

Can we make people want what they ought to want – and should we? Historical lessons for sustainability planners

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Abstract

There are numerous historical examples of purposively designed urban infrastructures that facilitate or prevent certain behaviours. This is no news for STS scholars who are familiar with concepts like prescription, temptation, or the policy of artefacts. Such strategies could be of particular interest in the context of sustainable development because, as many sustainability activists argue, people need to change their behaviour. However, this approach raises critical questions concerning its compatibility with democratic ideals and its long-term effectiveness. Both aspects are discussed in the paper concluding with a pragmatic recommendation for participatory “co-evolution” between design and behaviour.

Introduction

“If you want your subordinates to do or not to do certain things, build a city” Machiavelli might have recommended to his king. Indeed, there are numerous historical examples of purposively designed urban infrastructures that (are meant to) facilitate or prevent certain behaviours and numerous authors have discussed, some even explicitly recommended, this strategy. Norberg-Schulz (1965), for example, talks about “physical control” through built forms, Brodey (1967) praises “intelligent environments”, and Sommer (1969) endorses “design for behaviour change”. While Lipman (quoted in Joerges 1977: 12) considers the behaviour of users as “determined by the physical environment”, Becker and Keim (1978) see the urban environment more cautiously as a “potential impulse for collective behaviour”. Moos is ready to utilise this mechanism: “The design of environments is ... probably the most powerful technique to influence behaviour” (1975: 211).

As the publication dates of these publications indicates, the 1960’s and 70’s witnessed a wave of ideas related to what may be summarised as “social engineering”. Since then, many of these approaches have been stripped of their mechanistic naïveté, often under active contribution of authors in the field of Science and Technology Studies (STS) who emphasise the two-way-nature of the relationship between technologies/infrastructures and human behaviour. The most prominent metaphor for this view is maybe Hughes’ (1988) term of a “seamless web” with society and technology constantly interacting and shaping each other.

What STS scholars call “prescription” (Akrich, mentioned in Latour 1992: 232), “domination” or “temptation” through artefacts is nevertheless one thread of the seamless web. If certain built environments indeed manage to confine, enforce or suggest a corridor of behavioural choices, then this is particularly interesting in the context of sustainable development because, as many sustainability activists argue, people need to change their unsustainable behaviour. However, this approach raises critical questions concerning its compatibility with democratic norms and its long-term effectiveness, that is, its successfulness. For this reason, a number of historical examples shall be analysed for lessons that help to answer the question whether we can make people want what they ought to want - and whether we should.

Glimpses at Historical Cases

A very interesting attempt to influence a citizenry’s behaviour is unfortunately not accessible to empirical assessment because Amaurot (figure 1), Thomas More’s (1478-1535) ideal and (programmatically termed) “utopian” city has never been built. Its design was supposed to stimulate orderly behaviour and maximise efficiency of interpersonal interactions. It is thus an early example of an explicit approach trying to improve the world not by preaching to the people or by legal coercion but by influencing people’s behaviour through design (More 1999).



Figure 1: Section from Thomas More’s Amaurot (More 1518: 12).

A particularly blunt idea of social determination through urban infrastructures was implemented by order of Cardinal Del Monte (1487-1555), governor of Gualdo Tadino in Umbria, Italy: “When [he] saw popular sentiment against the Papal State swell dangerously, he had a spine of houses built in haste down the middle of the main square, dividing it in two and thereby diminishing the space, and effectiveness, of a possible uprising” (Kostof 1999: 125). No information could be found on the successfulness of Del Monte’s coup, the fact that he later became Pope Julius III, however, seems to indicate that it did work

quite well. What remains as counterargument must therefore be based on normative democratic foundations.

The Panopticon (literally: “all seeing”) of Jeremy Bentham (1748-1832) is a classic example of deliberate control by design, particularly of prisoners. The original Panopticon was circular with the cells for the inmates built into the curve of the circle facing inward and thus could be observed from the guard tower located in the centre. Bentham’s idea was that the constant possibility of being watched would coerce the prisoners to permanent compliant behaviour. Bentham’s model has made a considerable career as some penitentiaries have actually been built according to this design (see figure 2). Also modern surveillance cameras follow the same principle of “seeing without being seen” and they, too, require far-reaching design consequences because public spaces must not contain corners and niches that elude the gaze of the cameras. Although John Stuart Mill considered himself a matured follower of Bentham’s utilitarianism, he criticised its patronising implications and its ignorance of the “existence of a consciousness, self-respect, ... honour and personal dignity”. (1968: 160). From a non-normative point of view it is interesting, or almost fascinating, how petty criminals have learned to erode the effectiveness of constant observation by wearing out the alertness of the security personnel behind the surveillance monitors through week-long suspicious but lawful behaviour before they actually strike (Hertle, personal communication May 22 2004).

