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The Dark Side of Crime Prevention Through Environmental Design (CPTED)

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Summary and Keywords

This chapter provides an overview of the principles of Crime Prevention Through Environmental Design (CPTED). The paper focuses on the "dark side" of CPTED, a relatively underreported element to this theory, which relate to the negative outcomes that can result if CPTED is not implemented thoughtfully and equitably as a process. This chapter highlights why it is important to understand the "dark side" and provides examples of "dark-side" CPTED outcomes, such as the excessive use of target hardening, governance issues, and the use of CPTED as "crime prevention through exclusionary design." The chapter highlights CPTED as a process, which can be enhanced to consider "dark-side" issues, using program logic models.

Keywords: Crime Prevention Through Environmental Design (CPTED), "dark-side" problems, exclusion, fortification, governance

Introducing and Learning from the "Dark Side"

Crime Prevention Through Environmental Design (CPTED) is increasingly practiced throughout the World, including in Europe, North America, South America, Asia, Australia, New Zealand, and South Africa (Cozens, 2014, 2016; Ekblom, 2011), and is supported by the United Nations (United Nations Human Settlements Programme, 2007). These ideas are also being explored in the United Arab Emirates (Ekblom, Armitage, Monchuk, & Castell, 2013), Botswana (Cozens & Melenhorst, 2014), and Iran (Iranmanesh, 2004).

More than half of the world's population is now urbanized (United Nations, 2010), and this proportion is projected to rise to 60% by 2030 (van Ginkel & Marcotullio, 2007). The popularity of CPTED will therefore most likely continue to increase in the coming years. This article provides a brief overview of the key concepts of CPTED and how it is currently understood in the 21st century. A more detailed review of CPTED is provided in Cozens and Love (2015).

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The issues, problems, and contexts associated with CPTED are highly complex. Every CPTED intervention or design change has multiple effects, and some are beneficial in crime prevention terms. However, in spite of widespread international support for CPTED, outcomes are not always positive. Some aspects of CPTED interventions may facilitate crime or reduce quality of life in some other manner.

Significantly, like most good theories, CPTED has a "dark side." The "dark side" of CPTED is multi-faceted, complex, and substantially hidden. Drawing on trends in the discipline of urban planning (e.g., Flyvbjerg & Richardson, 2002), we here describe aspects of this "dark side" of CPTED to highlight issues helpful in learning from this perspective.

Crime situations are rarely simple, and CPTED interventions can have multiple effects. Some will reduce crime as intended, whereas others can contribute to crime via other pathways, such as changes in routine activities. Some CPTED interventions can both reduce and support crime simultaneously. For example, increased lighting can offer increased surveillance to citizens while also facilitating criminal activity by highlighting targets. Some CPTED interventions can reduce crime but at the expense of a significant reduction in quality of life for the community. The most obvious examples include extreme target hardening, overfortification, and exclusionary methods (e.g., discouraging young people from using public spaces). Some CPTED interventions produce outcomes that are not worth the investment in them, while others can increase crime or protect criminals. For example, "offensible space" (Atlas, 1991) can be used by criminals to protect their illegal businesses from the police. Each of these is an example of the potential for "dark-side" CPTED outcomes.

What Is CPTED?

The origins of CPTED (pronounced "sep-ted") can be traced to several sources, including Jacobs (1961), Jeffery (1971), and Newman (1972). A commonly recognized definition of CPTED asserts that "the proper design and effective use of the built environment can lead to a reduction in the fear and incidence of crime, and an improvement in the quality of life" (Crowe, 2000, p. 46). This focus on quality of life is clearly highlighted by Crowe and Zahm (1994, p. 22), who observed "the first objective of crime prevention through environmental design is a high-quality aesthetically pleasing built environment not crime prevention per se, but good physical design." This is achieved via three overlapping strategies of territorial reinforcement, natural surveillance, and natural access control (Crowe, 1991, 2000; Crowe & Zahm, 1994). Crowe (2000) elevates territorial reinforcement as a principal component, arguing that "territoriality [is] the umbrella concept, comprising all natural surveillance principles, which in turn comprises all access control principles" (Crowe, 2000, p. 38). These three "natural" strategies are summarized in Table 1.

Table 1. Three Natural CPTED Strategies

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CPTED Strategy	Brief Description
Territorial reinforcement	Territoriality is about how people try to keep others away or dictate their behavior in areas that they perceive that they have the authority to control. It depends on perceptions of and relationships with the environment. High levels of promotion of feelings of territoriality by CPTED interventions encourage individuals to take control of the environment and defend it against misuse, abuse, or potential offending. Strong feelings of territoriality can be supported by architecture and design which clearly identifies specific areas/setting as the domain of a particular individual, group or land use activity. Being able to defend an environmental setting is not enough on its own. Territorial feelings of pride and ownership are required so residents/users actually want to perform this role.
Natural surveillance	Surveillance strategies are directed at facilitating observation. Natural surveillance is about organizing physical features, activities, and people to maximize visibility. It creates an enhanced risk of detection for potential offender, and increased perceptions of safety for legitimate users. It is argued that people feel safer in environmental settings where they are visible to others and where they can see what is happening in their general vicinity. Conversely, offenders prefer locations that are not visible to others who might intervene in a criminal act and help their victims.
Natural access control	Natural access control is directed at reducing opportunities for crime by denying or restricting access to targets and increasing offenders' perceived risks using design features such as entrances and exits (e.g., doors), landscaping (e.g., shrubs), fencing, gates, and lighting. This creates a perception among offenders that there is an increased risk associated with targeting a particular criminal opportunity. Access control also helps to assist the movement of legitimate users through the environment and enhance their perceptions of personal safety. It also uses design to clearly differentiate between public and private space.

These three strategies can be reinforced by "activity support" (the presence of staff and scheduling of local activities) and as well as by target hardening (e.g., locks, security cameras, and alarms) where the effectiveness of design and staffing is limited. Zahm (2007, p. 10) argues that design features are "supported" by locks, guards, and alarms, where needed, whereby "target hardening and security measures are not the primary

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means for improvement.” Indeed, although CPTED emphasizes “natural” strategies as the preferred approach, these can be supplemented (as needed) by organized and mechanical strategies.

