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Criminal Self-Efficacy and Perceptions of Risk and Reward among Women Methamphetamine Manufacturers

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ABSTRACT

People consider potential risks and rewards while deciding whether to engage in crime. Such perceptions and their impact on behavior can vary according to individual differences like criminal self-efficacy, or one's perception of criminal competency. We examine perceptions of skill, risk, and reward using semi-structured interviews with 46 women "shake and bake" meth cooks currently residing in a halfway house in Alabama. Those who expressed cooking self-efficacy identified many tangible and intangible rewards in meth cooking, which motivated them to persist. They believed the risks were lower and surmountable, employing various risk management strategies. Those who did not express cooking self-efficacy saw cooking as anxiety-inducing, rather than rewarding. They saw the risks as inevitable and made little effort to prevent them but continued cooking to maintain access to meth. Findings indicate that individual levels of criminal self-efficacy should be considered in studies of decision-making and in intervention and treatment strategies.

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Introduction

Decision-making theorists have long argued that people consider potential risks and rewards before engaging in behavior, including committing crime (Beccaria, 1764; Bentham, 1789; Pratt et al., 2008). People weigh the potential pleasure against the pain that may result from various lines of behavior and select the course of action with the greatest expected utility (Becker, 1968). Negative consequences that are especially certain or severe, particularly those that outweigh the rewards, are thought to deter criminal behaviors. However, not everyone is equally responsive to risks. Differences among people, such as self-control, social bonds, or moral inhibitions, alter the impact of risks and rewards on behaviors (Nagin & Paternoster, 1993, 1994; Piquero et al., 2011; Pogarsky, 2002; Wright et al., 2004). These individual differences

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also influence the ways in which people respond to risks, such as by updating risk perceptions or implementing risk management strategies (Gibbs, 1975; Schulz, 2014; Thomas et al., 2013).

Criminal self-efficacy, or people's perceptions of their own criminal competencies, is an individual difference that may help explain how people experience the utility of crime. Perceptions of being skilled at crime, even if inaccurate, are likely linked to perceived risks and rewards of criminal behavior. Those with high criminal self-efficacy may perceive the rewards to be obtainable and the probability of sanctions small, as they believe they have the skills to evade detection or minimize consequences (Vieraitis et al., 2015). They may instead attempt to manage or avoid the risks of crime. For example, belief in being skilled at evading detection can encourage behavioral persistence, even after experiencing challenges and costs, and further embed people in criminal lifestyles (Grundetjern & Miller, 2019; Loughran et al., 2013). People can even paradoxically become "emboldened" after arrest, due to their adaptations in response to sanction risks (Jacobs, 1993; Shover, 1996). Focusing solely on offending decision-making processes without consideration of the degree to which people feel a sense of mastery over crime may thus paint an incomplete picture of their response to sanctions.

To examine the relationship between criminal self-efficacy, perceptions of risk and reward, and responses to risk, we rely on data collected from semi-structured interviews with 46 women who manufactured "shake and bake" methamphetamine (meth). We show evidence of two distinct groups of women meth cooks: those who expressed self-efficacy related to cooking and those who did not. While all were keenly aware of the risks of cooking, they differed according to their level of confidence in their cooking abilities, in the rewards they gained from cooking, and in how they responded to the risks. Our findings point to the importance of criminal self-efficacy to decision-making processes. This individual difference has down-the-line consequences for deterrence/rational choice theory, and failing to account for its role in criminal decision making can undermine programs and policies meant to leverage increasing sanction threats to deter criminal behavior. Attention to criminal self-efficacy in studies of decision-making can help researchers better understand individual differences in perceptions of and responses to risk and reward, as well as their potential link to crime desistance and persistence.

Criminal Self-Efficacy

Self-efficacy refers to people's confidence in their ability to produce desired outcomes from a given task (Bandura, 1977, 1986). In general, those with high levels of self-efficacy are quick to initiate, put forth great effort, and persist in lines of behavior even in the face of obstacles and challenges to ensure success in the behavior at hand (Bandura, 1997). Bandura (1994, 1997) specified four factors that encourage development of self-efficacy: (1) *enactive mastery experiences*, or experience in overcoming relevant challenges with perseverant effort, (2) *vicarious experience through social models*, or seeing similar others fail or succeed at relevant tasks, including comparing one's performance to these successes and failures, (3) *verbal persuasion*, or encouragement

or discouragement from others, and (4) the interpretation of *physiological and affective states* as positive while completing relevant behaviors.