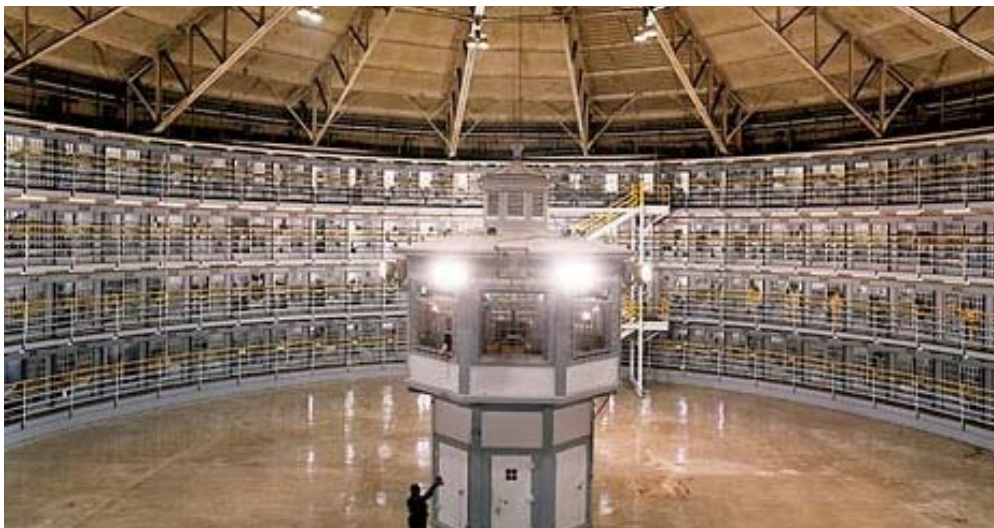


Figure 2: Interior of a penitentiary built according to the design principles of Bentham’s Panopticon (duBois & Goldberg 2002).

A design-based strategy for preventing hostilities was devised in New Orleans. In the early 19th century, many Anglo-Americans poured into the city and were perceived as a nouveau-rich disturbance by the supposedly more cultured French/Spanish Creoles who had settled there earlier. Their antagonism made them plan a 50 feet wide canal with 60 feet of reservation on each side to separate the Creole from the American quarter (Kostof 1999: 105). The canal plans came to nothing but the space reserved for it left a 170 feet wide void in the centre of New Orleans. A photograph of around 1867 (figure 3) still renders the separating function palpable even after Canal Street had long evolved into the bustling Central Business District. The initial “sociofugal” (Osmond 1970) intention was thus outdeveloped by pragmatic economic rationales. Nevertheless, today’s New Orleanians still refer to the former no-man’s-land as the “neutral ground”.



Figure 3: Canal Street in New Orleans, probably 1867 (Friedman 2004: Picture 13).

Robert Moses, the famous planner of New York City of the 1920's, is said to have employed a much more subtle strategy to keep social groups apart. He supposedly tried to keep the beaches of Long Island free of low-income groups, particularly of African Americans, by blocking buses, their preferred or only means of transportation, through low-clearance bridges (Winner 1980). Although the intentionality of this design is subject to spirited debates in the STS community (e.g. Joerges 1999a and 1999b; Latour 2004), it serves well as an exemplar of a school of thought that considers the architect “not as decorator but as organizer of life” (Ginsburg 1924, cited in Chan-Magomedow 1983: 581). In this view, the authorship of artifacts comes with enormous power to infringe upon the freedom of choice. Putting normative democratic qualms aside for the moment, the pragmatic question remains, whether such strategies succeed. In many, if not most, cases, the patronized human objects regain their subjecthood by means of some form of subversion, disobedience, modification, sabotage, counterstatements (Pfaffenberger 1991: 10) or antiprograms (Latour 1992: 251). The low-income population of New York, for example, simply took the train (Joerges 1999b: 3). Plus, Moses’ bridges remain as an ironic annoyance for modern truck traffic (see figure 4).



Figure 4: Low-clearance underpass in New York City (Yanev, reproduced in Latour 2004).

