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Offender Decision-Making: Decision Trees and Displacement

Final Summary Overview

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Purpose of Project

Studies of offender decision-making have often simplified the analysis into the decision to offend or not offend. Here, we explore a range of alternatives within the “not offending” category using a framework derived from the concept of crime displacement. Decision trees were employed to analyze the multi-staged decision-making processes of criminals who are blocked from offending due to a situational crime control or prevention measure. We were interested in how offenders evaluated displacement options as available alternatives. A better understanding of how criminals respond to crime control and prevention efforts, beyond simple desistance, helps expand offender decision-making theory. Such knowledge also provides insight into the efficacy of crime prevention practices and suggests new and useful ways to improve these.

Project Design

Methods

Semi-structured interviews were conducted with 200 adult offenders, either in jail or on probation under the authority of the Texas Department of Criminal Justice, from 14 counties. To be included in the sample, an offender had to have a minimum of three convictions for predatory property or street crime (auto theft, vehicle burglary, residential/commercial burglary, shoplifting, or street/commercial robbery). Offenders were asked about their desistance/displacement decision-making when confronted with a crime prevention or crime control measure.

All data were collected through face-to-face offender interviews. We used mixed methods in that the interview format was designed to allow both open-ended questions akin to those employed in previous ethnographic research, and a series of scenarios similar to those used in studies employing the hypothetical scenario method. Offender demographic data were also collected.

Each interview involved three parts: (1) offender experiences; (2) a crime control measures survey; and (3) situational crime vignettes. Subjects were first asked about their experiences involving situations in which they wanted to commit a crime but chose not to do so due to a crime control or prevention measure. We explored why they made the choice they did, what they then decided to do, and their assessments of any changes in effort, risk, or reward.

Next, subjects were asked to assess the effect of a standard list of 10 to 17 control/prevention measures for their particular crime type and to explain why they thought the measure did or did not have an effect. They were asked to rank order those measures that had an effect, and then indicate their chosen desistance or displacement response.

Finally, subjects were given a series of situational vignettes, each describing a prevented crime situation, followed by five displacement options (spatial, temporal, target, persist/tactical, and functional) and a desistance option. Quantitative data from the crime vignettes provided the subjects' preferred order of displacement options, their assessments of effort and risk, and the point at which they decided not to offend. Offending displacement decision trees were then created from these data. The ordinal selections of these options were evaluated against the effort and risk levels.

Our analysis was informed by the qualitative data from the subjects' explanations and experiences to provide a more in-depth understanding of their decisions. Attention was also paid to the use of heuristics and other prospect theory explanations for asymmetric decisions and exceptions to rational choice theory.

Human Subjects Protection

Of the 200 individuals interviewed for this project, 115 (58%) were imprisoned and thus classified as protected subjects. The Human Subjects Protection Office at the National Institute of

Justice (NIJ) approved the research on April 24, 2014. The final research plan was approved by Texas State University's Institutional Review Board (IRB) on November 6, 2014, and then reviewed annually. On November 30, 2017, the university IRB regulatory manager officially closed the study as all data collection and analysis of identifiable information was concluded.

Data Analysis

Subject Characteristics

The characteristics of the 200 offenders interviewed for this project were as follows:

- sex: male 173 (87%); female 27 (14%)
- race/ethnicity: Hispanic 84 (42%); white 53 (27%); black 53 (27%); other 6 (3%); mixed 4 (2%)
- current age: mean 33.2 years (mode 20 years)
- age at first arrest: mean 17.6 years (mode 17 years)
- time from age at first arrest to current age: mean 15.5 years (mode 4 years).

Offender Experiences

Subjects were asked about their experiences with crime control/prevention measures. The notes from the semi-structured interviews ($N = 200$) were coded in NVivo using 17 nodes (topics): offender motivation; need; measure avoidance; measure credibility; measure deterrence; crime effort; crime risk; crime reward; modus operandi and tactics; opportunity; target selection; spatial patterns; temporal patterns; offending frequency; chance and luck; instinct; and other. Nodes were also generated for each individual question. These responses provided insight and detail into how

offenders regarded crime control efforts, how they tried to circumvent them, and under what conditions they would desist or displace.

Many subjects stole to support their drug habit or were under the influence of alcohol or drugs when they offended. These offenders were highly motivated. They accepted high risk and were willing to put forth considerable effort, leading to higher probabilities of displacement.

Subjects typically offended near their homes, an accomplice's neighborhood, or other familiar areas. However, shoplifters were often willing to travel some distance to find a preferred store type. While target selection was relatively straightforward, some offenders employed ingenuous methods to steal and circumvent crime control/prevention measures. Certain measures, such as police patrols or attentive store clerks, had a strong deterrent value; others, such as alarms, much less so. A few measures lacked credibility (warning signs) and were simply ignored.

