Situational Crime Prevention and Offender Decision Making

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Background

Human choice is a central topic in the social sciences. Different disciplines tend to look at the choices we make in different ways. Psychologists are inclined to try to understand how people choose between the options open to them (with relatively little interest in the range of choices and their sources). Sociologists are more inclined to try to understand which choices are and are not available to particular groups of people, and where those that are available come from (with relatively little interest in how selections from them are made). For many in both disciplines, however, the term 'decisions' may overstate the degree to which those acting knowingly elect to do one thing or another. For such sceptics people *behave* and mostly do so in response to inner urges, habits or external stimuli. The notions of choice-making and decision-taking imply a degree of voluntarism that is deemed largely illusory. For others, choices are not so much 'there' or 'not there' as 'seen' or 'not seen': in this view they are individual or social constructions rather than brute givens. Thus, in principle, many more may be available than the perceived set from which individuals make a selection, albeit that the range of choices is not unlimited.

Criminologists are similarly interested in human choice, most notably the decision to commit crime (or not). What factors influence this decision is a fundamental criminological question, and as with psychology and sociology, different branches of criminology have attempted to answer this question from contrasting perspectives. The dominant approach has been to explain criminal behaviour in terms of dispositional factors: most crimes are universally condemned and so those that engage in crime must harbour criminal dispositions, the source of which likely resides in an individual's genes, upbringing and wider social conditions. Efforts to reduce crime therefore hinge on altering criminal motivation by effecting changes in the social conditions assumed to dispose some to become criminal, through early

intervention for individuals judged to exhibit greater risks of participating in crime, or, retrospectively, in attempts to rehabilitate known offenders.

An alternative and complementary perspective, albeit one which is less fashionable among traditional criminologists, assumes that crime need not follow inexorably from a disposition to commit crime, whether that disposition derived from individual attributes, social forces or some combination of both, but instead can be traced to the immediate environment in which crime takes place. The dominant view from this perspective is that crime is a choice, and individuals make decisions about whether to commit crime in much the same way as any other behaviour, responsive to and influenced by opportunities and temptations in the immediate situation. This account of offender decision making is known as the *rational choice perspective*. Simply put, this perspective argues that an individual is more likely to commit crime if the expected rewards are greater than the perceived losses. It follows that crime can be prevented by altering the immediate environment in ways that influence the choices of prospective offenders, without having to address the 'root causes' of criminal disposition, in whatever ways those root causes are construed. This approach is known as *situational crime prevention*.

Few would deny that situational crime prevention and the rational choice perspective have made significant contributions both to criminological thinking and the practical task of reducing crime. In the year of writing this chapter, Ron Clarke, a central figure in the development of both concepts, was awarded the prestigious Stockholm Prize in Criminology (alongside Patricia Mayhew). As the awarding committee report, 'Rarely has so much direct application of criminological research occurred so quickly, and with so much apparent benefit in crime reduction'[1]. Yet situational crime prevention and the rational choice perspective have also received much criticism, both independently and in combination. In this chapter we explore the development of and relationship between situational crime prevention and the rational choice perspective, drawing on cognate fields with an interest in decision making such as economics, sociology and psychology. We begin by recounting the origins of situational crime prevention and its expansion to include the rational choice perspective (for more detailed overviews see Clarke 2008; Leclerc and Wortley, 2014; Tilley and Sidebottom

[1] This quote is taken from http://www.su.se/english/about/prizes-awards/the-stockholm-prize-in-criminology/criminology-prize-winners-2015-1.207725. A video of Professor Clarke's prize winner's lecture is available at: https://www.youtube.com/watch?v=edjQXd0FmfE

2014)[2]. We then consider three related questions. Firstly, is rational choice the only possible theoretical underpinning for situational crime prevention? Second, is it sufficient as a model of offender decision making for the purposes of crime prevention research and practice? Third, should the rational choice account of offender decision making be supplemented? And if so, with what?

On the marriage of situational crime prevention and the rational choice perspective

Situational crime prevention (SCP) was first articulated in the 1970s. As mentioned previously, it is most associated with the work of Ron Clarke, although efforts to ward off undesirable behaviours through situational techniques have a much longer history – consider the fortress design of castles or the thorns and prickles of certain plants. Clarke defines SCP as "opportunity-reducing measures that (1) are directed at highly specific forms of crime, (2) involve the management, design and manipulation of the immediate environment in as systematic and permanent a way as possible, (3) make crime more difficult and risky, or less rewarding and excusable as judged by a wide range of offenders (Clarke 1997, p. 4)."

A key study in the initial formulations of SCP concerns gas supply and suicide. Until the early 1960s the gas supplied to most households in England and Wales for cooking and heating was toxic. It provided a convenient opportunity for suicide through self-gassing. Advancements in the gas industry (such as improved production processes and a shift from manufactured to natural gas) initiated a gradual change in domestic gas supply to less toxic forms. This produced some unexpected effects, in particular a commensurate reduction in the rate of suicide. There was no reason to assume that there had been an equivalent reduction in the motivation to commit suicide precisely during the period in which detoxification of the gas supply occurred. The change in gas supply did not, of course, remove all opportunities for suicide: many other methods remained available. Gas, however, had certain common-sense advantages. It was on tap, painless and non-disfiguring. Once the choice of self-gassing as a method for committing suicide was removed the overall rate went down simply because a readily available and widely known choice was removed, with little displacement to alternative suicide methods. Removing one popularly used opportunity for suicide was thus

[2] We recognise that other theories have also made important contributions to the development of situational crime prevention – most notably the routine activity approach (Cohen and Felson 1979) and crime pattern theory (Brantingham and Brantingham 2008) – but given the focus of this handbook we limit our discussion to the rational choice perspective.

sufficient to lead to a reduction in the number of suicides overall (for an overview see Clarke and Lester 1988). What went for the suicide reduction consequences of the removal of a toxic gas supply went also for the reduction in the availability of other suicide commission methods, including the use of catalytic converters in cars (which made exhaust fumes less toxic), the introduction of blister packs for paracetamol (which made taking handfuls of tablets less convenient) and blocking off access to high bridges and buildings (which made lethal locations to jump from more scarce). Even desperate behaviour, presumably consequent on deep feelings leading to a disposition to kill oneself, was found to be strongly affected by the choices of method available. This was a profoundly counter-intuitive finding.