In terms of controlling access control and defining territory, Newman (1972) identified “real” barriers (e.g., walls, fencing, bollards) and “symbolic” barriers (e.g., flower beds, changes in surfaces/materials, and signage). Symbolic measures are considered “softer” prevention strategies (Midtveit, 2005).

Organized strategies for access control include the use of security guards, whereas locks, boom gates, and card entry systems represent mechanical forms of access control. Organized or formal surveillance is provided by local stakeholders (e.g., shopkeepers, security guards, and police), while CCTV and lighting are forms of mechanical surveillance. Figure 1 illustrates this early model of CPTED. Over the years, the concepts of maintenance (Wilson & Kelling, 1982), activity support (Wekerle & Whitman, 1995), and target hardening (Moffat, 1983) have emerged as additional parts of the CPTED model.

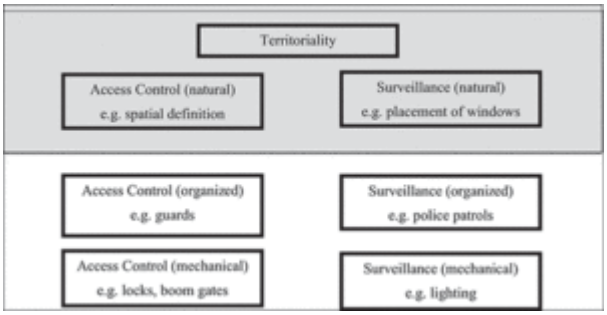


Figure 1. An early model of CPTED.

(*Source*: Crowe, 2000)

Maintenance is an important aspect of territoriality. It can influence offenders’ perceptions of the risks associated with committing a crime as well as residents’/users’ perceptions of safety in a particular environmental setting. Maintenance is an expression of the sense of ownership and proprietary concern for a specific environmental setting. Poorly maintained settings showing signs of deterioration indicate to potential offenders that there may be reduced levels of control, which can imply more tolerance of disorder. It can send out the message that no one cares and no one is likely to intervene. The “broken windows” theory of Wilson and Kelling (1982) supports this understanding of the importance of maintenance in deterring crime. It recommends the routine and regular maintenance and rapid repair of graffiti and vandalism. For example, a broken window that is not repaired can encourage vandals to break more windows. The rapid repair or replacement of the broken window may, therefore, help to discourage further vandalism.

Legitimate activity support uses design, signage, and scheduled activities to encourage intended use patterns in a specific space. The idea is to place unsafe or less safe (in crime terms) activities (e.g., those involving cash) in safe locations with high levels of activity and opportunities for surveillance. Similarly, safer activities can attract law-abiding citizens, whose presence works to potentially discourage the presence of criminals. This

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approach also contains aspects of territoriality, access control, and surveillance. Although these additional law-abiding citizens may provide additional “eyes on the street” and potentially discourage some types of crime, they may also actually encourage crime by providing additional targets for offenses (e.g., pickpocketing).

Target hardening is directed at limiting or denying access to specific crime targets via the use of physical barriers (e.g., fences, gates, locks, electronic alarms, surveillance, and access control). Hardening targets may also involve reducing the rewards on offer to the offender. In essence, target hardening strategies significantly increase the effort that offenders must expend in committing a crime while also increasing the risks of being seen and/or apprehended. Too much target hardening, however, can create a fortress mentality and an overfortified environment that can discourage normal social interactions and encourage fear and prompt residents to withdraw into the safety of their homes. Some (e.g., see Atlas, 2008; Saville, 2015) feel that target hardening should not be considered part of the CPTED model.

Geographical juxtaposition (Newman, 1972) is about the capacity of a location to influence crime in adjacent locations and vice versa. From a CPTED point of view it is most commonly about how the surrounding environment might influence or be influenced by the location where CPTED is being implemented. Different types of land uses and activities are associated with varying levels of crime, and when many high-crime risk land uses are concentrated together, higher levels of crime can occur. Using the concept of geographical juxtaposition is about assessing the potential influence of surrounding land uses on crime and the fear of crime. It has also been argued that “geographical juxtaposition” (Newman’s fourth defensible space mechanism), in spite of its relevance and practical significance for designing effective CPTED interventions, has been insufficiently emphasized within the CPTED literature (Cozens, 2014, 2015A, 2015B, 2016).

Also important is the role of social dimensions in the potential effectiveness of what has become known as 1st generation CPTED, which focuses largely on physical design (Saville & Cleveland, 1997). In some ways, this was the first “dark-side” issue for CPTED, since it was observed that even in well-designed physical spaces that utilized 1st generation CPTED principles, residents and citizens did not always act as guardians to self-police the built form and settings within it. CPTED 2nd generation CPTED (Saville & Cleveland, 1997, 2003A, 2003B, 2008) emerged, in part, to redress this imbalance. 2nd Generation CPTED strategies help to encourage communities to act as “eyes on the street” and to care about what they are watching (Saville & Cleveland, 2008). Indeed, it has been argued that “what is significant about Jacobs’ ‘eyes on the street’ are not the sightlines or even the streets, but the eyes” (Saville & Cleveland, 1997, p. 1). This social dimension to CPTED, often referred to as 2nd generation CPTED, is an important development in the field. It also encompasses the notion of inclusion and identity and promotes the idea that community participation in CPTED process is vital.

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Although a detailed discussion is outside the scope of this paper, the key elements are highlighted in Table 2.

