

Technology as place dependent practice - Traffic lights

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God made man to his image. Man made technology to his image. As such an image, technology is always assumed to be in service of mankind. It is also supposed set forth economical development as well as to stand in for humans under conditions that are severe for us. And for that reason it is given a mandate to act in ways that mere "objects" are unable to. Further, an important aspect of technology is that it needs almost the same connection to and orientation towards particular places. My discussion here revolves around humans and technology as place dependent.

The relation between humans and non-humans is complex. According to Serres (1995:87) there are quasi-objects that stabilize social relations. Without them all relations would be fickle and unstable. If relations only consisted of contracts between subjects, they would quickly vaporize into air. Technological quasi-objects play a crucial role in our society because they often replace and embody human actors in situations and at places where they are more efficient or where it is unbearable for humans to be. The example of a placedependent technological quasi-object I would like to discuss here is the traffic light.

Yet another intriguing aspect about traffic lights is that their "acts" are very similar to the nonverbal acts of traffic participants. Artifacts are thus given the mandate to act as agents, not only in terms of an existential project, where God made man to his image and man made the machine to his image. Agency also operates in terms of intentionality through a certain kind of language. For instance Ruesch and Kees (1970:148) claim that there exists syntax of object

language. The arrangement of objects become an expression ... and machines have been given certain “gestural languages” (Ibid, 1970:82).

This means that a traffic light, under certain circumstances, can be elevated to the same level as all other types of actions – discursive- or nonverbal actions in traffic – they are seen as performing expressions of a culture in terms of mediums and stand-ins for human gestures in traffic. One example is the shift in colors of the traffic light which signal different coded messages.

Bodies navigating and creating places

Humans orient themselves through geographical notions like inside and outside, and navigate the body in terms of what is up, down, in front, behind, north, south, and so on. By doing this, we also create the places we act upon through our own thoughts-and-actions.

Traffic is sometimes misunderstood as a unidirectional flow of objects in time and space. Instead, traffic is shared exchange of gestures and discourses in the web of interaction, and, again, the creation of places. As such, traffic is simultaneously a social, cultural, and spatially constructed phenomenon. *Traffic, like all other human constructions, is comprised of different forms of spatially situated social and cultural practice.* Hence the environments encapsulating traffic – everything from traffic research and infrastructure planning, traffic management to traffic participants’ different strategies for dealing with these constructions – are of interest as settings of social and cultural constructions.

Viewed from a participant perspective, formal traffic rules and regulation instruments, like traffic lights, are translated and interpreted, improvised, contested, negotiated, ignored,

misunderstood, changed, resisted and instrumentalized in daily traffic practice.

Traffic Interaction

Traffic can be derived from the Latin word *commercium*, which means commerce, dealing, communication and exchange¹. Hence, traffic in this sense means two things – constant place-dependent *interactive* movement and regulation coordination of that movement. Analysis of traffic lights, whether in terms of discursive elements or ritualized nonverbal actions, necessarily involves a reflection upon ideological forces struggling to control the making of places. At the same time, it inevitably involves a consideration of the social spaces of invention, ignorance, misunderstanding, and resistance against the power that strives for control over humans on the move.

Society is commonly analyzed in terms of divisions between different geographical levels – from the local to the global. However, traffic, although place-dependent, crosses all boundaries and divisions, in both a physical and a cultural sense. Therefore, traffic is simultaneously connecting particular places on a global level through networks of actions.

Before

Applied traffic safety has traditionally been studied as an absolute conflict phenomenon – in terms of both discourse and practice. Few studies are based on actual interaction between people and interaction between humans and objects in traffic. Since there is a general lack of what has been called qualitative or grounded data in traffic studies, such as ethnographic, ethnomethodological, participant

observation studies etc, most studies must depart from preconceived statistically formulated theories and models of accidents and conflicts, or they advance from very specific and detailed physiological/psychological knowledge of the human body and psyche to generalizations about practice in traffic.

In those studies which have an empirical character based on first-hand observation, they tend to take actions in and discourses about traffic at face value as absolute depictions of what is going on, as if actions could be lifted out from the ongoing context, dissected and examined under the microscope of science. Therefore many studies tend to miss the social- and place dimensions around traffic discursive and nonverbal acts. This paper rejects any attempt to find stable correlations within different forms of scientific or actually lived realities. Instead it tries to grapple with the complexities of interaction between what can be called the "empiric marshland" and applied traffic safety/management.

