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METHODS TO INTEGRATE CONSIDERATIONS ON CULTURE, ETHICS AND CITIZEN ACCEPTANCE INTO URBAN PLANNING FOR RESILIENCE ENHANCING AND VULNERABILITY REDUCTION REGARDING CITIZEN SECURITY

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ABSTRACT

This paper presents selected relevant research results from the EU FP7 project VITRUV (“Vulnerability Identification Tools for Resilience Enhancements of Urban Environments”), relating to methods to integrate consideration on culture and ethics aspects, including citizen acceptance, into conceptual urban planning. While security aspects do not always figure prominently in urban planning, much of that planning has effects on citizens’ security. Security aspects obviously have an influence on how built environment is changed and developed. Conversely, the way in which built environment is changed and developed influences the security of infrastructures and society as a whole, both in manifest and in latent ways. Putting one focus on ‘soft’, such as cultural, aspects in urban planning, related parts of VITRUV will help urban planners identify how their planning decisions may directly or indirectly affect societal security. In this context, security means a high level of safeguard for the infrastructure, the supply of goods and services as well as for the commonly acquired values of a community. By identifying and validating practical methods to integrate social and cultural aspects in an urban planning tool, project results will facilitate the consideration of the multiple dimensions of threats and vulnerabilities in their context of urban planning. This among other things includes appropriate addressing of gaps between ‘factual’ security and citizens’ ‘felt’ security.

Keywords: urban security; comprehensive approach; new urban design; citizen resilience; citizen acceptance; critical infrastructure protection; social critical infrastructure; societal security

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INTRODUCTION

The vulnerability of urban environments remains an undeveloped theme. With half of the world's population currently living in urban centres, and with this figure set to increase to two-thirds by 2050, the issue of security and citizen safety is of paramount importance and a growing concern. In view of the growing number of threats from global terrorism, natural disasters or crime, urban planning practice must incorporate appropriate security measures for vulnerability identification and resilience enhancements. This also poses challenges for urban research.

This paper presents selected relevant research results from the EU FP7 project VITRUV ("Vulnerability Identification Tools for Resilience Enhancements of Urban Environments").³ The focus is on:

- Addressing security aspects in strategic urban planning;
- Methods to integrate security-relevant considerations on culture, ethics aspects and citizen acceptance into conceptual planning urban planning; and
- Methods how this can be done in a citizen involving/activating way.

Structural and social dimensions of a public area overlap each other; therefore, a public space is also a social place. Urban planning is increasingly considering the fact that public spaces are used by different types of people, with different necessities, usage and needs. This awareness is important both from the researcher's and the practitioner's point of view, since it contributes to resilience-enhancing planning, considering the multidimensionality of threats and vulnerabilities present in urban space.

While security aspects have only since recently figured more prominently in urban planning (Boisteau 2006; PluS-EU project;⁴ LKA NI 2010; UN-HABITAT 2007a, b), much of that planning has rather direct effects on citizens' security. Highlighting of 'soft' aspects (such as culture) in urban planning will help identify how planning decisions may directly or indirectly affect societal security, and what impact this has on vulnerable and resilient cities.

Security should be a more prominent theme within urban planning. One main reason for this is that security aspects obviously have an influence on how built environment is changed and developed; conversely, the way in which built environment is changed and developed influences the security of infrastructures and of society as a whole, both in manifest and in latent ways (cf. Boisteau 2006). VITRUV, among other things, seeks to assist planners in understanding and identifying those latent aspects.

Built environment is intrinsically meaningful. It has its particular "semiotics" (Gottdiener/Hutchinson 2011: 394) that tell about policy, economy, etc. – and also about security. This has a couple of practical ramifications for strategic urban planning, such as the effect of that planning on public perception of built environment, and its susceptibility to risk.

Design features of urban infrastructure influence citizens' perception of the risk that infrastructure is at, or that it is assumed to mitigate or prevent. Design features also influence the general perception of criticality of that infrastructure. While urban sociology and socially concerned urban planning have gained much insight on environments such as "pleasant", "calming" or "exciting" (cf. Nasar 2011: 168), "secure environments" have been addressed to a far lesser extent.

The "ecological" perspective (Michelson 2011) in urban sociology explores what happens in social terms as a consequence of the exposure of people to built environment. Possible consequences include social exclusion of specific parts of the public, as reprimanded by cultural criminology (cf. Garland 2001).

On the bottom line, urban structure has an impact on social processes, and this needs to be addressed in strategic urban planning (cf. Hannigan 1998). The school of *New Urbanism* has referred to this as the "sociospatial perspective". This means that urban space and society interact, and that "social space

³ Project homepage: <http://www.vitruv-project.eu> [last access: 2012-07-28].

⁴ Planning Urban Security – PluS Project homepage: <http://www.plus-eu.com> [last access: 2012-07-28].

operates as both a product and a producer of changes in the metropolitan environment” (Gottdiener/Hutchinson 2011: 394; see also 20).

Based on these assumptions about societal security as it applies to urban planning, this paper summarizes selected results from study work within the VITRUV project. The project as a whole is by far broader and it also includes the development of a knowledge base (“*Urban Securipedia*”) as well as a risk assessment tool (“*Securban*”) to enable planners:

- To make well-considered systematic qualitative decisions at the concept stage of design;
- To analyse the susceptibility of urban spaces (e.g. building types, squares, public transport, and their functionalities) with respect to new threats at the plan stage of design; and
- To perform vulnerability analyses of urban spaces by computing the likely damage on individuals, buildings and traffic infrastructure at the detail stage of design.

All tools will contribute to enabling the development of more robust and resilient space in the field of urban (re)planning/(re)design/(re)engineering. The leading idea of the VITRUV’s tools is to support urban planners to deliver urban space less prone to and less affected by attacks and disasters, thus sustainably improving the security of citizens. Moreover, the tools will have a direct value for research, including serving as a knowledge base and support for scenario studies.

This paper focuses on the following aspects of a study conducted in support of the tool development and some of its content:

- Security culture as concept of reference;
- Subjective assessment of criticality of infrastructure by citizens, with identified indicators for assessment of subjective protection requirements of critical infrastructure;
- Citizen demands and ethics aspects, such as acceptability and acceptance of security-related urban planning;
- Resilience as an evolving concept in security research, how it relates to urban research and planning, and how urban planning can contribute to increasing community resilience.

Results are summarized in the form of security-related missions in urban planning.

SECURITY CULTURE

Following the rise of the paradigm of *New Urbanism* (e.g. Calthorpe/Fulton 2001) – that is also a main frame of reference for addressing social and culture aspects in urban planning and to link approaches from urban planning as well as social sciences and humanities (cf. Gottdiener/Hutchison 2011) – architecture and planning have essentially included the theme of society and culture. *New Urbanism* sets out to overcome the zoning of certain functional areas (typical of the industrial age) that separate residential from economy and other use. Considering today’s economy, predominantly information-based and complying with stricter pollution regulations, planning should promote mixed-use development (e.g. development of residential and economy-related functions) to prevent urban sprawl.

However, this conceptual integration of society into urbanity does not always reflect well the new levels of social density that will be reached and that may change urban cultures. This includes the social and cognitive foundations for the perception of insecurity and fear by the citizens. In urban studies, cultural factors have largely been understood as legal requirements related to upholding historic landmarks, involving questions such as “Is it legal for a historic preservation commission to stop an owner from demolishing or even modifying the exterior of a historically significant building?” (cf. Kayden 2011: 175). Urban research and planning practice should be aware that culture aspects relevant to security reach beyond that common understanding.