Table 2. Key 2nd Generation CPTED Strategies

2nd Generation CPTED Strategy	Brief Description
Social cohesion	This focuses on nurturing a community where there exists a mutual respect and appreciation of the differences and similarities that make communities unique. It recognizes, values, supports, and celebrates diversity. A socially cohesive community shares a common vision and a sense of belonging and focuses on developing positive relationships between people from different backgrounds.
Community connectivity	This is required to create partnerships and connections within the community. These are the basis for coordinating activities and programs so well-connected and integrated communities become more empowered and develop a stronger sense of place. Community connectivity can help to encourage and sustain the capacity for self-policing and discourage crime and antisocial behavior.
Community culture	This is about residents coming together and sharing a sense of place and explains why they may be more inclined to display any territoriality. Practically, this involves setting up and participating in festivals, cultural events, and youth clubs and celebrating significant community events and people. This can empower the community and encourage more positive perspectives and behaviors, including self-policing. However, this also results in a “dark-side” issue, where some communities exclude and disadvantage other ethnic or socioeconomic groups.
Threshold capacity	Communities are ecosystems with finite carrying capacities for certain land-uses and activities—including crime and antisocial behavior. It is important to manage the threshold capacity to promote human-scale functions rather than exceeding the size and/or density, which might inadvertently promote anonymity, for example. Such thresholds or “tipping points” can include settings where there is a high concentration of bars in a city center—where crime and harm exceed the ability for police and emergency services to respond. Another tipping point example is when

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	dereliction and lack of maintenance can attract vandalism and graffiti and compromise the image of the neighborhood. This can result in a downward spiral of dereliction and crime.

Some suggest that CPTED is poorly defined and argue that CPTED needs to be clarified and reconceptualized (e.g., Ekblom, 2011; Gibson & Johnson, 2016). It is argued that weak conceptualizations and poor definitions within CPTED can contribute to measurement and evaluation issues (Ekblom, 2011).

In consideration of the developments in CPTED since Crowe (1991, 2000), a more recent definition of CPTED has been suggested by Cozens (2016, p. 10) as "a process for analysing and assessing crime risks in order to guide the design, management and use of the built environment (and products) to reduce crime and the fear of crime and to promote public health, sustainability and quality of life." Figure 2 shows a recent, more comprehensive conceptualization of 1st and 2nd generation CPTED.

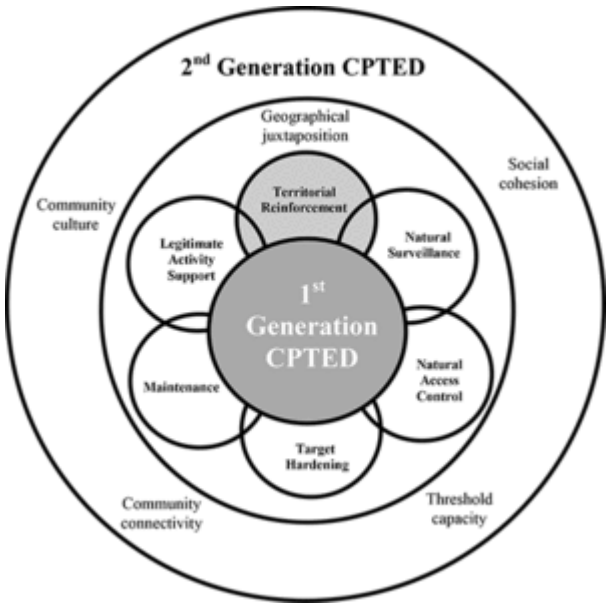


Figure 2. A conceptualization of 1st and 2nd generation CPTED.

CPTED will continue to be (re)conceptualized, and to some extent how it is currently understood and utilized in practice raises a number of issues related to the "dark side" of CPTED.

The Importance of Exploring the "Dark Side"

The notion of the "dark side" has many meanings. The *McGraw-Hill Dictionary of American Idioms and Phrasal Verbs* defines it as "The negative and often hidden aspect of someone or something" (Spears, 2002). The online Phrase Finder defines the "dark side" as "The evil and malevolent aspect of human personality or society" (Martin, 2015). Simply, it is the unseen flip side of an idea or theory, which can have negative or unintended malign consequences.

Recent developments in planning theory have seen the growth of a perspective known as the "dark side" of planning theory (Flyvbjerg, 1996, 1998A, 1998B; Flyvbjerg &

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Richardson, 2002; Huxley & Yiftachel, 2000; Yiftachel, 1998). CPTED has close relationships with planning and architecture, in which environment CPTED interventions are physically located. Raising the issue of a “dark side” of planning implies that there are benefits in doing the same in CPTED.

The main “dark side” of planning perspective is, in part, concerned with viewing planning as operating as an oppressive mechanism of social control (Yiftachel, 1998). The “dark side” of planning refers to how notions of power and politics are often ignored such that there can be a “power blindness” (Flyvbjerg & Richardson, 2002, p. 50). Furthermore, planning can be manipulative and coercive and act as “a tool for the control and disempowerment of social life” (Certoma, 2015, p. 25). Indeed, Schindler (2015) cites many examples where architectural/environmental design has been manipulated to exclude and segregate the poor and people of color in the United States. Examples include barriers to access, such as low bridges to exclude buses and the installation of walls, bollards, and street closures. She argues for the idea that using architecture/design as a form of regulatory control to shape behavior is “at the core of much urban planning and geography scholarship” (Schindler, 2015, p. 1944).

This “dark side” of planning theory is critical and analytical, in contrast to mainstream planning theory (Yiftachel, 1998). The lack of critical analysis in mainstream planning theory results in concern for how things should be done rather than how they are actually done and whether such visions are achievable (Flyvbjerg & Richardson, 2002). Focusing on “what is actually done” may provide less idealistic, more grounded insights into what planning is and which strategies might help to improve it. Flyvbjerg and Richardson (2002) encourage planners to “take a walk on the dark side” of planning theory in order to explore it and learn from it. They observe that “[p]lanning is inescapably about conflict: exploring conflicts in planning, and learning to work effectively with conflict can be the basis for a strong planning paradigm” (Flyvbjerg & Richardson, 2002, p. 62). Indeed, Yiftachel (1998, p. 400) argues that planners have tended to overlook this “dark side” and “thereby literally keep planning’s dark side ‘in the dark’.”

These discussions in the realm of planning indicate a need to explore the “dark-side” issues of CPTED. Similarly, understanding the “dark side” of CPTED could provide significant contributions to how we understand and apply the processes of CPTED.

