Article

What Is CPTED? Reconnecting Theory with Application in the Words of Users and Abusers

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Abstract   Crime prevention through environmental design (CPTED) represents a multifaceted approach to crime reduction that draws upon theories from environmental criminology, architecture and urban design and requires the commitment of agencies as diverse as police, planners, and housing developers. Its importance as a crime reduction approach has been formalized through strategy, policy, and regulation and its effectiveness has been confirmed in evaluations (see Brown, unpublished data, Pascoe, 1999, Armitage, 2000, Teedon *et al.*, 2009; 2010, Armitage and Monchuk, 2011). Yet there remains a lack of clarity regarding CPTED's definition, scope, and crucially, the fundamental components that form its definition. Conscious of the need for clarity and consistency, this article presents the findings from in-depth interviews with a sample of 10 incarcerated, adult, male burglars and 10 Designing Out Crime Officers in England and Wales. The method was exploratory and inductive, with participants being encouraged to express their perceptions of housing design features and the association of these features with burglary risk. The findings reveal key similarities between the users and abusers of CPTED and confirm (and elevate) the significance of features such as surveillance. However, other features of design traditionally considered as critical to burglary risk are afforded less importance—raising questions regarding terminology, weighting and redefinition.

Introduction

The influence of place on crime risk is well established within the study of crime. From the work of the University of Chicago School of Sociology in the 1920s and 1930s (Burgess, 1916; Park *et al.*, 1925) to the study of Environmental Criminology in the 1980s and 1990s (Brantingham and Brantingham, 1981) and, more recently, the interdisciplinary focus of Crime Science (Smith and Tilley, 2005), research consistently confirms that the location of a property plays a key role in predicting future crime risk (Armitage, 2006). This influence works at the macro, or neighbourhood level—for example, distance of property to a transport interchange (Groff and LaVigne, 2001), distance of a property to an offender's residence (Bennett and Wright, 1984; Rengert and Wasilchick, 1985; Wright and Decker, 1994; Bernasco and Luykx, 2003; Bernasco and Nieuwbeerta, 2005), and distance of a property to a footpath/pedestrian walkway (Armitage, 2006; 2013). This influence of place also works at the

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micro, or property level—once a neighbourhood has been selected, which individual properties are identified by burglars as suitable targets? The individual features of housing design confirmed to play a role in burglar's target selection include, but are not limited to, the extent to which a property is overlooked by neighbouring dwellings, the orientation of dwellings in relation to the street on which they are located, the standard of physical security, and the level of access to the rear of the property (Brown and Altman, 1983; Cromwell et al., 1991; Brown and Bentley, 1993; Armitage, 2006; 2013; Tseloni et al., 2014).

Research commencing in the 1960s and 1970s illustrated the role that design can play in this place-based approach to crime prevention (Jacobs, 1961; Wood, 1961; Angel, 1968; Jeffery, 1971; Newman, 1973). In the ensuing decades, the concept of Crime Prevention through Environmental Design (CPTED) became increasingly recognized as an effective approach to the management of crime (Poyner, 1983; Poyner and Webb, 1991; Armitage, 2000). CPTED aims to reduce crime by influencing the design, build, and management of the built, and sometimes natural, environment. Armitage (2013) defines CPTED as: 'The design, manipulation and management of the built environment to reduce crime and the fear of crime and to enhance sustainability through the process and application of measures at the micro (individual building/structure), meso (neighbourhood) and macro (national) level' (Armitage, 2013, p. 23). CPTED is largely described, particularly within academia, according to a series of principles or components. These generally focus upon limiting through movement, maximizing natural surveillance, ensuring that physical security is commensurate with crime risk, ensuring that properties and their surrounding areas are well managed and maintained, and maximizing what is often referred to as territoriality. Both the number and terminology of these components vary considerably, as Ekblom (2011, p. 8) states: 'Terms vary (this is part of the problem)'. As an example,

Poyner (1983) outlined the four principles of CPTED as surveillance, movement control, activity support and motivational reinforcement. Cozens et al. (2005) extended this to the seven principles of defensible space, access control, territoriality, surveillance, target hardening, image and activity support. Montoya et al. (2016) in their study of CPTED in the Netherlands, referred to the six principles of territoriality, surveillance, access control, target hardening, image/maintenance and activity support. Armitage (2013) offered yet another combination of physical security, surveillance, movement control, management and maintenance and defensible space and Cozens and Love (2015) updated their original seven components to include territorial reinforcement (as opposed to territoriality), natural surveillance (updated from surveillance), image/space management (as opposed to image), natural access control (as opposed to access control), legitimate activity support (revised from activity support), target hardening (remains the same) and geographical juxtaposition.

Before returning to the emphasis of this article—the need to reshape, refocus, and clarify the specific meaning of CPTED, it is worthwhile reminding the reader of the progress made in recognizing the importance of crime prevention within the planning system. The purpose of this article is not to challenge or refute that importance, but to encourage its development through reconnecting CPTED with what Ekblom (2011, p. 8) refers to as 'its intellectual blood supply'. By developing a consistent and controlled vocabulary, it is our hope that CPTED can reconnect with Crime Science—thus, enhancing its position as an effective and credible crime prevention approach, and that there can be enhanced consistency, confidence and, thus, credibility, for those tasked with interpreting and applying it on the ground.

The importance of CPTED

While an increasing emphasis upon deregulation within the planning system (Armitage (2013) will give a full overview) has threatened the recognition

of crime prevention within the design and build of housing, the overall direction of progress has been positive. The 'National Planning Policy Framework' was introduced through the Localism Act (2011), and guides local planning in England and Wales (Department for Communities and Local Government, 2012a). Page 15 of the Framework states clearly that crime prevention should be a key factor in Local Plans, thus influencing planning decisions: '. . . planning polices and decisions should aim to ensure that developments . . . create safe and accessible environments where crime and disorder, and the fear of crime, do not undermine quality of life or community cohesion'.

