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# **Cognitive mapping of public space: Causal assumptions and core values among Nordic city planners**

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## **Cognitive mapping of public space: Causal assumptions and core values among Nordic city planners**

### **Introduction**

Cognitive models, city planning and public space

Bøgelund-Hansen and co-authors describe how, in the 1920s, Danish planners changed their ideal of how Copenhagen city centre should evolve. Up until then the city plan had been built around values which viewed the city centre from a predominantly aesthetic point of view. This now changed to one in which the centre was rationally understood in terms of the 'modern metropolis' - as an enclave of enterprising commercial life. This transition was not of course unique to Copenhagen and was indeed rather typical of a broader historical trend (see for example Hall, 2002). Such trends and trend-breaks can be used to exemplify how planners' values have implications for the ways in which public space is structured, modelled or implicitly 'mapped' in cognitive terms, that is to say, what planners consider to be the 'valued' outcomes of their planning activities, and what social and physical mechanisms will bring these outcomes about.

This paper is an attempt to show how planning logics, or worldviews with physical and theoretical components found locally in city planning, can be modelled through the creation of 'cognitive maps' depicting planners' core values and causal assumptions as regards public space. Applying cognitive mapping (cf. Eden & Ackerman, 1998) as an approach to explicate the cognitive models at work in planning may have at least two benefits: Firstly, it may be of academic interest to explicate planners' tacit theories of any subject, particularly since this partly implicit knowledge is itself derived from reading, observing and experimenting in the field. To paraphrase Kaplan's original adage: there is no better source of theory than good practice. Secondly, one may argue that it is good planning practice to explicate the hidden assumptions behind one's planning imperatives, so that these can be confronted with existing knowledge, tested and if necessary, revised. This paper will provide an inroad into this methodology from the point of view of public space planning. First, it will briefly and very selectively discuss a number of planning models for city spaces, mainly in order to provide exemplification. Second, cognitive mapping will be presented and put in a broader methodological and intellectual context. After this the empirical material will be presented, including the cognitive maps of public space derived from the planning documents of four Nordic cities. Finally, the issue of how cognitive maps reveal both a theoretical consistency across planning contexts as well as a number of internal contradictions, of academic as well as of practical interest, will be raised.

To return briefly to Copenhagen, the authors above describe how the 'romantic' plan of 1910, with its focus on the formation of squares, picturesque diversity and irregularity shifted towards the strict neo-classicist plan of 1918, which emphasized qualities such as harmony and calm through coherence and uniformity of architecture, expressed particularly in broad, straight streets and overviews (Bøgelund-Hansen et al. 2002). The architectural aspirations and at least one of their associated core values were clearly expressed by architectural commentators Oxvig and Beck (1998, cited in Bøgelund-Hansen): "What a release there is in the experience of the refreshing effect of being able to see far. It was the desire to liberate the eyes that brought the street into existence". This is a typical example of a cognitive model of public space. It

represents a 'conceptual package' containing a notion of what values should be realized in the public space, together with a more or less implicit causal theory embedded within the planning imperatives and their related architectural expressions.

The most visible underlying cognitive order in city planning can be found in the modernist project where, in the architectural imagination, the city was subject to disruptive social forces, disorder and chaos. Plans to ameliorate this disruption involved conjuring up counteracting factors, physical and social technologies, which were supposed to arrange this chaos and impose order and rationality on a fragmented city (Bridge & Watson, 2002). The main influence here was le Corbusier, whose aim was essentially to create readability and transparency in city spaces. Transparency and readability were interpreted here as uniformity, and ultimately as zoning. One could say that 'zoning', 'readability' and 'order' together form clear causal progression, in the sense of which policy interventions will achieve which particular public space values, and through which mechanisms. In the Nordic countries the kind of public space embraced by Corbusier in *The City of Tomorrow and Its Planning* (1929 [1971]) - a commercial 'great central open space...providing a spectacle of order and vitality' - is still a dominant means-ends narrative. Even though many of the modernist sentiments are now questioned, as elsewhere, they almost completely dominated Nordic city planning during the 1940s-1970s period and still do to a large extent even today particularly in everyday planning practice.

Sometimes seen as the historical replacement of modernism, and sometimes viewed as being in ongoing opposition to it, the 'humanist' tradition of among others Kevin Lynch and Danish architect Lars Gehl has also been a source of much inspiration among Nordic planners. In their view public space must be both physically and psychologically 'available' to people. Lynch (1960) relates this to the quality of 'imageability', where the physical structures must facilitate memory and orientation. His discussion of the use of paths, nodes, edges, districts and landmarks to facilitate the readability of city spaces, reconstructs a rich model of public space. Lynch's ideal public space, as well as Jane Jacobs' (1961), is that of a kind of 'communal memory theatre' (cf. Shane, 2002), which emphasizes the village quality of local city life. In Nordic planning, these sentiments became most notably translated into models for planning by Jan Gehl in his classic book *Life Between Buildings: Using Public Space* (1987). One of Gehl's main notions of public space is that the details of small, individual spaces determine how larger spaces are used and developed. Experience is important in public space, and since in Gehl's view experience grows as space is reduced, public spaces should be kept small. Streets should be dimensioned in relation to the number of people using them, mainly because of the communicative aspects and cognitive machinery of human beings. Gehl's is an empirical exposition of how public space is actually used, combined with a normative vision of what processes and ultimate values public space should promote, e.g. sociality and participation.