The “Dark Side” of CPTED

Compared to the discourse in planning, a larger range of issues is associated with CPTED that exhibit a “dark side” and warrant exploration and discussion to improve CPTED outcomes. Identifying and addressing these “dark-side” CPTED issues require problematizing and critically reviewing the design and implementation of CPTED interventions at a detailed level.

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One way of critically reviewing the design and implementation of CPTED interventions and their outcomes is through program logic models. A program logic model is a “picture” of the processes of designing and implementing an intervention. This is also a feature of the more research-oriented theory of change methodology for evaluation to promote change (e.g., see Clark & Taplin, 2012). Program logic models link the intended outcomes (short-, medium-, and long-term) with outputs and inputs within the program design and implementation processes while making explicit the assumptions underpinning those processes (GHD, 2010).

Distinguishing between outcomes and outputs in the manner of program logic models helps in identifying, describing, and addressing potential “dark-side” outcomes of CPTED. Typically, in CPTED, when “dark-side” problems occur, they do so as adverse outcomes from outputs correctly designed according to CPTED principles. The application of program logic to understanding CPTED is described in more detail below.

Program Logic Models and the CPTED Process

Program logic models provide a formal basis for evaluating programs and interventions at all stages in their implementation. Any program or intervention comprises five phases:

1. Events prior to any work on the program or intervention
2. Identifying the need for and scope of the program or intervention
3. Designing the program or intervention
4. Implementing the program or intervention
5. The outcomes and changes following the implementation of the program or intervention

The program or intervention comprises only the middle three phases. The benefits (or otherwise) emerge as outcomes in phases 4 and 5. Phase 1 offers the basis of a reference condition. The design and development of the program or intervention occur in phases 2 and 3 and for many programs are modified in phase 4.

The development of CPTED interventions typically follows the same five phases in the same manner (Love, 2016). The five phases are:

- Phase 1: Prior situation with crime-related concerns
- Phase 2: Identifying the situation as one in which CPTED resources should be committed
- Phase 3: Design of CPTED intervention
- Phase 4: Implementation of CPTED intervention
- Phase 5: Outcomes resulting from CPTED intervention post-implementation

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Inputs, Outputs, and Outcomes

In program logic, each of the three phases of developing and implementing the program or intervention—phases 2, 3, and 4—has inputs and outputs, as set out in Table 3.

Table 3. CPTED Phases, Inputs, and Outputs

Phase	Inputs	Outputs
Commitment of resources	Crime data, fear of crime survey data, social data, political pressure, management decisions.	Commitment of resources, outline program plan, project aims, objectives and intended outcomes, budgets; and overall timeline.
Design of program	Guidance from Phase 2; human, technical, financial and informative resources.	Detail written design of program ready to be implemented; written evaluation and amendment strategy; detailed timeline; detailed budget; management strategies and plans.
Implementation of program	Design of program and its plan for implementation and management.	Implementation staff employed and managed to undertake the implementation; resources used in implementation; implementation occurs; evaluation of implementation occurs; project completion process is undertaken; report written on three stages of the project.

The outcomes of the program or intervention are the external effects of, and changes resulting from, the implementation of the program or intervention in the world. The outcomes of a program or intervention contrast with, and are totally different from, the outputs of the program or intervention. The outputs are the internal products of the program design and implementation, whereas the outcomes are the subsequent effects on the world resulting from the intervention.

Successful interventions have outcomes as intended that result from the implemented outputs of the intervention. An intervention may, however, have no, or insignificant, outcomes in spite of having outputs exactly as planned and specified. Worse is when an intervention produces outcomes that are adverse or opposite of what was intended.

All of the above occur when the processes of design and implementation of an intervention are flawed or based on faulty information, assumptions, or principles. The “dark-side” consequences in CPTED can occur both in outputs and outcomes of the project logic model of CPTED intervention. The program logic model, in which the details

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of program intent (intended outcomes), inputs, outputs, and the reasoning for them are made explicit, provides a straightforward tool for exploring “dark-side” consequences of CPTED.

Identifying CPTED “dark-side” possibilities in this way is beneficial to many aspects of CPTED and criminology. It provides a sound basis for identifying missing or faulty data, erroneous assumptions, and flawed design and management planning; it also identifies where improvements are needed in criminological theory and CPTED principles.

A useful framework to assist in weighing all of the potential CPTED concepts is to adopt the 3D approach (Crowe, 1991, 2000). This process emphasizes that all spaces require a designated purpose that socially, culturally, legally, or physically defines acceptable activities/use patterns. The 3Ds refer to the *designation* and *definition* of the purpose and acceptable behaviors of a space, which can then be supported by the *design* of that space. A range of questions about designation, definition, and design include the following (Crowe, 2000):

- Is there a clearly designated purpose for the space?
- Is the use of the space clearly defined?
- Does the design match the intended use?
- Does the space clearly belong to someone/some group?
- Does the design facilitate access control and promote surveillance?
- Is there any conflict or confusion between purpose and definition?
- Are there any use/user conflicts?

This simple process can also assist in highlighting and potentially avoiding “dark-side” issues.

Common “dark-side” outcomes of CPTED revealed by the program logic model (and from experience) include issues relating to governance and crime risks, the excessive use of target hardening, the problem of “stand-off space,” CPTED design not defended or repurposed by criminals, the institutionalization of CPTED, and issues around social exclusion. The latter specifically concerns the potential for CPTED to result in “crime prevention through *exclusionary* design.”

Governance and Crime Risks

“Governance” has come to mean any process of governing any formal or informal arrangement of people. The role of governance is the devising of rules, processes, and administrative arrangements to manage societies or social groups—in contrast to politics, whose focus is decision-making. As a concept, the idea of governance emerged around the 16th century (Foucault, 1991) with John Fortescue’s “Difference Between a Limited

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and Absolute Monarchy” (1714) on how those in power organize and control a nation or city.

Maintaining order and controlling crime is an aspect of the larger-scale governance of a society. With the extension of the meaning of governance to the governing of any form of organization, the administrative processes of crime prevention can now also be interpreted as part of that governance (O’Malley, 1992). Indeed, Parnaby (2007, pp. 74–75) argues that CPTED is “a strategic neo-liberal form of governance … [that] … has become a competitive enterprise as interested parties look to capitalize on what it has to offer.”