While *New Urbanism* is committed to a reconciliation of physical infrastructure and community building, it follows a sort of physical determinism. It assumes that informed, progressive architectural design per se meliorates human behaviour, reduces insecurity as well as citizens’ feeling thereof, and increases societal resilience. Although *New Urbanism* relies on active citizen participation in the

construction of urban neighbourhoods, it has been criticized by urban sociologists from a cultural point of view:

“New Urbanists, like many architects, believe that social goals [...] can be achieved through the physical means of design and construction. This is a fallacy. Residents of communities do not behave in certain ways simply because well-known architects direct them to do so.” (Gottdiener/Hutchinson 2011: 331)

According to Gottdiener/Hutchinson (2011: 331), many examples of community-enhancing constructions represent an “elitism of architectural choice” that may eventually increase societal gaps and perceptions of fear, as well as actual insecurity.

There are several reasons, why it is important to consider security culture aspects in urban planning in a more diverse as well as comprehensive way: First, culture determines both the behaviour and the perception of people, and thus determines the (perceived) security. Second, cultural behaviour can be directed by the surroundings, and thus by the result of urban planning. Third, the framework for urban planning is also to some extent culturally determined. Consider the following example:

In *The Culture of Control: Crime and Social Order in Contemporary Society*, cultural criminologist David Garland identifies cultural and institutional practices to construct artefacts that allow a continuation of imagined middle-class separation from crime. Garland illustrates the argument with examples from urban planning, especially the concept of offering citizens new middle-class type privacy in private public spaces, such as commercial malls based on architectures “to separate out different ‘types’ of people”, including commercial policing by private companies (Garland 2001: 162).

In fact, culture aspects in urban planning can for the most part be referred to the approach of cultural criminology. Cultural criminology demurs that while culture is a prominent theme in theoretical and practical terms, culture entails a concept of vulnerability and resilience that is “rooted in the material predicament of the actors concerned. It eschews both a social positivism of material conditions and a cultural positivism of stasis and of essence.” (Hayward/Young 2007: 117)

In security-related accounts, culture is often used as a denominator for everyday living conditions as well as conditions of social exclusion and in-group/out-group formation. For example, criminological research has typically identified the following cultural (and socialization-related) factors in relation with crime occurrence and risk of crime (actual threat) (White/Habibis 2004: 67-68):

- Cultural norms that define masculinity and act as enablers for the practice of violence by marginalized young men, who feel themselves excluded from normal paths of enacting the gender-specific norms to demonstrate virility.
- Cultural norms that define masculinity and dehumanize people, who derive from the dominant culture of normalcy (e.g. violence against homosexual males).
- Political culture providing a breeding ground for hate crimes against people representing otherness.
- Ideological constructions of social systems (such as the family) that involve a sense of right of – even violent – control of men over women.
- Cultural norms of acceptable violence such as in sports, schools and entertainment, which may however trigger excesses of violence.

However, different perceptions and disputes about risk and security can be linked to competing worldviews, as they are paramount in multicultural cities: Conceptions of risk, security and solutions to security problems vary according to the organization of political and social relations. Risks and security threats are selected as important because they reinforce established interpretations and relations within a culture, thus reproducing the symbolic foundations of a community: “Common values lead to common fears [...]. There is no gap between perception and reality.” (Douglas/Wildavsky 1982: 8)

In other words, there is no risk ‘out there’, but risk is always selected from within a society, based on cultural backgrounds. Following this interpretation, risk is a ‘social construct’ and cannot be assessed against a (mistaken) ‘objective’ or ‘factual’ notion of the concept. Rooted in this basic assumption, security culture (e.g. Siedschlag/Jerković 2008, 2010) is a deeper rooted concept that goes beyond

those approaches, based on a cognitive concept that looks into how groups of people perceive things and how this perception can be explained, as well as to some extent predicted and modified. As mentioned above, the general assumption of cultural approaches to the perception of (in)security is that things, such as fear of crime, depend on culturally embedded meanings of risk. For example, immigrant cultures may be interpreted as the cause of social radicalization that mounts up to threats to internal security; a user security culture may be interpreted as a social firewall against IT security offences, etc.

CULTURE AND THE LIMITS OF URBAN SECURITY BY DESIGN

Approaches such as “designing out” are taken to reduce related risks by appropriately shaped built infrastructure. The approach to “designing out” crime and terrorism (practical examples include Geason/Wilson 1989) assumes that certain types and locations of urban space are significantly more attractive to perpetrators than others, mainly for social and cultural reasons. Therefore, the choice of urban targets is seen as mainly driven by factors such as maximum visibility of casualties, vulnerable and actually harmed people, maximum media exposure and potential for vast spread of fear among the wider population.

Also on the governmental level, concepts like designing out crime and designing in (security) community have been introduced as counter terrorism protective security strategies (e.g. HM Government 2012a, b). They provide guidance for local authorities for preparing local development documents, in order to protect crowded places from international terrorist targeting. The UK authorities aim for the creation of safer buildings and places to decrease terrorist attacks and vulnerability. This example illustrates that urban planning in general, and the designing out approach in particular, are fundamental mitigation instruments vis-à-vis urban security risks.

Provided guidance includes advice, how to incorporate counter terrorism protective security measures into high design quality, and how to improve security of existing buildings and public realm as well as environments. Specific requirements for transport facilities (e.g. airports, railways and ports) are communicated. Counter-terrorism good design is considered to include risk response and integrating protective security measures. Design principles should be considered as early as possible in planning and development processes and are promoted by the government.

In contrast to designing out, inclusive concepts, such as “appreciative planning” (Ameyaw 2000), focus on an inclusive, participatory planning process in/for multicultural metropolitan environment(s):

“‘Appreciative planning’ is an approach to urban planning in a multicultural context. Appreciative planning is a model based on mutual respect, trust, and care-based action. It is a two-way learning and problem-solving approach to planning. Appreciative planning is a multi-faceted process that unites rational and nonrational processes of social interaction and social learning to enable citizens and professionals to share the work of problem solving and decision-making for the benefit of their communities. By so doing, it enables planners to celebrate the valuable assets multicultural groups bring to city life and planning deliberations.” (Ameyaw 2000: 101).

The appreciative concept can also be understood as a social tool to confront “the real conflicts, issues, dissent, and trade-offs in city planning.” (Ameyaw 2000: 101) The purpose is to “create contexts in which planners and multicultural groups can continuously learn and experiment, think systematically, engage in meaningful dialogue, and create visions that energize action and inclusion in city planning.” (ibid.)

The cultural selection of risks (Douglas/Wildavsky 1982: 8) – a core component of the concept of security culture as addressed above – has also been reflected in urban studies, for example by the community safety approach (e.g. Matthews/Pitts 2001). This approach advocates a general shift in infrastructural, political and public conceptions of security, from situational prevention to safety of a community as a whole. This requires a particular “multicultural sensibility for planning”, including how cultures, “which prescribe members’ relations with the community, orient their actions, and, among other things, suggest how they might use formal planning processes.” (Baum 2000: 115)

Based on the concept of security culture, urban research as well as urban planning should in particular consider the following main messages:

- *Get to know culture:* Familiarize with public security cultures, which influence citizens' acceptance of urban security planning decisions and built environment resulting from those planning decisions.
- *Mind cultural meaning:* Consider the influence of culture on urban structure and of urban planning on culture, bearing in mind that culture aspects go beyond preserving historic artefacts and protecting the traditional image of the city. Culture is linked to dynamic societal processes, and co-determines the meaning that citizens ascribe to built urban structure. These processes cannot be planned and meaning cannot just be socially transmitted by design of urban space.
- *Analyze risks comprehensively:* Use the culture of risk of a society in order to determine security aspects in urban planning and needs to protect that may be overlooked by technological approaches to risk analysis.
- *Integrate cultural components of resilience:* Consider in resilience-enhancing planning that resilience and the vulnerabilities towards which that planning is directed include elements of public culture – such as citizens' morale and societal preparedness, social networks, etc. Planning should work with – not over or against – those aspects. Resilience as capability to learn and adapt to changing environment essentially involves societal characteristics. This involves styles of how citizens perceive urban environment and security (gaps), as well as their expectations how this should be addressed by authorities.