Modernist ideologists expected this permanent back-and-forth of action, re-action, re-re-action and so forth to subside in an ideal city. One of them, the Voisin quarter of Paris (see figure 5), rose 1925 on the drawing table of Le Corbusier who had envisioned it as the perfect city, e.g. with minimized distances, thus making it obsolete for the citizens to reflect upon their mobility choices because the enlightened designer had already done the thinking - and the choosing. This approach was not primarily meant as an attempt to impose certain behaviours upon the users of built environments but rather as a method to finally facilitate truly rational behaviour that was very cumbersome¹ under the constraints of urban structures accrued from continuous ad-hoc additions to their mediaeval nuclei. The resulting tabula rasa approach in cities like Brasilia was expected to leap forward on the “proper path” (Le Corbusier 1990: 91) of architecture and thus to draw nearer to an end of history. Later assessments, however, had to acknowledge that this modernist ideological programme could not vitiate (a modified version of) McLuhan’s seminal observation: “First we shape our cities and they in turn shape us”.² The “boring hygiene” (CIAM, cited in Knie & Marz 1997: 14) of these cities moulded their inhabitant to “a sanitised peasant on a chess board; but he is alone and there is no challenge, no dialogue” (ibid.). Lewis Mumford would have described this problem as a lack of “social drama” (1937: 96), but he, too, saw the remedy in intentional design, in particular in “deliberate local nucleation, ... better technical organization ... appropriate individual and urban structures” (ibid.). This idea culminates in Fishman’s creed that architecture shall “direct[] the community onto the path of social harmony” (1977: 4). One such strategy was employed in postwar Germany where “public places were not fostered in spatial planning due to their disreputed role as parade grounds” (Knie & Marz 1997: 16).



Figure 5: Le Corbusier's Plan Voisin for Paris (reproduced in Moore 2001: 190).

The regime that had led Germany into World War II applied similar strategies to make people want what they ought to want and joined in the roundelay of most political ideologies that claim to know the truly best behaviour, or simply define it according to their needs. The need was a large Aryan population for the “Lebensraum in the East” where Gottfried Feder, the Nazi commissioner for settlements, envisioned perfect cities with 20,000 inhabitants because a research project conducted by him found that Germans in medium-size cities procreate more willingly than in large cities. Figure 6 from Feder’s famous book “Die neue Stadt” (1939) portrays this finding in a dramatic depiction, evoking the biological Volkstod (death of a people) in cities over 100,000 inhabitants where every household, on average, “produces” only 0.2 children. The Nazis found support for this supposedly objective finding in empirical studies by Heini Hediger, the curator of the Zurich Zoo, who found that “if a captive animal were given too little, too much, or the wrong kinds of space, it would be likely to ... fail to reproduce” (cited in Sommer 1983: 7). That the causal direction for the phenomenon observed by Feder might be reverse, that singles and people who wish to have fewer children choose to move to larger cities, did not interest his ideologically blinded opinion. Besides, he argued, large cities are “hatcheries of Marxism and Bolschewism [therefore] they are to be destroyed through decongestion and rehabilitation” (Feder, quoted in Kramer 2004: 2). An assessment of the effectiveness of Feder’s approach is dispensable because its underlying absurd doctrines led to other political results that thwarted its implementation: Germany’s defeat.

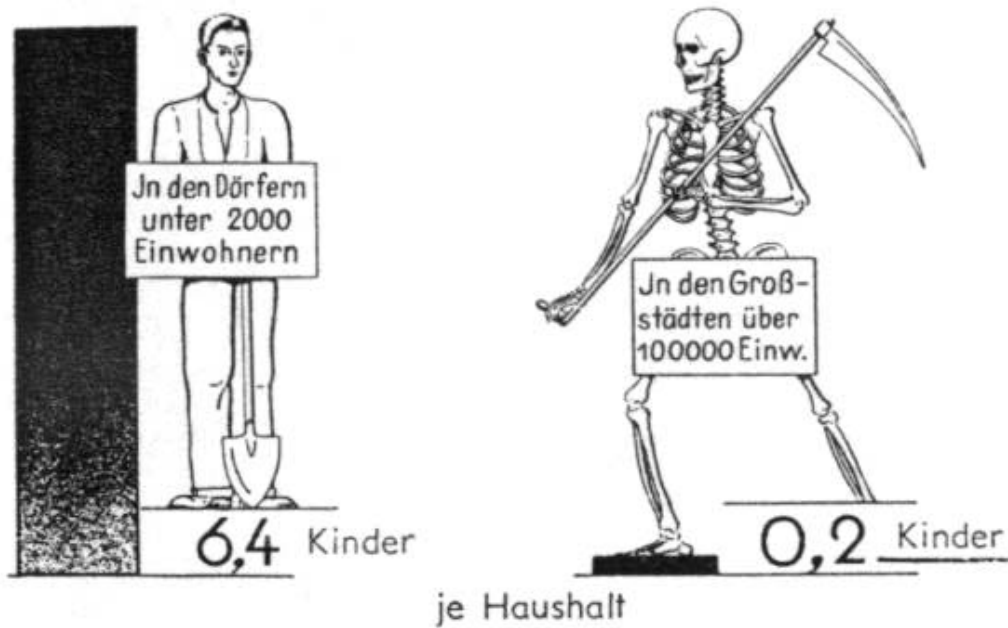


Figure 6: “Facts” about fertile environments (Feder, reproduced in Kramer 2004). Left inscription: ‘In villages below 2000 inhabitants ... 6,4 children per household’. Right inscription ‘In large cities over 100000 inhabitants ... 0,2 children per household.’