Recent urban planning has often tended to focus on the city and its public spaces as a site for creativity and innovation and in extension combined the 'physicalism' and humanism of public space planning discussed above with an economic purpose. The idea here has been to build into the city the physical and social conditions for cultural dynamism. In this tradition public space is seen as a platform for creative and innovative milieus, where artistic expressions can be extended and where traditionalism is tempered through new encounters (Hall, 1998). This is tied to the

notion of the weightless economy, where ideas generate growth. The core value of this public space is creativity and innovation, and the means to achieve this is to encourage discovery, experiment and surprise. Spaces must be neutral in order to facilitate free thinking and communication, yet at the same time the expression of identity, and of city identity, is important since the city now has to brand itself in competition with other cities (Landry, 2000). In what follows we will look more closely at how such policy theories of public space can be investigated and analysed methodologically.

### **Cognitive mapping as a planning research approach**

It has been common to view architectural knowledge as consisting of rules of thought and key concepts anchored in ‘types’, that is in generalized categories of places and spaces ordered according to certain qualities (cf. Bentley, 1999; Frank & Schneekloth, 1994). These types can be seen as a means of breaking down complex relationships and dynamic processes into more comprehensible structures, e.g. into cause-effect models. Bentley (1999) refers to such models as ‘typological chains’, the purpose of which is to link relatively concrete phenomena, or ‘surface types’, to deeper structures and qualities in the world, or ‘deep types’. In a sense, such deep types may be associated, via the notion of a core value, with a discursive formation in planning which is itself tied into a system of power (cf. Foucault, 2002). However, in Bentley’s more analytical understanding, typological chains may be said to link, for example, the surface type of ‘lamps’ to the deeper type of ‘public space’ via the intermediary ‘street’ type. This also exemplifies the type of reasoning pursued in the present study.

This view of architecture and urban planning can be connected to the concepts of programme theory or policy theory found in the policy literature. Mohr (1995) suggests that a policy should be understood in terms of an ‘outcome line’; a causal model or ‘theory’ of how an ‘outcome of interest’ can and should be brought about through a series of activities, each resulting in the realization of a sub-objective pertinent to the outcome of interest. By consciously creating such an outcome line early in the making of a policy, connections between actions, sub-objectives and ultimate goals can be interrogated and compared to received wisdom, and afterwards used to capture the lessons learned. Majone (1980) coined the notion of ‘policy as theory’ to highlight how policies are essentially cognitive arguments, and as such ‘theory-laden constructs resulting from definition, convention and abstraction (Majone, 1980, p. 154). Majone argued that just as in the natural sciences, policy makers and planners tend to build and follow ‘research programmes’ in the Lakatosian sense (cf. Lakatos, 1970), characterised by a hard core of conventionally accepted premises which seldom get put to the test. Planning exercises are, according to Majone, also characterised by a set of ‘positive heuristics’ which function to pick out some but not other problems for consideration. These problems tend to be the ones that offer positive reinforcement to existing policies and thereby strengthen the core or the ‘programme’. A policy theory can be said to represent a combination of one or several outcome lines in Mohr’s sense, while the methodological approach of cognitive mapping is designed to explicate these outcome lines, namely, how they relate to each other and form a more or less coherent set of beliefs about the world and desired goals to be pursued, seen as a mix of values and assumed facts, which make up the cognitive frameworks underpinning planning. For such models/theories to be explicated, the object, purpose and process of a policy must be at least partly

verbalized. This approach then comes close to discourse analysis, or the study of the 'interwoven language and practices' which make up a policy field (Crush, 1995). One branch of discourse analysis, that of 'policy narrative' (Roe, 1994), comes close to the notion of cognitive models employed in this study. The difference is that within cognitive models, narrative is not present as a story which unfolds, but is instead compressed into simple vehicles, or causal types, which underlie a broader discursive understanding of a phenomenon. Such causal types may be viewed as locally valid Kuhnian 'exemplars' (cf. Kuhn, 1962) for transmitting cues about how to evaluate and act with regard to a particular problem. Such causal types can, once explicated, be seen to relate intricately to each other and together to construct a dynamic discursive order around a policy field such as public space. That being said, the purpose of the present study is not to characterize either the broader field or discursive practices on public space planning, but rather to reconstruct some locally produced cognitive models of such space. Inference to wider discourse on this theme has been and will be alluded to throughout though it is not however placed at the core of the present argument.

Instead, the present perspective is one where policy arguments/theories are taken to be cognitive models through which organizations and other communities 'come to understand their internal and external environment, and so act purposefully' (Grønhaug & Falkenberg, 1998). This involves a process of seeking causal understanding, making causal claims about the world, and arguing for these, i.e. it contains a rhetorical component. City planning documents can be read in this way, as being made up of a number of 'everyday explanations (that is attributions) revolving around chains of connected events, either real or imaginary, and occurring either in response to a demand for an explanation or because something is not understood' (Sanford, 1987, p. 99). Cognitive mapping thus attempts to capture how ideas about cause and effect relationships and desired outcomes (i.e. values) are implicated in planning discourse – not how planners actually work and practically conceive the world. The type of study allowed for by cognitive mapping using documents as a base, must be evaluated against the understanding that while texts represent a different reality to that of physical action, text is itself a type of action in that it condenses motives and assumptions about the world that others are affected by, and which often form the basis for how others must act.