SUBJECTIVE ASSESSMENT OF CRITICALITY OF INFRASTRUCTURE BY CITIZENS

Structural and social dimensions of a public area overlap each other, as citizen acceptance and demands with regard to urban planning decisions and their results cut across consideration of culture and ethics aspects. At the same time, a public space is also a social place. Such a place needs time to develop its identity and image. Urban planning considers the fact that public spaces are used by different types of people, with different necessities, usage and mobility needs. Urban strategic planning is an essentially dynamic process in the evolution of cities; and active participation of citizens is crucial for a better urban development. Civil society is more or less active in all planning-relevant sectors.

Each city and community is distinct – with specific population characteristics, physical spaces, government structures, values and history. Thus, each city and community will have its own particular security problems, some of which will be more important for the community to deal with right away than others. The involvement of citizens by identifying their needs, selecting priorities and strategies offers better chances for developing solutions that are sustainable, feasible, and which citizens are more willing to accept or implement. A major issue is how city administration can incorporate the ideas provided by an active civil society into administrative processes. Public participation in the urban decision-making process can be implemented through a number of tools, such as stakeholder analysis, city consultations and working groups.

Factors that affect citizen's perception of risk automatically have an impact on their acceptance for risk reduction strategies and, vice versa, security and resilience enhancing planning of urban built environment.

Physical infrastructure is in particular acknowledged to be critical, and planning of such infrastructure is usually integrated in regional and urban planning as well as development. Future infrastructure planning will require consideration of specific security aspects, both in technical and physical terms, but also in psychological and more general citizen-related terms.

A security culture point of view includes the assumption that the 'criticality' of a certain infrastructure and needs for protective measures, including by urban planning, does not only follow risk assessment models and methods. They also follow citizens' perceptions and needs. Urban planning should be responsive to those perceptions and needs if it seeks to contribute to resilience from a comprehensive point of view.

Moreover, failure of built critical infrastructure has an impact on the social components of a system and poses a threat to the functioning of society. If an infrastructure-endangering event occurs, domino effects and/or cascading effects are very likely due to interference or outages of the critical infrastructure. Those effects have the potential to bring different sectors of society to standstill. In addition to direct harm to citizens and economic losses, this can generate also loss of confidence in the political system. Complexity of social consequences from critical infrastructure failure mounts with increasing citizens' dependence on the respective infrastructure, including critical services. Furthermore, crisis behaviour also depends on the predominant social patterns and legal frameworks, on the general legitimacy of political, economic and social institutions, and on the amount of risk tolerance of the population.

Risk research has shown the citizens' assessment of risks and threats to be considerably dependent on knowledge of precedents, frequency and extent of risk experience as well as perceived immediate effects on themselves (Proske 2004). This includes factors rooted in perception that do not match with the objective risk, and the extent that they are being brought to attention by, for instance, the media.

In line with such insights, the following can be concluded from previous studies (Siedschlag/Jerković 2010): The acceptance of protective measures by the population essentially depends on individual risk perception against the backdrop of individual experiences, which is the most common cue that people have to make guesses about the impact the measures are going to have. The acceptance of security interventions (such as designing out crime and terrorism or designing in security, for example by surveillance technology) is determined by individual experience and often happens on a case-by-case basis. An important predictor of acceptance by the public is the adaptation of the intervention model to specific national, regional and/or local requirements. European citizens do not believe that enhanced technologies and infrastructure alone can eliminate insecurity.

What people perceive is real for them, at least in its consequences (cf. the so-called Thomas theorem: Thomas/Thomas 1928: 571-572); so their behaviour will be influenced not by the actual level of security, but of their perception of it. Urban planning decisions can distract citizens' risk perception from more objective risk levels.

Conversely, citizens' risk perception can also result in societal demands on urban planning. Several specific aspects, as addressed in the following, are worth consideration in strategic urban planning. These aspects include indicators for citizens' subjective perception of criticality of infrastructure and need to protect it, including by appropriate urban planning measures. Conversely, infrastructure that results from urban planning may also influence subjective assessment of its criticality and contribution to security or susceptibility to natural or anthropogenic ('man made') risk.

Risk perception is strongly influenced by various subjective factors that drag it from objective risk figures. These include overconfidence, loss aversion, individual experience, temporal factors, capacity of remembering, level of information and knowledge, public discourse, stigmatization, cultural factors, orientation of values, confidence in institutions, etc. (cf. Covelio u.a. 2001: 382-391; OECD 2003: 54-56; Proske 2004: 167-174; Slovic u.a. 1981; Sterr u.a. 2008: 345-346; Zwick/Renn 2008: 85-95). Adequate risk management and public communication can help urban planners to prevent negative effects from public risk perception, or misperception, and related public demands on or acceptance of urban design. Addressing of risk in planning should be coherent with societal risk perception and views (cf. OECD 2003: 54-56).

To do so, the complexity of individual and social mechanisms of risk perception has to be appreciated (Coppola 2007: 162). Humans usually do not fear statistically highly ranked threats to life and health (such as car accidents, food poisoning, cancer and others), whereas they are disproportionately wary of spectacular hazards, even if related vulnerabilities are low.

In considering how to address perception of risk in urban research and planning, one can follow Coppola's (2007: 164-166) distinction between fear-related and knowledge-related factors:

- Fear-related factors:
 - Risks causing pain and death are generally feared (e.g. shark attack vs. heart attack);
 - Controllable risks tend to be feared less than uncontrollable risks (such as air trips, urban criminality, terrorism, food contamination);

- Disasters with global impacts are feared more than those with regional impacts (nuclear war vs. conventional war);
- Lethal risks are feared more (air crashes vs. car accidents);
- Risks equal to all population groups are feared less than risks effecting particular sub-groups (especially children);
- Collective risks are feared more than individual risks;
- Risks exceeding life spans are more alarming;
- Risks that are hard to prevent cause greater fear;
- Decreasing risks (e.g. due to mitigation such as immunization) are feared less;
- Involuntary risks are feared more;
- Direct affection (e.g. 9/11) raises fear of risk;
- Avoidable risks cause less fear (e.g. due to medical progress such as AIDS).
- Knowledge-related factors:
 - Invisible Risks (e.g. smoke vs. genetic engineering);
 - Risks with unknown degree of exposure;
 - Risks having delayed effects;
 - New/unknown risks;
 - Scientifically implausible risks.

From the security point of view, it is important to not only consider objective criticality of infrastructure and reflect resilience-enhancing measures in urban planning but to also consider citizens' requirements for resilient infrastructure. These citizen requirements are of subjective nature and can hardly be addressed by standard planning assumptions. However, they have considerable impact on citizens' acceptance of urban planning decisions and on whether security by design of built environment matches societal security (cf. Davis 1999, introducing the concept of the "ecology of fear").

Addressing citizens' felt risks to urban infrastructure and needs to protect that infrastructure provides a foundation for optimizing public risk communication and for prioritizing protective measures. This also needs considering in urban planning. In a review of relevant case studies, the project SFI@SFU⁵ funded in the Austrian national security research programme KIRAS identified a list of indicators for how characteristics of built urban environment influence citizens' security-related perception of that infrastructure. The results are shown in *Table 1* below.