Though self-efficacy is often thought to be a tool for avoiding risky behavior—for example, sexual health self-efficacy, harm-reduction self-efficacy, or coping self-efficacy—it is clear that self-efficacy can also increase risk-taking behaviors. People with high self-efficacy often take more risks because they do not focus on the threat of failure, but instead on the potential rewards and on their ability to skillfully avoid negative outcomes (Heath & Tversky, 1991; Krueger & Dickson, 1994). Those with higher self-efficacy are more likely to perceive difficult situations as opportunities, rather than threats (Krueger & Dickson, 1993). For example, higher financial self-efficacy is associated with lower risk perceptions of investing in the stock market (Cho & Lee, 2006). Additionally, those who engage in extreme sports, like free solo rock climbing, have been found to have higher physical self-efficacy than those who engage in lower risk sports, and report this confidence as part of the explanation for why they take these “calculated risks” (Slanger & Rudestam, 1997: 367). Self-efficacy may also help explain why some are more comfortable with the risks of crime.

Criminologists have presented prior evidence that people take pride in their criminal endeavors and believe that they are skilled and successful in these roles (e.g., Erickson et al., 2019; Grundetjern & Miller, 2019; Sampson & Laub, 2003). Brezina and Topalli (2012), using data on incarcerated people from the Nebraska Inmate Survey, found about one-half of the sample perceived themselves as very or somewhat successful at crime. Some youth feel confident and competent in their criminal abilities, demonstrating traits similar to successful businessmen (McCarthy & Hagan, 2001). Many who are experienced with crime believe that they have the potential to succeed at it, a belief they continue to hold even after experiencing sanctions (Shover, 1985). In the face of rising risks, such people opt to change their strategies rather than ceasing criminal behavior, ostensibly due to a belief that they possess the ability to evade these risks (i.e., restrictive deterrence, see Gibbs, 1975; Jacobs, 1996a, 1996b). It is common to see oneself as less likely to be apprehended than one’s peers for criminal offenses, a perception which is linked to criminal persistence (Loughran et al., 2013). Similarly, those who are successful with criminal endeavors experience psychological empowerment from their awareness of their own skills in navigating crime markets, which can act to hinder their desire and attempts to desist (Grundetjern & Miller, 2019). Thus, it is necessary to focus not just on the prosocial consequences of self-efficacy, but also on its more nefarious analog: criminal self-efficacy, which can promote and encourage crime.

Early research on criminal self-efficacy has often treated criminal self-efficacy as a universal trait relating to crime. Such work typically uses one-item measures to ask people how successful they believed they were at crime (Brezina & Topalli, 2012; Laferrrière & Morselli, 2015). However, self-efficacy is a multidimensional construct that varies by behavioral domain. That is, individuals may have high self-efficacy regarding their behavior in one situation but have low self-efficacy over their behavior in another context (Bandura, 1997). Crime is one particular dimension of behavior, with different types of crime (e.g., meth cooking) representing specific domains of focus. For instance, those who are experienced robbers often avoid burglary because they

do not have the same level of confidence in their abilities to manage the scene (Wright & Decker, 1997). As such, it is important to focus on specific criminal domains.

Although sources of criminal confidence may be external and perhaps objective, self-efficacy is not an entirely rational process. People tend to overestimate their capabilities, and high self-efficacy is resistant to change, even after experiencing challenges, failures, or negative consequences (Bandura, 1994). However, whether criminal self-efficacy represents a subjective cognitive distortion or a proxy of objective skill (likely, it is a mixture of both), criminal self-efficacy is an important, heterogeneous perception that has salient consequences for criminal behavior. Variation in criminal self-efficacy may explain important differences in offending patterns. In particular, those with criminal self-efficacy are likely to continue their offending careers, whereas those without it may give up crime upon facing minor difficulties (Weaver & Carroll, 1985). Among serious youthful offenders, those who are overconfident in their abilities are more likely to both offend and to be arrested than those with less confidence (Loughran et al., 2013). In addition, adults with high criminal self-efficacy are less likely to intend to desist from offending after prison release, despite experiencing incarceration (Brezina & Topalli, 2012).

One potential reason for the link between criminal self-efficacy and criminal persistence is the facilitation of resilience in the face of sanctions and other risks. Encountering sanctions can serve as a learning experience, since people learn which mistakes to avoid in the future, as well as realize that they can handle the punishment (Shover, 1996). Overcoming such challenges can function as an enactive mastery experience that may heighten perceived criminal competency. Indeed, people can become further emboldened in offending after adapting their crime commission strategies in response to sanction risks (Cherbonneau & Copes, 2006). This is consistent with research finding that some people may fail to raise or even lower their risk perceptions after risk experiences (Piquero & Pogarsky, 2002; Schulz, 2014), that some find ways to account for their failures to maintain this sense of self (Copes & Vieraitis, 2012), and that some may draw on their experiences to develop strategies to avoid risk in the future (Jacobs, 1993). Thus, those possessing criminal self-efficacy may be particularly likely to persevere in the face of sanctions and instead develop risk management strategies, which suggests they will respond differently to deterrence strategies than those without criminal self-efficacy.