### **The present study - Cognitive mapping of public space**

This paper will present a number of cognitive models or policy theories of public space, derived from planning documents written by urban planners in four Nordic cities: Aalborg, Denmark; Umeå, Sweden; Vaasa, Finland; and Kristiansand, Norway. The cities are all characterised by having an active planning constituency involved in formulating and implementing ideas relating to public space in the respective city. The material on which the study builds was collected over a period of six months from public sources, and consists of planning proposals, white papers, orientation guides, architectural histories and master and detail plans. Altogether some 62 planning documents were collected and analysed between 2003 and 2004. The following analytical process was utilized: First, all documents were coded so that sections of text dealing either explicitly or implicitly with public space were highlighted following the process of template analysis discussed by, among others, King (1998). Second, these sections were condensed into a protocol so that the policy argument of that section could be clearly discerned. This process focused in particular

on those 'conceptual packages' discussed above, i.e. discernable types or sequences of reasoning which outline a notion of what values should be realized in public space, together with explicit or implicit causal statements for how these values should be achieved. Previously these were referred to as 'everyday explanations' or attributions revolving around chains of connected events (Sanford, 1987, p. 99). For example, Oxvig and Beck's statement cited above that "what a release there is in the experience of the refreshing effect of being able to see far. It was the desire to liberate the eyes that brought the street into existence" relates well-being in the public space to the possibility of casting a gaze uninterrupted by visual obstacles. This implies a condensation of street quality values and a causal mechanism for how these values are realised. In order to systematize this analysis a basic interpretative schema for attribution research typical of cognitive mapping was utilized (see Eden & Ackerman, 1998). This schema was used to order the policy arguments/theories found along three key types of planning stipulations:

Actions – the answer to the question: what policy interventions stimulate public space? This category depicts the planners' understanding of what actions/interventions they should perform in order to stimulate latent mechanisms operating in the public space (antecedents) which have the potential to realize certain positive qualities (ascriptions). Antecedents are those intermediary conditions which bring about positive qualities in public space. This category depicts the planners' notions of what general states of the world bring about the above qualities of public space. Ascriptions, finally, is the answer to the question: what are the more or less valued outcomes of public space? This category depicts the planners' ideas of the valued qualities or core attributes of public space.

The causal types identified in the planning documents were formalized into reasoning chains of the general form – actions leading to antecedents realizing ascriptions – and were finally compiled into cognitive maps integrating the reasoning chains present in the policy documents for each city.

Before proceeding, it is important to note that the categories of 'ascriptions' and 'antecedents' are likely to be tied in with general core values and related policy narratives about what public space is, how it is legitimated, and the potential for intervention by policy actors. The latter will be likely to draw from a concept of how influence and power are legitimately exercised by planners and policy makers. It is also important to note that in what follows actions are conventionally depicted as preceding antecedents and ascriptions (outcomes). A more cautious interpretation may have removed such causal ordering of the three components, and simply depicted these as co-existing or 'hanging together' without any particular direction of influence. This of course is really only a question of how human action is depicted - naturally the 'goal' of an action is also in some regard its 'cause'. In this more cautious sense, the maps below can be viewed as 'action complexes' with highly interactive relationships between their various components. In this study however, the direction of the arrows represent the reasoning found in the policy documents and thus carry their own cognitive meaning which should not be eliminated from the presentation.

## **Four cognitive models of public space**

### **Aalborg - Denmark**

The Aalborg documents suggests that on the one hand public spaces should promote a feeling of identity and safety – a resting place where pedestrians can linger in a place beyond the more instrumental concerns of city life. At the same time public space should promote only ‘a relative sense of order’, in that it should also encourage the flow of people, access and play. Space should also be ‘flexible’, so that several functions and uses can be created and maintained over time and in some places, at the same time.

The facilitating conditions or antecedents for these qualities are believed to be the ‘movability’ of people through space, opportunities for flaneuring – here understood as leisurely strolling through a city environment, enjoying its spatial variation on the one hand, and a coherent street environment, a feeling of historical continuity and stylistic cohesion on the other. Because of this ‘duality’, one of the desired qualities of public space, namely that of a resting place, is actually negatively related to a desired facilitative condition, namely the ‘transit quality’ of such spaces. One facilitating condition thought to promote both types of quality is the existence of a close connection between nature and the city, e.g. the proximity of parks to the city centre. The policy interventions thought to bring about these mechanisms focus on landscaping and traffic alterations/reductions, and reductions in car access. This intervention is positively connected both to movability/flow and to coherence in the street environment. Otherwise, antecedents such as opportunities for flaneuring, spatial variation and diversity are thought to be created by means of promoting ‘self-tourism’ (organized city walks or ‘get to know your city’ activities), mixtures of functions and materials and the cutting up of larger spaces into smaller ones. Antecedents such as cohesion and feelings of historical continuity are promoted by reducing ‘odd elements’ in facades and streets, reusing existing material and sites and creating ‘overviewability’ by reducing

barriers.