Complementary evidence for arguably more mundane behaviours supported the notion that situational contingencies are important in understanding behavioural choices. In one of the first publications on SCP titled *Crime as Opportunity*, Mayhew, Clarke, Sturman and Hough (1976) provide several examples of unwanted behaviours (such as cheating and absconding) that appear to be responses to "provocations, attractions, and opportunities of the immediate situation" (1976, p. 1). At the same time, doubt had been cast on the effectiveness of efforts to reduce crime by altering the disposition of offenders, famously encapsulated by Robert Martinson's 'nothing works' slogan (1974). Beyond criminal behaviour, accumulating evidence from psychology and sociology demonstrated the significance of the immediate situation for behaviour. At a macro level, patterns of social mobility appeared to be largely conditioned by changing occupational structures. An expanding white collar and shrinking blue collar sector changes the opportunity structure and thereby facilitates upward social mobility (Goldthorpe, Llewellyn and Payne 1987; Goldthorpe 2000). At a micro level, the famous Asch (1955) experiment (on conformity) and notorious Milgram (1974) and Zimbardo (2007) experiments (on obedience and anonymity, respectively) showed how easily individuals' behaviour is shaped by their immediate situations. Most of us recognise this in our daily lives. If something we like (say chocolate) is to hand, then even if we know it is bad for us we are easily tempted to eat some even as we recognise what is happening. We may try to forestall the availability of that option by choosing not to buy it or even not to walk down the aisle where it is displayed in order to avoid situations in which the choice is readily to hand.

No grand psychological or sociological theory of the individual or of society is needed to grasp the salience of situations and of the choices they present in shaping behaviour. In many

respects, what is odd (and in need of explanation) is why so many people have had such a hard time accepting that this is the case. The 'fundamental attribution error' has been invoked for this purpose (Ross 1977). It refers to the general tendency to overestimate disposition in others' undesirable behaviours rather than the situational contingencies at work, a tendency that is less frequent in accounts of one's own behaviour. The fundamental attribution error has itself been subject to some critical discussion. It comprises a label for a general tendency rather than an explanation of underlying cognitive processes. What may be the case is this: where unwanted or undesirable behaviour is undertaken by those we dislike (or know little of) we tend to invoke internal causes deriving from some personal pathology (thereby blaming them); where we engage in unwanted or undesirable behaviour or those we like or admire do so we tend to invoke external situational contingencies (thereby exculpating ourselves or those close to us); where those we dislike (or know little of) engage in desirable behaviours we are apt to invoke external situational contingencies (to avoid commending them); and where we or those we like or admire engage in desirable behaviours we tend to invoke internal causes (and thereby celebrate the virtues of ourselves or of others with whom we identify) (see Pettigrew 1979). In some cases those we admire or have liked behave in ways that we find appalling, in which case they move from liked to disliked and explanations move to internal rather than external causes (as with those found to have acted improperly towards children, who are bestowed the master-status of paedophile). All this could be easily explained as a result of efforts to reduce cognitive dissonance.

The fundamental attribution error might explain why SCP only emerged in the 1970s, and more generally why dispositional theories of crime outnumber their situational counterparts. However, buoyed by developments in related fields and following the initial recognition and demonstration a) that opportunity plays a part in explaining patterns of unwanted behaviour (including crime) and b) that reducing opportunity can prevent that behaviour, rather than simply diverting it elsewhere, a more general account of how situations foster or foreclose crime was developed by Ron Clarke and Derek Cornish. They drew on rational choice theory. Rational choice has a strong pedigree in the social sciences. It had been assumed in classical economics. It had been a cornerstone of exchange theory. It had formed the starting point for Weberian sociology. It is founded on the notion of *utility*, taken to mean decision outcomes that are favourable to the decision maker. Rational choice theory proposes that humans make decisions based on an appraisal of the utility of available options, choosing that which affords maximum utility.

Since its inception, rational choice has been widely seen to be at best a workable approximation that could usefully be drawn upon to better understand and model behavioural choices. Moreover, rational choice theory could easily be rendered unfalsifiable by the simple expedient of defining observed behaviour as necessarily that which is, in the eye of the agent, expected to yield the greatest utility. This is a simple trick if utility is defined broadly enough, to include the non-material as well as the material, the after-life as well as this life, a sense of self-satisfaction at helping others as well as satisfaction from receiving help from them and so on. If someone did x, even if it seems to an observer to be against their better interests, that can be explained as a function of the utilities that that person values more highly than those we otherwise impute to him or her and his or her ideas about how best to achieve those utilities. Suicide bombing is a case in point.

Rational choice is hence generally considered to be a *normative* model rather than a *descriptive* one. In other words it outlines the decisions that we *should* make under perfect conditions as opposed to providing an accurate account of what people ordinarily do in reality. It has emerged that we are far from perfect in our calculations of what will achieve greatest utility. A raft of experimental work has shown that miscalculation is rife, often in predictable ways (see Kahneman 2011). Moreover, situational contingencies play a part in limiting our capacity for utility estimation – life is too short and calculations too complex for us to work through what will serve us best at each decision point[3]. Standing decisions, rules of thumb and faulty reasoning against a backdrop of time pressures and incomplete information are all part of the stock-in-trade of human agents. All this is captured in the innocent-sounding notion of 'bounded rationality' (Simon 1955). The rational choice, utility-maximising assumption remains, but departures from it in the ebb and flow of everyday life are acknowledged and have been the focus of analysis.

Clarke and Cornish's (1985) version of rational choice and crime was initially that risk, effort and reward fed into the calculation of whether or not a given crime would be committed in the circumstances facing someone who might contemplate crime commission. Expected effort and risk are balanced against anticipated reward (broadly defined) to work through

[3] To elaborate, with the exception of the most rudimentary of tasks, the number of possible consequences resulting from real world decisions is too many to confidently assume perfect rationality. Psychologists refer to this as a *combinatorial explosion.* Chess is a helpful game to illustrate this principle. Colman (1995) describes how in a standard game of chess there are usually about 30 options per move, with each player usually performing about 40 moves in the course of a game (80 in total). That equates to a total number of chess moves of approximately 30^{80}. To put this in perspective, there are an estimated 10^{80} particles in the universe.

whether or not to commit a crime in the presenting circumstances. Marginal changes in the risk/reward/effort equation are expected to effect marginal changes in the calculations made by prospective offenders, leading to alterations in decisions about whether or not to commit a particular crime in a given context. Conclusions will vary across offenders according to their appetite for risk taking, values for rewards and the perceived level of effort required for them to commit the crime.