In recent years, the privatization of security has created a user-pays system (O’Malley, 1992) whereby the crime prevention aspect of governance becomes in part “a function of whether property owners, designers or managers are willing and / or able to spend the necessary funds” (Parnaby, 2007, p. 76). By implication, the opportunity to reduce crime is not equitably distributed or available to all sections of the community.

The inclusion of crime prevention into governance has resulted in concepts such as the “war on crime.” In *Governing Through Crime*, Simon (2007) argues that the promotion of the concept of the “war on crime” has created a culture of fear and the notion of the citizen as a victim of crime. For Simon (2007) this facilitated governance through the framing of crime and crime prevention as an aspect of governance. It results in the potential for a “dark side” in the role of CPTED in governance by which CPTED-focused outputs can result in adverse outcomes of quality of life contrary to the aims of good governance.

For Parnaby (2006), CPTED and crime prevention becomes seen as risk management when it is applied in the framing of crime prevention as an aspect of governance. As a consequence, CPTED experts are regarded as similar to other risk management experts who identify risks (inputs in program logic terms) to be addressed. The processes for addressing those risks in order to produce crime prevention outputs can result in the outcome of reduced crime, which in turn supports more accurate governing by reducing the risks of deviation from the intended outcomes of government. There are obvious parallels with other fields. For example, an environmental consultant identifies risks linked to global warming and a nutrition expert highlights risks associated with fast food. For Parnaby (2006, p. 2), CPTED experts “must identify, rationalize and concretize the crime-related risks in question so that the layperson believes CPTED to be a logical and prudent course of action.” The establishment of this latter belief is an output rather than an outcome.

It has been argued that CPTED is a process rather than an outcome (output in program logic terms) (Atlas, 2008; Cozens, 2014, 2016; Crowe, 2000), and in practice CPTED processes often fail to adequately consider crime risks (Atlas, 2008; Clancey, 2010; Clancey, Fisher, & Lee, 2015; Cozens, 2014, 2016). The implication is that the processes of CPTED are compromised so that the application of CPTED principles results in incorrectly designed outputs because they are based on inadequate inputs. This can be

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problematic. It has been likened to a medical practitioner suggesting treatment for patients without initially diagnosing their problems (Cozens, 2014, 2016). As observed by Atlas (2008, pp. 141–142): “Risk assessment is the problem-seeking part of the CPTED process. *Problem-solving* properly occurs *after* the risk assessment and problem seeking.” Even when risk assessment is conducted, it is often limited by the availability of crime data and undertaken too late in the solution development process (Clancey et al., 2015; Monchuk, 2011), such that it is “almost as an after-thought” (Clancey et al., 2015, p. 286).

The failure to assess local crime risks and the application of CPTED purely as a method of rules and principles applied to physical aspects of sites results in CPTED outputs being problematically produced in a “one-size-fits-all” manner (Cozens, 2014, 2016). This can result in a CPTED “dark-side” issue whereby CPTED outputs, through lack of matching to crime risks and other factors, can result in less-than-optimal quality-of-life outcomes.

The same factors have also resulted in fallacious thinking and faulty beliefs that particular forms of urban design might align with CPTED principles and reduce crime more than others. This “dark side” of CPTED is described in more detail in Cozens (2014), where he draws attention to the erroneous but widespread CPTED and urban planning beliefs that high-density settings and permeable, mixed-use streets are associated with low rates of crime. In fact, in many cases, high-density settings and permeable, mixed-use streets are often associated with much higher rates of crime than less dense, less permeable, single-use settings (see Cozens, 2014, 2016; Cozens & Hillier, 2012).

Excessive Use of Target Hardening in CPTED Solutions

Target hardening can be implemented in many ways, and, simply, it is about making a target of crime less attractive (more difficult) to criminals. It is a well-established strategy and commonly applied to reduce burglary, theft of/from motor vehicles, and graffiti (Clarke, 1997; Cornish & Clarke, 2003). The intention outcome is to deter the offender from committing the burglary, theft, or graffiti, or whatever offense, more than by conventional crime prevention practice. The concept of target hardening, therefore, is relative and refers to increasing the security of whatever is current. Where target hardening is applied as an ongoing continuous process, it can result in increasing levels of security and restriction of access. The result is a tendency toward buildings becoming “fortresses,” with increasingly limited access.

The role of many buildings is social, with access intended to be relatively informal and public. Target hardening leads to buildings becoming more antisocial and more private, with access becoming more controlled, more formal, and more restricted. This has prompted Raymen (2015, p. 2) to ask whether, if we use CPTED target hardening, we are “designing-*in* the decline of symbolic efficiency and the development of potentially harmful subjectivities by designing-*out* the social?” That is, is the reduction in quality of life from the target hardening greater than the benefits in crime reduction? It has been

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suggested there are examples where too much “hard” security measures and target hardening have been implemented under the banner of CPTED (Hollander, 2005).

The overfortification of buildings due to target hardening can be seen in various environmental settings, including gated communities, public space, retail shopping centres/malls, the nighttime economy, and nightclubs. In the book *City of Quartz*, Davis (1992) writes about a form of hostile privatization in Los Angeles, where the “hardening” of public spaces (largely against the poor and the homeless) has occurred. Geyh (2009) suggests that this “hardening” has spread to many other American cities. Davis (1992, p. 324) discusses such overfortification as “[a] tendency to merge urban design, architecture, and the police apparatus into a single comprehensive security strategy.”

It could be argued that gated communities can represent excessive use of a range of CPTED principles, not just target hardening. McKenzie (2011) estimates that gated communities represent nearly one fifth of the total housing stock in the United States and, significantly, 60% of all new housing. Schneider and Kitchen (2002) suggest it was the strong influence of Newman’s defensible space (1972) on crime prevention planning in the United States that stimulated this proliferation of gated communities.

Flusty (1997) argues that in the design of walled/gated communities and/suburbs, there are five new “species” of space to protect the citizen-consumer. These are specific to and highlight the impact of different types of defensive architecture, particularly in overfortified communities (see Table 4).