Traffic places

Here, the term "nonverbal actions" refers to the myriad interactions among traffic participants, humans and non-humans, who have to interpret, compete, negotiate, and cooperate in order to resolve the micro-conflicts that occur in everyday traffic. In that sense, traffic could be said to be a cultural network that is continuously being constructed and reconstructed, whose pillars are constituted by key themes that in turn are being stabilized by the iterative performance of ritualized actions in traffic and by interpretation of the physical infrastructure taking place. Iteration, in this sense, involves constant awareness of, reflection upon, and openness to negotiations within seemingly script-like structures. In turn, and playing an important role

here, structure is seen as dependent on participant practice and therefore in constant change and flow.

The construction of traffic sites and situations is thus a social drama that plays out through joint action among participants in traffic, vehicles and traffic infrastructure – including non-humans and the managers of the urban landscape.² Places are seen as much more than passive objects firmly and unambiguously leading actors or object in traffic to the right target and through the right set of motions. Instead, places stabilize and uphold social relations that are otherwise volatile. *Places where practice is situated are coupling stations for social relations.*

This also means that each place in traffic itself has to be continuously interpreted, negotiated, constructed, deconstructed, and reconstructed through the actions produced when people meet as traffic participants. Places in traffic thus include both direct human action and the actions that can be related to the artifacts that are intended to transmit an unequivocal meaning to traffic participants. *A place is a nexus in networks of action, one that holds and embodies the relationships negotiated between different traffic participants, non-humans and humans.*

Not only a particular traffic light, but also an entire place can be defined when being *in use*. By use I mean the mere reflection, by utterance or from mediating with it in traffic-light-gestural terms, making a traffic participant slow down or stop. Remembrance and reflection is an active thought-and-action that recalls, reproduce, invent, distort and construct a traffic light. Although not reflective in itself its gestural means shape human thought-and-action as well as the traffic light is shaped by thought-and-action.

Places are constructed by human action, direct or through technological agents. Places are thus not already “in place” before the appearance of actors in it. *Places do only come into existence at the moment we think and act upon them.* Thus, artifacts and places have no immanent meaning that resides in concrete, steel and wood, which can be separated from human thought and action.

Improvising structure

Traffic lights are part of the infrastructure. They are instruments for engineering order among objects in time and space. Structures and ordering can be used as metaphors for and the product of power.³ Structures are then not only comprised solely of solid, concrete “things” that exist outside our bodies in the form of infrastructural features such as traffic lights, pavements, roundabouts, and formal traffic rules.

According to structuration theory, structure is not any form of societal totality (Giddens, 1984). In fact, neither Giddens nor Bourdieu defines structure as something beyond and isolated from practice; rather both have sought ways of connecting social structure with agent’s practice.⁴ Thus, traffic lights are part of one structure among many. Other structures include knowledge and experience of individual practices, comprised of acceptance, resistance, ignorance or by interpretation of traffic rules in everyday interaction; discursive elements constantly reproduced by applied traffic safety research, traffic management, as well as by all other mobile elements.

There is thus not one structure in traffic, but multiple structures, semi-structures, hierarchies, and connections. Furthermore, they are all active at the same time. These structures are sometimes merely threadlike connections and thus not always

palpable. For instance, what structure can we identify when none of the participants know what rule to follow at certain places where situatedly improvised ones are active at the same time? Who is structuring when participants are willing to engage in a game where the outcome is uncertain for all involved?

Structures can thus be difficult to detect, almost invisible. Serres (1995) examines things that at first glance appear to be in disorder, *but* which upon a closer look turn out to have order. Structures might be unstable, contestable, coexistent, multiple, and negotiable. Structures may be placed in a foreground; for instance, Bourdieu observes that structures as class relations have been transformed into classifications, materialized in space-time, and those materialized classifications conceal the structures that organize these relations. Structures may embody and contain power relations. For Giddens, power is the structure that is inherent in all social relations (See Friedland and Boden, 1994:28, about Structuration theory). Structures can be seen as a force that shapes. For Foucault (1972), power(ing) is the disciplining and thus structuring force that shapes the human condition through discourses in different ways in different times and spaces.⁵

Chaos and structure in tension with place

By considering the dynamic tension between order and chaos, we can recognize that place has order in, at least, two *senses*. First it has order because all spatial locations of phenomena, like traffic lights, are produced by practice, and since practice is given meaning, it is also ordered by that meaning. Therefore these locations can in principle be explained in relation to meaning. Second, place has order because there are indeed spatial systems, sets of social phenomena in which spatial arrangements (that is, mutual and relative positioning

rather than 'absolute' location) are part of the constitution of the system.

"...There is an integral spatial coherence here, which constitutes the geographical distributions and the geographical form of the social relations. The spatial form was socially 'planned', in itself directly socially caused, that way. But there is also an element of 'chaos' which is intrinsic to the spatial...they are unintended consequences. Thus, the chaos of the spatial results from the happenstance juxtapositions, the accidental separations, the often paradoxical nature of the spatial arrangements which result from the operation of all these causalities" (Massey, 1994:266).