The Planning Practice Guidance (Department for Communities and Local Government, 2012b), introduced through the Taylor Review of Planning Guidance (2012), while cancelling the existing planning guidance that focused specifically upon crime prevention—Safer Places, has continued to emphasize the important role that design can play in the prevention of crime.

> Designing out crime and designing in community safety should be central to the planning and delivery of a new development . . . the prevention of crime and the enhancement of community safety are matters that a local authority should consider when exercising its planning functions under Town and Country Planning legislation. (Paragraph 10)

The 'Modern Crime Prevention Strategy', published in March 2016, highlights the importance of CPTED, with opportunity being identified as one of the six drivers of crime (thus, opportunity reduction being an essential part of any crime prevention package). Specific reference is given to designing out crime, with support shown for Secured by Design (SBD), the UK police-led award scheme that sets standards for the design and build of homes, based upon the principles of CPTED.

> Designing crime out of homes and the built environment: We are working with the police to maintain the 'Secured by Design' brand, which is an important source of advice on how design of, for example, housing estates and shopping precincts can prevent crime and anti-social behaviour. (Home Office, 2016, p. 16)

Her Majesty's Inspectorate of Constabulary (HMIC) (2014) inspection of crime prevention, police attendance, and the use of police time— 'Core Business', emphasizes the importance of crime prevention within modern policing, yet recognizes its somewhat inferior position when considering alongside front-line policing.

> Crime prevention remains today the primary purpose of the police. In that respect, nothing has changed. Yet in too many respects, crime prevention receives in policing a priority which is beneath that of apprehending offenders. This report explains why this must be changed and why crime prevention needs to be restored in the mind of every police officer to his [sic] highest purpose. (HMIC, 2014, p. 4)

Alongside its recognition within policy, research has confirmed the importance of design in the reduction of burglary. Reductions have been demonstrated for individual design features such as limiting through movement (Johnson and Bowers, 2010; Armitage et al., 2011), the presence of symbolic barriers (Brown and Altman, 1983; Armitage, 2006; Montoya et al., 2016) and enhanced natural surveillance (Armitage, 2006; Armitage et al., 2011)—to name a few. These reductions are also clearly demonstrated in evaluations of interventions that implement CPTED features in combination—such as the UK's SBD (Brown, unpublished data; Pascoe, 1999; Armitage, 2000, Teedon et al., 2009; 2010;

Armitage and Monchuk, 2011). Those advocating the Security Hypothesis in explaining the international crime drop (Farrell *et al.*, 2014) have clearly recognized the role that planning policies, incentives and regulations that require or encourage enhanced security, have played.

Reconsidering CPTED

This, albeit brief, review has illustrated the progress made in recognizing the need to consider crime prevention within the design and build of housing. However, it is clear that the primary application of this process—CPTED, needs to change. CPTED needs to reconnect with Crime Science and Environmental Criminology and regain intellectual credibility as a scientific approach to crime reduction. It needs to reconnect with practice—ensuring that both academics and practitioners are applying the same terminology and definitions, and it needs to reconnect with the crime problem—primarily to evolve with changing patterns of offending, changing targets, changing drug use, and changing *modus operandi*.

To restate the point, CPTED has suffered from a severe lack of clarity—clarity in definition and scope, and clarity in terminology regarding the components that make up this approach. Just a small selection of authors (presented earlier) define the components of CPTED differently. Crowe (2000, p. 220) argued that '. . . the greatest impediment to the widespread use of CPTED is ignorance'. It is the view of the authors that lack of clarity poses a much greater risk to this area of criminology. In his 2009 paper—'Reconstructing CPTED'—Ekblom argues that such uncontrolled vocabulary would not be accepted within the natural sciences. We argue that this is equally unacceptable in the social sciences, and that this lack of precision has left CPTED behind as a credible area of Crime Science.

CPTED needs to reconnect with its users—from the field of both police and planning. While academics have identified albeit differing components that form the basis of CPTED, a

review of police and planning guidance and policy suggests little evidence of such explicit categorization. SBD (Police Crime Prevention Initiatives, 2016), as well as previous versions of the same standard, take the user through the development from (for example) the layout of the road on which the property is located, to the communal areas, dwelling boundaries, gable ends and walls, surrounding footpaths, dwelling identification, to the specific security of the property itself—the windows and doors. There is no segmentation of these specific standards into the five, six or seven components defined by CPTED academics, and this raises concern regarding the evolution of CPTED—from whose point of view has this been developed and refined?

Finally, it is essential that CPTED reconnects with the specifics of existing crime problems. Patterns of offending change, as do the methods by which offenders commit crimes and this can be influenced by (for example) improvements in the quality of security products as well as changes in patterns of drug use—and the subsequent influence on the level of force or persistence used.

SBD New Homes (2016, p. 4) highlights the importance of evolving to keep up with changes patterns and trends in offending: 'The Police Service continually re-evaluates the effectiveness of SBD and responds to emerging crime trends and independent research findings'. This same message is highlighted in both HMIC's (2014) 'Core Business' and the recent 'Modern Crime Prevention Strategy' (2016):

> As the volume of more familiar types of crime falls, modern technology provides offenders with new ways of committing crimes with what they believe to be less risk to themselves: less risk of physical apprehension in the act, and lower risk of detection. The police need to understand and adapt to these

new methods and types of criminality. (HMIC, 2014, p. 5)

We need to recognise that the crime prevention challenge has evolved. (Home Office, 2016, p. 2)

At present, there is little evidence of this evolution or adaptation.