Figure 1

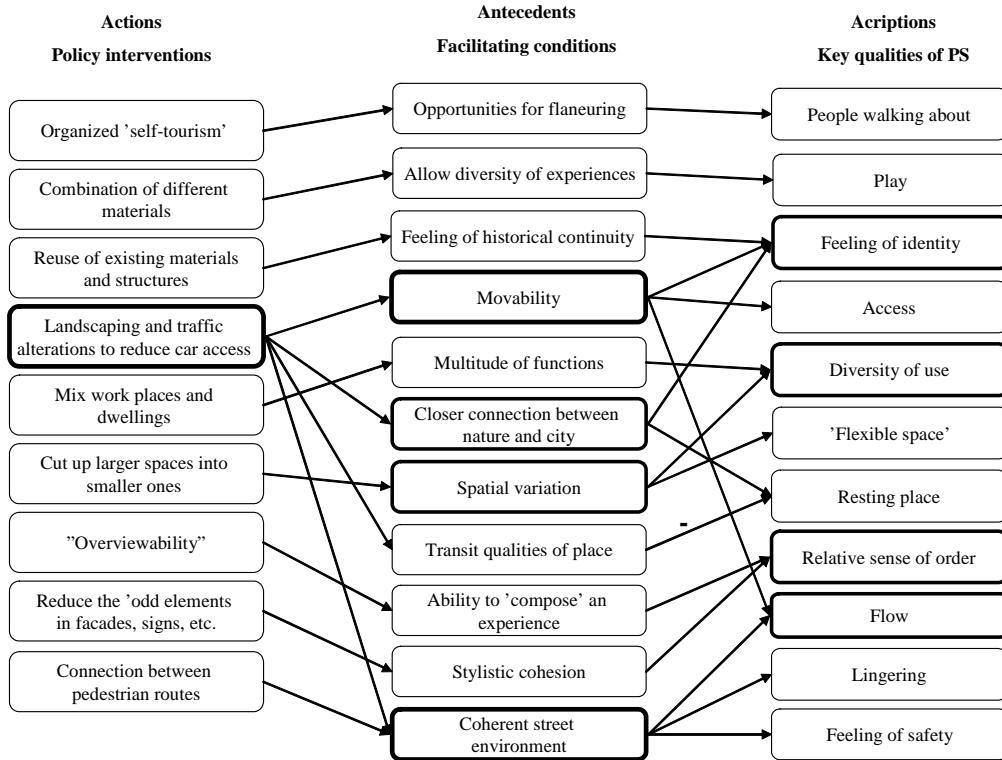


Figure 1: Cognitive map of public space policy discourse in Aalborg, depicting how policy interventions are taken to stimulate facilitating conditions or mechanisms which then lead to certain key qualities of public space. The degree of boldness in the boxes indicates relative importance.

### Umeå – Sweden

In Umeå, the same basic duality existed as in Aalborg, however here the emphasis was more on the identity of city spaces, their connection with the history of Umeå as a city, and their ability to promote a sense of identity in the users of public space. Public spaces were seen to draw their strength from their capacity to promote a sense of presence in a cultural and historical context by dint of being identifiable as markers of this particular city and its history. This quality was also connected to the importance assigned to the feeling of safety among the public while occupying the city's spaces, and also to the experience of beauty. Both these qualities relate to recreation and to the biological diversity of the city. In Umeå too, diversity and access were seen as key qualities of public space, however these were not as important as in Aalborg.

The most important antecedents for bringing about these conditions were believed to be open parks and walkways in the city, a better 'city image' – i.e. a more coherent idea of 'what this city is about', and 'orientability'. These antecedents could be broadly related to the qualities of both identity/safety and the diversity of public space. In addition, the presence of historical-architectural heritage was seen to be

important in maintaining a sense of identity, while mixes of activities and peopled streets were seen to promote diversity.

The relevant policy actions fell mainly on two factors: moving traffic out of the city, and maintaining greenery and trees in and around the centre. These actions were seen as promoting 'orientability' and city image. One policy action high on the agenda involved reclaiming space from traffic and idle transportation routes on behalf of pedestrians. It was also seen as important to make the face of the city more coherent by reducing the number of galleries and passages, and by homogenizing design codes.