These results could inform strategic urban planning and support the urban planner in an approach to security by design, considering aspects of the "ecology of fear" (Davis 1999) from the early stages of planning processes for built environment.

⁵ KIRAS project SFI@SFU: "Development of an Austrian Centre for Comprehensive Security Research at Sigmund Freud Private University Vienna" (<http://www.sfi-sfu.eu>), funded by the Austrian Ministry of Technology, Transport and Innovation (bmvit) in the Austrian national security research programme KIRAS (<http://www.kiras.at>) [last access: 2012-05-20].

Table 1: List of indicators to assess citizens' felt risks to urban infrastructure and needs to protect it.⁶

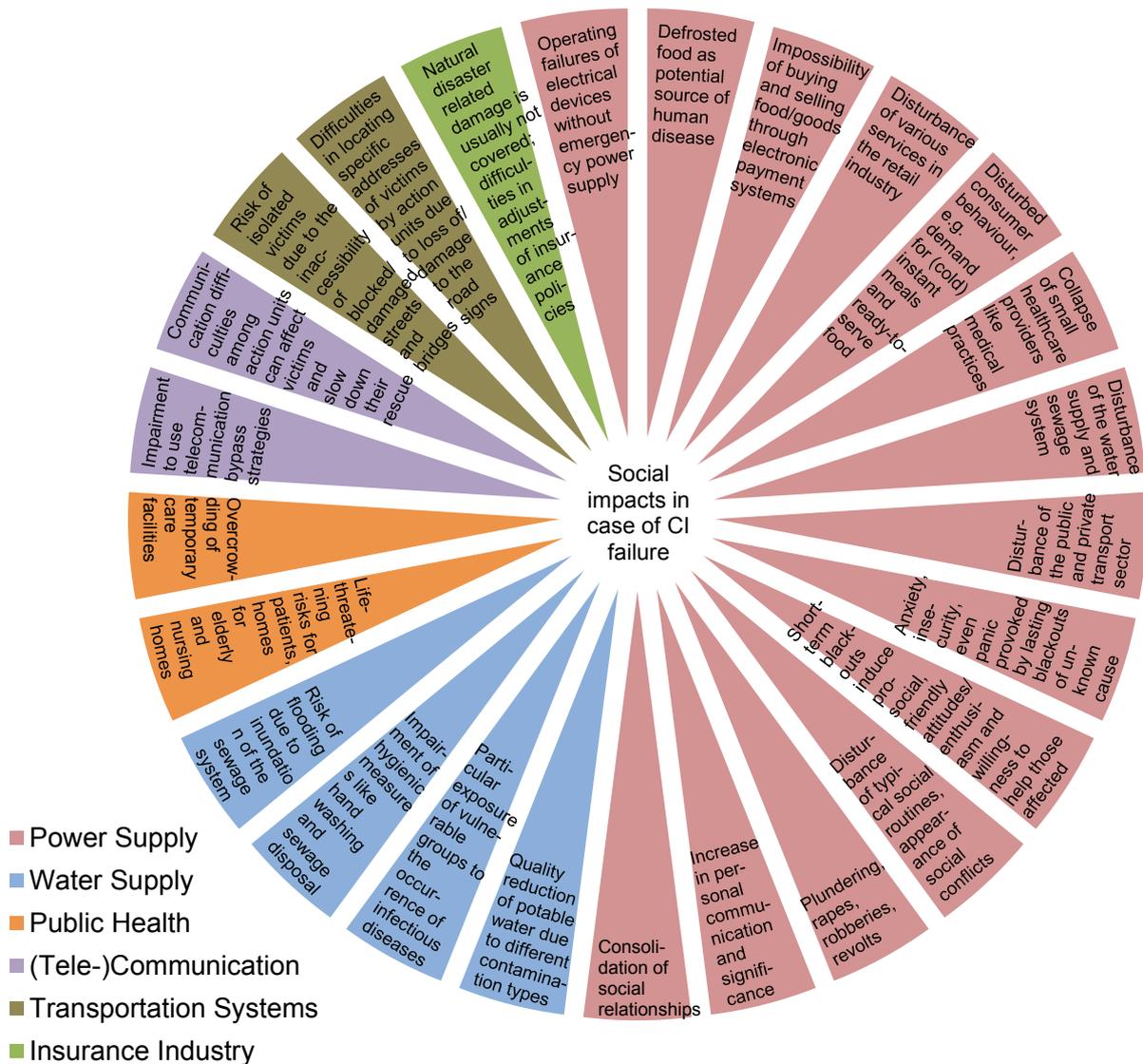
Indicator	Effects on citizens' felt risks to urban infrastructure and needs to protect	Methods to determine the effects
Experienced/expected extent/duration/season of harm to infrastructure	Multiplication of breakdown consequences (e.g. power breakdown in winter season; disruption of passenger transport) increase citizens' felt risks to urban infrastructure and needs to protect.	Interviews and surveys; analyses of available case-studies (e.g. on power breakdowns)
Direct experience of harm to infrastructure	Visibility and direct experience increase citizens' felt risks to urban infrastructure and needs to protect.	Analyses of available case-studies (e.g. on nuclear accidents or on supply)
Impact on/impairment of one's own life due to protection measures (e.g. traffic obstruction due to security checks)	The individual ratio of expected benefits from protective measures and expected costs influences citizens' felt risks to urban infrastructure and needs to protect.	Interviews and surveys; behaviour analyses
Irreversibility of impact on infrastructure and its effects (such as cascading effects from supply disruptions or material loss)	Irreversibility increases citizens' felt risks to urban infrastructure and needs to protect.	Interviews and surveys
Individual dependence on infrastructure (e.g. water and food supply)	Individual dependence increases citizens' felt risks to urban infrastructure and needs to protect.	Interviews and surveys; analyses on consumption patterns
Degree of physical effects caused by harm to infrastructure (e.g. supply chain breakdown)	Physical effects increase citizens' felt risks to urban infrastructure and needs to protect.	Analyses of available case-studies (e.g. on power breakdowns)
Evidence of direct benefit from infrastructure	Perceived direct benefit of an infrastructure increases its acceptance compared to and increases citizens' felt risks to urban infrastructure and needs to protect.	Interviews and surveys; analyses of user frequency
Optional use of infrastructure	"Voluntariness" and alternatives for infrastructure use decrease citizens' felt risks to urban infrastructure and needs to protect.	Interviews and surveys
Controllability of use/functioning of the infrastructure	Perception of own capability to control the infrastructure decreases citizens' felt risks to urban infrastructure and needs to protect.	Interviews and surveys
Familiarity with infrastructure and comprehension of its functioning	By trend, familiarity decreases citizens' felt risks to urban infrastructure and needs to protect.	Interviews and surveys; regression analyses
Spectacularity of infrastructure and media attention for (potential) harm to infrastructure	High spectacularity and media attention increase citizens' felt risks to urban infrastructure and needs to protect.	Interviews and surveys; media analyses
Unique identity and cultural value of the infrastructure (e.g. St. Peter's basilica in Rome, etc.)	Disruption/destruction of culturally valued infrastructure triggers identity crises such as deep uncertainty; it increases citizens' felt risks to urban infrastructure and needs to protect.	Interviews and surveys; analyses of demographic/statistical data
Detailed media coverage on the effects of risks/harm to infrastructure	The more details media reports contain, the higher citizens' felt risks to urban infrastructure and needs to protect.	Media analyses

⁶ This is mainly derived from SFI@SFU project results, see footnote 5.