The extent to which definitions of CPTED differ is not simply a matter of semantics. The authors would argue that this lack of clarity has two clear risks. The first relates to the scientific credibility of this subject. While the last two decades have seen many areas of Environmental Criminology grow in both status and popularity, CPTED remains a somewhat 'niche' subject largely dominated by practitioners (albeit referred to here as a critique, this does have many advantages). The second risk relates to the extent to which success can be achieved and measured. CPTED as an intervention needs to be defined and definable. At present, we know what is labelled as CPTED, but what does this actually entail? If this remains open to interpretation, there is a risk that what is actually implemented is not specifically CPTED, as Ekblom (2011) highlights: 'There is a tendency to use the label CPTED indiscriminately to cover everything that aims to prevent crime in the built environment' (p. 9). If we are not clear regarding what constitutes a CPTED intervention, how can we measure its effectiveness?

Research rationale

The rationale for this research is clearly rooted in the need to clarify the terminology used by practitioners of CPTED, specifically relating to what is often referred to as its principles or components, as well as ensuring that those components reflect what those abusing CPTED (burglars) believe to be the most influential in their decision-making processes.

This research aims to assess the extent to which there is consistency in the terminology utilized by police Designing Out Crime Officers (DOCOs)[1] when describing what they consider to be the design features associated with crime risk on one housing development; to what extent do they use the same terminology and to what extent do they agree regarding the design features impacting burglary risk. The second facet of the research is to replicate this aim with a sample of burglars—to what extent do burglars utilize the same terminology when describing the design features associated with burglary risk and to what extent do they agree when explaining the importance of these features in influencing their decision-making. Finally, to what extent do the two samples align? Are users and abusers of CPTED using the same language and, perhaps more crucially, are they describing the same risk factors associated with housing design?

The approach to this research is qualitative and entirely inductive. A sample of DOCOs and a sample of burglars are asked to describe, in their own words, what they believe to be the crime risks associated with the design of areas of housing. The importance placed upon this method reflects what the authors believe to be an over-reliance amongst existing CPTED research, upon quantitative (using police recorded crime data), deductive research. There are several extremely comprehensive studies exploring the impact of specific housing design features upon burglary risk (Winchester and Jackson,

[1] Within each police force in the UK, dedicated officers—DOCOs are responsible for assessing planning applications and providing advice on how the built environment can be manipulated to reduce the opportunity for crime and disorder. DOCOs are responsible for liaising with urban designers and local planning officers, to appraise and amend planning applications in an attempt to ensure that the proposed development is as secure as possible. DOCOs are also responsible for delivering the Secured by Design accreditation scheme. Historically, DOCOs have been labelled Architectural Liaison Officers (ALOs) and Crime Prevention Design Advisors (CPDAs). The role is the same; the title has changed to improve consistency.

1982; Van der Voordt and Van Wegen, 1990; Armitage, 2006; Johnson and Bowers, 2010; Armitage *et al.*, 2011; Johnson and Bowers, 2010; Van der Voordt and Van Wegen, 1990; Winchester and Jackson, 1982). These studies have allowed conclusions to be drawn regarding the impact of design features upon the subsequent victimization of a property, and for the components or principles of CPTED to be defined based upon those findings. However, for each of these studies, victimization risk is determined through police recorded crime data.

Besides the focus upon police recorded crime data, many studies have used a deductive approach to defining the principles of CPTED and in doing so, have simply tested existing hypothesis (Winchester and Jackson, 1982; Van Der Voordt and Van Wegen, 1990; Armitage, 2006; Armitage *et al.*, 2011). These studies have generally involved selecting a list of design features, albeit extremely comprehensive, that prior research has identified as playing a key role in influencing crime risk and testing the extent to which these features are present or absent in victimized properties. These are without doubt valuable studies, but at what point did we stop to ask the users and abusers of CPTED to describe what features of design they believe to influence crime risk.

Research has been conducted exploring perceptions of housing and burglary risk (Bennett and Wright, 1984; Wright and Decker, 1994; Ham-Rowbottom *et al.*, 1999; Cozens *et al.*, 2001a,b; 2002). These studies are significant, but this article builds upon these findings by assessing offender perceptions, as opposed to the views of police or planning professionals; assessing the behaviour and perceptions of offenders in 2015/2016, thus accounting for changing patterns in *modus operandi*, drug use, and house design and build; and allowing offenders to describe, in their own words, their perceptions of housing design. This differs from the approach taken by Cozens *et al.* (2001a,b; 2002) where offenders are shown two design options

and asked to select which they view to be the most vulnerable.

It was perhaps Ekblom's (2011) 'Deconstructing CPTED' paper that planted, not the seeds of doubt (the authors in no way aim or dispute the effectiveness of CPTED or to slow the progress of its implementation), but the seeds of a certain hesitance regarding research to date. Ekblom (2011) made it clear that his paper aimed to start a debate on the subject: 'I reiterate here that this article doesn't aspire to complete the task, merely to indicate possible directions and to stimulate debate' (p. 9). It is here that the authors aim to take on this mantle to do more than stimulate debate. This article aims to move towards a clarity and certainty that can allow CPTED to move forward and to reconnect with its users and abusers and the wider academic community.

Research questions

The research questions explored throughout this article are outlined in Table 1 below.

Methodology

This article brings together the findings from two pieces of research. In that sense, it is far from perfect. However, on completing two distinct projects the authors felt that the merits of connecting the two sets of findings far outweighed any methodological limitations.

Offender sample

The offender sample included 10 incarcerated adult males convicted of burglary offences and identified by the Integrated Offender Management Team (based in the prison) to be prolific. The offenders were all based at one prison in the North of England. The offenders were not required to take part in the research and recruitment took place post sentencing to avoid involvement for bargaining purposes. Table 2 summarizes several details relating to the sample of offenders—this includes the

Table 1: Research questions

When describing the features of housing design that influence their decision-making, do burglars refer to some features more regularly than others?	When describing the features of housing design that they believe will influence crime risk, do DOCOs refer to some features more regularly than others?
When describing the features of housing design that influence their decision-making, do burglars reference the same concepts/principles that are presented in existing CPTED literature/theory?	When describing the features of housing design that they believe will influence crime risk, do DOCOs reference the concepts/principles that are presented in existing CPTED literature/theory?
Is there consistency between burglars in the terminology used to describe the concepts/principles of design that are associated with heightened crime risk?	Is there consistency between DOCOs in the terminology used to describe the concepts/principles of design that are associated with heightened crime risk?
Is there consistency between DOCOs and offenders when describing the principles/concepts of design that influence crime risk?	

