Traffic Signals and Pedestrians

The Mutual Shaping of Infrastructure and Walking Practices

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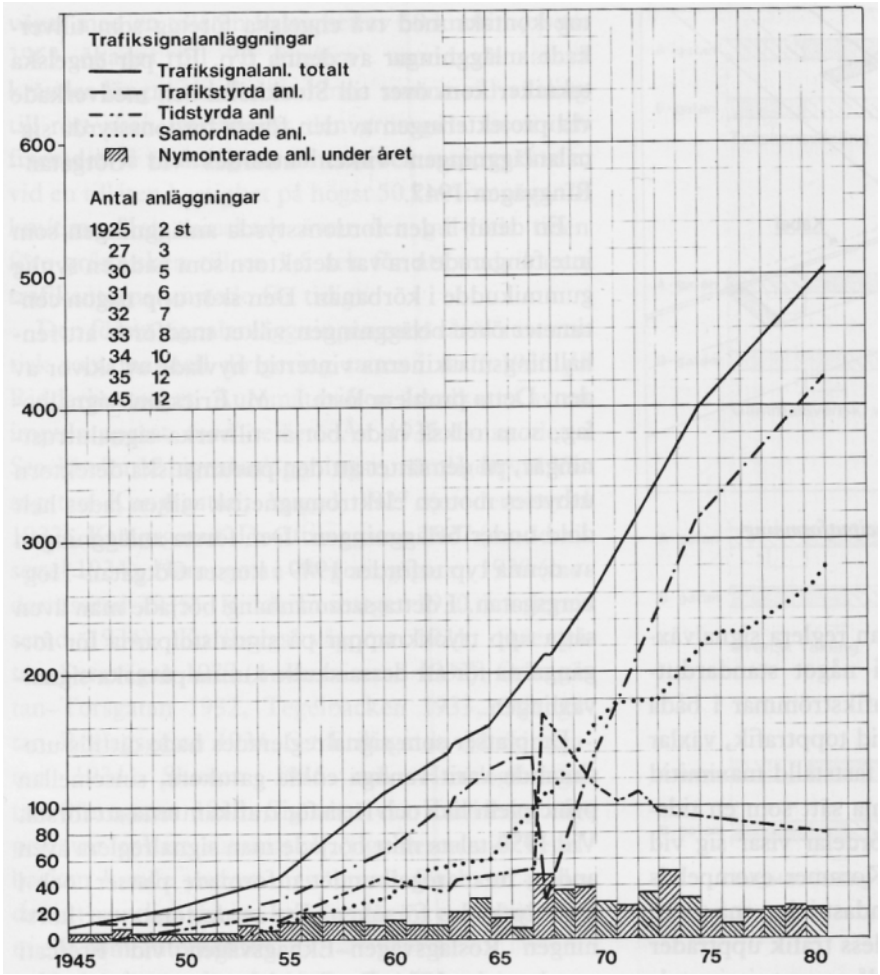
”Success for the optical traffic police”

“It was striking how, during the complete day, the cars that had signal to go, rushed through the intersection. In other words, **speeds were higher than usual**. This is of course only a merit, since traffic is so heavy that it does not allow unnecessary delays, but it is on the other hand extremely important for the pedestrians to observe. For while the new system has the ability to safely guide the pedestrians over the roadways, it also implies **greater danger for those who defy or neglect its warnings**. The corner of Kungsgatan and Vasagatan is now, from a traffic perspective, **a piece of metropolis**, with both its advantages and disadvantages.”

Svenska Dagbladet 23 January 1925

Traffic signals in Stockholm

- 1925: first optical traffic signals
- 1947: vehicle-induced signals
- 1950: pedestrian-activation
- 1954: coordinated signals
- 1966: computer-aided coordination
- Police direction *slowly* declines
- Homogeneity/National styles



- How was traffic signals accepted as natural, self-evident and indispensable part of the urban mobility system?
- What does traffic control technologies such as traffic signals “do” in a Latourian sense?
- What room for resistance and negotiation is entailed?

Social interaction under different traffic control regimes

- Traffic is commonly understood as being decentralized, impersonal, and based on autonomous road users; but
- Traffic control regimes set the framework for interaction (Normark 2006)
- Before regulation, “customary conduct”: High degree of negotiation and coordination between road users
- Police direction: Two-way communication road user-police, less interaction between road users
- Automatic signals of engineers: One-way communication signal–road user, less interaction between road users

Agency of traffic signals?