Indicator	Effects on citizens' felt risks to urban infrastructure and needs to protect	Methods to determine the effects
Association of infrastructure with maintenance or improvement of material status	Expected restriction of one's own lifestyle increases felt risks to urban infrastructure and needs to protect.	Interviews and surveys
Direct/indirect exposure of self owned infrastructure to risk/harm	Perceived high degree of exposure increases citizens' felt risks to urban infrastructure and needs to protect.	Index of employees of affected business/ industry sectors; customer/client analyses
Experienced/expected individual economic loss/economic cascading effects	This increases citizens' felt risks to urban infrastructure and needs to protect.	Determination of dependent clients and entrepreneurs; customer/client analyses; entrepreneur surveys
Ownership structure of infrastructure	Citizens' felt risks to urban infrastructure and needs to protect can be influenced according to ownership structure (public vs. private owners; domestic/foreign owners).	Determination of ownership structure; interviews and surveys
Geographical vicinity to infrastructure	A preference for protection of local/close infrastructure is common, so that proximity usually increases citizens' felt risks to urban infrastructure and needs to protect.	Interviews and surveys
Effects of risk/harm to infrastructure on vulnerable groups (children, elderly in need of care)	Perceived affection of vulnerable groups increases citizens' felt risks to urban infrastructure and needs to protect.	Interviews and surveys
Known vulnerability of infrastructure	Knowledge of vulnerability can either increase or decrease citizens' felt risks to urban infrastructure and needs to protect ("will happen again" effect, known as reflective fear vs. "has already happened and will not happen again" effect, known as over-amplification)	Interviews and surveys; <i>oral history</i> /narrative interviews
Risk of disaster from harm to infrastructure	Highly perceived/known disaster risk increases citizens' felt risks to urban infrastructure and needs to protect.	Risk analyses; interviews and surveys; regression analyses
Anthropogenic risk/harm to infrastructure (e.g. human failure, false usage, accidents, terrorist acts, etc.)	This usually decreases citizens' felt risks to urban infrastructure and needs to protect	Risk analyses; Interviews and surveys; regression analyses

Public perception of social impacts in case of urban critical infrastructure damage or failure, as illustrated in *Figure 1*, is a further example that provides interesting information on societal (citizen-centred) security aspects and concerns.

Figure 1: Perceived social impacts in case of urban critical infrastructure failure and identified types of social impact.



Through physical loss of structures, homes, plant closures, etc. communities also suffer from negative psycho-social consequences and are not only affected economically. Recovery through an efficient organizational response reduces such negative effects. Urban planning considering security aspects can contribute essentially to enhance efficiency, ease response activities, and reduce negative perceptions as well as psycho-social consequences.

Urban research and planning should be aware that citizens always assess risks, threats and uncertainties on a subjective and individual basis. To a certain extent, gaps between felt and factual security are normal phenomena. Therefore, an analysis of the distribution of gaps between felt and factual security across society is more important than a mere gap analysis. In the case of risks that citizens perceive as out of their ability to change, such as risks to large urban built infrastructure,

citizens will usually discount or even discharge a risk, which opens a gap between felt and factual security (Parfit 1998).

Counterterrorism security measures are an important case in point. Especially their visibility and proportionality intersects everyday life of citizens by influencing individual and collective experience of life in urban areas. Therefore, counter-terrorist urban design poses particular challenges in the light of human factors that influence citizens' perception of risk to built infrastructure, needs to protect, and acceptance of protective measures.

Coaffee (2010: 940-42) has identified challenges to be considered by built environment professionals (planners, architects, etc.) in their planning activities. A particularly important one is the societal impact of physical changes of urban areas, as result of implemented counterterrorism measures in the urban environment. Planners, architects and urban designers need to integrate not only effective protective counterterrorism security into the design of urban objects with severe terrorism risk but also consider the visible impact of security measures. It is recommended to design these as unobtrusive as possible. For example, to delimit security zones in governmental areas, it is recommended to use stealthy balustrades instead of bollards. This also serves the purpose to avoid building largely visible "defensible space", thus outlining to everybody the vulnerability of the fortified built environment.

Critical urban infrastructure and physical protective measures should still suggest a sense of welcoming, openness and democracy (Coaffee 2010: 940). Secure urban areas need the intervention of trained people, who have the capability to recognize dangerous situations with terrorist potential. Availing people with the sense to prevent and respond to terrorist activity is far less costly and often more effective than planning and implementing 'anti-terrorist' built environment.

To sum up, future urban research and planning should bear in mind the following when addressing citizen acceptance and demands aspects related to secure urban space:

- *Consider that even the best planning decisions, appropriately addressing the security dimension, and their implementation, are not self-enforcing but need to be embedded in citizen acceptance:* A public space is also a social place. Therefore, structural and social dimensions of a public area overlap each other, as citizen acceptance and demands cut across consideration of culture and ethics aspects.
- *Do not apply a 'one size fits all' approach to citizen acceptance:* Each city and community is distinct, with specific population characteristics, physical spaces, government structures, values and history. Each will thus have its particular security problems and public security cultures that co-determine, whether urban design will be accepted by citizens and used appropriately. Addressing of security aspects in urban planning should be grounded on a holistic view by incorporating, in a balanced way, the following five interconnected functional components: social, economic, political, demographic, and environmental.
- *Respond to citizens needs:* Citizens always assess risks, threats and uncertainties on a subjective and individual basis. To a certain extent, gaps between felt and factual security are normal phenomena. Even if not supported by other, more technical ways of risk assessment, integrating citizens' needs in urban planning will strengthen its addressing of security issues and contribution to enhancing urban resilience.
- *Implement insight from social sciences:* Implementing insights from social sciences in all stages of urban planning, such as cultural and ethics aspects addressed above, contributes to building resilience cities. Resilience essentially includes societal resilience, and this is linked to citizens' acceptance of security-enhancing measures. For that reason, security by design should as well consider the visible impact of security measures and should be unobtrusive as possible.

ETHICS ASPECTS

Citizen-related aspects should always be part of security and related considerations in urban planning since citizens are its ultimate end-users. However, it is not easy to address citizens by built infrastructure in order – for example – to influence their behaviour using that infrastructure. The reason for this is that – among other things due to culture aspects – citizens ‘read’ built urban environment in different ways: One central tenet in environmental psychology (cf. Nasar 2011) is that meaning intentionally embodied in built environment is not always decoded by citizens according to that intention. From the psychological point of view, environmental cognition cannot be just designed because “the perception of insecurity in cities depends largely upon the substantial amount and constant flow of information that urban residents receive from many sources.” (UN-HABITAT 2007a: 19)

Thus, urban planning is trying to avoid stressful and potentially threatening feelings of being lost in the urban realm, and resulting perceived threat, by providing “legibility” (Lynch 1960). That means to design built infrastructure in such a way that “one can comprehend and navigate environments” (Nasar 2011: 165). The lesson is that it would be a mistake to believe we can consider all aspects of security only through ways of planning, such as “designing out” crime or “designing in” protection and resilience. Therefore, it is important that urban designs “incorporate public meanings” and citizens’ images of places (Nasar 2011: 166), including – one can add – those of secure places. As a result, also the identification of “weak points” in urban environments from a security culture point of view has to be seen as socially negotiated and constructed sense-making that takes place in cultural contexts (Falkheimer/Heide 2006).

Debates in urban design have often disregarded this aspect, rather centring on “which good design determines good behavior” (cf. Whitzman 2011: 670). However, additional aspects should be considered in order to arrive at a holistic view. Social conflict between different social groups about public space is a democratic phenomenon that should not be subject to designing out. Security aspects of urban design should not be overly mainstreamed because planning to increase security of excluded groups may also contribute to making cities safer. Desire for security should not lead urban planning to contributing to threatening citizens’ lawful rights of expression and dissent, owing to the old principle that city air should make people free, rather than constrain them (cf. Whitzman 2011: 670-671).