Table 2: Offender sample (10 participants)

Participant	Summary details	Proportion of images judged as attractive burglary targets
Offender 1	-Started offending at the age of 15/16 years (football-related violence) -Progressed to shoplifting and on to burglary -Committing 5–6 burglaries per day before arrest -Used ecstasy, LSD, and cannabis	69
Offender 2	-Started offending at the age of 13/14 years (breaking into sheds and garages) -Progressed to burglary at the age of 15/16 years -Committing 4–5 burglaries per day before arrest -Not a drug user	69
Offender 3	-Began offending at the age of 4–5 years (dad used to break into pubs and use him to enter through window) -Progressed to burglary -Heroin user	38
Offender 4	-Began offending at the age of 9 years (petty crime) -Progressed to burglary at the age of 15 years -Committing 5–6 burglaries per day before arrest -Crack and heroin user	75
Offender 5	-Committed first burglary at the age of 11 years -Cannabis and ecstasy user	63
Offender 6	-Began offending at the age of 5 years (stealing) -First burglary at the age of 9–10 years -Cannabis, solvents, LSD, ecstasy user -Committing a minimum of 1 burglary per day before arrest	69
Offender 7	-Committed first burglary at the age of 12–13 years -Amphetamine user	75
Offender 8	-Committed first burglary at the age of 15 years -Drug user (not specified)	38
Offender 9	-Began offending at the age of 12–13 years -Committed first burglary at the age of 14–15 years -Amphetamine and cannabis user -Committing 3–4 burglaries per day before arrest	69
Offender 10	-Began offending at the age of 5–6 years (petty theft) -Committed first burglary at the age of 18–19 years -Heroin user -Committing between 1 and 6 burglaries per day before arrest	88

age at which they commenced offending, the age at which they committed their first burglary offence, the extent of their offending and, in the final column, the proportion of the 16 images that they stated they would offend against—this presenting some measure of their commitment to offending/ judgement of risk. Of the 10 offenders, 9 were drug users, and their rate of offending, where specified, ranges from 1 to 5/6 burglary per day.

Interviews took place within the prison (legal visits) with one participant, one interviewer, and one note taker (a note taker was required as no recording equipment was used). Interviews were semi-structured, with participants asked to look at a series of 16 images of residential housing and to describe: 'From what you can see from the photo, can you describe what would *attract* you to this property when selecting a target for burglary.' And 'From what you can see from the photo, can you describe what would *deter* you (put you off) from selecting this property as a target for burglary.' Participants were informed that there was no right or wrong answer and were not prompted during their response.

The 16 images were taken in a variety of different locations across England. They all included residential housing with a mix of properties known to be vulnerable to burglary and those less so. They included a mix of old and new properties, social housing, and privately owned.

Interviews were transcribed and thematic analysis was used to identify patterns or themes in responses. Content analysis was used to count the regularity with which those themes were discussed, and the levels of consistency between offender accounts.

DOCO sample

The sample of DOCOs included participants from 10 different police forces across England and Wales. DOCOs were randomly selected and comprised: 3 serving police officers; 5 retired police officers (who have returned to undertake the DOCO role in a civilian capacity) and 2 civilian

Table 3: DOCO sample (10 participants)

Participant	Background	Length of time in the post (years)
DOCO 1	Serving police officer[a]	8
DOCO 2	Retired police officer[b]	20
DOCO 3	Police staff[c]	18
DOCO 4	Serving police officer	12
DOCO 5	Retired police officer	10
DOCO 6	Retired police officer	20
DOCO 7	Serving police officer	19
DOCO 8	Police staff	16
DOCO 9	Retired police officer	9
DOCO 10	Retired police officer	9

[a]Serving police officer: a warranted police officer that has the legal power to arrest,
[b]retired police officer: former police officer that has returned to work in the police as a member of police staff,
[c]police staff: a civilian member of staff that does not have any prior policing experience.

staff (who have no previous operational policing experience). Table 3 provides a summary of the 10 DOCOs including their background and length in post.

Interviews took place at the DOCO's place of work; there was one interviewer and one participant; interviews were recorded. Interviews were semi-structured, with participants presented with a hard copy version of a site plan for one residential development with which they were unfamiliar. The development comprised: 41 individual properties; 4 blocks of flats (each containing 12 individual flats); car parking (much of this comprised rear parking courtyards); cycle storage and an open green space. Participants were shown the site plan and provided with generic information relating to the development (such as the number of dwellings and car parking spaces). Participants were then asked to spend some time reviewing and digesting the information provided. They were then asked the following two questions: from looking at the site plan, what initially do you *like* about the plan from a crime prevention perspective and why?' And 'What *don't you like* about the plan from a crime prevention perspective and why?' Participants were not prompted during their response. During this

discussion, participants were asked and encouraged to think aloud when undertaking their assessment of the site plan. Any reference to additional plans, such as housing elevations or the landscaping plan, was noted and the participant was provided with this additional information if available.

Interviews were transcribed and thematic analysis was used to identify patterns or themes in responses. Content analysis was used to count the regularity with which those themes were discussed.