Measures Survey

Subjects were asked to assess the effect of a standard list of control/prevention measures for one of seven crime types and to indicate whether the measure had an effect ($N = 2,415$ measure evaluations). They were then asked to rank order those measures that had an effect, and indicate whether they led to desistance or displacement.

Table 1 shows the overall effect of crime control and prevention measures on particular crime types. About half of the measures had an effect on the decision to offend (though this varied somewhat by subject). Crime control measures had the greatest impact on auto theft and theft from auto (57%), and the lowest on shoplifting (39%).

Crime	Impact (N)	Impact (%)	No Impact	Depends	N/A	Total
Auto theft	127	57	100	8	5	240
Commercial burglary	120	54	107	7	4	238
Commercial robbery	74	51%	75	4	1	154
Residential burglary	364	55%	315	20	15	714
Shoplifting	192	39%	322	13	13	540
Street robbery	48	52%	47	3	2	100
Vehicle burglary	231	57%	182	7	9	429
Total	1,156	51%	1,148	62	49	2,415

Table 1. Effect of Crime Control/Prevention Measures for Crime Type.

Table 2 shows the overall desistance and displacement effects of crime control/prevention measures by specific crime types. Only 13% of positive impact responses (where subjects indicated the measure would have an effect on them) involved desistance from offending; this ranged from a low of 4% for auto theft to a high of 34% for street robbery. Spatial displacement accounted for about half of the choices, followed by target displacement.

Crime	Spatial	Temporal	Target	Tactical	Functional	Desist
Auto theft	56%	3%	32%	4%	0%	4%
Commercial burglary	52%	2%	25%	3%	0%	17%
Commercial robbery	54%	3%	27%	8%	0%	8%
Residential burglary	41%	3%	44%	3%	0%	8%
Shoplifting	59%	2%	19%	9%	0%	12%
Street robbery	44%	0%	12%	10%	0%	34%
Vehicle burglary	56%	5%	26%	4%	0%	8%
Total	52%	3%	26%	6%	0%	13%

Table 2. Desistance and Displacement by Crime Type (*N* = 1,189).

The various crime control/prevention measures had different influences on the decision to desist for specific crime types. Each measure was assessed by whether it had an effect, its effect rank, and whether it led to desistance. Table 3 shows the most effective crime control measures by rank and desistance. Rank scores were calculated by multiplying the number of respondents who assigned a measure a certain rank order by the inverse of the rank, and then summing for all ranks. Desistance was measured by the proportion of respondents who stated the measure would cause them to stop offending.

Crime	Rank	Desistance
Auto theft	police patrol steering locks	police patrol private security guards
Commercial burglary	police patrol private security guards	private security guards police patrol
Commercial robbery	police patrol private security guards	police patrol, armed business signs private security guards
Residential burglary	police patrol residence security cameras	police patrol private security guards
Shoplifting	attentive sales clerk private security guards	controlled store entry/exit attentive sales clerk store security camera signs
Street robbery	police patrol street security camera	security cameras police patrol, street lighting, dog
Vehicle burglary	police patrol street security cameras	police patrol private security guards

Table 3. Crime Control Measures Rank and Desistance Effects.

Of those instances in which a subject explained why he or she desisted in response to a crime control/prevention measure, 96% (126 out of 131) involved concern about an increase in risk – either being arrested or being identified (and presumably later arrested). Increased effort or reduced reward appeared to be more likely to lead to displacement than desistance.

Crime Vignettes

Subjects were given a series of situational crime vignettes and asked to respond by selecting a displacement option or choosing to desist. The subject's first choice was then removed from consideration and he or she was again asked to make a selection; this process was repeated until the subject elected to desist.

Most subjects chose to persist or displace; in only 14% of the vignettes did the offender initially decide to desist, though, unsurprisingly, this proportion grew with the number of thwarted displacement options (see Figure 1). The mean number of subject choices per vignette was 2.6.