Moreover, “designing in” and “designing out” approaches have been criticized for an infrastructure-based “clubbing of private security”, which contributes to the deconstruction of security as a public good to the benefit of a short-sighted approach of mere physical risk reduction. (Hope 2001: 216) Critics may also draw from Waltzer (1983: 20), who condemned the blurring of distribution criteria for security and: “[P]rivate security should not be denied to people who do not possess some other good – for example, wealth”. Others have criticized the production of security by use of exclusionary practices (Hughes 2007) and called for communitarian reasoning to reconcile the idea of security with that of community (Loader/Walker 2007).

While the public interest is a question of continuous debate, both in its general principles and case-by-case applications, it requires a conscientiously held view of the policies and actions that best serve the entire community. The “ethical planning pyramid” (Brucelius s.a.) illustrates the different elements and levels of abstraction that ethics has in planning processes: Ethics, power and responsibility at the planning system level stand versus the everyday morality at individual level – with flows running in both directions through planning techniques and judgements as well as ethics in planning and policy documents.

This also applies to the gender perspective:

“[G]ender is not only about women in society. It is about the ways women and men interact and their ability to access resources and opportunities in their communities depending on their being a woman or a man. Therefore, when any type of survey or analysis of a society is undertaken, it is important to have data that reflects the situation of women in comparison to the situation of men and vice versa“. (UN-HABITAT 2007b: 28)

Women and men have different perceptions of security, which leads to different urban protection needs (cf. Women's Initiatives for Safer Environments 2005). Understanding the various situations, individual needs and perspectives of men and women should inform all aspects of urban planning and management (UN-HABITAT 2007b: 26), as summarized in *Table 2*. It is important to clarify what a gender perspective actually means when undertaking security-related urban planning.

Table 2: The meaning of a gender perspective in the urban planning process.⁷

Having a Gender Perspective in urban planning does NOT mean ...	Having a Gender Perspective in urban planning DOES involve ...
Focusing only on women	Looking at the inequalities between men and women
Treating women only as a vulnerable group	Recognizing that both men and women are actors in the planning process
Treating women and men exactly the same	Designing planning strategies that take the inequalities and differences of men and women into account
Striving for numerically equal participation between men and women	Moving beyond only counting the number of male and female participants to focus on the substance of their involvement as well as the impact of planning on men and women
Assuming that all women (or men) will have the same interests, views or priorities	Recognizing the differences between different groups of men and women (based on age, ethnicity, socio-economic status, etc.)
Focusing only on employment equity issues within organizations	Recognizing that equal opportunities for women within organizations is only one aspect of gender equality
Assuming who does what work and who has what responsibilities	Understanding the specific situation and documenting the actual conditions and priorities

In summary, from a state of the art review, the following main messages for addressing ethics aspects of security in urban research and planning derive:

- *Address ethics aspects in an investigative way:* Decisions about how to configure and live within the built environment have ethics dimensions that are sometimes hard to see.
- *Critically address planning requirements, including identified culture aspects of security, in the light of ethics aspects:* For example, security by design should be checked against risks of deconstructing security as a public good (such as common accessibility of public space, etc.).
- *Identify risks of creating uneven distribution of security in society:* Urban design addressing security aspects may unconsciously contribute to selective delivery of security, contributing to making secure or wealthy citizens more secure, and vulnerable or less prosperous citizens more vulnerable.
- *Actively contribute to limiting potential for (e.g. criminal or terrorist) abuse of sensitive planning information and data.*
- *Involve citizens in planning decisions:* This not only increases legitimacy of planning decisions, but it is also a requirement from basic principles such as ownership and community goals.
- *Consider the various situations, perceptions of (in)security, needs and perspectives of men and women:* Such consideration should inform all aspects of urban planning, which should actively identify and respond to gender-specific perceptions of security and needs for protective measures.

⁷ Source: UN-HABITAT (2007a): 26.

COMMUNITY RESILIENCE IN THE URBAN CONTEXT

In the context of societal security, resilience typically refers to a community as a whole. In security research, resilience is an evolving concept and most often used as a descriptor for a state of the system. However, various authors agree on resilience not being an equilibrium state but being a dynamic property or process, changing and being variable over time (e.g. Lorenz 2010; Norris et al. 2008; Cutter et al. 2008). For example, Cutter (s.a.: 3) proposes to define resilience as including “those inherent conditions that allow the system to absorb impacts and cope with an event, as well as those post-event adaptations that help the system to change and learn and thus achieve an acceptable level of functioning.”

A comprehensive approach to security aspects in urban planning should also reflect that in urban systems all phases of the common crisis management cycle may be experienced simultaneously in different parts of the city: While one part of the city may be struck by an incident (such as a natural disaster or terrorist attack), other parts may be under warning, evacuation, or even in an immediate post-disaster phase with restoration (e.g. of supply-related infrastructure) beginning. Still other parts of a city may be in the role of observers and drawing immediate lessons for risk assessment, mitigation, prevention and preparedness.

While there are various conceptions of resilience, urban studies have linked resilience back to its ecological origins and applied as a concept within the context of environmental psychology. This concept has been placed in a socio-political context to arrive at a notion of resilience that focuses on macro-resilience of an urban society as a whole (cf. Coaffee/Wood/Rogers 2009: 110-122). On the bottom line, resilience can be considered as the degree to which a system (e.g. an urban environment as a structural and as a social system) is capable of organizing itself to increase its capacity for learning from past disruptions for better future protection and improved risk reduction (cf. Sapirstein 2009).

By adopting resilience as a clear and pragmatic policy goal, aiming to invest in fostering community resilience, communities are supposed to achieve an improved position to withstand disruptions and to recover and re-establish more easily (cf. Cutter et al. 2010) – that is, to be more resilient vis-à-vis vulnerabilities.

The message for urban planning is that it should contribute to building a system (of both social and of built environment) “to either absorb or respond to negative external influences or to more generalized experiences of perturbation” (Coaffee/Wood/Rogers 2009: 122).

In summary, the conceptual state of the art is that there are four interrelated dimensions to resilience: technical, organizational, social, and economic. This illustrates that, especially in urban systems, resilience cannot be comprehensively addressed merely from the technical or structural point of view.

Based on this tenet, in particular with respect to planning for secure systems of different kinds, resilience can be described to be based on the following characteristics:

- It reflects the extent of change that a system can experience, while retaining its order or its normative (formal) as well as its dynamic organization.
- It reflects the capability level of a system for self-organization.
- It requires both acceptance by as well as symmetric competences of the citizens.
- It reflects the capability of a system to learn and adapt to changing environments, while retaining its characteristics and identity (or, technically, its operational closure).

Applying a comprehensive approach to urban planning can help increase societal resilience because it acknowledges that an urban system can be confronted with all the phases of the crisis management cycle simultaneously. Essentially, resilience thinking in the urban planning process should be grounded on a holistic view by incorporating the following five interconnected functional components: social, economic, political, demographic, and environmental (cf. Pelling 2003: 12).

Approaches such as “New Urbanism” (e.g. Calthorpe/Fulton 2001) have argued that citizen resilience could be increased by informed, progressive architectural design, that per se would meliorate human behaviour and reduce insecurity as well as citizens’ feeling thereof. However, this physical determinism will not hold. Perceptions of the ‘users’ of a city/an urban environment have to be

essentially taken into account. Urban research and planning should be sensitive to societal security cultures and, in particular, consider citizens' perception of insecurity, feeling of vulnerability and acceptance of technological solutions for security problems. For example, while the need to provide for sufficient lighting clearly shapes the planning process of urban public space, thorough analysis of the relevant users and user groups are required to better assess how lighting can contribute to heighten individual security perception and to reduce 'fear' in public space.