Table 4. Flusty’s (1997) Five “Species” of Space

“Species” of Space	**Brief Explanation**
Stealthy space	Cannot be found, obscured/camouflaged; for example, objects/ grade changes.
Slippery space	Inaccessible, missing paths, contorted, protracted—cannot be reached.
Crusty space	Inaccessible due to walls, gates, and checkpoints.
Prickly space	Cannot be comfortably occupied since they are defended by, for example, wall-mounted sprinkler heads to remove loiterers.
Jittery space	Cannot be used unobserved due to monitoring by security patrols and/or CCTV.

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Hostile/defensive architecture is also apparent at the micro scale in such fortressed outcomes. A range of defensive design and architecture has evolved to discourage people from carrying out a variety of “unwanted” behaviors, many of which are not crimes (see Table 5 for a brief summary of some of these).

Table 5. Hostile/Defensive Architecture

Objective/Behavior Being Discouraged	**“Hard” Defensive Architecture(S) Designed to Achieve the Objective**
Skateboarding	Steel L bolts, metal studs, strips, and other devices to break up smooth surfaces.
Congregating youths	Mosquito sound device uses high-pitched frequencies to annoy young people (these cannot be heard by older people) Loud music (often classical) Pink lights to highlight acne Use of water sprinklers Curfews to exclude youths from specific spaces and times
Rough sleeping or lingering on seats/benches	Coin-operated benches to retract spikes Fences around benches Barriers around hot air vents Benches divided into individual sections Use of water sprinklers
Public urination	Water-resistant paint repels liquids, which then splashes back onto the perpetrator.

Figure 3 shows an example of defensive architecture where a cage has been installed to cover an air vent at a university to prevent the homeless from sleeping there. Figure 4 is an example of the use of floor studs to discourage sleeping or sitting outside a Tesco’s branch in London.

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Figure 3. Cages covering an air vent at British university.

(*Source*: Lewis Hopkins)



Figure 4. Floor studs to discourage sleeping or sitting.

Midtveit (2005, p. 32) reports on the use of loud opera music and Christmas carols to symbolically define territory and discourage homeless people and drug dealers from congregating at the entrance to the Copenhagen railway station. Midtveit (2005) contends that this is different from playing calming music to enhance feelings of safety in car parks in Sweden.

Although loud opera music is a “soft” measure, it seems not to overtly “exclude.” Other devices, however, are designed specifically to exclude. Little (2015) discusses public space in Britain and the use of the “mosquito” device. Howard Stapleton devised the Mosquito Ultrasonic Teenage Youth Deterrent, and over 9,000 have been sold in the United Kingdom since its launch in 2005, with distributors in the Netherlands, Belgium, Denmark, Germany, Ireland, Sweden, Switzerland, Egypt, Israel, Japan, Mexico, Morocco, New Zealand, Australia, North America, and the United States (Compound Security Systems, 2012). It is marketed as “the solution to the eternal problem of unwanted gatherings of youths and teenagers in shopping malls, around shops and anywhere else they are causing problems” (Little, 2015, p. 167). Little (2015, p. 168) observes how it is used for “actively enacting social exclusion for a particular population.” He suggests it *could* be viewed as a CPTED strategy (i.e., could be seen as target hardening or access control) and is an obvious means of defining territoriality of some social groups to the exclusion of others. It reflects several of the components of CPTED “as a means of access control, activity support, image management and target hardening” (Little, 2015, p. 170).

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Little (2015, p. 180) concludes, “young people occupying public spaces are not breaking any laws. The Mosquito, however, *is* breaking laws.” It breaks equality and anti-discrimination legislation. Many of these are cases of the outputs of CPTED processes of target hardening acting to result in outcomes in the world that reduce the overall aim of improving quality of life in an egalitarian manner.

Stand-Off Space and CPTED

Stand-off space has become an element of “fortress architecture” and CPTED target hardening. It has been used to combat terrorism in Northern Ireland since the 1970s (Coaffee, 2004). Stand-off space is a space around buildings and built resources that is overlaid with overfortification and access control. The aim is to provide a zone and boundary such that attacks and blasts on the other side of the boundary have only a limited effect on the buildings that the stand-off space surrounds. A primary focus of stand-off space is to reduce vehicle access on the basis that vehicles can carry larger (class 1) explosive devices than the class 2 levels of explosive that can be carried by an individual (U.S. Department of Defense, 2013).

Stand-off space also provides a space for improved controlled surveillance and time for response to adverse events. Efforts to “design out terrorism” using “defensible space” increased in the United States after the 1993 World Trade Center attack, and this also occurred in London and Manchester following attacks by the Irish Republican Army (IRA) in 1992 and 1993 (Coaffee, 2004). In each case, the primary CPTED and anti-terrorism design approach has been grounded on the use of stand-off space as the foundation for other CPTED methods: typically surveillance, access control, and target hardening.

In the public realm, any responses to the risk of terrorism require a balanced approach, since they pose “serious consequences for urbanity and the civic realm and in particular for social control and freedom of movement” (Coaffee, 2004, p. 209). One result has been a drive toward making cities safer via the use of “invisible security” or “unobtrusive security,” sometimes considered as “soft” measures compared to the “hard” measures of fences, razor wire, and concrete walls (Coaffee & Bosher, 2008). An example is the Emirates football stadium in North London—home of the Arsenal Football Club, which is surrounded by various ornaments, streetscape designs such as reinforced benches, large canons (the insignia of the club), and large toughened lettering which spells out the clubs name (see Figure 5), all located to prevent vehicle access.

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Figure 5. Reinforced concrete barrier at the entrance to the Emirates stadium.

More widely, many property owners (e.g., banks, city governments, utilities, and the U.S. government) use a range of target hardening strategies based on stand-off space to try to secure vulnerable facilities and reduce personal safety fears after the September 2001 terrorist attacks on the World Trade Center in New York (Hollander, 2005). These methods have included street closures and the erection of concrete barriers, enabling more effective use of CCTV (Hollander, 2005).