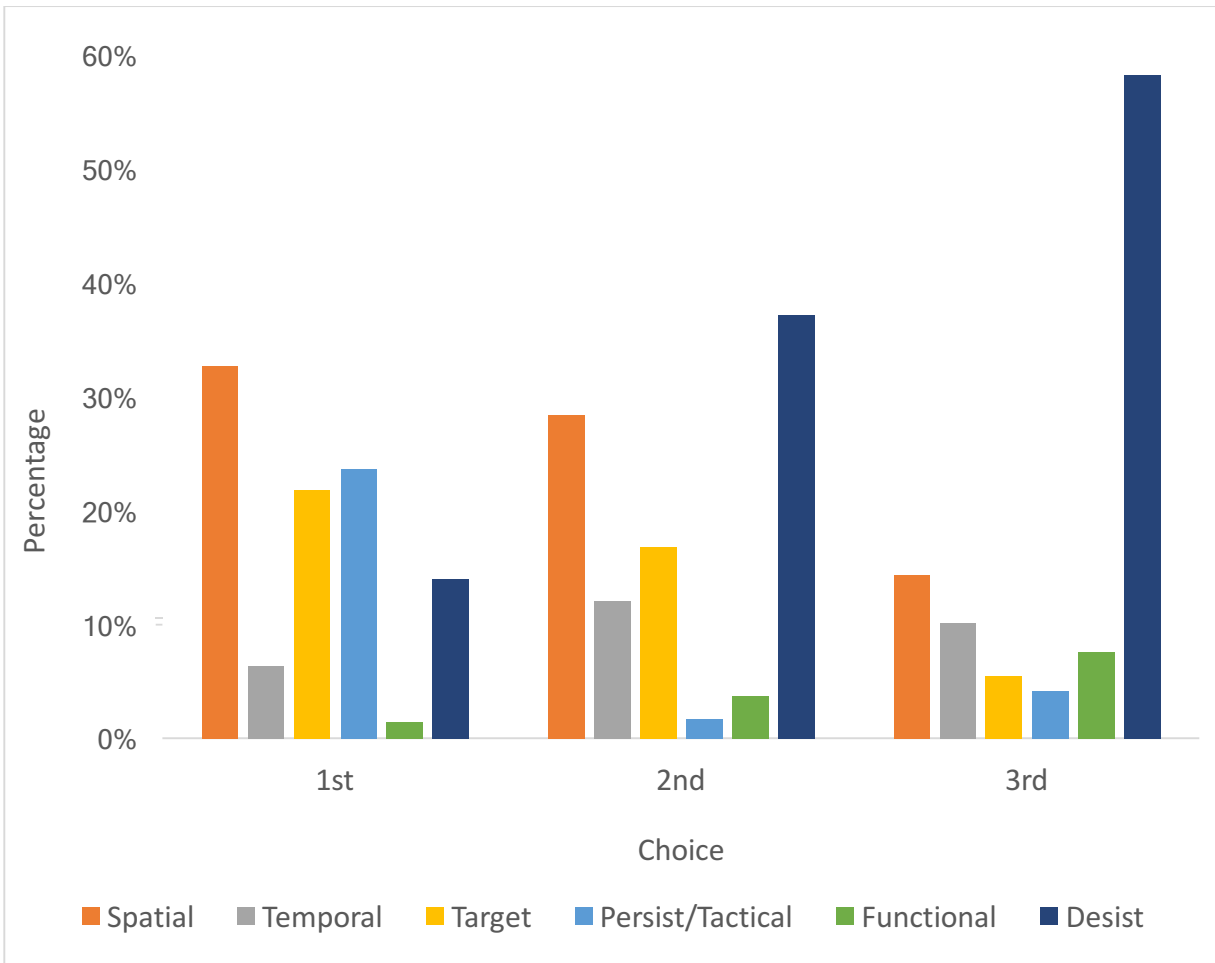


Figure 1. First Three Displacement and Desistance Choices.

Spatial displacement was the most commonly selected first option; in a third of the vignettes, subjects chose to offend in a different geographic area upon confronting a crime prevention or control measure. Spatial displacement was also the most commonly selected option overall ($N = 313$, 25%), across all six vignette stages (the maximum in our study). Persist/tactical and target

displacement were the next most common first choices (24% and 22%, respectively). Functional displacement was the least common first choice; there were only 50 (4%) such choices overall, most involving a shift to lower-level crimes, such as shoplifting ($N = 15$) or drug dealing ($N = 13$).

Some displacement choices followed particular decision tree sequences. Target and spatial displacement, in particular, were often linked. The decision tree in Figure 2 shows the probability (and number of vignettes in parentheses) of specific responses, with each level of the tree indicating whether the choice was the subject's first, second, or third. For the second and third choices, only decision options associated with 10 or more vignettes are displayed. Some of the sequences continued into higher level choices, while others ended in desistance (depicted by a black triangle with the abbreviation "DES" inside); a few subjects stated nothing would deter them (black triangle with no text).

When only the first two choices are considered, the most common displacement sequence patterns were ($N \geq 20$):

- spatial → desistance ($N = 93$)
- target → spatial ($N = 65$)
- persist/tactical → target ($N = 48$)
- persist/tactical → spatial ($N = 31$)
- spatial → temporal ($N = 30$)
- target → desistance ($N = 24$).

When the first three choices are considered, the most common displacement sequence patterns were ($N \geq 15$):

- target → spatial → desistance ($N = 40$)
- persist/tactical → target → spatial ($N = 25$)

- persist/tactical → spatial → desistance (N = 18)
- spatial → temporal → desistance (N = 15).