During the 1940’s and 50’s, General Motors pursued its vision that people ought to use cars instead of public transport through deliberate design of urban infrastructures. It used unsuspecting “front” companies to acquire the majority of shares of public transport companies in the East Bay, San Jose, Fresno, Stockton, Sacramento, San Diego and Los Angeles (for a detailed analysis see Szoboszlay 1999). These hostile takeovers, as we would call them today, allowed GM to slowly but surely disimprove the rail-bound public transport system. Although an official report concluded that “electric interurban railways have a greater capacity and offer safer and faster transportation ... than do other forms of transportation” (California Dept. of Public Works 1947: 52), the electric trains and streetcars were replaced by GM buses and the right of way of the trains was converted to additional automobile lanes. This coup was eulogized as “modernization” (see figure 7) but was effectively “a tool for discouraging people from using transit [because] buses have absolutely no advantage over streetcars and trains from the customer’s viewpoint” (Szoboszlay 1999: ctc04). Eventually, people voted with their feet as a letter to the editor states in 1948: “Every month more and more of us are being driven from the Key System [the public transport system in the East Bay area] to the use of private automobiles” (quoted in Szoboszlay 1999: ctc05). As we know in retrospect, this attempt to influence people’s behaviour was terribly successful and left an enormously unsustainable legacy.

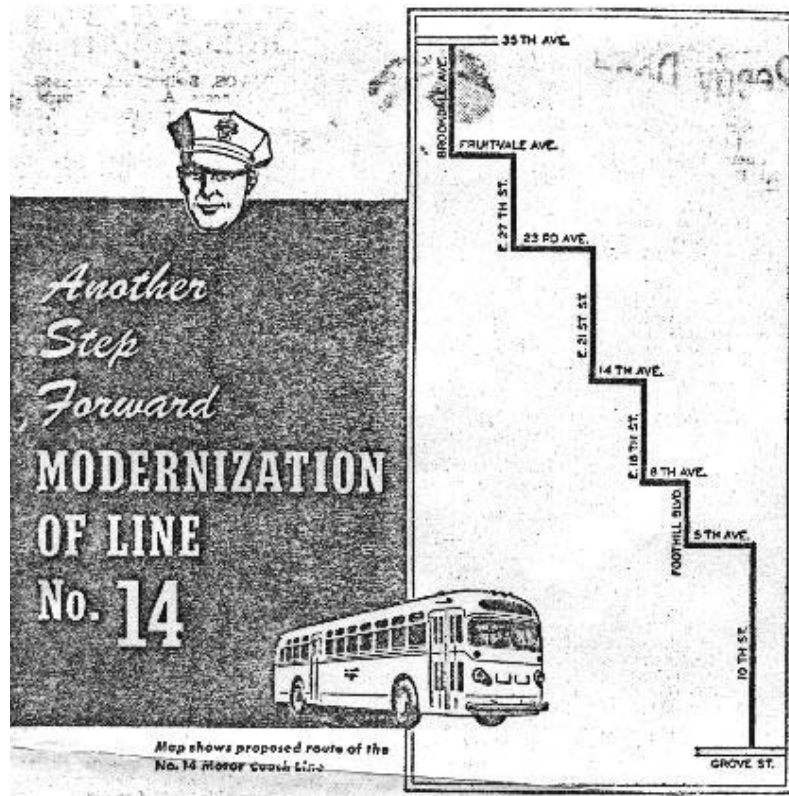


Figure 7: Advertisement in the Oakland Tribune of Jan. 23, 1948 (reproduced in Szoboszlai, 1999).

Crime Prevention Through Environmental Design (CPTED), an approach emerging in the 1970's, tries to prevent people with criminal energies from doing what they ought not to do. The basic premise of CPTED and its more academic branch, Environmental Criminology, is "that the physical environment can be changed or managed to produce behavioural effects that will reduce the incidence and fear of crime" (Crowe according to Draper 2002, 1). In other words, it "aims to reduce the opportunity for specific crimes to occur" (International Security Management and Crime Prevention Institute) through deliberate arrangements of the built environment. Figure 8 shows an example of a neighbourhood designed according to CPTED principles. ETTA Training, an Australian training provider for engineers, describes other CPTED applications such as:

street lighting, sensitive landscaping and windows to improve opportunities for surveillance, increasing the frequency of use of under-utilized (hence potentially dangerous areas) by introducing facilities such as stores and recreation facilities, using low scale fences or shrubbery to indicate that a particular piece of property belongs to residents of the site (the rationale is that people intruding on the property would arouse suspicion and may thus be deterred from committing a crime) (2004: 3).