These measures appear to have secured the structures and their occupants, but for Hollander (2005) they compromise local social, economic, aesthetic, and transport issues. Before the 9/11 attacks, many of the spaces around city facilities were vibrant and well-used social spaces (e.g., used farmers' markets, music concerts, and family picnics). These locations are now fortress-like, sterile, and barren security zones (Hollander, 2005). Raymen (2015, p. 4) is critical of using CPTED (target hardening) to create such sterile public places, arguing that it can "design spaces so that they are deliberately absent of anything resembling actually existing public sociability, in which public space becomes empty space to move through, rather than remain in." This is the "dark side" of any CPTED initiative that uses stand-off distance either alone or in conjunction with other CPTED methods in socially dense settings.

Hollander (2005) suggests it is possible to design and manage security zones more effectively to balance security and openness. It is also possible to balance security and environmental sustainability (Coaffee & Bosher, 2008) by using "softer" measures that are secure and "green." This will be a challenging task for the future, and one that could represent a form of sustainable urban environmentalism (Cozens, 2002). For the future, the challenge is about "balancing the perceived risks with the broader objectives of maintaining healthy, liveable and sustainable towns and cities" (Cozens, 2014, p. 217, 2016).

CPTED: Crime Prevention Through Exclusionary Design?

Ethically, CPTED is used in an egalitarian manner to support the law. However, CPTED intrinsically has exclusionary properties because many CPTED principles are intended to exclude offenders/criminals.

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The exclusionary properties of CPTED can be (and have been) used to provide privilege to some groups in society at the expense of others. This occurs in CPTED via a variety of methods from specific exclusion by limiting access to only the permitted, to the discouragement of certain social groups. One subtle method is by limiting access to those who can afford private transport. This can be achieved by making access difficult by foot or public transport, thus acting to inhibit those who are poorer and do not own a private vehicle.

Key dimensions of this exclusionary “dark side” of CPTED include who, when, and how it is used to exclude. CPTED interventions can be used in many ways to segregate the poor from the rich or minimize the challenges to powerful elites, e.g., by controlling how protests can be undertaken.

This has been a relatively hidden aspect of CPTED in which CPTED principles can be used to disguise or hide social segregation and other anti-egalitarian practices. On a slightly different note, Parnaby (2006) observes how CPTED is used to depoliticize risk by making a binary distinction between legitimate and illegitimate users. It is a value-laden process whose value-ladenness is not well recognized. Effectively, by dividing the world between legitimate and illegitimate users of a resource, this apparently “cleanses CPTED of its inherently subjective elements” (Parnaby, 2006, p. 9) and hides the use of preconceptions about race, ethnicity, socioeconomic status, and gender. It hides anti-egalitarian policies under the he guise of using CPTED to “sort people” into legitimate or illegitimate categories, deciding who belongs, who does not, and who has access to resources.

It is common in CPTED documents to find the uncritical use of the terminology of illegitimate/legitimate users and abnormal/normal users. Critically, the human subjectivity and lack of attention to the political and ethical issues involved in making these kinds of decisions are not to date commonly recognized in the CPTED literature. Indeed, Parnaby (2006, p. 12) has argued that “the fact that members of a community may run the risk of excluding citizens on the basis of discriminatory criteria is not even acknowledged.” For Parnaby (2006, p. 12), this “sorting of people … may or may not be accurate, let alone ethical.” Midtveit (2005, p. 36) suggests that marginalizing and removing certain groups from public spaces “poses … a serious ethical dilemma” and questions the right of those who seek to maintain their notion of “order.”

Currently, part of the role of CPTED experts is to “identify, rationalise and concretize the crime-related risks in question so that the lay person believes CPTED to be a logical and prudent course of action” (Parnaby, 2006, p. 2). It is problematic, as Parnaby (2006) describes, that CPTED experts “responsibilize” the management of crime risks and sorting of legitimate from illegitimate users to make CPTED a moral, ethical, and civic responsibility. This goal of securing and maintaining public compliance to assuming processes of risk management are legitimate is common to all risk management experts (Parnaby, 2006). By its nature, this kind of persuasion will always have the potential for “dark sides” because of the lack of transparency and validation with their intrinsic

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potential for behind-the-scenes corruption of outputs to shape outcomes to the preference of some stakeholders. An example, as Midtveit (2005) notes, is how those engaged in crime prevention (including architects and planners) work in the interests of their clients and have responsibility over a limited space. She suggests that this is not necessarily a good strategy because “the planning of safe communities is therefore directed towards the communities of the few” (Midtveit, 2005, p. 32).

Using the project logic model analysis, these are issues in which inadequate inputs are used uncritically to develop CPTED outputs that may contradict the intended outcomes of improving quality of life.

CPTED Design—“Undefended Space” and “Offensible Space”

Designing an environment according to CPTED principles of defensible space does not necessarily mean that residents and users will act as guardians within that environment. Merry (1981) has observed how different communities adopt territoriality in different ways and to different degrees. Furthermore, adverse local socioeconomic conditions may increase levels of fear and reduce the potential for resident intervention with individuals withdrawing into their home and failing to provide the eyes on the street (Jacobs, 1961) vital to the effectiveness of CPTED (Merry, 1981).

An additional “dark side” issue occurs when criminals and drug dealers use the well-designed defensible spaces created with the use of CPTED strategies by legitimate authorities to protect their illegal activities. Atlas (1991) notes how criminal gangs manipulate CPTED strategies, such as access control and surveillance, to obstruct law enforcement to actively benefit their criminal enterprises (Atlas, 1991). He refers to this as “law and order obstruction through environmental design” (Atlas, 1990) and introduced the concept of “offensible space” sometimes known as “reverse” CPTED, whereby criminals use environmental design modifications to their own advantage (Atlas, 1991). Atlas studied 21 crime sites and observed how criminals used defensible space features to watch and identify police and others approaching the area and modified the environment to hinder this access. Later, Atlas (2008) suggested that the successfully implementation of “offensible space” by some criminals is due to the resources they possess and the consensus they may have created locally through intimidation and fear. Such criminals manipulate the physical environment and the “character” of their own community to increase their own personal security. One example of the use of such “offensible space” was in Hulme (Manchester) in the United Kingdom (Mackay & Davey, 2006).