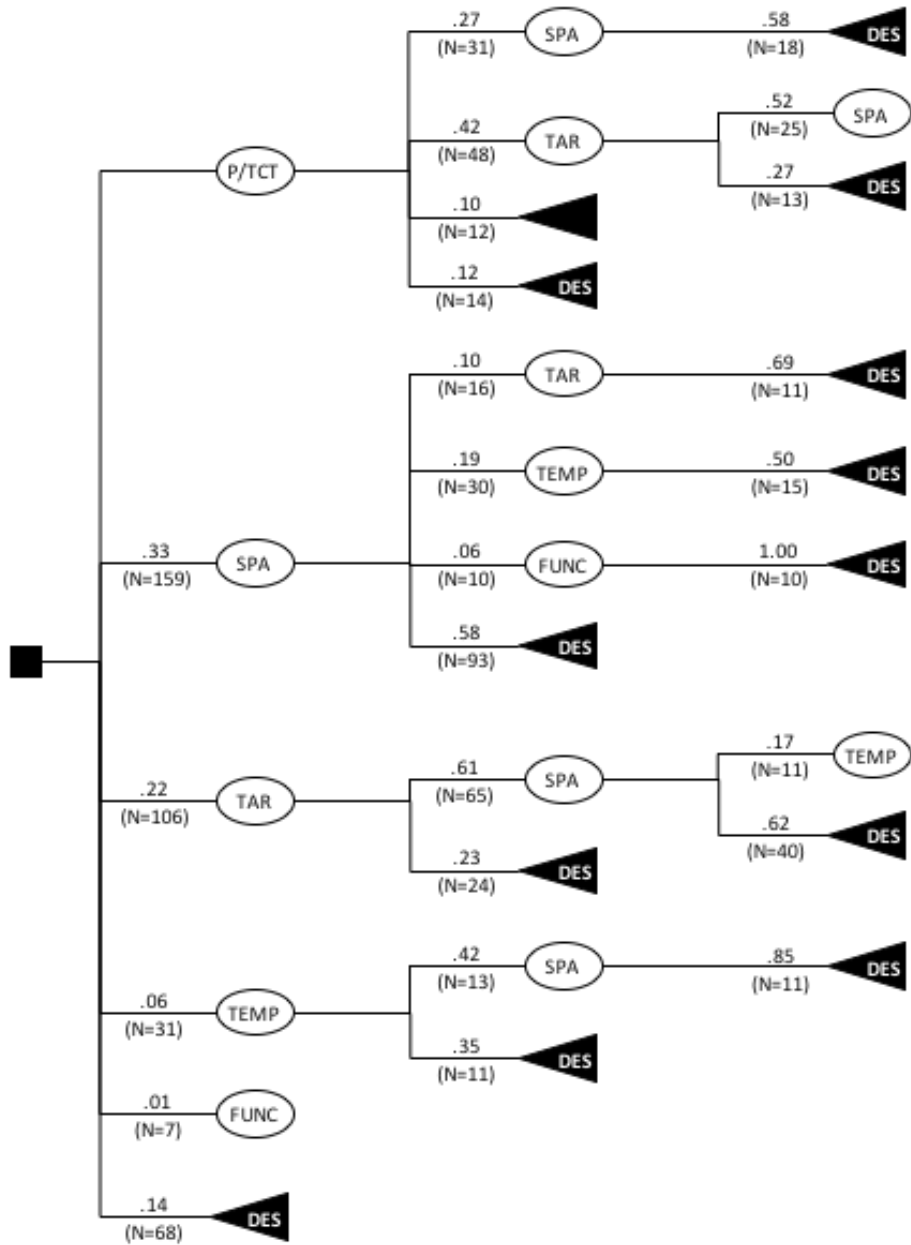


Figure 2. Decision Tree for First Three Displacement/Desistance Choices

(P/TCT=persist/tactical, SPA=spatial, TAR=target, TEMP=temporal, FUNC=functional, DES=desistance).

The crime control/prevention measures with the largest desistance effects for specific crime types were:

- auto theft – police patrol (63%), private security guards (60%), vehicle kill switches (60%)
- commercial burglary – police patrol (50%), street lighting (45%)
- commercial robbery – private security guards (60%), silent alarm signs (50%)
- residential burglary – street lighting (50%), residence security camera (43%), property marking signs (43%)
- shoplifting – Business Watch signs (50%), attentive sales clerks (35%), security mirrors (35%), store security camera signs (35%)
- street robbery – police patrol (63%), street security cameras (60%)
- vehicle burglary – private security guards (47%), street security cameras (42%), carport security cameras (42%).

Subjects were more deterred by measures that increased risk than by those that increased effort or reduced reward. Subjects often believed they could circumvent a given crime prevention measure but were still worried about the chances of being apprehended or identified.

Figure 3 shows the distribution for subjects' assessments of changes in effort, risk, and reward for vignette displacement choice responses across all stages ($N = 804$). While many subjects rated these as the "same," there were more "higher" and "much higher" than "lower" and "much lower" ratings.