While there certainly exists some kind of "CPTED tunnel vision" (McKay 1998) that enthusiastically embraces CPTED as a panacea against all evil, the assessment of ETTA Training does not seem terribly exaggerated that CPTED is a "proven approach to reducing ... opportunist crime" (2004: 1).



Figure 8: A neighborhood designed according to CPTED principles (McKay 1999: 1).³

Another set of approaches without a particular label attempts to influence the behaviour of ordinary, law-abiding citizens through built forms. Chains or railings, for example, are supposed to discourage jaywalkers while elsewhere, designers “seek to channel jaywalkers by using a mid-block crosswalk” (Brodeur 2003: 24-25). Cobblestones, speed bumps, street narrowings and other features of the “self-explaining street” (Schmitt 2004: 56) are supposed to prevent motorists from speeding. More positive incentives are needed for the “merchant-friendly streetscape-design” (Brodeur 2003: 24), which is a never-dwindling task for planning consultants. An article in the journal of the American Planning Association, for example, recommends to find the right balance between too little and too much illumination (insecurity versus ballpark atmosphere), to provide the right amount, type and location of parking spaces, and to segment the sidewalk into three distinct utility-, through way- and browsing-zones, with the latter generating the perfect setting for window-shoppers to stop and gaze (Brodeur 2003). The desire to induce potential customers to linger in the shopping district also made the Belgian city of Hasselt replace spiky anti-parking poles with flattened ones because tired shoppers can rest on the latter. I know of no universal assessment of the effectiveness of such techniques but from anecdotal evidence it seems fair to conclude that many of them work pretty well as long the users do not feel too bluntly manipulated and comprehend the greater purpose of the measures taken.

A Question of Categories

For a provisional conclusion, Skinner’s observation does not seem completely absurd that “there are many varieties of ‘behaviour modification’ and many different formulations, but they all agree on the essential point: behaviour can be changed by changing the conditions of which it is a function” (1971: chap. 8). Winner (1980) helped raise attention to the dangerously undemocratic aspects of this claim with his famous statement that “artefacts have politics”. As helpful as Winner’s call may have been, it was transformed by some technophobic contemporaries to a polemical and too much aggregated slogan, thus barring the view for a closer inspection of the mechanisms and conditions inside the black box of what I suggest to call for now “socially active designs” (SAD).

I cannot conceal my impression (or hope) that there might be some potential for legitimate and successful applications of SAD for sustainable development. My assumption is fed by the observation that neither the exhortations for sustainability-compliant, moral and often heroic choices nor the numerous attempts to provide technological fixes for the unsustainable state of the world have so far proven very successful. Therefore, I cannot help but wish “if we only could make the sustainable kind of behaviour attractive through the appropriate design of infrastructures”. This quest is what makes me attempt to disentangle the phenomenon of socially active designs, develop categories that may facilitate a productive discussion and ultimately identify successful and legitimate cases of SAD for sustainable development.

The heterogeneity of SAD may be fascinating but it is, at the same time, a challenge for constructing meaningful clusters. One pivotal criterion is the rigor of their embodied scripts. SAD projects can either be rigorous in the sense that they leave no other choice but to obey the script built into an artefact or they can simply suggest a certain behaviour. The STS community uses the expressions domination, prescription or determination for the former type. Cognate vocabularies include adjectives like adamant, strict or rigid to describe structures that enforce the desired behaviour by ruling out its alternatives, thus leaving only a narrow corridor of behavioural choices; for example, a car that does not ignite unless the driver is buckled up. The second type of SAD is laxer and simply suggests to do or not to do certain things but still leaves realistic alternatives, like the flattened anti-parking poles. The resulting classification of the above examples is shown in table 1.

Table 1: Category 1: Rigorous versus suggesting types of SAD.

rigorous	suggesting
Robert Moses; Cardinal del Monte; General Motors	Panopticon; New Orleans; Paris Voisin; Die neue Stadt; CPTED; Merchant-friendly design

Hardly anyone would find this categorisation alone very helpful because it clearly allows too different cases to mingle. Therefore, I suggest to make another cut through the variety of SAD, which divides cases that discourage from those that encourage certain behaviours. The preventing type aims to deter from undesired choices by making them unattractive (not necessarily impossible) and is probably the more debated kind in the STS literature - maybe because it is better suited to trigger indignation and thus attention. The scripts of such artefacts start with “don’t!” and thus deserves the label “behaviour-fugal”. However, Latour reminds us that there is also a generous type of artefacts, “thanks to them ... we are ‘allowed’, ‘permitted’, ‘enabled’, ‘authorised’ to do things” (2004: 4). This class of artefacts is rather “behaviour-petal” because they tend to make the desired behaviour attractive and convenient, thus hoping to invite or lure their audience to make certain choices. With these two dimensions, we can span a matrix as shown in table 2.