- ANT: Agency of objects through their associations within a non-/human network of actors; assemblages
- Through the “scripts” (the end-product of an operationalization of the designer’s perception of the relationship between technology and user) the designer “prescribes” appropriate forms of mobility (Akrich 1992)
- Mediators vs. Intermediaries
- Make traffic signals “speak” (de-scribing them):
  - Recapture innovation processes through archives
  - Early assessments in daily press
  - Study of police/engineering handbooks

Hand signals vs. optical signals

Comments in Sweden daily papers on 23 January 1925:

- Traffic signals had a preciseness that allowed intersections to “swallow” more traffic [**Efficiency**]
- Their instruction was “rigid, but clear”. [**Clarity**]
- “The signals can be seen from hundreds of meters away”, which gave road users plenty of time to judge how to behave once they reached the intersection. [**Visibility**]
- ”... it is considerably easier [to keep an eye on the traffic signals] than to pay attention to a windmill-turning officer in the street corner.” [**Visibility/Clarity**]

Manual vs. automatic operation

”Traffic signals are cheaper than police officers for directing traffic at intersections and they can alternately stop and start the traffic stream more quickly than an officer is able to. They are suited for different amounts of traffic and can, under appropriate circumstances, with advantage replace traffic officers except at such instances, when personal judgment is required.”

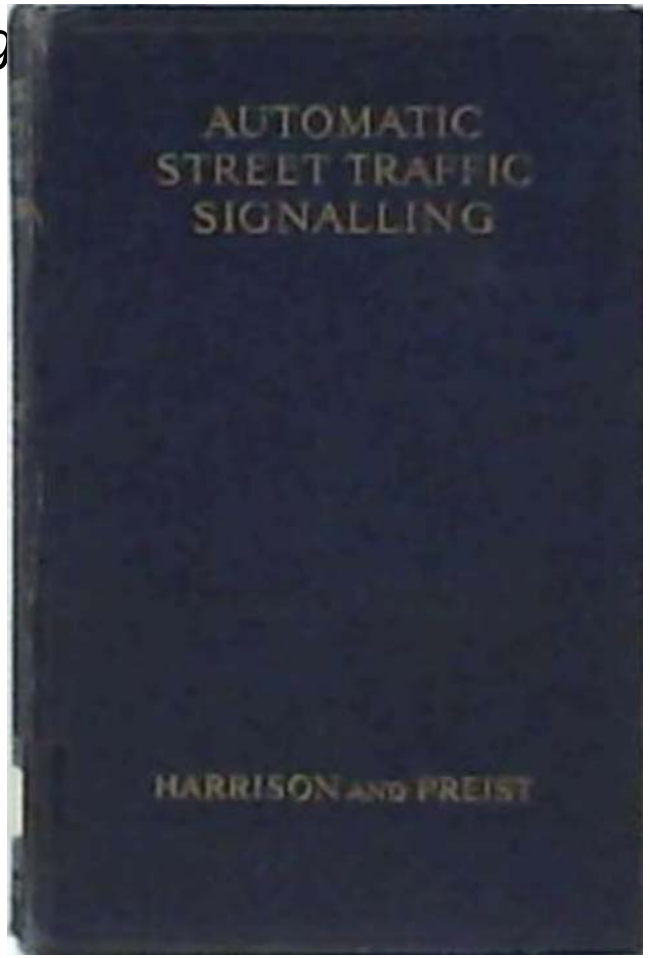
Economy/efficiency vs. **Personal judgment**

“The failings of traffic officer control”

Harrison & Preist, *Automatic street traffic signalling* (1934)

Lack of visibility, exactness, endurance and efficiency. But also:

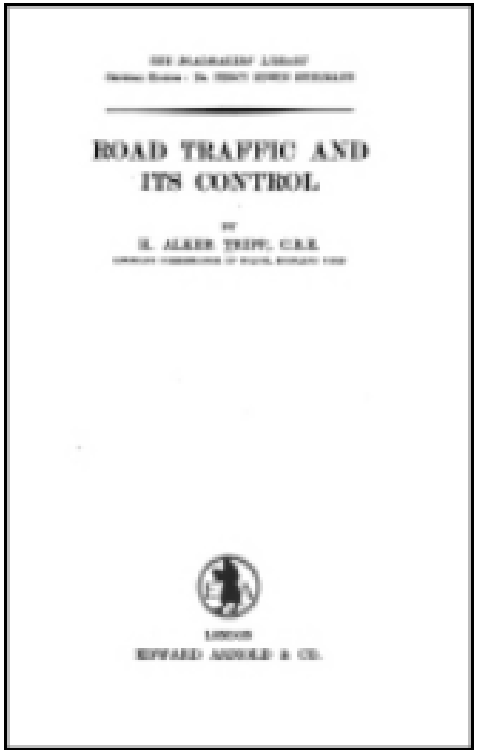
- “The same signal does not always mean the same thing: each officer has his own little personal characteristics—hence, drivers are a little **more hesitant** at an officer-controlled intersection.”
- “The psychological effect on a considerable percentage of drivers is such as to make them **more timid** at such intersections. After indicating where they wish to go, they tend to wait for a personal signal to proceed.
- “The traffic officer is prone to **wait for stragglers** instead of dealing promptly with waiting traffic.”



”Disadvantages of automatic signals”

Tripp, *Road traffic and its control* (1950/1936):

- No replacement (breakdown, enforcement)
- Inflexible (pedestrians, short turns, filtration, emergency)
- “Signals can only give direction and cannot enforce them. If their directions are disregarded, the dangers at a junction are likely to be increased instead of lessened…” [**greater need to conform**]
- “The ‘confidence and quickness’ of drivers in response to automatic signals is liable to develop into over-confidence and disregard…” [**too little hesitant**]

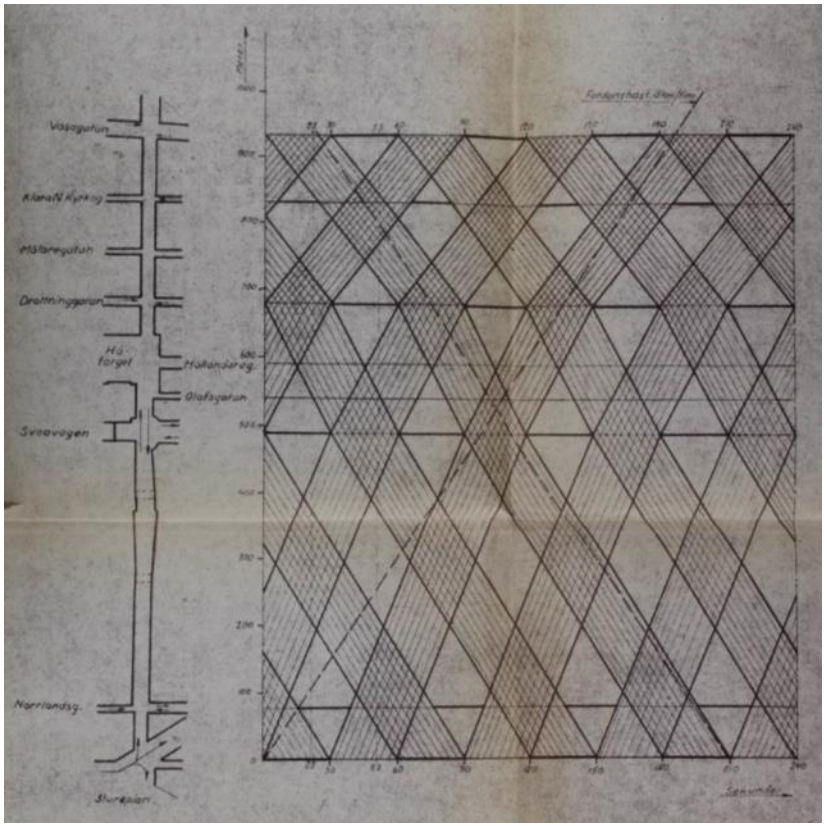

ROAD TRAFFIC AND
ITS CONTROL

De-scribing traffic signals

- Prescribe ”on-off-behaviour” among road users (instead of continuous negotiation between them, or between them and the officer)
- No need to hesitate—no room for hesitation or deviant behavior
- Delegate the responsibility to comply with traffic rules to road users (instead of the traffic police)—necessity to (blindly) follow traffic signals to avoid traffic accidents

Bias of traffic signals

- Traffic signals were not neutral in relation to different modes of mobility
- Values of traffic engineers were incorporated into the methods they used
  - “Optimum” signal timing?
  - To traffic engineers, well-timed signals maximized streets’ vehicular capacity
  - Pedestrians left out of their equations
- While police officials had tended to defend the customary rights of pedestrians, these now had fewer safe opportunities to cross at mid-block or at red lights
- McShane: “Traffic engineers treated pedestrians as second-class citizens.”