Figure 2

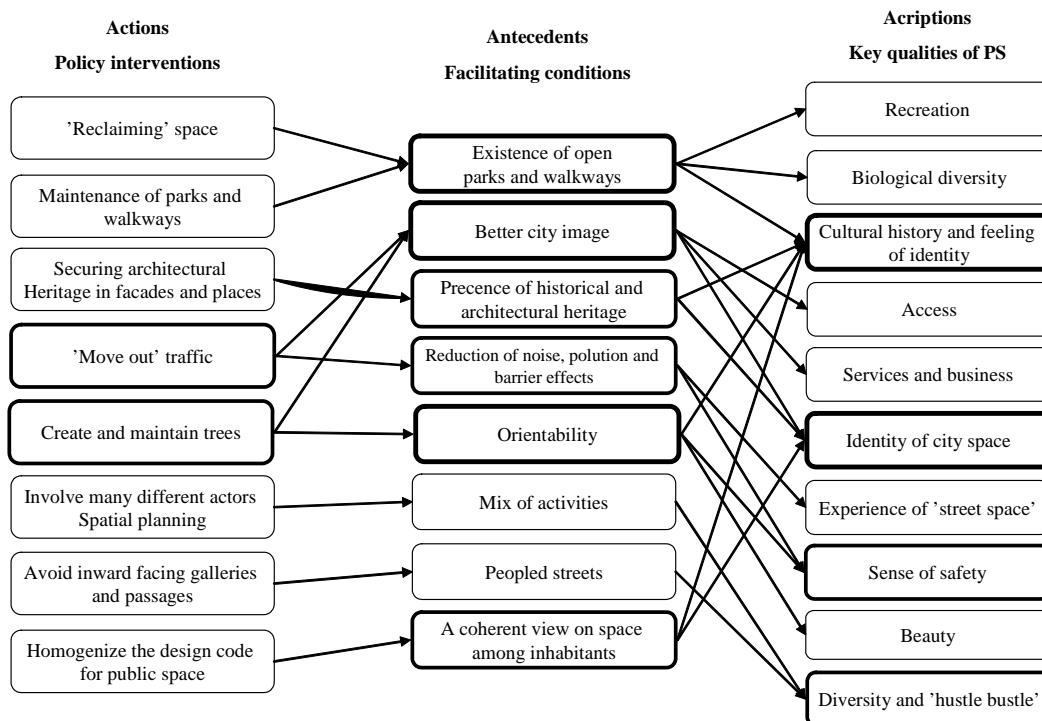


Figure 2: Cognitive map of public space policy discourse in Umeå, depicting how policy interventions are taken to stimulate facilitating conditions or mechanisms which then lead to certain key qualities of public space. The degree of boldness in the boxes indicates relative importance.

### Vaasa - Finland

Planners in Vaasa tended to emphasize commerce and street activities in the way they outlined desirable public spaces. Commerce should be attractive and inviting and display a sufficient degree of professionalism in order to stimulate public movement and satisfaction. A diversity of street activities should also be present, as well as play and a general sense of spontaneity. One of the more important core public space values in Vaasa was the 'cleanliness, tidiness, safety' triad, which can be seen as this city's covering term for a 'wholesome' and well-developed public street life.

The antecedent conditions for these qualities were mainly thought to be found in a balanced mix between culture and commerce, in combination with flexible use of the main square. This could for example be done by having commercial actors house cultural activities there or by encouraging street performances and small traders to use the square and co-exist there. Such mixes were seen to promote play and spontaneity. Density was another quality which was seen as key to this form of diversity. Vaasa's planners saw it as their responsibility not only to work on the appearance of the shops, but also to try to influence the behaviour of shop owners and their employees, so as to provide city dwellers with a more pleasant shopping experience. The qualities of 'cleanliness, tidiness and safety' were believed to be best promoted by the unification of the city centre, as well as by the creation of 'overviewability'.

The actions viewed to best bring about these conditions included, among others, the placing of higher demands on the self-presentation of shop owners, the promotion of small-scale street commerce and diversification in the use of space. Density was to be created simply by adding things to the street. At the same time coherence was sought in buildings and other structures, as this was thought to promote the quality of a unified city centre.

Figure 3

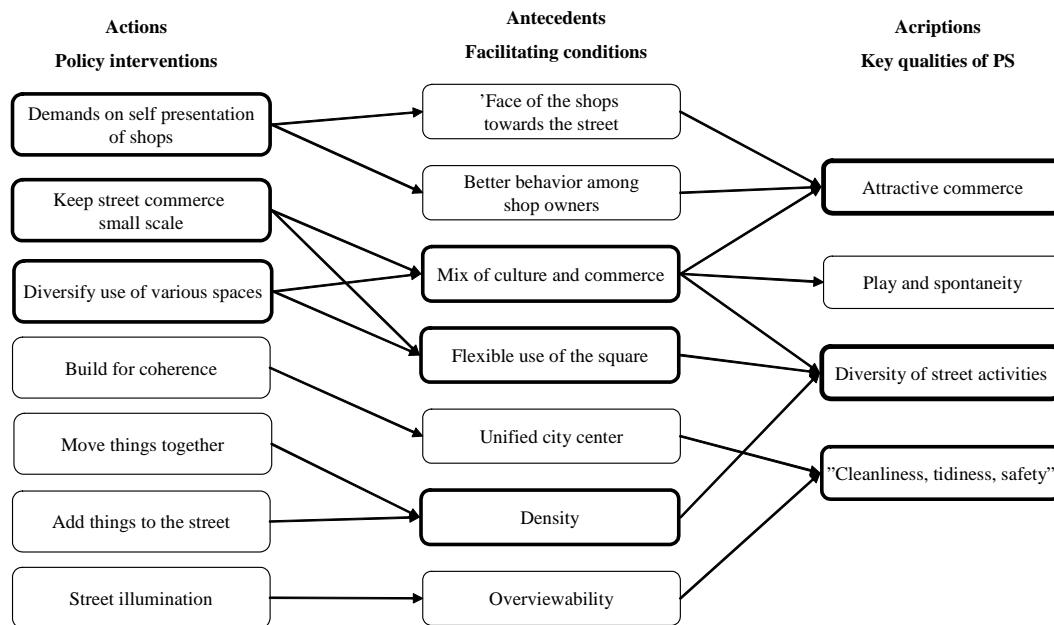


Figure 3: Cognitive map of public space policy discourse in Vaasa, depicting how policy interventions are taken to stimulate facilitating conditions or mechanisms which then lead to certain key qualities of public space. The degree of boldness in the boxes indicates relative importance.