Table 2: Categories 1 and 2: rigorous vs. suggesting and behaviour-fugal vs. behaviour-petal.

	rigorous	suggesting
behaviour-fugal	Robert Moses (“don’t use the underpass”) Cardinal del Monte (“don’t gather”)	CPTED (“don’t burgle”) Panopticon (“don’t misbehave”) New Orleans (“don’t bother us”)
behaviour-petal	General Motors (“use your car”)	Die neue Stadt (“procreate”) Merchant-friendly design (“buy here”)

This categorisation does not seem very useful either because it leaves the Nazi ideology in the same class as merchant-friendly design. The attempt to unravel them, thus asks for an additional criterion. Maybe the differentiation along the intended beneficiary provides the sought-after corrective. Authors of a SAD project can either intend to favour the society at large or an elite whose mission they implement and whose money they receive. Cardinal Del Monte, General Motors, Robert Moses’ alleged friends with property on Long Island (Joerges 1999b: 3) and the downtown merchants were clearly the intended beneficiaries and initiators of the respective projects. In contrast to such a personal union between designer and intended beneficiary are monitorable public spaces, the planned canal in New Orleans, Corbusier’s Paris, Feder’s Aryan cities and CPTED. In these cases, the intended effect was to foster some common good, be it safety, conflict avoidance, general efficiency, folkish hegemony or crime prevention.

The beneficiary-criterion still pools cases that intuitively do not belong together, especially where the intended beneficiary is not overtly identical with the designer. Thus, this criterion alone cannot help us, but if we blend the three hitherto categories, we obtain a three-dimensional tool that might prove expedient. For reasons of clarity, figure 9 depicts a “flattened” version of this notional cuboid, a so-called semantic box. In this depiction, it is also possible to do justice to the gradual nature of most real phenomena - and to gratify the attentive reader who might have criticised the previous table structure - by assigning the examples non-binary positions.⁴

Now, we have a more sophisticated categorisation scheme, which allows us to finely differentiate the aforementioned cases. I suggest to test its usefulness with a contemporary case I have described and analysed elsewhere (Brand 2003) and that I consider an example of SAD from which sustainability planners can learn some (not all) important lessons: The mobility policy of the city of Hasselt, a Belgian city that used to suffer from severe traffic-related problems such as accidents, traffic congestion, low mobility for senior citizens, poor accessibility of the shopping district in the centre of the city especially for out-of-town customers et cetera. In the mid 1990’s the city council opted to narrow the traffic artery in the inner city, to rededicate the space thus gained to parks, bicycle and pedestrian lanes, to increase public transport services eight-fold, to radically modernize its bus fleet, to introduce a five-minute interval on some bus routes, and to make bus travel free of charge - at least for some years. As a result, many people changed their behaviour, such that bus use octupled. This change of behaviour was achieved not through a moralising awareness campaign but through urban infrastructures that made the socially desired behaviour (walking, bicycling, bus use) convenient. The Hasselt example therefore ranks among other suggesting and behaviour-petal cases and its intended beneficiary is the society at large. Its trajectory in figure 9 would be in uncanny proximity to Feder’s ideal Aryan city and Le Corbusier’s plan for Voisin.

Consequently, a sieve that successfully winnows legitimate and effective cases of socially active design is in need of at least one more criterion.

