Taking Place – Augmenting Space: Spatial Diffusion in Times of Technological Change

Drawing from an ethnographic account, this study engages with the implementation process of a robotic welding system in Kiruna, a small mining community in the northernmost part of Sweden. More specifically it intends to disclose how the division of labour and spatial diffusions of bodies are altered as a consequence of the arrival of a piece of technological equipment. In doing so, it argues against the distinction between human and machine. The intention is instead to visualize their interlaced association, which is why interrogation of the spatial settings is actualized.

During the year of 2008 until the early spring of 2009, I observed the daily assignments of approximately fifteen welders: four women and eleven men as they produced trolleys for collection and transportation of iron-ore. The arrival of the robotic welding system clearly altered the spatial settings of Tuollavaara Transportation, the industrial site, in which I conducted my field work. This in turn compelled different routes to be taken, new surfaces to be trodden. The implementation process of the robotic welding system was far from a mere organizational concern, but was contested, negotiated and fortified in situated and spatially located activities, which also clearly affected the bodies at play. The daily activities in the industrial hall fostered certain material arrangements at the same time as the use of the robotic welding system changed the structure of activity. The altered routines provided a spatial distortedness through which bodies, artifacts and activities were accumulated as well as diluted. Equally, the spatial demarcation of the robotic welding system suggested revivified use of paths and space at the same time as emerging activities clearly obstructed previous arrangements.

The spatial settings of Tuollavaara Transportation were not restricted to the physical environments provided by the industrial hall, the offices, the lunch room and the meeting venues. Everyday undertakings, especially in conjunction with the robotic welding system, concerned mobile phones, digital platforms such as the control device that accompanied the installation as well as the computerized system, in which technical information about the trolleys were stored. In order to acquire an understanding of the ways in which the bodies of the welders traversed the different spaces, I suggest a nascent perception of spatiality, not as simply restricted by physical laws, but as fickle yet intermingling tiers of realities that exceed material boundaries. The body is thus a “key element in terms of how it mediates the comprehension of spaces and the layered meanings that transform them into spaces” (Turner & Davenport, 2005, p. 3).

Exploring the implications of spatiality, the industrial hall of Tuollavaara Transportation was subjected to continuous negotiations in that it was furnished and re-furnished, raised and dismantled through situated practices. Processes of furnishing equally invoked the ephemeral positions of the iron-ore baskets, which in turn affected the location of bodies. The workforce gathered around certain objects and in particular areas whilst neglecting others; spatial orientation was thus embodied and also stratified in tandem with instrumental utility. Interestingly, the arrival of the robotic welding system modified the spatial arrangement. In as much as space is a scarce resource, it equally constitutes a shared resource, and that association is a crucial part of technological changes.

To summarize, I suggest that the new routines of Tuollavaara Transportation equally brought forth new routes. As space is “traversed/…/by pathways and patterned by networks” (Lefebvre, 1991, p. 117), the routes taken in times of technological change might serve to slightly revivify conventional understandings. Adhering to the work of Nigel Thrift (1996), distribution of bodies co-exist alongside division of labour, which proves the suggestion of free and equal mobility to be somewhat misleading (Thrift, 1996, p. 293). Especially in times of technological shifts, the conventional division of labour is subjected to change, something that in turn affected the spatial occupation of my informants.