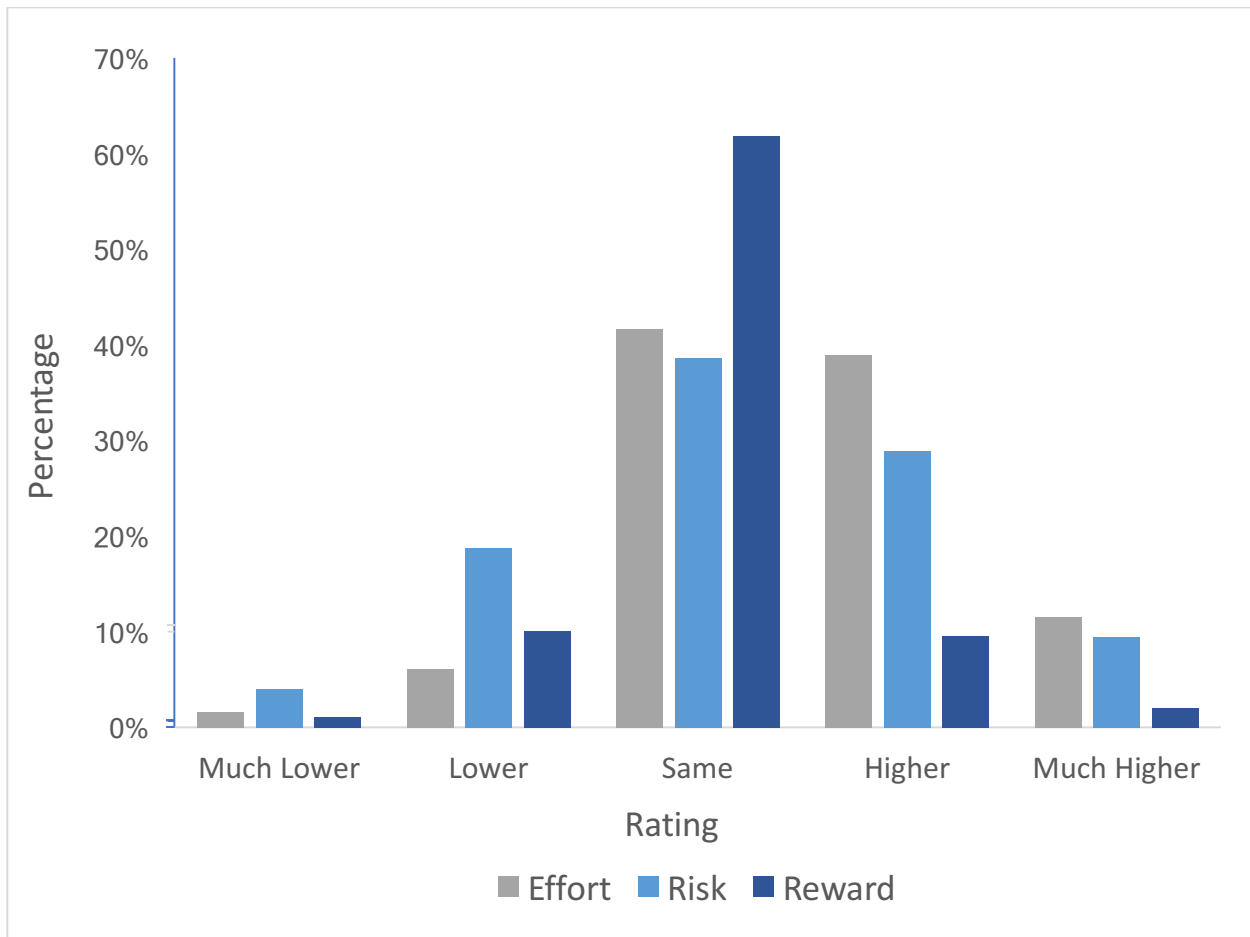


Figure 3. Effort, Risk, and Reward Assessments.

Generally, subjects thought displacement involved more effort than risk; reward changed little. Auto theft required the least effort to respond to, while shoplifting, commercial robbery, and residential burglary required the most. Displacement responses resulted in the highest increase in risk for commercial burglary, and a reduction in risk for street robbery. Reward assessment was the least influenced by displacement; the highest increase (but still quite small) was reported for commercial burglary; the greatest drop was reported for auto theft. For all crime types, reward – (effort + risk) was negative, meaning combined effort and risk increases were not offset by increases in reward.

Figure 4 shows the mean reported changes for effort, risk, and reward across all choices by displacement type ($N = 805$). Spatial displacement involved the most effort, followed by temporal displacement. Persistence/tactical displacement involved the highest change in risk (perhaps attributed more to persistence than to a change in tactics), while functional displacement actually resulted in a decrease in risk, most likely because it led to less serious crime. However, changing crime type was also seen as resulting in reduced rewards. For all forms of displacement, reward – (effort + risk) was again negative; this was true at both the aggregate and individual-level.