Reward perceptions may also explain the potential link between criminal self-efficacy and persistence. People with high criminal self-efficacy likely perceive rewards to be high and outweigh the potential risks. One of the ways people develop self-efficacy is through experiencing rewards, and those with high criminal self-efficacy are likely to have had successful experiences with crime that provided instrumental or intangible rewards—such as money or excitement (Brezina & Topalli, 2012; Laferrière & Morselli, 2015; Meenaghan et al., 2020). Social rewards for offending, which are important to one's decision to offend (Loughran et al., 2016), can also serve as forms of verbal persuasion whereby offending behaviors are reinforced through being commended by others. The pleasure of offending or the “seductions of crime” (Katz, 1988) is also related to a greater intention to offend (Nagin & Paternoster, 1993), and people with

high criminal self-efficacy are likely to interpret physiological and affective states during crime commission as rewarding. As such, people's criminal self-efficacy levels are likely intricately related to their perceptions of the rewards of crime.

Despite its implicit connection with decision-making, criminal self-efficacy has not yet been explored as an individual difference explaining how people experience the risks and rewards of criminal behavior. This is a drawback, given that criminal self-efficacy has theoretical relevance in this area and may play a potentially major role in how people respond to the risks of crime. Criminal self-efficacy is linked with resistance to change and increased risk of re-offending, making it important to examine the ways in which perceptions of criminal competency and criminal decision-making are intertwined. We investigate this link using semi-structured interviews with women meth cooks, for whom the risks and rewards of cooking meth are particularly salient.

The Current Study

To explore how domain-specific self-efficacy influences the criminal calculus relating to risks and rewards, we focus on women who manufactured "shake-and-bake" methamphetamine (hereafter shake) in Alabama. The shake market differs from other drug markets in that it has been shown to have more gender equality (Deitzer et al., 2019). The growth of smaller shake markets and the reduction of other forms of cooking allowed women to gain access to cooking positions that were once reserved almost exclusively for men. The ease of cooking coupled with meager profits from doing so democratized meth cooking and women began taking roles as lead cooks (Deitzer et al., 2019). This is similar to research on other drug markets showing that conditions such as rapid change, high product demand, low buy-ins, and decentralization are conducive to women's involvement at higher levels (Denton & O'Malley, 1999; Dunlap, et al., 1997; Fleetwood, 2014).

While there were still more men in cooking positions in the shake market, the roles and responsibilities for cooking are similar regardless of gender (Erickson et al., 2019). As such, the rewards from cooking shake (e.g., access to meth, profits, and status) as well as the risks (e.g., arrest, victimization, and explosions) were similar for men and women cooks. In this more democratized market, gender differences relating to assessments of risks and rewards were relatively minor compared to other drug markets (Erickson et al., 2019). Yet, women in drug economies tend to be heterogeneous in how they enact these roles. While some women in the shake market express confidence in their meth-cooking strategies, others remain dependent on men in many areas of life, including cooking, with some becoming more successful than others (Deitzer et al., 2019; see also Anderson & Kavanaugh, 2017; Grundetjern, 2015). As such, we have reason to expect the women in this sample will express variation in their perceptions of meth-cooking competency and that this variation is comparable to that found among men.

The meth cooking history of the women in our sample makes them well-suited to provide insights into how criminal self-efficacy and perceptions of risk and reward shape offending behavior. Their offense of choice – meth cooking – provides them

with much experience considering risks, given that manufacturing meth carries severe risks, both formal and informal (McKetin et al., 2011). Shake cooks experienced law enforcement crackdowns, anti-meth campaigns, and persistent media coverage of the meth epidemic, likely providing them with an enhanced awareness of the threat of law enforcement detection, explosions, and other risks inherent to meth market involvement. Further, meth cooking can be seductive (Erickson et al., 2019). It provides status in a group and is intrinsically exciting (Jenkot, 2008; Shukla, 2016). For women meth cooks, such strong rewards may warrant the need to manage the risks while continuing their meth use and cooking careers (Carbone-Lopez, 2015). Some women entering male-dominated drug markets indeed report empowerment and confidence in their skills (Deitzer et al., 2019; Grundetjern & Miller, 2019).¹ As all the women in this sample learned and participated in the cooking of meth, they were well-positioned to experience particularly high gains in meth-cooking self-efficacy. Thus, women meth cooks may pose a particularly salient case for examining risk, reward, and criminal self-efficacy.