From the outset, Cornish and Clark treated rational choice as a heuristic as opposed to a descriptive *theory* of offender decision making – hence the term *perspective.* They privileged pragmatism, and saw rational choice as a "good enough" account of how the decision to commit crime is influenced by situational factors, with the central purpose of informing crime prevention. It is a point they reiterated again and again, lest there be any confusion (for numerous illustrative quotes see Wortley 2013, pp. 237-239).

In a review Cornish and Clarke (2008, p. 24) set out six assumptions that characterise the rational choice perspective of offender decision-making. We repeat them here:

1. *Criminal behaviour is purposive*: individuals make a deliberate decision to commit crime and do so in the expectation of reaping some form of benefit, be that monetary, social or psychological.

2. *Criminal behaviour is rational*: when faced with alternatives, individuals will opt for that which they consider offers the best means of achieving one's goals at that time, accepting that mistakes will happen.

3. *Criminal decision-making is crime specific*: different crimes are often carried out for different reasons, requiring different resources and in the expectation of receiving different benefits. Treating crime as a single homogenous phenomenon runs rough shod over the nuances associated with particular crime types, and stymies thinking about how best to prevent them. Being crime specific affords a greater understanding of the criminal decision making process.

4. *Criminal choices fall into two broad groups: 'involvement' and 'event' decisions*: the decision to embark, continue and desist from crime (involvement decisions) is

qualitatively different from the decisions associated with performing a particular type of crime (event decisions) in a particular set of circumstances. The two should be distinguished and studied separately.

5. *There are separate stages of involvement*: it is advantageous to think of criminal involvement as comprising three stages: initiation, habituation and desistance, with different factors being brought to bear on decisions made at each stage.

6. *Criminal events unfold in a sequence of stages and decisions*: it is tempting (and common) to reduce 'event decisions' only to those most salient features of a particular crime – the theft of the car, the sale of the drug, the abduction of the child. Yet the process of committing crime invariably involves numerous decision points occurring before, during and after these central stages. Deconstructing crime types into their necessary stages provides a fuller range of the criminal choices associated with particular crimes and how they might be influenced by situational intervention[4].

Rational choice is a well-established criminological theory in its own right. It lies at the heart of deterrence theory, which in turn underpins many efforts to reduce crime. In their ambitious attempt to determine the extent to which statistical models derived from different criminological theories explain crime – measured using the R-squared statistic from papers published in *Criminology*, the premier journal in the field – Weisburd and Piquero (2008) find rational choice theory to exhibit the largest average R-squared statistic (.782)[5]. Our interest in this chapter, however, is limited to rational choice as the dominant model of offender decision making underpinning SCP, about which questions remain over the necessity of and profit from this relationship. Here we consider three key questions. First, is rational choice the only possible theoretical underpinning for SCP? Second, is it true enough as a general working assumption for further (and fruitful) research and practice? Third, does it need to be supplemented?

[4] Crime scripts have emerged as a popular tool for parsing specific crime types into their necessary stages (see Cornish, 1994)

[5] Readers should note that Weisburd and Piquero (2008) are quick to point out that this statistic was generated from only two articles that met their definition of testing rational choice theory.

1. *Is rational choice the only possible theoretical underpinning for situational crime prevention?*

The propositions built into SCP were certainly not derived specifically or formally from rational choice. The initial formulations of SCP (Mayhew et al. 1976; Clarke, 1980) predate references to and the application of rational choice (Clarke and Cornish, 1985). Instead responsiveness to situations was observed (as with the suicide example) and it was noted that this opened the way to prevent crime without having to focus on dispositions presumed to foster criminality. The key theoretical point was that the assumptions of the then dominant dispositional theories (that crime will out because of deep-seated social and psychological causes) are mistaken.

Nevertheless, it might be argued that rational choice is implicit in SCP or that rational choice is the only assumption that could make sense of the effects of situations on criminal behaviour. Neither position can be sustained. Evolutionary theory, for example, would have it that those behaviours that probabilistically favour survival persist *because* they favour survival; those that did not were weeded out by the sieve of natural selection[6]. Behavioural ecology has shown how animal behaviours are shaped by the benefits they bring for survival of the organism and their genes. Responsiveness to frequently encountered situations clearly confers advantages. Although ecologists speak of choices in these circumstances, the use of the term is metaphorical. Optimal foraging theory, for example, does not propose that flies, frogs and foxes carefully assess predation threats, energy expenditure and so on. The cause lies in the hard-wired mechanisms of the brain that underpin behavioural responses that have persisted (or been selected) because of their survival-enhancing advantages. Skinnerian behaviourists likewise show how animals respond to the contingencies surrounding them. The notion that pigeons and rats *decide* to move in the patterns to which they have been conditioned by the artfully designed rewards given in response to their more or less random movements makes little sense.

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[6] This seems to have been Milton Friedman's view of economics too. He said, 'Let the apparent immediate determinant of business behaviour be anything at all—habitual reaction, random chance, or whatnot. Whenever this determinant happens to lead to behaviour consistent with rational and informed maximization of returns, the business will prosper and acquire resources with which to expand; whenever it does not, the business will tend to lose resources and can be kept in existence only by the addition of resources from outside.' (Friedman 1953, p. 22).

Furthermore, at least some behavioural possibilities emerge and then cease to be available thereby altering the set from which any choice can be made. In this case situational contingencies do not so much affect choices but the range from which choices can be made. As Felson (1986, p. 119) put it: 'People make choices, but they cannot choose the choices available to them.' Indeed much SCP may not so much influence *choice-making* as *choice-availability*. The invention of the car, internet, mobile phone, credit cards, bank notes, customs duties, airplanes, postal services and self-service shops, for example, all furnished new crime opportunities that were not available prior to their invention. Likewise there can sometimes be a reduced supply of crime possibilities (see Walsh 1994). Coin-clipping was a widespread crime in the seventeenth century, punishable by hanging. Milled edges made it difficult. The use of base metals later made it pointless. The crime became obsolete. Regicide is no longer possible in countries that have become republics. The removal of customs borders between two countries means that smuggling to avoid duty payable ceases to be available as a crime. Failure to vote is a crime only in jurisdictions where voting is compulsory. And so on. This broadly sociological position has it that elections to take advantage of available choices may be of very many different kinds, most of which are easy to grasp: stealing objects because one needs or covets them; hitting or killing people because one dislikes them or is thwarted by them; or damaging objects because they are frustrating us. In these ways, doing things one wants to do but which may be unlawful is more or less self-explanatory. What matters is the supply of options, rather than the reason for exercising choices that happen to comprise infractions of rules. Moreover, there is no need to invoke or assume or propose any single theory of the person to explain the range of reasons why a decision is made to act in ways that a jurisdiction has deemed criminal.