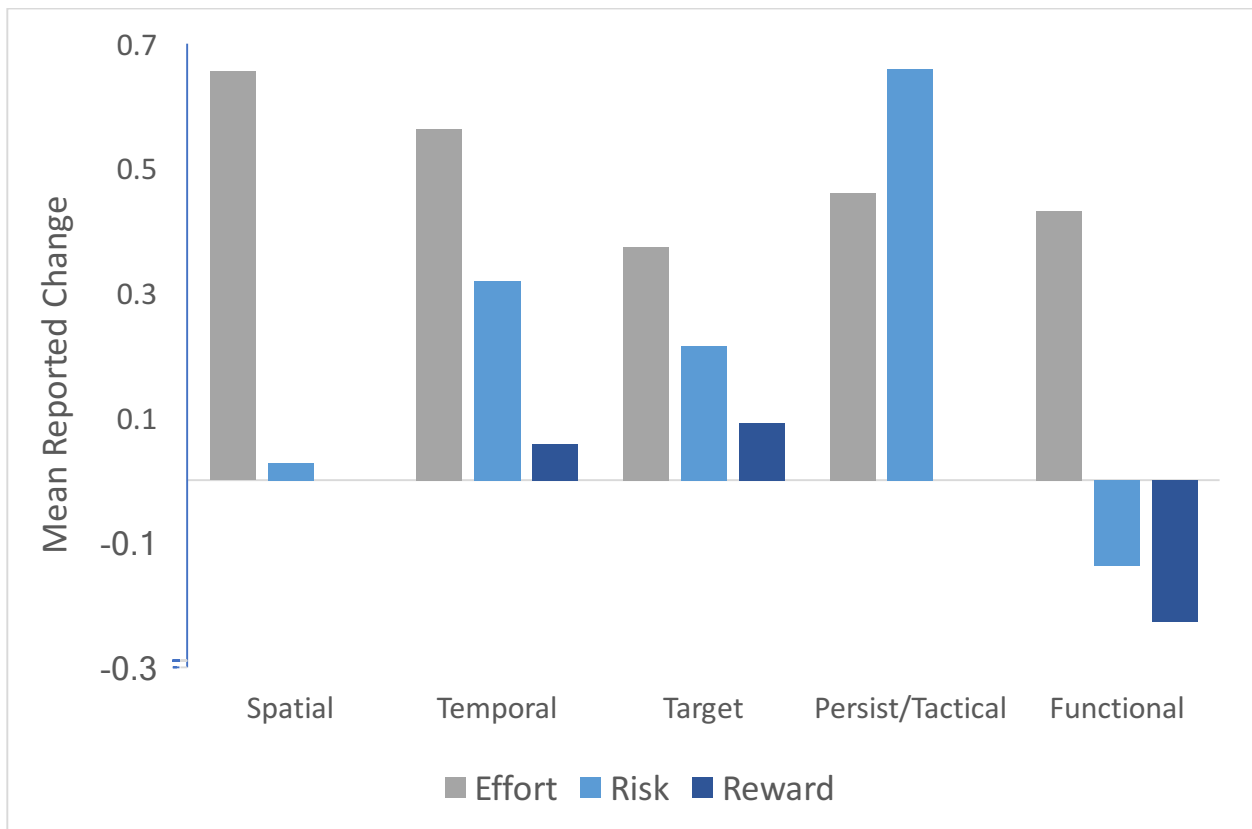


Figure 4. Effort, Risk, and Reward by Displacement Type.

Effort, risk, and reward were analyzed by both crime and displacement type; the following combinations had a mean reported change in excess of 1 (“higher” or greater for effort and risk, “lower” or less for reward).

- effort
 - commercial robbery – persist/tactical
 - shoplifting – functional
 - street robbery – functional
- risk
 - auto theft – persist/tactical
 - commercial burglary – target
 - commercial robbery – persist/tactical
 - street robbery – target
- reward
 - auto theft – functional (decrease).

Subjects’ perceptions of effort and risk slightly increased with each displacement choice ($N = 637$, for subjects who chose at least two displacement options; see Figure 5). While effort and risk marginally increased, reward was more or less consistent.