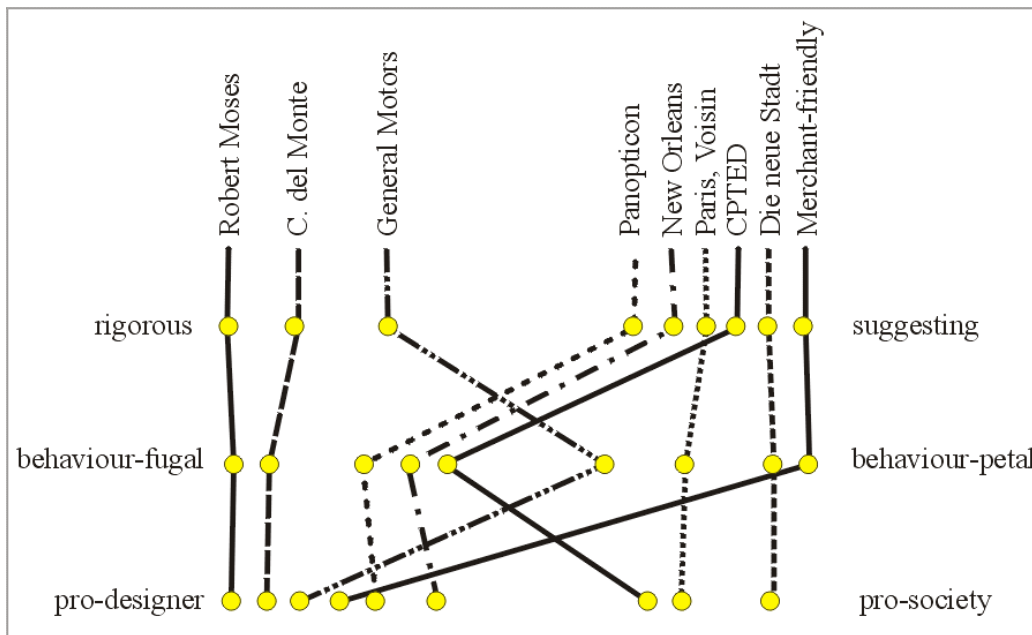


Figure 9: Three-dimensional semantic box.

A self-suggesting candidate seems to be democratic approval⁵ - be it implicit or explicit, ex-ante or ex-post - of the definition of “common” and “good”. Now, folkish hegemony quickly plunges down because the man and woman in the German street, as I assume, did not care much for a demographic superiority over the Polish.⁶ The same languidness probably governed the attitude of the Parisian toward the mechanistic perfection in Voisin. A safer, quieter and greener ring road, frequent bus connections and safe bicycle paths, however, enjoy high appreciation by the average Hasseltian. The key question is thus whether the intended good is defined by an ideologically or scientifically “enlightened” elite only or by the society at large. If the intended good is not common - as in the case of merchant-friendly design - it is at least crucial that the population considers it legitimate. Expanding the semantic box by this criterion produces figure 10 where the Nazi plans are finally sharply distinguishable from other suggesting, behaviour-petal and pro-society cases like Hasselt.

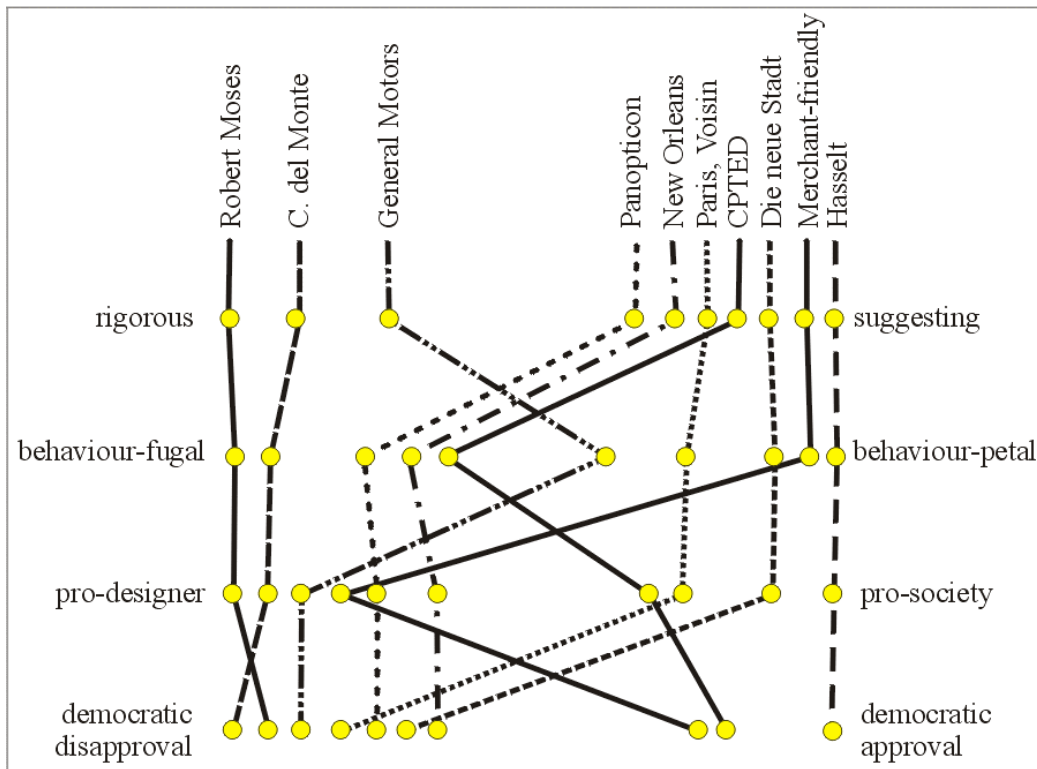


Figure 10: Four-dimensional semantic box.