Increasing urban resilience at the citizen level also requires addressing and understanding of *vulnerability* (Medd/Marvin 2005). While vulnerability in general is the susceptibility (of a community and/or an infrastructure) to the impact of hazards, the concept of vulnerability as applied in planning should in particular "involve a predictive quality: it is supposedly a way of conceptualizing what may happen to an identifiable population under conditions of particular risk and hazards." (Cannon et al. 2003: 4).

The following general checklist for consideration of the citizen perspective in addressing security issues in urban planning derives from the aspects addressed in this chapter:

- Identify and involve all relevant actors in the process of urban planning, including active citizen participation;
- Consider the non-linearity based on the fact that in urban systems all phases of the common crisis management cycle may be experienced simultaneously in different parts of the city;
- Reflect that resilience in cities should be grounded in a holistic view of sustainability;
- Appreciate individual perceptions of security (e.g. on the level of regional or national patterns);
- Identify areas of concern and address them specifically, without extrapolating to the planning of the city as a whole;
- Combine urban planning with raising of citizens' awareness;
- Contribute to identifying individual as well as group-specific vulnerabilities and methods to increase resilience;
- Based on the acknowledgement that public urban space is about living and evolving, not about being watched and observed, planning decisions should provide sufficient space for later changes and adaptations.

SECURITY-RELATED MISSIONS IN URBAN PLANNING

As a comprehensive conclusion, a number of security-related missions in the context of urban planning – addressing culture and ethics aspects in urban security – can be derived from the research reported in this paper, in some cases connecting to missions identified in preceding work. They are listed in the *Table 3*, along with some examples. The missions are assigned one or more practical method(s) to meet the challenge. Naturally, there are crossovers between missions, for example between women's security and perception of security. Nevertheless, it may be helpful for societal security considerations in urban planning to use the listed missions as some type of checklist.

In addition to more general results on culture and ethics aspects, those missions represent a pragmatic sum-up of the results and contribution of the undertaken study to identify clusters of societal security aspects that future urban research and planning should address more prominently.

The idea of defining security-related "missions" follows the founding idea of European security research and its mission-centred approach to address capability development and further measures to meet challenges grouped in different clusters (cf. European Communities 2006).

Table 3: Summary of security-related missions in urban planning, addressing societal security aspects – and assigned practical methods to meet the challenge.

Security-related mission	Example/illustration	Tool/method to meet the challenge	Source/reference
Enhance women's security	<p>Situation analysis for planning safe cities, e.g. “What times of day or night do women and girls go out most often? What times of day or night do women and girls go out least often? Why?”</p> <p>Which groups of women in the city or community most often experience violence or insecurity?</p>	<p>Safety audit, e.g. women’s safety audit by the Metropolitan Action Committee on Violence Against Women and Children (http://www.metrac.org/prgrams/safe/audits.htm), based on diverse audit group members so to reflect a broad spectrum of safety concerns. An example for a safety audit checklist is available on http://www.redmujer.com.ar/pdf_publicaciones/safety_audits_checklist.pdf</p>	<p>UN Entity for Gender Equality and the Empowerment of Women (UN Women): http://www.endvawnow.org/en/articles/262-ask-questions-about-womens-safety-in-the-city.html</p>
Address/design in responses to citizens’ felt risks to urban infrastructure and needs to protect	<p>Certain artefacts as present in urban areas can distract citizens' perception of risk from the more ‘objective’ level of risk. For example, citizens tend to perceive monumental infrastructure as more critical than less conspicuous infrastructure, sometimes irrespective of its known function.</p>	<p>List of indicators derived from risk research to determine relevant kinds of infrastructure and properly address the issue of perceived criticality in urban planning.</p>	<p>KIRAS project SFI@SFU: http://www.sfi-sfu.eu</p>
Prevent emotional and radical reactions to “privatized” public spaces	<p>Examples from urban planning include the concept of offering citizens new middle-class type privacy in private public spaces, such a commercial malls based on architectures “to separate out different ‘types’ of people” and including commercial policing by private companies.</p>	<p>Advocacy Planning, Participatory Diagnosis, Local Dialogue or Dynamic Facilitation are important methods to identify different interests and types of people in using public spaces.</p>	<p>Garland (2001)</p>
Reduce gaps between felt and factual security	<p>“[T]he perception of insecurity in cities depends largely upon the substantial amount and constant flow of information that urban residents receive from many sources.”</p>	<p>Multicultural crisis communication to identify “weak points” in urban environments, e.g. involving use of new social media in citizen-to-government/public administration and government/public administration-to-citizen communication.</p>	<p>United Nations Human Settlements Programme (UN-HABITAT 2007a, b)</p>

Security-related mission	Example/illustration	Tool/method to meet the challenge	Source/reference
Zone certain functional areas in the city without creating unequal levels of security in different areas (“new urbanism”)	Overcome the zoning of functional areas, separating residential from economy and other use. Aim at a mix of residential and economy-related functions. Conceptually foster the integration of society into urbanity.	The zoning of certain functional areas relies on active citizen participation – like Opinion Surveys, Planning for Real, Local Dialogue or Round Tables – in the construction and development of urban neighbourhoods.	Calthorpe/Fulton (2001)
Designing out crime	Even if there are things that go wrong in society (which may lead to crimes), designing urban environment influences offender decisions that precede criminal acts by affecting the built, social and administrative ambience.	Design can reduce the incidence of many (urban environment related) crimes through, e.g. laminated glass, framed structures, bomb shelter areas, good overview, visibility, better street lightening, accessibility, etc.	Crime Prevention Through Environmental Design: http://www.CPTED.net
Counter terrorism by design	To counter terrorism and better protect people from terrorist attacks in urban places, it is important to ensure the safety of public spaces and buildings. In this order, urban environment should be practical, sustainable, affordable and attractive, and should also give a sense of security.	Guidelines for the implementation of a better blast resistance for buildings, better building management facilities, better traffic management and measures mitigating the potential effects of hostile vehicles, as well as guidelines for creating a better oversight of public spaces.	HM Government (2012b)
Implement a full crisis management cycle	From the point of view of a comprehensive approach in urban planning, architects and planners should also reflect that in urban systems all phases of the common crisis management cycle may be experienced simultaneously in different parts of the city.	The urban planning tool should reflect that resilience in cities should be grounded in a holistic view of sustainability and consider social, economic, political, demographic, and environmental functional components. Methods to integrate these components are Expert Forums, Interviews, Local Dialogue, Round Table, and Future Workshops.	Pelling (2003)
Match built environment with citizen user cultures	The planning process of urban environments should consider that public space is used by different social groups. Value conflicts and security problems accumulated in specific areas negatively impact planning and everyday use.	Discursive strategies and related public communication measures, like Advocacy Planning, Participatory Diagnosis, Local Dialogue or Dynamic Facilitation, are important assets in reducing public disorder phenomena.	Participation and sustainable development in Europe: http://www.partizipation.at/

	Security-related mission	Example/illustration	Tool/method to meet the challenge	Source/reference
	Protect crowded places	Crowded places (sports stadiums, concert halls, clubs/pubs, exhibitions/museums, shopping malls, etc.) represent attractive targets for terrorists or criminal attacks.	Through efficient planning of building structure, windows and glazing, parking and external areas, building internal layout, good building lighting and continuous monitoring systems, urban planners can enhance the security of crowded places.	HM Government (2012b)
Ethics aspects in urban planning	Distributive justice (idea of same security [level] for all)	Ethics principles for all who participate in the process of environmental planning derive both from the general values of society and from the planner's special responsibility to serve the public interest. Ethics aspects accentuate the necessity for the highest standards of fairness and honesty among the planning process.	Neosocratic Dialogue, Participatory Diagnosis, Dynamic Facilitation, Safety Audits and Checklists and Future Workshops are important methods to identify, through citizen's participation, the different ethics issues in environmental planning.	The American Planning Association: Ethical principles in planning: http://www.planning.org/ethics/ethicalprinciples.htm UN-HABITAT (2007b)
	Sustainability			
	Legitimacy			
	Citizen rights			
	Acceptability of planning decisions			
	Protection of personal data			
	Gender perspectives (general)			

As a first step ahead, these identified missions were assessed in an expert consultation. The purpose of this consultation, conducted in February 2012, was:

- To obtain some external validation of the study results from subject-matter experts;
- To prioritize the missions and associated methods;
- To gain insight on urban planning experts' perception of the meaning/use of the concept of security in urban planning.