## Kristiansand – Norway

In Kristiansand public documents tended to depict public space as sites where people should be able to experience a ‘mixed feeling of safety and excitement’, in line with what we have seen described above. The city centre should create the potential for networking – for the making of new and unexpected contacts - and a sense of ‘urbanity’ – of having a feeling of living in a city. At the same time it was viewed as important that the public spaces of the city centre displayed an identity easily connected to that of the city itself (cf. Umeå). The public space of the centre should have the quality of ‘a living room’. Natural experiences were also viewed as important to the public space.

These public space qualities were believed to be enabled by encounters between people - to be seen in public - as well as by being able to experience a sense of belonging. Most important however seems to be the ‘gravitational foci’ of public space, that is to say, the ability of this space to draw people towards it. Closely related to this is the ability of people to enact public space in accordance with their own ends, and by extension to have a mix of activities and users of this space.

The public documents of Kristiansand put the emphasis on interventions geared in two general directions; one towards maintaining flexibility, e.g. by creating places which are not predefined in terms of use, and an active mixing of public space functions. The second orientation was more towards facilitating homogeneity, for instance through creating clear architectural limits, directing flows and maintaining historical connections through city architecture. Also here the need to create easily accessible green areas was emphasized.

Figure 4

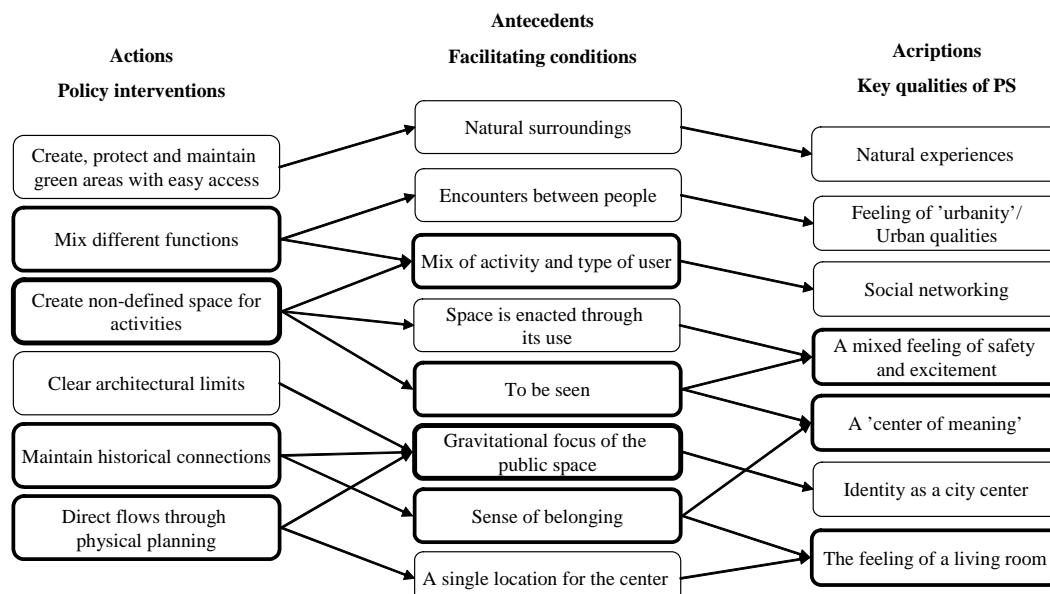


Figure 4: Cognitive map of public space policy discourse in Kristiansand, depicting how policy interventions are taken to stimulate facilitating conditions or mechanisms which then lead to certain key qualities of public space. The degree of boldness in the boxes indicates relative importance.

## Discussion and conclusions

When structuring the accounts of public space in the above manner, certain local preferences can be seen to emerge, for example Vaasa's preference for street activities and a rich commercial life, Umeå's notions of public space as a site for building and supporting identity and historical connections, Kristiansand's more ethereal notions of public space as a centre of meaning as well as networking, and Aalborg's emphasis on flow and 'flaneuring'. Still, what is more interesting than the apparent differences here is the coherence with which public space is 'cognized' in these four cases, with regard to what are seen as the most desirable qualities of such spaces, as well as with respect to what policy interventions are seen to best facilitate these qualities, and the conditions viewed as supportive of these interventions towards the desired ends. In all four cases the understanding of public space, its antecedents as well as policy interventions, took on a dual character. Either it tended to be seen as disruptive in the productive sense of the word or as preservatory of identity and social cohesion. Both the preservatory and the disruptive elements were actively used by planners to depict what public space was and how it should be designed. Figure five depicts a synthesis version of these two streams of reasoning: the top section shows the causal progression of a productive or disruptive type of public space based on the principle of creativity while the lower chain depicts a preservatory type of space, which draws on coherence and identity. Also depicted in figure five however we see how the two 'streams of argument' occasionally intersected (represented by diagonal arrows), for example in the case of Aalborg, 'movability' was also associated with a sense of identity. This unexpected connection can be taken to represent a temporary disruption in the 'logic' of the emerging model. In general however the two main 'logics' produced two clearly discernable lines of argument out of which a notion of public space emerged – both disruptive and preservatory.

