoneon!* (*a combine*)

The technical set-up of *Bandoneon!* (*a combine*) consists of different units (see Figure 1). Apart from the bandoneon, there are signal processing units and different outputs which are connected with wires (Bardiot 2006). In general, the system can be divided into three parts. The first part are inputs like the bandoneon and controls, the second part the processing of the signals, and the