Risks and limitations of this study

The first, and most evident limitation is that the findings presented are collected from two distinct research studies—one using an inductive approach to ascertain which design features of residential housing, displayed in a series of 16 images, are judged by offenders to influence crime risk (with the aim of reviewing existing CPTED principles and components). The second using that same inductive approach with a sample of DOCOs to describe which design features of residential housing, displayed in a site plan, were judged to influence crime risk, again with the aim of reviewing existing CPTED principles and components. A more appropriate methodology would have utilized the same images (or plans) on the same of 20 participants (10 offenders and 10 DOCOs). While entirely acknowledged as a weakness, one defence of the use of two sets of 'prompts' (plans versus images) is that images mark the closest representation of a house, and thus, the display of factors that an offender would be judging, that can be presented to an offender in prison (we had considered the use of Street View and other videos, but the use of technological devices such as computers, tablets, and telephones were not permitted in prison). Plans, on the other hand, represent the medium through which DOCOs would judge the crime risk associated with the design features of proposed/new housing. This is not an attempt to rationalize these differences, merely an explanation of the consideration for setting and context that warrants mention regarding this methodology.

While the accounts of active offenders can provide details not captured in other research methods, there are undoubtedly risks and limitations with this approach. The first and most perceptible risk is false narratives from participants. There is a risk that offenders will approach the responses with an element of bravado—for example, 'I'm not deterred by anything', thus underplaying the deterrent effect of certain design features. Conversely, offenders may downplay their boldness—for example, 'No, I wouldn't burgle them', thus risking overestimating the deterrent effect of certain design features. In collecting and analysing offender responses, there must be clear consideration for their motives for participating. Copes and Hochstetler (2014) summarize these as immediate rewards (including financial incentives, conversations with outsiders, a change of setting and curiosity), psychological benefits (including catharsis and helping others) and misunderstanding—the extent to which the participant believes that taking part will influence their sentence or relationship with prison staff.

> The motives that inmates have for participating in research ultimately affect the nature of the stories they relay and the type of information they withhold. (p. 20)

While the participants involved in this study were not offered financial reward, and participation was only offered post-sentencing, it is likely that these elements will have played a role in their decision to take part.

The second risk relates to the sample of offenders. Of the 10 offenders, 9 described themselves as drug users—not just taking drugs, but committing burglaries while under the influence of drugs. The risk associated with this element of the sample is difficult to determine; however, it is highly likely that this will downplay the deterrence effect of specific design features—for example, 'nothing deterred me', 'I would keep going until I got in', 'I felt invincible'.

An additional risk relates to the sample being selected from those burglars who have been detected and sentenced. To what extent does this sample represent unsuccessful, overconfident offenders—those making poor decisions regarding suitable targets? The risk here could be that the sample overplay the deterrent effect of certain design features—for example, 'I don't like culs-de-sac because I was caught on one'. Or that they underplay the deterrent effect of specific design features, because they are, by nature, risk takers.

The main risk associated with the methodology employed to ascertain the views of DOCOs was the potential for participants to view the exercise as an examination; thus, enhancing the likelihood that they would provide standard textbook responses that they believed they should be giving, as opposed to the decisions they make on a day-to-day basis. There is every possibility that this risk could be real.

Finally, it should be acknowledged that, for both offenders and DOCOs, these are small sample sizes—10 burglars and 10 DOCOs.

Findings

Reference to CPTED principles

Taking the five principles of surveillance, movement control, physical security, management and maintenance and defensible space as a starting point (those defined by Armitage (2013)), the responses from the sample of 10 burglars and 10 DOCOs were analysed to establish the extent to which reference was made to the specific term and to the concept described by that term. The findings presented in Table 4 reveal, unsurprisingly, that none of the burglars referred to the specific terms of surveillance, movement control, physical security or defensible space. One burglar referred to management and maintenance.

While it may be expected that burglars would not refer to these specific terms, DOCOs—whose role it is to implement CPTED, would be expected to use consistent terminology. While 9 of the 10 DOCOs

specifically referred to surveillance, just 3 of the 10 mentioned defensible space, 1 of the 10 physical security and management and maintenance and none referenced the specific term of movement control.

When analysing the responses to ascertain the extent to which a concept (as opposed to the exact term) was referenced (see Table 5), the results are revealing. All burglars referred to the concepts of surveillance, movement control and physical security. Of the 10 burglars, 8 referred to the concept of management and maintenance, and 4 of the 10 referred to the concept of defensible space.

For the sample of DOCOs, the concepts of surveillance, movement control and defensible space were referred to by the entire sample. Physical security was referenced by 7 of the 10 and management and maintenance by 3 of the 10.

Table 6 displays the number of specific references to CPTED terms by both the offender and DOCO samples. Unsurprisingly, the offender sample makes very little specific reference to these terms—with just management and maintenance referenced once. Of more concern, is the lack of reference to these terms by the DOCO sample—practitioners not only implementing CPTED on the ground, but also liaising with agencies such as planners, development control, architects and developers. While 55 references were made to the term surveillance, there were only 3 references to defensible space, 1 reference to both physical security and management and maintenance and no specific references to movement control.

When assessing reference to the 5 CPTED concepts, the results reveal that surveillance is referenced on 112 occasions—68 by offenders and 44 by DOCOs (this is in addition to the 55 specific references to surveillance made by the DOCO sample).

Movement control was the second most commonly referenced component of CPTED with 76 references. The concept of physical security was referenced on 65 occasions, defensible space 55 and management and maintenance just 25.