What might be more accurate is that efforts to prevent specific crimes turn on changing situations to introduce considerations that may not previously have figured. These would make the exploitation of a given opportunity less attractive. These considerations introduced in the changed situation very often broadly relate to potential offenders' calculations about whether or not the costs or effort involved have become so large or any prospective benefits have become so small that at least a proportion act differently and forgo the crime they would otherwise have committed. In this way, marginal changes in the costs and benefits may alter the rates of those behaviours for individuals for whom costs and benefits are a major factor in informing actions and for whom the change is sufficient to tip the balance in favour of refraining from a crime that would otherwise have been committed. Of course a small

marginal change for those for whom the costs are low in relation to the prospective benefits (hence expected returns are high) would be unlikely to be effective. It might be added that other changes in prospective offenders' circumstances might also alter the cost-benefit equation through the life-course: more is to be lost, for example, where a new significant other (say wife or girlfriend) expresses disapprobation at criminal involvement, or where work yielding regular utility is put in jeopardy by involvement in crime and the risk that this may lead to apprehension, prosecution and conviction.

2. *Is rational choice true enough as a general working assumption for further (and fruitful) crime prevention research and practice?*

Oddly for a man emphasising that scientific progress is achieved with the production of falsifiable propositions that are then subject to rigorous empirical test to provoke the production of better ones, Karl Popper championed the pragmatic value of what he referred to as the 'rationality principle'. Even though it is clearly false, he argued that we should retain it because of its explanatory fecundity. The 'rationality principle', of course, equates to rational choice. Let us examine whether Popper's case holds specifically for research and practice in relation to crime and SCP.

The pragmatic value of rational choice is clear. It provided SCP with a well-established theoretical base. Through emphasising that human decision making is influenced by situational contingencies, it shone a light on the pervasive neglect of opportunities as a causal factor in crime. It provided a convenient framework for organising and describing general techniques that could be considered by those trying to deal with specific crime problems. It accorded with much common sense and experience – we all know from our everyday lives what is involved in working through options with different balances of cost, risk and expected benefits. It has been easily taught and now is widely presented as the theoretical base for SCP, when this is introduced to students, policymakers and practitioners. It may also have helped at least some to recognise that the ways in which offenders think and make decisions is not alien to the ways in which ordinary law-abiding people think and make decisions. Idle assumptions that those who offend comprise pathological monsters are hard to sustain. In this way, rational choice assumptions are humanising in their conception of criminals.

Just as in classical economics, even if not absolutely true as an account of how individual behaviours are produced, rational choice may possess enough truth (be roughly right as a working principle) both to explain and predict many patterns of crime, and to inform crime prevention. Let us give a few examples. The spurts in shop theft, car theft, phone theft, respectively when self-service rather than counter-run displays were being established, when cars were becoming commonplace, and when mobile telephony was becoming widespread are all easily explained by rational choice in the face of new opportunities. Likewise the precipitous international drop in car theft experienced in the past two decades is easily explained by the increasing difficulty and risk of stealing cars consequent on improvements in vehicle security and in the locations where they tend to be parked (see Farrell, Tseloni, Mailley and Tilley 2011). The recent scandal in Britain concerning excessive expenses claims made by many politicians – most (in)famously for moat maintenance – are equally readily explained by the ease with which they could be made and the low risk that they would be queried.

From a prevention perspective, the accumulated evidence in support of reducing crime through situational means is considerable. Across a variety of contexts and crime types, advocates can point to numerous anthologies (Clarke 1992; 1997) and reviews (Guerette 2009; Guerette and Bowers 2009; Smith, Clark and Pease 2002) which generally converge on the finding that thoughtfully conceived and correctly implemented situational interventions are an effective crime reduction method. Often the impact is immediate and confidently attributable to the situational measures put in place, such as the near disappearance of bus robberies following the installation of drop safes introduced as part of a wider shift toward an exact fare system (Chaiken et al. 1974 cited in Clarke 2008). This is not always the case for many other crime control efforts where greater uncertainty exists over the causal mechanisms that link intervention to any crime reductions observed (for example see Weisburd, Hinkle, Braga and Wooditch's (2015) discussion of broken windows policing). Although comparisons between different crime reduction methods are limited, in a randomized controlled trial on the effectiveness of various police strategies at crime hot spots in Lowell, Massachusetts, Braga and Bonds (2008) found situational interventions to outperform misdemeanour arrests and social service-oriented interventions in terms of reductions in calls for service.

The scope of SCP is widening. This can be seen in recent treatments on the application of SCP to terrorism (Clarke and Newman, 2006), cyber crimes (Newman and Clarke, 2003), wildlife poaching (Lemieux, 2014), maritime piracy (Shane, Piza and Mandala, 2015) and sex offenses against children (Wortley and Smallbone, 2006). It is difficult to isolate the influence of rational choice on the formulation of these situational interventions; many may well have been designed in ignorance of the rational choice perspective[7]. However we feel it is reasonable to assume that at least some of the many forms of SCP were formulated with some awareness of the effort, risk and reward calculus supplied by the rational choice model.

Attaching primacy to rational choice, even where its lack of verisimilitude is known in advance, has a strong pedigree. Weber argued for it in sociology, whilst recognising that actions always also include elements of habit, affect and value. In modern bureaucratic and market societies, in particular, Weber argued that means-ends rationality (at the heart of rational choice) tended to prevail over other aspects of action that might prevail in other times, places and conditions. As we have seen, Popper endorsed the rationality principle, whilst at the same time knowing its assumptions to have been falsified. Rational choice remains the default position in economics, whilst much research explores its limits and exceptions. Imre Lakatos would understand rational choice to have been (and maybe still is) a 'scientific research programme' (Lakatos 1978) that is 'progressive' in the sense that it is still yielding new findings – an attempted explanation of the age crime curve with reference to rational choice by Birks et al. (in preparation) is a rather dramatic illustration of the new discoveries that can still be made within the criminological research programme, notwithstanding the widely acknowledged weaknesses that are to be found at the heart of rational choice theory (see Latsis 1976 for an account of rational choice as part of the scientific research programme in economics).