The results provided insight from an international forum of urban planning experts to get an understanding of their view of societal security aspects. The expert consultation was done via e-mail with a questionnaire that was derived from *Table 3* above. Results were used on an anonymous basis. In that questionnaire, the identified security-related missions were listed, along with some illustrating examples. Each mission was assigned to a main practical method to meet its challenge. 130 European experts in urban planning identified by desk research were invited to assess the relevance of each mission from their particular expert point of view. In the end, 13 filled-in questionnaires were received. The resulting response rate of 10 per cent appears acceptable for an online survey, which often has substantially lower turnout, and for the purpose of an expert consultation that does not seek statistical relevance.

The answers were dissociated from the names of the respondents upon receipt and processed completely anonymously. Respondents could rate the relevance of each mission either "very low", "low", "medium", "high", or "very high", from their particular expert point of view. Experts addressed included urban and spatial planning researches and practitioners, including staff of urban planning authorities at the city level, in different EU Member States. Experts from Austria, Germany, the UK, Finland and Norway responded.

Table 4 shows the ranking of the security-related missions in urban planning according to the relevance assigned to them by the responding external experts.

Table 4: Results from external experts' consultation: Assessed relevance of the security-related missions in urban planning.

Relevance of security-related topics (culture, ethics, etc.) in urban planning missions from urban planner point of view
Very high
<ul style="list-style-type: none"> • Zone certain functional areas in the city without creating unequal levels of security in different areas; • Prevent emotional and radical reactions to “privatized” public spaces; • Protect sensitive data (general); • Protect personal data; • Safety; • Public ownership; • Citizen rights.
High
<ul style="list-style-type: none"> • Consider citizens' subjective perception of criticality of (urban) infrastructure; • Designing out crime; • Match built environment with citizen user cultures; • Engineering and transportation infrastructures; • Environmental conditions; • Distributive justice (idea of same security level for all); • Sustainability; • Legitimacy; • Acceptability of planning decisions.
Medium
<ul style="list-style-type: none"> • Reduce gaps between felt and factual security; • Use counter-terrorism by design; • Implement a full crisis management cycle; • Protect crowded places; • Enhance women's security.
Low
<ul style="list-style-type: none"> • Gender perspectives (general).

The following results deserve special attention:

- Missions in security-related urban planning and associated methods that address ethics issues are assessed of high relevance;
 - In particular, the experts emphasized the relevance of protection of sensitive and personal data in planning processes, acknowledgment of the principle of public ownership and of citizen rights;
 - Experts also attached high relevance to the mission of zoning certain functional areas in the city without creating unequal levels of security;

- Experts moreover stressed the prevention of emotional and radical reactions to public spaces that are perceived as being unduly “privatized” by urban planning and resulting built infrastructure.
- Experts further highlighted missions in security-related urban planning that relate to *infrastructure*, including:
 - Designing out crime;
 - Environmental matching with cultural usage patterns;
 - Sustainability;
 - Considering citizens’ perception of criticality of (urban) infrastructure.
- Further, experts confirmed the relevance of methods to assure *acceptability and legitimacy of planning decisions*.

To the assessment of the responding experts, terrorism and natural disasters are issues with medium relevance to strategic urban planning. Respondents clearly rank ethics aspects higher than countering terrorism by design or protecting crowded places by design. At the same time, respondents consider the implementation of gender-related aspects of low relevance as a security-related mission in urban planning.

The results of the consultation indicate that urban planning experts do not commonly perceive relevant security issues, such as terrorism or natural disasters, to touch their responsibility. In other words, they do not see urban planning as a possible resilience-enhancing and mitigation instrument, or as an activity that is immediately relevant to security. In the light of these results, further research should among other things contribute to awareness raising and tailored information concerning the security-relevant aspects of specific planning decisions and tools (such as designing in and designing out). Knowledge from research about direct and indirect effects of urban planning decisions on societal security and impacts of urban planning on urban vulnerability and resilience should be accumulated and aptly transferred to the urban planning sector.

Important to notice, the consultation has at the same time shown that urban planners are aware of general ethics issues to be considered within the planning process, and of citizens’ emotions, perceptions and responses that can be triggered by certain planning results. They further acknowledge citizens’ acceptance and the legitimacy of planning decisions to be aspects that should be addressed and assured within the planning process.

The experts’ assessments can be transferred to a ranking of the security-related missions in urban planning (as listed in *Table 3*) in the following order of relevance (*Table 5*):

Table 5: Prioritization of security-related missions in urban planning derived from the expert consultation.

1. Zoning of functional areas in the city without creating unequal levels of security in different areas (“new urbanism”)
2. Preventing emotional and radical reactions to “privatized” public spaces
3. Designing out crime
4. Consideration of ethics aspects in urban planning Protection of personal data Citizens’ rights Distributive justice (idea of same security [level] for all) Sustainability Legitimacy Acceptability of planning decisions

CONCLUSION

In view of the growing vulnerability of urban environments, security and security culture aspects should play a more prominent role within strategic urban planning. Various currents in urban theories were identified to directly or indirectly relating to security aspects: *New Urbanism* with its sociospatial perspective, the ecological perspective, appreciative planning, or the community safety approach each comprise security aspects in terms of as urban structures and design, built environment and society interact and affect each other. This should be considered in planning concepts and can be exploited for security and resilience enhancing purposes. However, from the expert consultation it can be concluded that urban planners are not always aware of their potential role in urban security and resilience, contributing to societal security. Future research into urban security should involve according outreach to end-user communities in the urban planning sector.

Urban research and planning on the one hand and societal security research and security policies on the other should become more reciprocally engaged. In particular, they should consider security culture aspects in a comprehensive way: First, culture determines the behaviour and perception of people; second, cultural behaviour can be directed by the surroundings; third, the framework for urban planning is culturally determined as well. In particular, urban planning – addressing culture and ethics aspects – should increasingly consider subjective (perceived) criticality of infrastructure and reflect resilience-enhancing measures.

To increase urban resilience not only in terms of infrastructure but also in terms of societal security requires addressing public perception of insecurity, feeling of vulnerability and acceptance of technological solutions for security problems.

Design of urban space and infrastructure always stands vis-à-vis affecting or even influencing social behaviour and feelings. It thus needs to incorporate public meanings, to address citizens' acceptance and to assure the legitimacy of planning decisions. A dynamic process in the evolution of resilient cities needs active participation of citizens. This is even more the case since citizens' risk perception determines their acceptance of risk reduction strategies and can also result in new societal demands on urban planning and on security missions that it should incorporate.

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