Figure 5

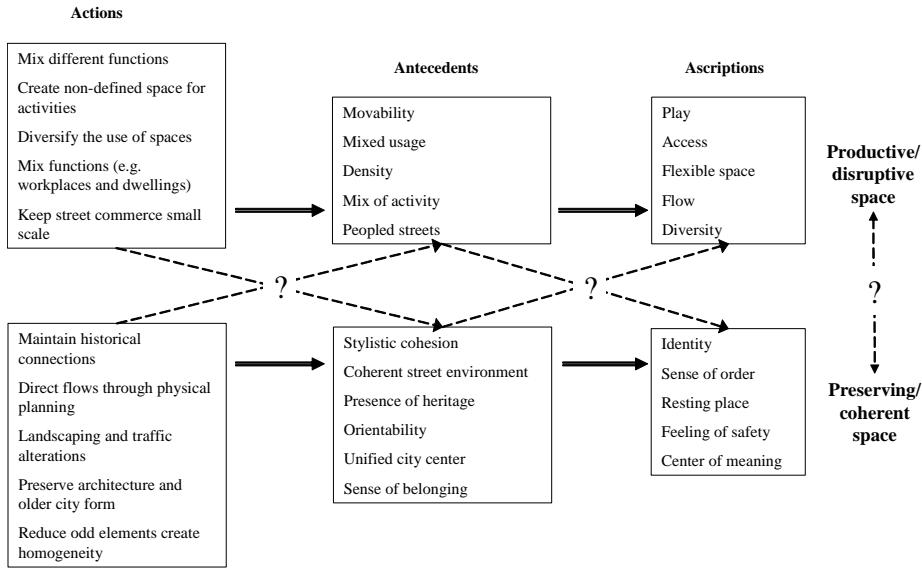


Figure 5: Synthesis map of public space – One or two public spaces? Two seemingly contradictory views of public space (the upper and lower causal chains) and the causal short circuiting of these chains, which, ultimately, suggests the possibility of a more flexible and open-ended theory of public space.

This notion of a conceptual duality of public space does need to result in contradiction; it may in fact be theoretically intuitive. In reality, and also in discourse, two apparently contradictory principles of public space can surely coexist if these qualities are integral parts of the concept of public space. If however the above cognitive maps or ‘policy theories’ were taken to be truth-functional descriptors, this dualism would prevent a coherent theory of public space from emerging, since in that case the desired qualities, the causes of these qualities, and ultimately, the policy interventions themselves would form two mutually contradictory arguments. At best they would give us two theories of public space, with the immediate result that we would be faced with a divided, incoherent understanding of what public space is and what brings it about. Naturally this is the beginning of theorizing, rather than its end. Conceptual tension is the source of improved understanding and fruitful theorizing on any social phenomenon. In this spirit, the synthesis map (figure 5) allows us to identify a theoretically valuable entry point from which to build a more complex yet comprehensive understanding of public space: represented by the question marks in the diagonal arrows as well as in the arrow connecting the main mode of reasoning for each ‘theory’, it points the way to at least two important tensions present in the cognitive maps above, and in effect at two questions which are likely to be fruitful avenues for future theorizing.

Firstly, there is an ontological question about categories: Are there two kinds of public space – one ‘productive’, diverse and evolving, and one ‘preservatory’, ordered and safe - or is there just one which embraces all of these qualities at the same time? If there are two, then how do they relate to each other and what do they provide? Can public space be viable without one or the other, and if not, what determines the

necessary balance between them? If there is only one public space, then what is the character of the interchange between the two foundational qualities, i.e. how do they, together, produce a coherent synthesis outcome – how do they interact? These questions are important starting points for deciding how public space should be evaluated by planners and policy makers, but also for how it should be theorized by researchers.

Secondly, from a ‘process perspective’, how do the policy actions oriented towards the creation of ‘productive’ public spaces affect the antecedents of the ‘preservatory’ public spaces and vice versa? This question is strongly related to the previous one. Is this simply an instance of incoherence where the two are unlikely have any significant effects on each other because interventions ‘cancel each other out’, or should we be looking for a working dialectical relationship? Can policy actions aimed at sustaining density and mixed usage be carried out without conflicting with antecedents such as ‘orientability’ and sense of belonging? This is a question of the production of public space, and it is directly related to the foregoing issue of what this space is. If, for example, public space is a unity of qualities which co-exist in a ‘generative’ tension, then is there no conflict between actions to promote disruptive/productive spaces and actions which aim to promote preservatory spaces? If on the other hand these are to be taken to be separate types of space, which can come into conflict with each other, then should more care be taken in deciding how to direct policy actions with regard to public space?