Thus for much research and practice, rational choice remains good enough, even if known not strictly to be true. Changing situations so that either specific crime options are removed or become marginally less attractive to potential offenders in terms of risk, effort and reward has proved an effective way to prevent much crime.

[7] A study by Wartell and Gallacher (2012) on crime analysts' familiarity with concepts from environmental criminology is relevant here, albeit with the usual caveat of concerns over generalisability. In their survey of over 100 analysts affiliated with the Association of Crime Analysts, 19% of respondents had never heard of the rational choice perspective. For repeat victimization and crime pattern theory the same response was, respectively, given by 4% and 7% of the sample.

This brings us to our third question.

3. Does rational choice need to be supplemented as a means of understanding crime patterns and finding ways of preventing crimes by altering the situations in which they are committed?

Even if the explanatory, policy and practice default is rational choice for the reasons already given, there may be good reasons (as with Weberian sociology, analytical sociology and behavioural economics) to focus attention on non-rational action consequent on situational cues. Indeed there has already been some tacit recognition of this in extensions made to the early typology of situational measures.

Consistent with the tenets of 'substantive rationality' emphasised in classical economics (Simon 1996), the first formulations of SCP stressed only risk, effort and reward: those considerations germane to determining what course of action will maximise utility. Later formulations referred to 'rule reminders' (Clarke and Homel 1997). Rule reminders acknowledge that social life occurs in and through adherence to rules of behaviour that we learn. We internalise these rules as they are taught to us and mostly take them for granted. Mores, those rules deemed most important, are enshrined in law and should we breach them we are both shamed and formally penalised. However, where conformity involves costs by forgoing utilities we might otherwise expect we can be tempted to break rules. In situations in which the operation of rules appears to have been suspended (for example during a riot where looting is happening or on a freeway where the prevailing rate of travel exceeds the speed limit) their salience is liable to diminish. Moreover, we are adept at rationalising breaches of rules with a repertoire of excuses – so called 'techniques of neutralisation' (Sykes and Matza 1957).

Rule reminders in situations where there might be temptations to breach rules remind the potential offender of the rule they might otherwise break. These techniques are widely used in British trains and railway stations, where weaknesses in the transport network are liable to produce extreme frustration and violence. Travellers are reminded in posters that assaulting staff members is an offence. The presence of rule reminders comprises an acknowledgement that most of the time most of us adhere to most rules. We learn them and accept that there is a general obligation to behave in ways that accord with widely accepted moral principles,

especially where these are enshrined in law. Rule reminders act as situational prompts where there may momentarily be high levels of temptation or provocation to behave criminally.

The reference to 'provocation' brings us to a second supplement to the initial classification of SCP techniques. Wortley (2001, 2008) suggests four ways in which situations may *precipitate* criminal action. Firstly, situations may contain cues that *prompt* individuals to act unlawfully, as when exposure to violence-related imagery is found to stimulate aggression-related feelings thereby priming the individual for violence (the so-called weapons effect, see Berkowitz, 1983). Second, situations may convey social *pressures* that are criminogenic, as when an individual commits crime in accordance with the (perceived) wishes of an authority figure. Third is *permissions*, which refers to situations rich in material that can be invoked or exploited to justify committing criminal behaviour, such as alcohol, drugs and unclear rules. Most relevant to this chapter is the fourth type of situational precipitator, *provocations*. Here crime may be engendered not because of the expected utility but because a nerve has in some way been touched. The frustrated, angry and potentially violent British rail traveller is a case in point. His (or her) aggression is "expressive" rather than "instrumental". It will not reduce the (all too frequent) delay to the rail service. Modifying situations liable to provoke in ways that make them less provocative comprises a SCP technique that speaks to emotion rather than reason. Signage of the sort already mentioned comprises a response to a situation that arouses crime-engendering feelings, but does nothing to lessen those feelings. Other situational interventions are similarly put in place to avoid generating those feelings or to assuage them should they arise. Managing queues, for example for taxis, for buses and in bars, reduces frustration and therefore provocation. Likewise provision for seating in bars creates conditions in which customers are less likely to collide with one another or upset one another. Soothing music at the end of a disco aims to leave patrons in a calm frame of mind, where they might otherwise be liable to act aggressively. Removing sweets from counters easily accessible to impecunious young children avoids stimulating their appetite and hence temptation to steal them. Provocation speaks to pushes towards criminal behaviour rather than the pull of expected utility based on calculated risk, effort and reward.

Max Weber referred to habit as a source of action. Habits or routines describe behaviours undertaken unreflectively, although they are not undertaken automatically in that those behaving habitually could have acted otherwise. Consider the case of the accomplished concert pianist. S/he does not reflect on the placement of each finger in the course of playing

a piece. Yet, s/he could certainly act otherwise. The action is intentional and in that sense willed, even though it is undertaken unreflectively. Much crime-prevention and crime-commission seems to fall into this category. For example, locking doors and windows at night or when going out, or activating the central-locking system have become for many routines that reduce risk of victimization. Of course, the householder or driver is not acting compulsively. They could do otherwise, but they are acting unreflectively as a matter of habit. As law-abiding citizens, for the most part we do not work out whether there is an opportunity to commit crime that would maximise our expected utility. Instead we have a standing decision to obey the law. We pay for goods in shops, buy tickets on buses and trains, pay for meals in restaurants, and ignore provocations at railway stations without a moment's thought, even though we could do otherwise. Likewise the 'habitual criminal' is apt to take advantage of criminal opportunities as and when they arise as a matter of routine, again unreflectively albeit that they could act otherwise. It is easy to miss the importance of routine as, like routine itself, it is taken for granted.

There are good reasons for routines. The economist Geoffrey Hodgson (1997: 665) lists seven:

1. *Optimisation*: where the choice set is known and it is possible to employ procedures and decision-rules to find an optimum.

2. *Extensiveness*: where the information may be readily accessible and comprehensible but the search for it requires the application of substantial time and other resources.

3. *Complexity*: where there is a gap between the complexity of the decision environment and the analytical and computational capacity of the agent.

4. *Uncertainty*: where crucial information and probabilities in regard to future events is essentially unobtainable.

5. *Cognition*: the general problem of dealing with and interpreting sense data.