Now, chaos and structure co-exist, choosing which one we emphasize depends on what context or "block" we are looking at. In face-to-face, or car-to-car relations, structure is relatively unstable, constantly floating and moving in time-space. Structure is more coincidental than in the relation between users and managers, where structures more closely resemble a Foucauldian "block" where discourse is aimed at structuring human activity.

Shaping and inventing

In the performance of gestural intentions and practices all traffic participants have to engage with a presence that simultaneously

tells everyone else who they are and how they perceive others. I call this presence for a presentational presence. This presentational presence forces us for brief moments to transmorph through the categorial space between machines like the traffic light and other humans. We are tangled in the net of relation as we act upon the brutal change in green light to yellow, just as if the city manager was communicating with us.

Although some of us play along in this game of shaping while others resist by disobeying, it can be argued that we are all caught up in the same net. Power *is* really structuring, but it allows *some* kind of self-organized ordering. Power sets the frames and form in which we are allowed to per-form and improvise. Power is the name of the game when categories and boundaries are being baptized and socially constituted – with them we are fettered and without them we are nothing (see Olsson, 1991).

As such, the understanding of power as *enabling* creativity and improvisation is perhaps a surprising conclusion. Perhaps not so surprising since creativity and restraint is in constant tension, just like the rebellion has to fight the reactionary.

The flow of structure

Thus, when the intentions is to grapple with the interpretation of the taken-for-granted everyday practice, it seems like structure/ chaos/agency unfold as context-dependent, and as a process of being in flow. The inseparable connection between place, culture and practice - the multiple and simultaneous ways in which they can be interpreted, and the continuous flow in meaning attached to them - inevitably mean that they have to be predefined in terms of their constant negotiative and constructive powers. Structure

embedded in the representation of practice, place and culture is at constant flow, in which "stand-ins" (symbols, markers, indicators, signs, labels, and attributes) for that structure, also have to be negotiated, renegotiated and constructed through interpretation and intervention in the process of interpretation. In this view, traffic lights are ideological constructions and bearers of a spatial-temporal ideology, which is interpreted, negotiated, accepted, ignored, unnoticed or resisted by the traffic participants.

Traffic participants must negotiate (with) all sorts of material and cultural representations as well as key indications in discourses, since these representations too act as moral agents with the mandate to act in humans' and structures' place - traffic rules are not shouted out in every corner by a policeman and a judge, they are embedded in different types of practices such as selective police interventions, traffic education, information through media, everyday talk and in traffic interaction.

The move towards seeing structure as a flow changes focus from "structure" and back to practice again, because **"Performance[s] do not unfold in a pre-given discursive field; rather they shape the very texture and contours of that terrain"** (Butler, 1990, 1993, in Moore, 1997:91). But the converse is also true: performances adjust to the texture and contours of the discursive terrain. Even the practice of interpreting formal rules and regulations is one of constant movement and change. Traffic rules have to be adjusted to practice, place and culture, although the flow in material structures - traffic lights, crosswalks etc. - are slower than that of non-material structures. The gap between "formal" and "informal" or situatedly improvised structures produces a space that traffic management and formal regulation cannot reach. It is supposed

to be this way, for humans can never be completely controlled. There will always have to be some space left over for humans to create roles, relations and hierarchies of their own.

Thus places are not only parts of a space-structure, or structured space, but also sites of continuous practice where the scene is not given in a complete structural sense, and where there is room for improvisation and negotiation between all structures. To negotiate is to enter a situation or a terrain that has never been entered before; it is like orienting oneself on social terrain.

Instead of drawing boundaries among different kinds of places – i.e., mythological, pragmatic, abstract, theoretical, conscious, unconscious, - we are now drawing attention to the *possible* and the *ongoing* place. When the desire for structure is set aside, the negotiative and improvisational are set in the foreground and a new drama is acted out.

Understanding through intervention

Places and parts thereof like traffic lights do exist in the form of memories where the recollection, taken for granted or consciously, is a human act in itself. So, the traffic light can be interrogated by intervening in the flow of traffic participants' everyday use of them. This is done, either by tracing the path back to the social place where it once was constructed, or by following the network of actions connected to one or several particular places. This is done by just asking different participants how and when they are doing what they are doing and taking part in their actions.