As can readily be seen from the synthesis figure however, the potential tensions described are very different from the ones discussed above in reference to the modern impetus to ‘control’ disruptive forces in the city, by installing various controls and disciplining mechanisms (e.g. Bridge & Watson, 2002). The ‘cohering’ of public space outlined in this study relates to a desired disruptive quality which if not already there has to be built into the spatial experience. Both these qualities are then internal to the act of planning in the sense that they represent desired ascriptions. As such, we can conclude that here is a break with modernist ambitions with regard to public space, one which may possibly be located in the new idea of ‘public’, i.e. where the public is a (positively conceived) creative part of space rather than just a passive filling. Closely related to this conception Low (1999) suggests the dual and complementary perspectives of a social construction and a social production of space indicate how public space “becomes semiotically encoded and interpreted reality” (p. 112). The social production of space is all the social, technological, economic and ideological factors which aim to create a physical setting. This materialist dimension of space is key to understanding how, for example, public planners mediate and translate their constructions of space into a concrete form. The construction of space on the other hand is the symbolic presentation of space, where ideas, memories, images which mediate the negotiation of what public space can be. While these ‘meanings of space’ then often become a battleground for conflicts and negotiation in the public sphere, such processes are socially embedded, and they help to illustrate how practical debates and definitions of space are connected to broader symbolic sense-making activities of, for example, a cultural or political nature.

In conclusion then, cognitive maps of the kind presented here may function to interrogate theoretically exactly what a planning entity such as ‘public space’ actually is. They may also aid planning practice by elucidating implicit planning theories of

public space, critiquing them and refining them. In this way, cognitive mapping can provide an avenue for learning within the planning process that is to function as a means for ‘remembering’ what worked and what did not, as well as identifying points of (creative?) conflict within the planning frameworks. This practice would be akin to what Imre Lakatos once referred to as a ‘progressive research programme’. Planners should not seek to insulate their core hypotheses within a protective belt of unarticulated and untested assumptions about the world but should rather strive to formulate their guiding models clearly enough to be debated and reflected upon. Apart from this, a progressive planning programme, just like a progressive research programme, should also endeavour to say new and unexpected things about the world thereby acting as a source of creative renewal.

## References

Bentley, I. (1999) *Urban Transformations: Power, People and Urban Design* (London, Routledge).

Bøgelund-Hansen, H., Darger, B. & Ovesen, H. (2002) Spotting modern Copenhagen, in: P. Madsen & R. Plunz (Eds.) *The Urban Lifeworld*, pp. 115-135 (London, Routledge).

Bridge, G. & Watson, S. (2002) Reading city imaginations, in: Bridge, G. & Watson, S. (Eds.) *The Blackwell City Reader*, pp. 3-10 (London, Blackwell).

Crush, J. (1995) Introduction: Imagining development, in: J. Crush (ed.), *Power of Development*, pp. 1-23 (London, Routledge).

Eden, C. & Ackerman, F. ( 1998) Analyzing and comparing ideographic causal maps, in: C. Eden & J-C. Spender (Eds.), *Managerial and Organizational Cognition*, pp. 192-209 (London, Sage Publications).

Frank, K.A. & Schneekloth, L.H. Eds. (1994) *Ordering Space: Types in Architecture and Design* (New York, Van Nostrand Reinhold).

Foucault, M. (2002). *The Archaeology of Knowledge* (London, Taylor and Francis).

Gehl, J. (1987) *Life Between Buildings: Using Public Space* (Copenhagen, Danish Architectural Press).

Grønhaug, K. & Falkenberg, J.S. (1998) Success attributions within and across organizations, in: C. Eden & J-C. Spender (Eds.), *Managerial and Organizational Cognition*, pp. 93-107 (London, Sage Publications).

Hall, P. (2002) *Cities of Tomorrow: An Intellectual History of Urban Planning and Design in the Twentieth Century* (London, Blackwell).

Hall. P. (1998) *Cities in Civilization* (London, Weidenfeld).

Jacobs, J. (1962) *The Death and Life of Great American Cities* (New York, Random House).

King, N. (1998) Template analysis, in: G. Symon & C. Cassel (Eds.), *Qualitative Methods and Analysis in Organizational Research*, pp. 118-134 (London, Sage Publications).

Kuhn, T.S. (1962) *The Structure of Scientific Revolutions* (Chicago, Chicago University Press).

Lakatos, I. (1970) Falsification and the methodology of scientific research programmes, in: I. Lakatos & A. Musgrave (Eds.), *Criticism and the Growth of Knowledge*, pp. 91-196 (Cambridge, Cambridge University Press).

Landry, C. (2002) *The Creative City* (London Earthscan/Comedia).

Le Corbusier (1924 [1971]) *The City of Tomorrow and its Planning* (London, Architectural Press).

Low, S.M. (1999) Spatializing culture: The social production and social construction of public space in Costa Rica in: Low, S.M. (Ed.) *Theorizing the City*, pp. 111-137, (New Brunswick, NJ, Rutgers University Press).

Lynch, K. (1960) *The Image of the City* (Cambridge, Mass., MIT Press).

Majone, G. (1980) Policies as theories, *Omega*, 8, pp. 151-162.

Mohr, L.B. (1995) *Impact Analysis for Program Evaluation* (Sage Publications, Thousand Oaks, CA).

Oxvig, H. & Beck, L. Eds. (1998) *Rumanalyser [Analyses of Space]* (Copenhagen, Fonden til Udgifelser af Architekturtidskriftet B).

Roe, E. (1994) *Narrative Policy Analysis* (Durham, NC., Duke University Press).

Sanford, A.J. (1987) *The Mind of Man: Models of Human Understanding* (Brighton, Harvester Press).

Shane, G. (2002) The machine in the city: Phenomenology and everyday life in New York, in: P. Madsen & R. Plunz (Eds.) *The Urban Lifeworld*, pp. 218-236 (London, Routledge).