6. *Learning*: the general process of acquiring crucial knowledge about the world.

7. *Communication*: the general need to communicate regularly with others.

The first five of these are self-explanatory. The sixth, 'learning,' refers to the pre-existing analytic frameworks that shape the ways in which we apprehend new information: we are not Bayesian learning machines adapting to new information to modify our estimates of risk, effort and reward, but instead we are apt to interpret new information in terms of our existing cognitive frameworks. These frameworks (and the neural circuitry that underpin them) are, however, themselves subject to change on the basis of experience that challenges prior assumptions. Once new frameworks are formed, albeit that initially they require conscious thought, they eventually become automatic frameworks for interpreting new events. The seventh, 'communication,' refers to the kind of routine signalling that occurs in humans and animals to convey behavioural intentions. It is sometimes conscious and sometimes hard-wired. Hodgson gives examples that are directly relevant to SCP. One is the message, 'Never negotiate with terrorists' and the other, 'Never give in to terrorists'. In both cases the behaviour could otherwise be different (and in specific instances may be sub-optimal), but the communicative routine is oriented towards achieving a wider preventive outcome.

In a later paper Hodgson (2010: 2) relates the development of routines to evolutionary principles, quoting no less than Charles Darwin, as saying, 'Men are called "creatures of reason," more appropriately they would be "creatures of habit"' (Darwin 1974: 85, 115). Habitual behaviours make evolutionary sense: making decisions exacts costs (time, cognitive effort etc); repeating responses which proved advantageous when previously encountering similar stimuli (such as avoiding snakes and cliff faces) frees our brains to consider other issues whilst simultaneously executing said behaviour (see Ekblom, this handbook). In this view habit comes first and (rational) choice then emerges, at least at the margins.

Habits can prove hard to break, however. Entire industries have been established on devising effective methods to extricate difficult-to-dislodge habitual behaviours such as smoking and gambling. Most relevant here is whether habitual aspects of human behaviour are open to situational intervention. The fact that routines are unthinking but enduring makes them less promising than rational choice calculations or rule reminders or provocation reduction, all of which speak to the immediate situation and the prompts within it to act in one way or another. For the potential victim, it is easier to see how establishing and acting on routines can be

important. Well-designed situational measures, such as central locking for cars can facilitate the establishment of precautionary routines. For the habitual offender, the question is whether situational measures can be put in place, which will undermine taken-for-granted offending routines. There may be a few possibilities.

1. Disruption of habituated offending. It is a sobering fact that most criminal behaviour goes unpunished. In England and Wales it is estimated that only a tiny proportion of crime (about 3%) results in a criminal conviction or caution (Barclay and Taveres 1999; see also Burrows et al. 2005). From the perspective of the offender, Cook (1980) argues that "if active criminals find that they are rarely arrested, unlikely to be convicted if arrested, and unlikely to be sentenced to prison terms if convicted, then they may acquire a justified sense of invulnerability" (1980, p. 224). Pioneering work by Ken Pease and colleagues on offender self-selection (Chenery et al. 1999), David Kennedy's on targeted deterrence (Kennedy 2008), and strategies implemented by Durham Police (UK) to disrupt organised crime families (Tilley 2014) all undermine routine offending patterns by altering the taken-for-granted context sustaining the routines (patchy enforcement; gang culture legitimating violence; and community intimidation and collusion)

2. Randomised crackdowns/checks: high rate randomised breath tests undermine the notion that drinking and driving can be routinely undertaken with little risk that the driver will be caught (Homel 1994, 1995). The same may go for random passenger searches at airports and for random speed traps leading to automatic prosecution and the risk that one's license will be taken away.

3. The signalling that neither blackmail nor terrorist demands will receive case-by-case attention, but will be routinely ignored (as noted by Hodgson). This amounts to mobilisation of routines as against rational acts.

4. The randomisation/variation of routes and times for wages collections or payment into banks to undermine victim-availability routines (Smith and Louis 2010). This amounts to artful creation of non-routines as against routines that reflect rational decisions.

5. Restriction of staff tenure, for example of police and accounting roles, to disrupt the creation of mutually rewarding fraud and corruption routines (Mundy 1999).

6. Broken windows policing. The signs permitting routine incivilities are removed thereby impeding decisions underpinning routinized, unthinking antisocial behaviour (Wilson and Kelling 1982).

7. Puncture pluralistic ignorance. Where we routinely behave in ways that accord with what we deem others routinely to approve, our behaviours can be altered if misconceptions of what others believe are persuasively punctured (Prentice and Miller 1993).

This section has suggested that although rational choice remains an invaluable default position for understanding crime patterns and for thinking about preventive interventions, it can usefully be supplemented with rule-reminders and excuse-removers; provocation removal and reduction; and routine mobilisation and disruption.

Conclusion

Much can be learned about crime patterns and crime prevention by looking only at opportunity distribution, without attending to the ways in which opportunities are apprehended. The early work of SCP (notably *Crime as Opportunity*) was indifferent to the internal processes lying behind decisions to take advantage of opportunities to offend. It was enough to note that opportunity made a difference to rates of criminal (and other unwanted) behaviours. The retro-fitting of rational choice to try to open up the black box of opportunity use has served SCP well. It was good enough to create a preliminary heuristically useful classification of preventive techniques that could be drawn on by those trying to think through preventive strategies. It was also good enough to drive explanatory efforts in relation to many patterns of offending.

This chapter, however, has suggested that more recent developments in SCP have, in some cases tacitly, acknowledged that rational choice is insufficient to explain crime patterns and in particular the ways in which situational contingencies can influence criminal behaviour without being mediated through *rational* choice. The term 'choice' may still be relevant in that the person could have acted differently, but the choices need not be altogether conscious and also may be informed by considerations other than utility-maximisation.

The next chapter of SCP will, we think, need to build on what has been achieved so far. It needs to include a wider range of cues to behaviour than those associated with traditional rational choice, some of which relate to reasoning that is not focused on utility maximisation and others that work 'behind the backs' of potential offenders to shape behaviour in ways they will not ordinarily recognise consciously (but of which they could become aware). This suggests a research agenda that does not assume offenders know fully how they are deciding what to do and that teases out grounds for decision-making that are not oriented to extrinsic utility maximisation. It also broadens the range of techniques that policymakers and practitioners might draw on in trying to prevent specific crimes. The acknowledgement of rule-reminders and provocation reduction are moves already made in this direction, but there is scope to broaden this further to include methods of disrupting (or mobilising) habitual behaviour and also measures that trigger responses that are sub-conscious (for e.g. see Thaler and Sunstein, 2008 and the literature on 'nudges'). In making these moves, SCP would be following the direction already taken in economics, which has come to embrace the findings and methods of the broader behavioural sciences, as well as other relevant disciplines.