Table 4: The proportion of offenders and DOCOs specifically referencing CPTED terminology

CPTED principle	Proportion of offender sample referencing the specific term ($n = 10$)	Proportion of DOCO sample referencing the specific term ($n = 10$)
Surveillance	0	90
Movement control	0	0
Physical security	0	10
Management and maintenance	10	10
Defensible space	0	30

Table 5: The proportion of offenders and DOCOs referencing CPTED concepts

CPTED principle	Proportion of offender sample referencing the concept ($n = 10$)	Proportion of the DOCO sample referencing the concept ($n = 10$)
Surveillance	100	100
Movement control	100	100
Physical security	100	70
Management and maintenance	80	30
Defensible space	40	100

Table 6: Reference to specific CPTED terms by offenders and DOCOs

CPTED principle	Number of specific references to the term (offender sample)	Number of specific references to the term (DOCO sample)	Total
Surveillance	0	55	55
Movement control	0	0	0
Physical security	0	1	1
Management and maintenance	1	1	2
Defensible space	0	3	3

Table 7: Reference to CPTED concepts by offenders and DOCOs

CPTED principle	Number of references to the concept (offender sample)	Number of references to the concept (DOCO sample)	Total
Surveillance	68	44	112
Movement control	28	48	76
Physical security	52	13	65
Management and maintenance	20	5	25
Defensible space	7	48	55

When assessing responses from offenders and DOCOs (see Table 7), the most commonly referenced concept by the offender sample was surveillance, followed by physical security, movement control, management and maintenance and, finally, defensible space. DOCOs referred to surveillance (accounting for the specific reference and the reference to the concept) most regularly, followed by defensible space and movement control, with physical security and management and maintenance being referred to less regularly.

Surveillance

Having explored the consistency and regularity of reference to the specific terms and concepts, this article now explores qualitative responses from both samples. Are there consistencies and/or conflicts between the users and abusers of this crime prevention approach?

While offenders did not use the specific term surveillance when describing the images, the concept of being observed was referred to on 68 occasions (the most frequently referred to component) and all offenders considered the risk of being surveilled to play a vital role in influencing their decision-making. Terms used to describe surveillance included being seen, look out, no one can see you, blocks view, looking at you. When describing the design features that would deter them, offenders focused upon the risk of being seen or observed by a resident, neighbour, or passer-by. This largely related to the size of windows, the position of rooms within the property, the extent to which shrubbery, fencing, and walls obstruct sightlines and the layout of properties on a street. Offender 3 referred to the deterrent effect of large windows at the front of a property:

> The front windows are nice and big too, so it'd mean that I could be seen easier if I was inside. (Offender 3)

Offender 5 reiterates this—highlighting not just the size of the windows, but also who the rooms are designed for, thus who is likely to be observing and from where.

> The adults have the main bedroom at the front, so if they hear something and look out the window, it'll be at the front not where the burglar is. Kids bedrooms are usually at the back. (Offender 5)

The design and layout of the road on which the property was located also appeared to influence offenders' perceptions of the risk of being observed. Several participants expressed the view that they avoid true culs-de-sac (those with no connecting footpaths) because you would have to leave the development the same way as you came in, thus enhancing the risk of being observed by neighbours.

> I wouldn't target houses on a cul-de-sac because you feel trapped and it's difficult if someone challenges you. They might say what are you doing and you say you are lost and then you have to walk back out the way you came in as they are looking at you. (Offender 3)

Participants regularly referred to the benefits of overgrown shrubbery, high fences, or high walls that obstruct surveillance from the residents and neighbouring properties. This allows them to enter the property without observation and to remain unobserved once inside the property.

> This is a burglar's dream. There are high trees at the back, the hedge is high so blocks the view from the road, the gate is high so no-one can see you. (Offender 4)

The interviews reveal one clear flaw in the current CPTED guidance relating to the requirement to install high fences/walls (minimum height of 1.8 m) where a property borders a footpath (due to the enhanced vulnerability this brings). Contrary to

the guidance, almost all offenders stated that the high fencing would attract them to these properties. The effort to scale the fence may be greater, but once inside the boundary, you have little risk of observation from neighbours or passers-by. Several offenders specifically stated that a low fence, or no fence, would deter them from selecting the property.

> No one can see you amongst the high walls. I'd feel more exposed if the walls and fences were lower. (Offender 10)

Surveillance was also the most commonly discussed principle among the sample of 10 DOCOs. Out of the 10 DOCOs, 9 specifically referred to the term surveillance—a total of 55 times during the interviews. Other terms used to describe the concept of surveillance included: overlooking, observing and visibility, and the concept was referred to a further 44 times. All 10 described the concept and its importance as a component of CPTED, with one participant (DOCO 3) describing it as the most fundamental consideration when assessing site plans: 'For me, that's the crux of the matter. To get things more visible . . .'. Participants tended to describe surveillance in terms of providing legitimate users with the opportunity to observe people accessing, egressing, and moving around the development.

DOCOs suggested that by creating opportunities for surveillance, crime can be prevented in two ways. First, residents are able to notice any suspicious behaviour/activity and either challenge this or report it to the relevant authority. Secondly, potential offenders are likely to be deterred from committing crime if they think that they may be seen: 'People don't usually misbehave when they can be seen misbehaving' (DOCO 3).

When describing the role of design features in enhancing surveillance, DOCOs discussed the layout and orientation of dwellings, the types and placement of rooms within a dwelling, and the number of and position of windows. In their assessment of the development, DOCOs referred to the notion of habitable or active rooms (a clear consideration also for the sample of burglars). It was considered that configuring each individual dwelling to ensure habitable rooms overlooked both the front and the rear of the dwelling, provided residents with the opportunity to both see and hear an offender trying to commit a crime. The DOCOs tended to define a habitable or active room as those predominately located on the ground floor, such as kitchens, living rooms and dining rooms that are regularly used by residents.

> Active rooms are: lounge, kitchen, probably stretch it to a dining room in some places. But certainly not bedrooms and certainly not downstairs toilets and things like that. (DOCO 3)

> I mean, how often are you in your upstairs windows? I suspect these will be bedroom windows looking out, but the routinely habitable rooms, the routinely used rooms, will be downstairs. (DOCO 10)

Interestingly, it is the bedroom that offenders refer to as a surveillance risk, which makes intuitive sense, given a proportion of burglaries will take place at night.