Using the project logic model analysis, these are issues in which inadequate inputs are used uncritically or via an incomplete design process (that hasn’t included criminal

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appropriation of the resources) to develop CPTED outputs that contradict the intended outcomes of improving quality of life and reducing crime and the fear of crime.

The above and related realizations promoted the development of 2nd generation CPTED, which has a social dimension. A detailed discussion is outside the scope of this article, and readers are directed to other sources (e.g., Cozens, 2014, 2016; Saville & Cleveland, 1997, 2003A, 2003B, 2008). However, essentially, it concerns the support for social cohesion within the community to promote self-policing by residents (Saville & Cleveland 2008). CPTED applied only as a physical outcome, rather than a process that includes the local community, can result in this "dark side" CPTED issue, whereby "defensible space," which is "capable of being defended," becomes "undefended or offensible space" (Merry, 1981).

Institutionalization of "Dark-Side" Problems

Institutionalization is the incorporation of formalized processes into an institutional arrangement for the use of staff and resources to achieve particular ends. The usual reasons for institutionalization include standardization, improving efficiency, and reducing costs. While institutionalization can offer cost-benefit advantages (mainly via reductions in internal transaction costs), it also results in ongoing potential for "dark-side" problems of reduction in quality that can reduce effectiveness as outlined by Deming (1986). These include:

- Reductions in quality of outcomes
- Overly rigid processes
- The establishment of organizational traditions that produce poorer outcomes than otherwise
- Delays in change and evolution
- Waste of resources and time in factional wars
- Enethical behaviors, particularly in management
- Lack of flexibility
- The establishment of dogmatic planning based on outdated principles
- Delayed or no innovation and development; outcomes opposite of those intended

These issues apply to the institutionalization of CPTED, whether in police departments, security businesses, local government offices, housing departments, academic institutions, or other professional organizations.

Some "dark-side" issues of institutionalization of CPTED result from its relatively unusual position at the intersection of at least four different professional fields: policing, law, planning, and community development. Any or all of these disciplines can create institutionalization-derived "dark-side" outcomes due to CPTED as an integrative field being locked into the preferred paradigms of each professional group and

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institutionalized. For example, in the disciplines of architecture, planning, and urban design, it is often assumed that CPTED principles always inherently support the use of permeable, high-density, and mixed-use developments—when this is not always the case. This design-led and outcome-focused perspective therefore fails to apply CPTED as a process—thereby ignoring locally specific issues and contexts (for a more detailed discussion of this research, see Cozens, 2014, 2015A, 2015B, 2016; Cozens & Hillier, 2012, Groff, Taylor, Elesh, McGovern, & Johnson, 2014; Johnson & Bowers, 2010). Assumptions made by different institutions/disciplines potentially slow the pace of correction and improvement, adaptation, new theory development, and the addressing of flaws in theory and practice. These institutionalization "dark-side" problems are not yet well addressed in the CPTED literature.

Improving CPTED to Reduce "Dark-Side" Problems

There are seven obvious strategies to reduce the possibility of "dark-side" problems in CPTED:

- Increase the use of data and critical analysis
- Reduce the use of CPTED principles in a "cookie-cutter" manner to create designs for CPTED interventions
- Promote the use of CPTED as a "process" rather than a "design outcome"
- Improve the evaluation and review during the design and implementation stages of CPTED and in the review of post-implementation outcomes
- Pay critical attention to ensuring the inclusion, as inputs, of all relevant information
- Pay critical attention in the design phase to the potential for outputs to have adverse outcome effects
- Increase publication of adverse outcomes resulting from what seemed to be correct and appropriate CPTED interventions

There is currently a broad base of simplified advice on developing CPTED solutions of the form "for situation X use CPTED element Y." This can be seen as a "cookie-cutter" approach to creating CPTED designs and interventions as it does not explicitly check for and avoid adverse outcomes. Nor does it check whether the outcomes from the changes are worth the investment. Using CPTED as a process, rather than using it as an oversimplistic design outcome, can help to avoid and minimize related "dark-side" outcomes.

In parallel, the potential for unexpected "dark-side" outcomes can be reduced by undertaking evaluation and review during the design and implementation of CPTED interventions and afterwards. To date, ongoing evaluation and review have been absent

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from CPTED design processes. Their implantation, however, is potentially straightforward, starting as a minimum, with a reflective journal for each CPTED project.

At the larger scale, the potential for learning from other CPTED practitioners' adverse experiences of "dark-side" outcomes has been limited by lack of communication. The public communication of CPTED has primarily consisted of descriptions of implementations. There has been very little literature detailing exactly what successes were achieved and even fewer publications about failures or adverse consequences of CPTED. Identifying and avoiding potential "dark-side" adverse outcomes will be potentially more achievable when organizations and individuals begin publishing and sharing their "dark-side" experiences.

Reflections on the "Dark Side" of CPTED and the Future

This article has provided an overview of the evolving concept of CPTED and explored the potential "dark side" of CPTED. Understanding how CPTED can be abused/misused and misapplied can hopefully make a significant contribution to its continued refinement and evolution as well as to better outcomes in terms of reductions in crime and the fear of crime and in an improvement in quality of life.

The field of CPTED will certainly benefit from the ongoing reconceptualization, recommended by Ekblom (2011) and others. This may assist in redressing some of the "dark-side" issues associated with institutionalization discussed in this article.

Significantly, for those charged with applying CPTED, acknowledging "dark-side" issues will potentially improve our understanding of how CPTED works (or not). Using CPTED as a process (not an outcome) can be promoted and critically analyzed using program logic models, and these can assist in identifying, acknowledging, and minimizing "dark-side" CPTED issues. Collaborative working across different institutions will also help highlight and potentially minimize "dark-side" CPTED issues.

Significantly, more critical inspection and scientific evaluation of CPTED interventions is required to deepen our understanding of what might work best in specific contexts for the different institutions that currently operationalize CPTED.

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