What we are suggesting is certainly no repudiation of SCP. What we hope it might stimulate, however, is greater and more explicit research attention to techniques whose underlying mechanisms operate at a subconscious level or which involve the removal of options. In both cases reasoning and choice-making are taken out of the equation. Even where rational choice is at work in offending behaviours, in practice it might sometimes be more practical to focus situational measures on the non decision-making cues that lie behind the criminal acts or on the removal of any option to choose to commit the crime.

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References

Asch, S. E. (1955). Opinions and social pressure. *Scientific American*, 193(5): 31–35.

Barclay, G. C. and Tavares, C. (1999). *Digest 4: Information on the Criminal Justice System in England and Wales*. London: Home Office.

Berkowitz, L. (1983). The experience of anger as a parallel process in the display of impulsive, "angry" aggression. In R. Geen & E. I. Donnerstein (eds.), *Aggression: Theoretical and empirical reviews,* 1, pp. 103-133.

Birks, D., Elffers, H., Manning, M. and Townsley, M. (in preparation). Challenging life-course complexity: utility-based explanations for criminal involvement.

Brantingham, P.J. and Brantingham, P.L. (2008). Crime pattern theory, in R. Wortley and L. Mazerolle (eds.), *Environmental Criminology and Crime Analysis*. Willan: Cullompton, pp. 78-93.

Braga, A. A. and B. J. Bond. (2008). Policing crime and disorder hot spots: A Randomized controlled trial. *Criminology,* 46: 577-607.

Burrows, J., Hopkins, M., Hubbard, R., Robinson, A., Speed, M. and Tilley, N. (2005). *Understanding the attrition process in volume crime investigations*. Home Office Research Study 295. London: Home Office.

Chenery, S., Henshaw, C. and Pease, K. (1999). *Illegal parking in disabled bays: A means of offender targeting*. Home Office, Policing and Reducing Crime Unit, Briefing note 1/99. London: Home Office.

Clarke, R.V. (1980). Situational crime prevention: theory and practice. *British Journal of Criminology*, 20:136–147.

Clarke, R.V. (eds.) (1992). *Situational Crime Prevention: Successful Case Studies.* Albany, NY: Harrow & Heston.

Clarke R.V. (eds.) (1997). *Situational crime prevention: successful case studies,* 2nd edn. Harrow and Heston, Guilderland.

Clarke, R.V. (2008). Situational Crime Prevention, in R. Wortley and L. Mazzerole (eds.), *Environmental Criminology and Crime Analysis*. Willan: Cullompton, pp. 178-194.

Clarke, R.V. and Cornish, D. B. (1985). Modeling offenders' decisions: A framework for research and policy, in M. Tonry and N. Morris (eds.), *Crime and Justice: An Annual Review of Research,* Vol. 6. Chicago: University of Chicago Press, pp. 147-185.

Clarke R.V. and Homel, R. (1997). A revised classification of situational crime prevention techniques, in S. P. Lab (eds.), *Crime prevention at a crossroads*. Academy of Criminal Justice Sciences and Anderson, Highland Heights/Cincinnati, pp 17-27.

Clarke, R. V. and Lester, D. (1989). *Suicide: Closing the Exits.* New York, NY: Springer-Verlag.

Clarke, R. V. and Newman, G. R. (2006). *Outsmarting the terrorists*. New York: Praeger Publishers.

Cohen, L. E. and Felson, M. (1979). Social change and crime rate trends: A routine activities approach. *American Sociological Review*, 44: 588–608.

Colmon, A. (1995). *Game theory and its applications*. Oxford, UK: Butterworth-Heinemann.

Cook, P. J. (1980). Research in Criminal Deterrence: Laying the Groundwork for the Second Decade, in N. Morris and M. Tonry (eds.), *Crime and Justice*, vol. 2. Chicago: University of Chicago Press, pp. 211-268.

Cornish, D.B. (1994). The procedural analysis of offending and its relevance for situational prevention, in R.V. Clarke (eds.) *Crime prevention studies*, volume 3, Monsey, NY: Criminal Justice Press, pp.151-196.

Cornish, D. and Clarke, R. V. (2008). The rational choice perspective, in R. Wortley and L. Mazzerolle (eds.) *Environmental Criminology and Crime Analysis*. Willan: Cullompton, pp. 21-47.

Darwin C. (1974). *Metaphysics, Materialism, and the Evolution of Mind: early writings of Charles Darwin*, transcribed and annotated by Paul H. Barrett with a commentary by Howard E. Gruber. Chicago: University of Chicago Press, Chicago.

Ekblom, P. (this handbook). Evolutionary Approaches to Rational Choice, in W. Bernasco, H. Elffers and J.-L Van Gelder (eds.), *The Oxford Handbook on Offender Decision Making*. Oxford: Oxford University Press.

Farrell, G., Tseloni, A., Mailley, J. and Tilley, N. (2011). The crime drop and the security hypothesis. *Journal of Research in Crime and Delinquency*, 48:147–175.

Felson, M. (1986). Linking Criminal Choices, Routine Activities, Informal Control, and Criminal Outcomes, in D. Cornish and R. V. Clarke (eds.), *The Reasoning Criminal*. New York: Springer-Verlag, pp. 119-128.

Friedman, M. (1953). The Methodology of Positive Economics, in M. Friedman (eds.), *Essays in positive economics*. Chicago: University of Chicago Press, pp. 3–43.

Goldthorpe, J. (2000). *On Sociology*. Oxford: Oxford University Press.

Goldthorpe, J., Llewellyn, C. and Payne, C. (1987). *Social Mobility and Class Structure*. Oxford: Clarendon Press.

Guerette, R.T. (2009). The pull, push and expansion of situational crime prevention evaluation: an appraisal of Situational Crime Prevention of thirty-seven years of research, in N. Tilley and J. Knutsson (eds.), *Evaluating crime reduction initiatives*, vol 24, Crime prevention studies. Criminal Justice Press: Monsey, pp. 29–58.