> The adults have a main bedroom at the front, so if they hear something and look out the window, it'll be at the front not where the burglar is. Kids' bedrooms are usually at the back. (Offender 5)

Movement control

Unsurprisingly, none of the sample of offenders specifically referred to the term movement control, however, all 10 referred to the concept. The concept of movement control was referred to on 28 occasions by the offender sample. The findings from the interviews confirmed that a lack of through

movement is a deterrent. Burglars expressed the view that they prefer to know how they will exit the development prior to commencing the offence. They specifically referred to the deterrent of a true cul-de-sac, whereby they would be required to re-trace their steps to exit the development.

> If I was there and the police came I would be boxed in and I wouldn't have an excuse for being in there. I couldn't say 'I'm just walking home officer'. (Offender 7)

Expanding upon this point, the participants stated that legitimate movement through a development provides them with an excuse for being in a loca-tion, should they be challenged.

> Culs-de-sac put me off. There is no reason to be on a cul-de-sac unless you live there. You aren't going any-where so you are a stranger. If it is a through road you can just keep walking through. (Offender 2)

Offenders also confirmed the benefits of through movement in providing them with a legitimate op-portunity to assess a property before committing an offence (rooting).

> I would first walk up and down the footpath and have a look at what I could see in the houses. The houses are on a public footpath, no one would give me a second glance if I walked up and down . . . . it's a footpath, no one can question you. (Offender 4)

The principle of movement control was not specif-ically referred to by any of the 10 DOCOs, instead they referred to the terms access and permeability interchangeably. The concept of limiting through movement was referred to by all DOCOs a total of 48 times. These terms tended to be used to discuss both levels of pedestrian and vehicular movement.

In terms of pedestrian movement, participants stated that it is imperative that levels of access and permeability are kept to a minimum so that potential offenders are not able to walk around a development. Confirming the views of the offender sample, the DOCOs suggested that excessive access or permeability helps offenders to select appropri-ate targets as they are able to move freely around a development, while remaining anonymous.

> That's a footpath there and so you have got a large degree of anonymity if you walk down there because you could be going to this parking area at the back or you could be making out that you are going to anywhere else in the develop-ment. (DOCO 2)

DOCOs also focused upon the accessibility of rear car parking courts, suggesting that they should be gated to restrict unauthorized access.

> To me, they would have to provide some other form of security measure. So it could be a barrier system across there to stop unwanted visitors getting in there. (DOCO 4)

The deterrence effect of gating a car park did not, in the views of offenders, appear to be this straightfor-ward. Some were deterred, preferring to opt for an easier target. However, others felt that gates sug-gested wealth—thus attracting them, and that the gates provided cover for them while committing their offence.

> The fence wouldn't deter me. In actual fact it would put me at ease as I could hear the fence rattle if someone came in. (Offender 1)

Physical security

All 10 offenders referred to the concept of physical security on a total of 52 occasions, making this the second most referred to component of CPTED (behind surveillance). Unlike the DOCO sample, the offenders clearly prioritized assessing the levels of security on the images. Participants were

clearly able to distinguish between poor and good quality door locks and could make an assessment, based only on the photograph, of how long it would take them to overcome the security. The offender sample regularly discussed Europrofile locks and their ability (or not) to mole grip those locks. As with gates (discussed above), offenders were not deterred by security grilles on windows, and interpreted what they viewed as excessive security as suggestive of something worth taking.

Burglar alarms, not discussed by the DOCOs, were referred to regularly by the offender sample; however, the pattern of responses was surprising. With the exception of one particular brand of monitored alarm, offenders were not deterred by alarms as they believed that, on most occasions, alarms did not trigger a response from neighbours or passers-by.

> If I smashed the window and the alarm went off, I might scuttle away and then come back ten minutes later to see if anyone had bothered dealing with it. From personal experience eight out of ten won't bother doing anything about them. (Offender 7)

Only 1 of the 10 DOCOs made specific reference to the term physical security. The concept was referred to by 7 of the 10 participants. The specific term was mentioned once throughout the 10 interviews, the concept was referred to 13 times, making this component of CPTED the fourth most referred to of five (amongst the DOCO sample). When referencing this element of CPTED, DOCOs focused largely upon gating/barriers for parking courts, or access control into flats. One particular participant (DOCO 4), stated that physical security should not be included as a principle of CPTED and that, should a development be built in accordance with the other principles (relating to design and layout), an offender should not be able to access a property to assess/attempt to overcome the physical security.

> To be honest that is secondary as far as I am concerned—the physical security. If we get the design of the estate right with CPTED, then the actual physical property they hopefully won't get that far, so that doesn't really matter. (DOCO 4)

Management and maintenance

The offender sample made specific reference to the term management and maintenance on one occasion, with 20 references to the concept. Of the 10 offenders, 8 referred to the impact of this component upon their decision-making. However, the vast majority of these responses contradicted the assumption that untidy properties will attract offenders (based upon the argument that a resident who does not tend to their property is less likely to be inclined to challenge a stranger/potential offender). The general consensus amongst the sample was that poorly maintained properties are unattractive targets because an unkempt external space equates to a lack of money, therefore it is not worth breaking in.

> It doesn't look worth breaking into as there is nothing to take. It looks scruffy. (Offender 4)

On the contrary, offenders specifically stated that they would be attracted to tidy, well-maintained properties—just the opposite of the advice offered by the DOCO sample ('I would want to know what sort of maintenance program goes with the hedge' DOCO 1).

> If they have a neat garden you know they have something to steal. You know they look after themselves and the house. (Offender 1)

> That's an ideal house for a burglar, it's secluded, hedge is neat and tidy, good maintenance. (Offender 5)

The term management and maintenance was specifically referred to by just 1 of the 10 DOCOs, and

the concept was referred to by 3 of the 10 (5 times). The context of these references tended to be in relation to ensuring that vegetation is managed to avoid obstruction of sightlines.

> How tall are these trees going to grow? What sort of obstruction will they eventually be. (DOCO 6)

Defensible space

While none of the offenders specifically mentioned the term defensible space, the concept was referred to by 4 of the 10 on 48 occasions. The interviews with offenders confirmed the existing theory and literature that suggests that the creation of a closed community in which offenders feel conspicuous will act as a deterrent.