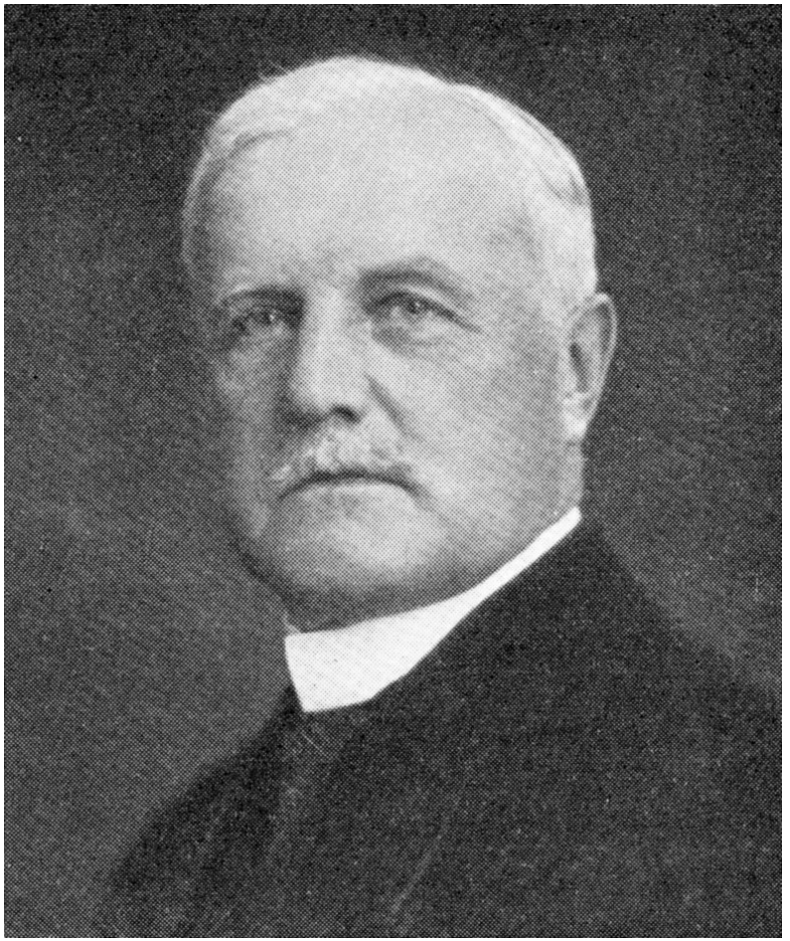
”Re-inscribing” traffic signals

- Traffic signals prescribed pedestrians to be extra careful and to subsume to other forms of (motorized) traffic
- Did pedestrians “subscribe” to the experts’ scripts?
  - Frequent complaints about their conduct suggest they did not
  - Continued innovation in traffic control technologies suggests they did not
  - 1927: Experimentation with complementary sound signals
  - 1930s: Three-coloured traffic signals
  - 1950: Pedestrian-activated signals
- Pedestrians developed “antiprograms” to the “programs of action” implemented in the traffic signal → Re-inscriptions of the technology
- Grounded in a wish to improve vehicular traffic flow, increase traffic safety for pedestrian (caring for them), or a concession to their conduct and demands?

> “It does not seem to have become part of general understanding, that the optical signals regard pedestrians as much as drivers. If the car stream stops for the red signal, it does not happen, that the stream of pedestrians does.”
>
> Axel Norlander 1926

Costumary pedestrian practice vs. modern city traffic ”demands”

- 1921: “It is no longer possible to promenade on roadways as in the old days.”
- 1926: “it is obvious that these conditions [more traffic, higher speeds] have brought increased risks and difficulties not the least to pedestrians.”