Guerette, R.T. and Bowers, K. (2009). Assessing the extent of crime displacement and diffusion of benefit: a systematic review of situational crime prevention evaluations. *Criminology*, 47(4): 1331–1368

Hodgson, G. (1997). The ubiquity of habits and rules. *Cambridge Journal of Economics* 21: 663-84.

Hodgson, G. (2010). Choice, habit and evolution. *Journal of Evolutionary Economics*, 20: 1-18.

Homel, R. (1994). Drink-driving law enforcement and the legal blood alcohol limit in New South Wales. *Accident Analysis and Prevention*, 26(2): 147-155.

Homel, R. (1995). Can police prevent crime? In K. Bryett and C, Lewis (eds.), *Contemporary Policing: Unpeeling Tradition*. Sydney: Macmillan, pp 7-34.

Kahneman, D. (2011). *Thinking Fast and Slow*. New York: Farrar, Straus and Giroux.

Kennedy, D. M. (2008). *Deterrence and crime prevention: reconsidering the prospect of sanction*. New York: Routledge.

Lakatos, I. (1978). *The Methodology of Scientific Research Programmes*. Cambridge: Cambridge University Press.

Latsis, S. (1976). *Method and Appraisal in Economics*. Cambridge: Cambridge University Press.

Leclerc, B. and Wortley, R. (2014). *The reasoning criminal*: twenty-five years on. In Leclerc, B. and R. Wortley (eds.), *Cognition and Crime: Offender decision making and script analysis*. London: Routledge.

Lemieux, A. M. (eds.) (2014). *Situational Crime Prevention of Poaching*. Abingdon, Oxon: Routledge.

Martinson, R. (1974). What Works? - Questions and Answers about Prison Reform. *The Public Interest*, 35: 22-54.

Mayhew, P.M., Clarke, R.V., Sturman, A. and Hough, J.M. (1976). *Crime as opportunity*. Her Majesty's Stationary Office, London. Home Office Research Study, No. 34.

Milgram, S. (1974). *Obedience to Authority: An Experimental View*. New York: Harper and Row.

Mundy, G. (1999). *Tenure Policy and Practice*. Police Research Series Paper 106. London: Home Office.

Newman, G. and Clarke, R.V. (2003). *Superhighway Robbery: Preventing Ecommerce Crime*. London: Willan.

Pettigrew, T. (1979). The ultimate attribution error: extending Allport's cognitive analysis of prejudice. *Personality and Social Psychology Bulletin* 5(4): 461-476.

Prentice, D. and Miller, D. (1993). Pluralistic ignorance and alcohol use on campus: social consequences of misperceiving the social norm. *Journal of Personality and Social Psychology* 64(2): 243-256

Ross, L. (1977). The intuitive psychologist and his shortcomings: Distortions in the attribution process. In L. Berkowitz (eds.), *Advances in experimental social psychology.* (pp. 173-220). New York: Academic Press.

Shane, J.M., Piza, E.L. and Mandala, M. (2015). Situational crime prevention and worldwide piracy: a cross-continent analysis. *Crime Science*, 4: 21.

Simon, H. (1955). A behavioural model of rational choice. *Quarterly journal of economics* 69, 99-118.

Simon, H. (1996). From substantive to procedural rationality, in S. Latsis (ed) *Method and Appraisal in Economics*. Cambridge: Cambridge University Press, pp. 129-148.

Smith, L. and Louis, E. (2010). *Cash in Transit Armed Robberies*. Trends and Issues in Crime and Criminal Justice 397. Canberra: Australian Institute of Criminology.

Smith, M.J., Clarke, R.V. and Pease, K. (2002). Anticipatory benefit in crime prevention, in N. Tilley (eds.), *Analysis for crime prevention*, vol 13, Crime prevention studies. Criminal Justice Press, Monsey, pp. 71-88.

Sykes, G.M. and Matza, D. (1957). Techniques of Neutralization: A Theory of Delinquency. *American Sociological Review,* Vol. 22, No. 6, pp. 664-670

Thaler, R. H.. and Sunstein, C. R. (2008). *Nudge: Improving Decisions about Health, Wealth, and Happiness*. Yale University Press.

Tilley, N. (2014). There is nothing so practical as a good theory: teacher-learner relationships in applied research for policing, in E. Cockbain and J. Knutsson (eds.), *Applied Police Research: Challenges and Opportunities*. London: Routledge, pp. 141-152.

Tilley, N. and Sidebottom, A. (2014). Situational crime prevention, in G. Bruinsma and D. Weisburd (eds.), *Encyclopedia of Criminology and Criminal Justice*, New York: Springer-Verlag, pp. 4864-4874.

Walsh, D. (1994). The Obsolescence of Crime Forms, in R.V. Clarke (eds.) *Crime Prevention Studies*, Vol. 2., edited by R. V. Clarke. Monsey, NY: Willow Tree Press, pp. 149-164.

Wartell, J. and Gallagher, K. (2012). Translating environmental criminology theory into crime analysis practice. *Policing: a Journal of Policy and Practice*, 149-163.

Weisburd, D. and Piquero, A. (2008). How Well Do Criminologists Explain Crime?: Statistical Modeling in Published Studies. *Crime and Justice* Vol 17, pp. 453-502.

Weisburd, D., Hinkle, J., Braga, A. and Wooditch, A. (2015). Understanding the Mechanisms Underlying Broken Windows Policing: The Need for Evaluation Evidence. *Journal of Research in Crime and Delinquency*, 52(4), pp 589-608.

Wilson, J. and Kelling, G. (1982). Broken windows. *The Atlantic Monthly*, March: 29-38.

Wortley, R. (2001). A classification of techniques for controlling situational precipitators of crime. *Security Journal, 14(4)*, 63-82.

Wortley, R. (2008). Situational precipitators of crime. In R. Wortley and L. Mazerolle (ed.), *Environmental criminology and crime analysis*. Cullompton, UK: Willan, pp. 48-69.

Wortley, R. (2013). Rational choice and offender decision making: lessons from the cognitive sciences, in B. Leclerc, R. Wortley (eds.), *Cognition and Crime: Offender Decision Making and Script Analyses*, pp. 237-251.

Wortley, R. and Smallbone, S. (eds.) (2006). *Situational prevention of child sexual abuse*. Crime Prevention Studies, vol. 19. Monsey, NY: Criminal Justice Press.

Zimbardo, P. (2007). *The Lucifer Effect*. New York, NY: Random House.