> Everyone that lives there will be focused on the entrance and what goes on. They'll all know each other and keep an eye out for each other—give the key to the coal man, that sort of thing. (Offender 10)

The findings confirm this principle as an important element of CPTED. However, in direct contrast to both literature and guidance regarding the implementation of CPTED, the interviews with offenders suggest that some methods being used to achieve defensible space, not only fail to deter, but may actually attract offenders. Offenders were shown one image of a small, true cul-de-sac with all houses facing the street. The entrance to the development was marked by a narrowing of the road, a change in road colour and texture and the words 'PRIVATE' written in large white paint on the road surface. The vast majority of offenders stated that this gave the impression of exclusivity and wealth, with the word private suggesting that the properties were owner-occupied (private) as opposed to social housing.

> The private road sign and the change in road colour and texture give me the

impression that it is an exclusive area—they have more money and that would attract not deter me. (Offender 1)

Others interpreted the word 'PRIVATE' as meaning no parking, while several participants could not read the word.

Of the 10 DOCOs, 3 specifically referred to the term defensible space a total of 3 times during the interviews. Other terms used to describe the concept of defensible space included: territoriality, ownership, demarcation, barriers and private and public space. Interestingly, the DOCOs regularly referred to the importance of rumple strips and a change in road colour and texture at the entrance to a development as a means of demarcating the public and semi-private space—advising what the offenders say appeals to them when selecting a target for burglary.

> I would either have a rumble strip, a change in colour or road surface, something like that, some pillars to define that you are going onto an estate ... If you put something there like that, it's saying to a criminal out there 'that's a public space' and 'in here is a private space'. A bit of psychology, so they are reluctant to cross that boundary. (DOCO 4)

Conclusion

The aim of this article has been to explore and scrutinize the crime prevention measure—CPTED, but in that process, to ensure that the examination in no way detracts from the progress made in embedding CPTED within the planning and policing systems. 'Core Business' (HMIC, 2014) calls for more recognition for crime prevention within policing and outlines the current problem of crime prevention being afforded less priority that of apprehending offenders. It recommends that crime prevention

must be restored in the minds of every police officer at every level. A laudable call to action, yet herein lies the problem. Crime prevention, and in particular CPTED, has been subject to drastic budgetary cuts in the last six years—DOCO numbers falling from 347 in January 2009, to just 125 in November 2014 (with more cuts in post 2014). Consequently we have fewer DOCOs, we have reduced budgets for police training and a push for civilianizing the role. This does not necessarily equate to a less effective performance (see Monchuk (2016) for a full review of civilianization of CPTED), but what it does require is a much clearer description of what CPTED means, not just as a theory or concept, but as a series of components that can be defined, implemented, and measured. This article marks the starting point for the authors of a series of research studies to clarify this, to enhance the scientific credibility of CPTED and to reconnect it with Crime Science.

The findings of this study have shown that the current terminology used to define the components of CPTED—surveillance, movement control, physical security, defensible space and management and maintenance, is not being utilized consistently by DOCOs. Not one component was referenced by the full sample. Surveillance, was referenced by 90% of the sample; 30% referred to the term defensible space, 10% to physical security, 10% to management and maintenance and 0% to movement control. Taking on board the issue of language and semantics, we explored reference to the concept (as opposed to the exact term) and found that 100% of the sample referenced surveillance, movement control and defensible space, but only 70% referenced physical security and 30% management and maintenance. Again this shows an issue of consistency. DOCOs were asked to describe what they liked and disliked about the plans, so the lack of reference to specific components cannot be attributed to the absence of a potential design problem, that is, poor defensible space, as that would naturally equate to good defensible space—thus, worthy of reference.

The findings also revealed a discrepancy between the emphasis placed upon each component by DOCOs and by burglars. While all DOCOs referenced surveillance, movement control and defensible space, only 70% referenced physical security and 30% management and maintenance. This aligns with burglars to some degree—all mentioning the importance of surveillance and movement control, but burglars appear to place a greater emphasis upon physical security—100% referencing it 52 times, while only 70% of DOCOs referenced this component a total of 13 times. In contrast, DOCOs appeared to overemphasize defensible space—100% referencing this 40 times, while the concept was only mentioned by 40% of burglars on seven occasions.

There are also issues regarding the detailed implementation of these concepts—relating to surveillance, management and maintenance and defensible space in particular. CPTED guidance recommends high rear fences (1.8m minimum) where the rear boundary of a property borders a footpath (thus enhancing vulnerability). Offenders specifically stated that this attracted them and that a low or no fence would deter them. Still related to surveillance, DOCOs appear to define habitable rooms as being on the ground floor—the living room and kitchen for example. Offenders, on the other hand, clearly consider the positioning of bedrooms as a key decision-making factor—with an adult bedroom at the front attracting them (as the rear is overlooked by the children's room). The difference in consideration likely relates to one sample focusing upon daytime burglaries, while the other considers night-time surveillance as well. Defensible space revealed another clear contradiction, with DOCOs recommending a change in road colour and texture, while offenders warned of portraying wealth and exclusivity. Finally, the concept of management and maintenance as a component of CPTED should be reviewed. All offenders expressed the view that a well-maintained, tidy exterior would be interpreted as a sign of wealth—if you care about the exterior of

your property you are more likely to have quality internal goods to steal.

Moving forward, the authors recommend a reconsideration of all components including discussion regarding weighting of importance. CPTED is an effective crime prevention intervention that enables key partners to work together to prevent crime, not only in the short term, but also for the decades in which properties stand. Progress has been made in recognizing this, but CPTED remains the poor relation of crime prevention, and this has impacted its scientific credibility. It is hoped that this article and those that follow will allow an honest reflection of CPTED and a review of consistency and implementation.

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