Practice is social and therefore it is not always closed, coherent, or ordered sequentially or spatially. Rather, it can often be complex, enmeshed in chaos, and in simultaneous coexistence with

multiple structures. It is not by “**monitoring routines**” (Giddens, 1984) or “**imagining places**” (Tuan, 1977; and Relph, 1976) that an understanding of the meaning of a particular practice is constructed. It is by taking part in that practices just like anyone else, albeit with the explicit intention of interrupting and intervening in the flow of everyday life and practice. It is by asking questions about “how this works” that an understanding of the discursive as well as the nonverbal and tacit knowledge can be achieved.

Shaping through practice

A discussion on technology in everyday life is constantly needed. We will otherwise find ourselves imprisoned and controlled by our ability to forget and take-for-granted its presence and purpose.

The traffic light embodies local and cultural conditions largely invisible to human actors, but that to a large extent are shaping them. In fact, any designed environment simultaneously serves educational and socializing purposes, as it is an expression of to whom it is directed and how this education should be conducted. In other words, traffic lights and circulation places articulate a social order at the same time that it is an articulation of how order is created. But, traffic lights are interpreted and shaped in many different ways by the use of humans, which means that they can be accepted as well as “resisted or subverted” (Michael, 1996:3). For instance, traffic lights are seen as symbols of security by some pedestrians, while some drivers see them as unjustified obstacles, and bicyclists see them as something that are not meant for them.

It is difficult exactly to define the influence that technological artifacts have on human thought and actions. Although,

it can be assumed that, since they tend to be reproduced in multiple places, and that they thereby assist in the production of relations in time and space, they may act as reproduction units of the socially and legally right way to act. They also reinforce legitimacy through their performative actions, both as mediators of a planned "will" and as individuals placed in a unique context. The traffic light represents a form of power extension from traffic planners, aiming to control and manipulate social relations in everyday spaces. In this fact lies the strength with the traffic light. It's conformity and relative identical function. The three ritualized temporal stages represented by the color red, yellow and green, makes it possible to transcend different traffic cultures without having to cope with actions invented by traffic participants at a local place somewhere in the world.

The traffic light also embodies an agency of replacement. It aims at replacing the human body through the production of a view of the body as being imperfect and the machine is considered to be perfect. Technological artifacts are thereby used as an excuse for subordinating and replacing the human body in order to control the maneuvers of traffic participants. The repetition of the belief in the perfect machine and the imperfect human body have been transmitted since before the industrial revolution and will continue to be a perfect way of controlling humans in the future.⁶

In terms of human service, this power device is constructed, manufactured and managed in a context where human beings, if considered at all, are viewed as isolated individuals without social relations to others. As a planning device, the traffic light is a product that reflects a contemporary view of humans as psychological objects that simply can be maneuvered by encoded visual stimuli and without theorizing responses as results of reflexive agency. Like many

technological artifacts, it has a taken for granted invisibility that makes it easy to accept and adopt as a friendly and natural part of the traffic landscape. The traffic light even takes over and replaces social expressions with ones considering humans as moving objects in time and space. The power of the traffic light lies in its ability to interfere in the sphere of human relations, as an allegedly neutral extension of traffic planners and politicians. *But the price paid for regulating traffic with unequivocal technical instruments is that the planner must forget that they are powerful tools that manipulates social relations, perhaps without having the explicit intention to do so.*

Many technological artifacts, like the traffic light, produces artificial hierarchies that aim at being simple, objective, unequivocal and unambiguous in a context which is multiple, complex and ambiguous. These planned technological interventions are often produced with little consideration of social knowledge. Technology is often easily accepted as being in service of humans and as quasi-objects stabilizing social relations. At the same time, this makes us vulnerable to it. We take it for granted and act upon it unreflectively. I have studied over two thousand accounts from traffic and no one said that traffic light where ugly....

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Endnotes:

¹ See *The Bantam New College Latin and English Dictionary*, by John. C. Traupman, Philadelphia, St. Joseph's University.

² Social drama is here used in almost the same sense as Goffman (1969)

³ Perhaps this is just another variation of the theme on structure and agency, but where agency is transformed into the particular ways in which agency works through certain types of practice?

⁴ See a work about Bourdieu by Donald Broady, (1990). *Sociologi och Epistemologi – Om Pierre Bourdieus författarskap och den historiska epistemologin*. HLS Förlag, Stockholm.

⁵ He draws a rather pessimistic view of the world in which he, rather than talk about freedom, prefers to talk about agonism – that is, a permanent provocation. In this world, power offers only one escape to the structuring forces – subordination (Foucault, 1972).

⁶ The computer is often compared, metaphorically and analogically, to the human brain and the ultimate goal for some of the geeks developing the capacity of the computer, is to be better than the brain. Without having the intention to do so, these engineers are creating a way for us to subordinate ourselves to the computer and replacing our brains for the machine.