Assembling the Arguments

A look at the bottom row of figure 10 even suggests that democratic approval alone could be a sufficient condition to distinguish legitimate from illegitimate cases. This hypothesis also could placate readers whose unease with seemingly behaviouristic premises might have grown over the last few pages. They could rightly quote Skinner again to show the proximity of socially active designs to behaviourism. The founder of this school argues that if all stimuli are set right “people will become wise and good without trying, without having to be, without choosing to be. The application of behavioural science to moral training will produce men who are good practically automatically” (1955: 60). This view of human beings as rats in a moralisation maze must indeed sound repulsively Orwellian to those who favour sustainability and democracy, including myself. A number of modifications to the maze metaphor, however, might win their approval: First, the lab attendant is dismissed. Second, the well-informed rats agree that the current distribution of rats in the maze is undesirable. Third, a plenary assembly of rats decides in an undistorted debate that it would be best for all rats to gather in a different corner of the maze. Fourth, the rats agree that a team should be appointed to place the food at an agreed-upon location. Fifth, the democratically elected rat government builds convenient steps and ladders on the path to that corner. In this version, the declared willingness to behave in a certain way (move through the maze) is developed simultaneously to the promise of attractive infrastructures (steps and ladders). This is what Rohracher calls “synchronic preadaptation” (2001: 8) and this is what describes the design process in Hasselt fairly well. The traffic problems there were unanimously perceived as unbearable and the inhabitants were asked in neighbourhood meetings and high-circulating questionnaires for their suggestions. The initial design was prepared by experts but followed by numerous and serious chances for the population to suggest modifications and improvements (for more details see Brand 2003).

If we accept democratic approval as a sufficient condition to distinguish legitimate from illegitimate cases, does this automatically make the former three categories (rigorous vs. suggesting; behaviour-petal vs. behaviour-fugal; pro-designer vs. pro-society) obsolete? It probably would, if democratic approval also qualified as a sufficient condition for successful socially active design projects. It seems much harder to support this hypothesis, though. All we know, for example from Cardinal del Monte and the fate of Californian streetcars, is that democratic approval cannot be a necessary condition for success. But knowledge about the manifold potentials and enormous creativity of objectified people to subvert or circumvent undesired scripts suggests that democratic approval is at least a highly advisable ingredient of successful cases of SAD. One, probably the best, means to ensure democratic approval is by including citizens up-front in any effort of devising urban infrastructures. This would make the ultimate experts in user behaviour, i.e. the future users themselves, co-designers of artefacts that can make the socially desired behaviour attractive. In STS lingo, this procedure would cut short some rounds in the “technological drama” (Pfaffenberger 1991) of action, re-action, re-re-action and anticipate its outcome through dialogue. I even dare speculate that most such processes would lead to results that are suggesting, behaviour-petal and pro-society. Therefore, I suggest as starting point for future debates that all four dimensions be taken as critical inspiration for the design of legitimate and successful SAD projects - with democratic approval being the overarching principle.

In the end, the question whether we - the design professionals - can and should make people want what they ought to want must be negated due to its underlying patronising and expertocratic premises. However, if we can help a citizenry employ design to facilitate the kind of behaviour that a majority considers socially desirable we should go right ahead and offer our services. If the socially desired behaviour deserves the label “sustainable” we are a lucky lot contributing to more sustainable conditions, without leaving the field to preachers of heroic choices or technological fixes. And I am convinced that many people do consider sustainable behaviour socially desirable but find it hard to live up to this ideal because of discouraging and therefore change-worthy infrastructures.

Notes

- ¹ The Athens Charter, devised at the 1933 meeting of the Congrès Internationaux d'Architecture Moderne (CIAM), thus promised liberation from the “merciless force of customs” (Charta von Athen, 1962: 119).
- ² McLuhan said “tools” instead of “cities” (cited in Lapham 1994: xxi). Interestingly, Winston Churchill made the same point with a more direct relevance to the built environment: “We shape our dwellings, and afterwards our dwellings shape us” (cited in The Churchill Center, 2002). I was unable to find out which of the two men inspired the other.
- ³ Explanation: “The homes utilize a modular lotting concept which accounts for the unusual angle of the buildings to the street and the almost gate-house like impression” (McKay, personal email communication, June 1, 2004) For more information refer to McKay 1999.
- ⁴ These positions are not derived from quantitative calculations. They merely reflect subjective assessments.
- ⁵ More accurately would be “the approval of those affected by the design decision”. Because urban infrastructures usually affect large portions of the population and for reasons of readability I use the term democratic approval.

⁶ This case demonstrates the importance of another, normative criterion of legitimate socially active design: No third party must be harmed.

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