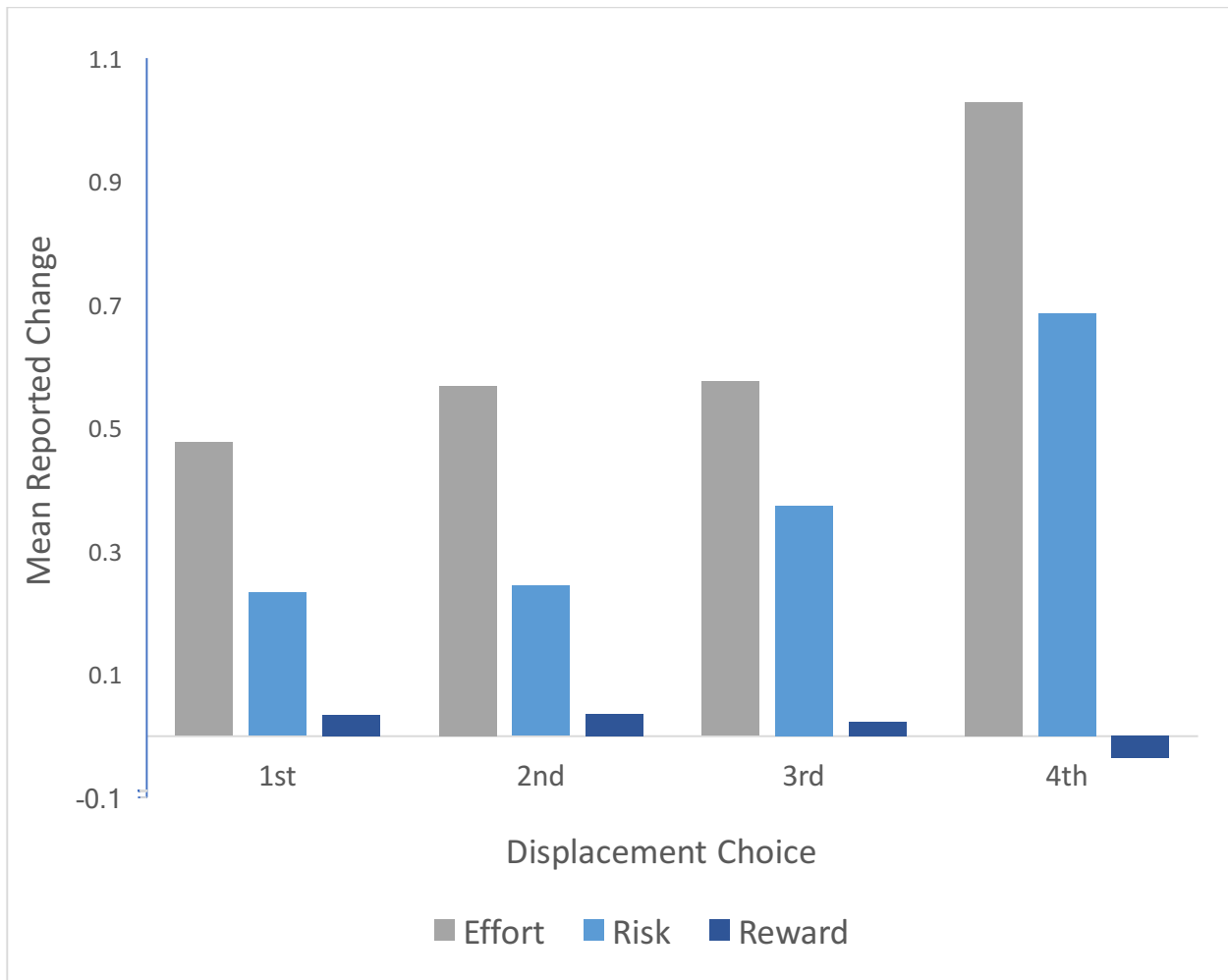


Figure 5. Effort, Risk, and Reward Change by Displacement Choice.

Discussion of Findings

A more comprehensive understanding of offending decisions is important for effective management of crime control and prevention efforts. Criminals typically have a range of options, and viewing their decisions as dichotomous fails to reflect this reality. By including displacement choices in our study, we were able to obtain a more nuanced perspective of offender decision-making and desistance.

Displacement

All three analyses – offender experiences, crime control measures survey, and situational crime vignettes – showed a high probability of offender displacement in response to crime control and prevention efforts. Spatial displacement was the most common form of displacement, followed by persist/tactical and target displacement. Temporal displacement usually only shifted offending a few hours. Functional displacement was rare and, when it did occur, was usually to a less serious type of crime. Confronted with repeated blocked opportunities, most offenders eventually desisted.

Our findings are inconsistent with some of the literature that has found little evidence of displacement. Most of these studies have only examined macro-crime patterns. However, displacement is essentially an individual-level change in offender behavior. Past research has also tended to focus on spatial changes while ignoring the other four forms of displacement. Moreover, spatial displacement has been measured by movement of crime to neighboring areas. Given what we know about the journey to crime, there is little reason to assume spatial displacement is limited to adjacent areas. An offender might find a suitable target area in a different direction, resulting in his or her new territory being situated some miles from the original area.

The divisions between different forms of displacement are not always clear. The distinction between spatial and target displacement depends on the definition (i.e., distance) of a different “place;” if a shoplifter goes to another store in the same mall, is that spatial or target displacement? Many thieves committed multiple crimes at a time, following a circuit in their search for potential targets. In these situations, effective crime control/prevention measures may not lead to desistance but might (or might not, depending on the offender’s needs) result in fewer crimes committed that day and a resultant total lower loss.

Tactical displacement and persistence overlap as there are a limited number of crime control measures and most experienced offenders are aware of them. Our subjects had studied avoidance and circumvention tactics (often learning from criminal peers or the Internet). These tactics became part of their standard *modus operandi* and consequently they were prepared to respond to most common prevention measures.