Stockholm’s chief of police Gustav Hårleman

Costumary pedestrian practice vs. modern city traffic ”demands”

“With respect to pedestrians, Stockholm has not yet become such a big city that even they follow the rules properly.”

Police intendent Bäckström, 1927

“I am generally speaking not pleased at all with Stockholm’s pedestrians, I must confess that. They often reveal a great incomprehension for modern traffic.”

Traffic inspector Stawström, 1934

Three-colour signals (yellow light)

- Inspiration from American cities, Berlin and Barcelona
- Smoother starts and stops: avoiding drawbacks of “on-off-behaviour”
- Preparation signal for drivers about the coming signal change: avoiding delays
- Go-ahead signal for pedestrians
- Experimentation and standardization process during the 1930s: “the Stockholm system”

Concern about pedestrians or about avoiding delays?

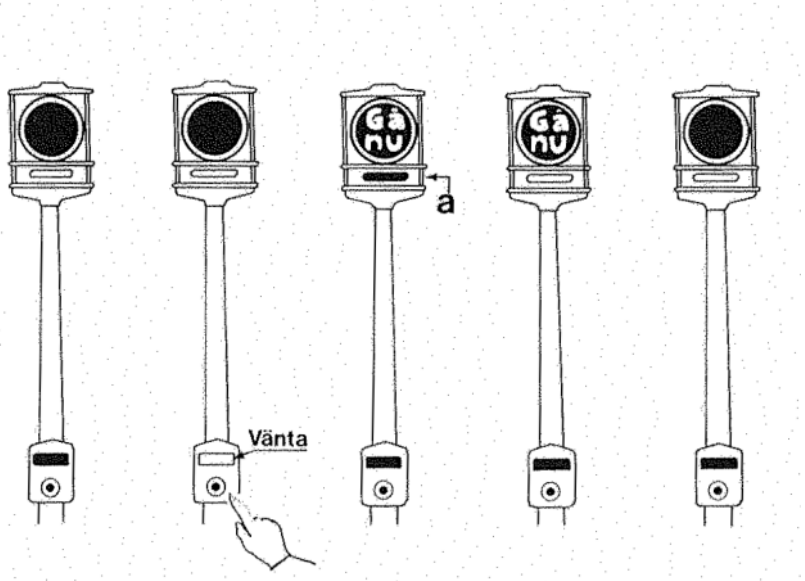
- Initial proposal spurred by concerns about pedestrians:
  - "when the signal changes occur instantly from red to green and vice versa, pedestrians are only lucky to save themselves up on the pavement from the roadway."
- Traffic Police: preference for an "all-red"-period
- Traffic Department:
  1. "a call to drivers and pedestrians to **evacuate** the [intersection]"
  2. "an indication … to **prepare**" for the green light (not provided by "all-red"-phase); this "preparedness" was important "since both methods implies less traffic capacity, time without any movement, why it is necessary to get moving as quickly as possible."
  3. The yellow light would better inform pedestrians that intersecting traffic would start within in a few seconds.
  4. No specific pedestrian phase: "As a consequence the pedestrians will always have to worry about turning traffic, but only on their passage of one side of the street."
- Comment in daily press:
  - A "notice" about the impending change

Yellow light: Points of conflict

- **Misinterpretation of yellow:** Back to the problem of hesitation (traffic experts)
- **Pedestrian disrespect:** ”A motorist has to be able to drive at green without taking intersecting traffic into consideration, but as it is now, he needs to be always alert, in order for no pedestrian to run out in front of his wheels.”
- “The pedestrians have to stop at red light, one cannot bargain about that.” (motorist)
- **Fair phasing:** ”much needed period for pedestrians to make it to the other side,” but often ”merely a blink” (ped.)
- **Turning traffic:** “Pedestrians cannot even walk safely at green light, since they always have turning traffic to take into consideration.”
- While always being careful when walking against a red light, a pedestrian is ”often … not aware of the danger entailed in the ‘false’ green light.” (ped.)

Conclusion: Users as co-producers of urban mobility systems

- Historical studies of technopolitics often emphasize the power of experts and the effectiveness of disciplinary techniques
- Users, however, also productively influence the functions, organization and distribution of the material world (Trentmann 2009)



Thanks!