Temporal displacement is typically short-term; for those subjects who provided a specific estimate ($N = 79$) during their interviews, 52% stated they would try to offend again within the same day, 67% within two days, and 85% in the same week (which is arguably desistance). In most cases, respondents indicated they were only waiting for a change in security circumstances, such as a shoplifter waiting for a store shift change. Many of the subjects knew the best time to offend, so temporal displacement was often seen as suboptimal. For those offenders who needed money for a drug fix, a wait of any length of time was undesirable.

Crime Prevention and Control Measures

The most effective crime control/prevention measures involved humans (police patrols, security guards, attentive sales clerks). Perceived increases in risk had much more influence than increases in effort or reductions in reward. A reduced reward can usually be offset by more effort (i.e., committing additional crimes), and for many of these offenders, crime was their “job,” one in which effort and multiple offending attempts were often necessary. All measures, including those human-based, were contingent on credibility; complicit store staff, inept security guards, fake security cameras, and spurious alarm signs were not taken seriously and likely undercut the effectiveness of legitimate measures.

Decision Theory

Three findings from this study are relevant for offender decision theory. First, many criminals use heuristics in their target selection and decision to offend. Some followed their instinct or “gut feelings” in assessing risk. Several offenders referred to the role of chance and luck (for some, this bordered on superstition or paranoia). Criminals learn by personal experience and their risk and reward assessments can be idiosyncratic. Subjects often perceived the same crime control measure quite differently in terms of effectiveness. Consistent with bounded rationality, some offenders had an incomplete understanding of the capabilities and effectiveness of certain measures (face recognition technology, surveillance cameras) and both under and overestimated the associated risks.

Second, subjects who offended while under the influence of drugs and/or alcohol, or to support a drug habit (and these comprised a considerable portion of our sample), were more willing to take risks or engage in additional effort.

“When I am on drugs I just do the crime and I do not care about anything... you do not think about anything twice, you do not use your mind.”

“I did not care... I would do it with cameras or with people watching me... I would have done it with a gun on my head when I was on Xanax.”

“[Methamphetamine] fueled all my actions, gave me all the energy, the nerve to go and do the burglaries, like nothing is impossible.”

There’s nothing you can do to deter drug users; “they’re going to do whatever they got to do in order to pay for their habit.”

Despite these claims, the research demonstrated that certain crime control measures had an influence on offenders’ decisions to desist or displace. Some subjects talked about being “worn down” by all the effort and “hassle” of trying to avoid being caught.

Third, a number of offenders reported dual motivations; these can be divided into their “needs” and “wants.” For example, some female shoplifters with children talked about stealing for survival – food, rent, diapers, and other living necessities. But they also stole for luxuries. Their motivation – the amount of effort they expended and the risk they accepted – was higher when stealing necessities. However, the most powerful and distorting motivation was the need of some criminals to fund their drug habit.

This dual motivation has implications for understanding reward and its subjective nature. In some cases, it is perhaps better thought of as “need” – for drugs, basic living requirements, or money to pay a fine. The concept of need may better explain decisions of effort and risk, and the choice between desistance or displacement. “Just ’cause, if we needed money, we were going to do it regardless. If it wasn’t in one neighborhood, it was at another. If something didn’t seem right, we’d go to another one.”

Study Limitations

Our subjects had a minimum of three convictions and therefore our findings may not necessarily be representative of less prolific offenders. Moreover, the fact that they had been arrested multiple times may mean they were less “successful” than some other criminals. In any sort of offender interview research, there are concerns regarding subject veracity; certain individuals tend to downplay their culpability, while others exaggerate their activities. However, efforts were made to check for consistency during the interviews and subjects were asked to clarify their claims when necessary. Finally, it may be difficult for some subjects to assign quantitative or ordinate values for subjective assessments such as situational changes in effort, risk, or reward.

Conclusions

This research project provided a broader understanding of the role of displacement in offender decision-making. By moving beyond the limited “offend/not offend” perspective, a more sophisticated basis for building effective crime control and prevention measures can be established. The study also suggests possible refinements in rational choice theory. For some criminals, reward is better thought of as need; in these cases, the high level of offender motivation distorts the relationship between reward and effort and risk. In many situations, however, offenders could still be deterred by multiple credible security measures, particularly those that increased their chances of being arrested or identified.

Scholarly Products Produced or in Process

Criminology. (in preparation). Offender decision-making and displacement.

Journal of Research in Crime and Delinquency. (in preparation). Criminal need, risk, and effort: Implications for rational choice theory.

Justice Quarterly. (in preparation). Offender perspectives of crime control effectiveness. Alternatively (or additionally), we may prepare a version of this article focused specifically on shoplifters, perhaps for publication in *Security Journal*.

Drug and Alcohol Dependence. (awaiting completion of Barbara Smith’s doctoral dissertation). The impact of drug use and addiction on offender reward, risk, and effort: Consequences for crime control and prevention measures.