Additionally, the current study moves our understanding of criminal self-efficacy forward in four key ways. First, prior literature on criminal self-efficacy has only studied its existence in all-men samples (Brezina & Topalli, 2012; Laferrière & Morselli, 2015). While we have the aforementioned reasons to believe that these processes will work similarly in our sample of women meth cooks, it is preferable to not simply assume that the experiences of women will mirror those of men (Naffine, 2018). Second, prior literature has also exclusively focused on *general* criminal self-efficacy, or the individual's perception of how successful they are at crime as a whole; yet, researchers have called for the investigation of competency perceptions for specific types of crime (Brezina & Topalli, 2012). As people often specialize in certain offenses (DeLisi et al., 2011), it is unlikely that individuals have blanket perceptions of criminal skill. Third, we use qualitative data to examine these processes, which can be especially valuable for development of new theoretical ideas. While Brezina and Topalli (2012) did include a qualitative component in their study, the authors did not report the findings for a comparison group (i.e., those without criminal self-efficacy) to analytically examine the differences. Fourth, we extend the study of criminal self-efficacy by explicitly investigating perceptions of risk and reward. Thus, we examine women meth cooks' levels of criminal self-efficacy related to meth-cooking, perceptions of the risks and rewards of manufacturing shake, and management strategies for overcoming the risks. We aim to enhance understanding of the factors that affect perceptions of risks and reward, which has implications for understanding criminal decision-making research and policies relating to deterrence.

¹This is consistent with findings on gender and self-efficacy. Women often have lower self-efficacy regarding male-dominated activities; for example, girls drop below boys in mathematical and computer self-efficacy around middle school and these differences grow stronger with age (Huang, 2013; Pajares, 2005; Wigfield et al., 1996). But, gender differences often disappear when controlling for previous mastery experiences (Pajares, 1996) and endorsement of gender role stereotypes (Harter et al., 1997; Eccles 1987; Pajares & Valiante, 2001). Thus, professional training and experience may remove gender gaps in domain-specific self-efficacy.

Methods

Our study relies on semi-structured interviews with 46 women who cooked shake.² We conducted the interviews in summer 2014 and fall 2015. Participants were living in a faith-based transitional facility for women in Alabama at the time of the interviews. To be eligible for the study, participants needed to have had a history of cooking meth and be at least 19 years old at the time of the interview. Staff members facilitated recruitment by making announcements during morning orientation classes and posting notices asking for volunteers who were willing to discuss their experiences cooking meth. Those interested in participating told staff, who then scheduled a time for researchers to meet with participants. The researchers distributed an information sheet and obtained verbal consent before the interviews. Participants' signatures were not collected to avoid any identifying information.

The first set of interviews included 40 women who cooked meth. These interviews focused on initiation into meth use and meth cooking, the cooking and distributing process, risks and rewards associated with meth cooking, risk management strategies, changes in perceptions of these risks, and perceptions of competency at meth cooking. The interviews were semi-structured, which allowed for exploring these topics while giving participants the freedom to expand on topics and to introduce new themes to the research. The interviewer ensured that these topics were covered in each interview, but not in a specific order. The interviews lasted between 30 and 90 minutes and were audio-recorded with the permission of each participant.

The second set of interviews included 14 women in the same facility using the same selection criteria. These interviews were similar to the original with one exception: They were more intensely focused on risk assessment, risk management, and criminal competency (i.e., criminal self-efficacy) than the first group. These interviews were driven by patterns that emerged in the initial interviews. We then synthesized the results of the two interview groups to better understand the rewards and risks the women associated with cooking meth. It is important to note that the accounts given by both groups as well as their demographic and drug using histories closely match one another. That is, the additional interviews with a similar group of women clarified previous points more than they fostered new lines of investigation. Such a style of including a boosted sample is consistent with standards of qualitative research. Rengert and Wasilchick (1989) have said that qualitative research entails asking questions to know which questions to ask. The initial set of interviews revealed the importance of criminal self-efficacy, which we wanted to expand upon by adding additional participants. Whereas it is common to rely solely on serendipitous findings in qualitative research, we wanted to provide additional support for our findings by adding the boosted sample. Boosted samples have been used by Humpheys (1970), Jacobs (1999), and Cherbonneau and Copes (2006).

For both groups, the interviews were conducted in a private area within the facility. The research team transcribed all interviews (removing identifiers and replacing names

²We conducted 54 interviews, but 8 participants were excluded from the analysis because of recording errors or limited involvement in cooking shake (e.g., one woman primarily sold ice, and five others only lent the use of their house, served as a lookouts, provided the pills, or helped in other tertiary ways).

with aliases throughout). We provided participants the opportunity to select their own alias; however, many opted out and asked that we assign them one. We paid participants \$20 for completing the interviews, an amount we believed was an appropriate compensation for participants' time without being coercive.

We began by coding for themes relating to aspects of skill at producing meth, rewards of cooking (instrumental and expressive), and risk perceptions and management. To improve coding consistency, the three lead authors coded the first 5 interviews independently before coming together to discuss commonly coded themes related to skills, rewards, and risks. They discussed any differences in coding, came to agreement on how to proceed, and then recoded the initially coded interviews and the next five based on these discussions. They repeated this process until each had coded all interviews.

Once coding was completed for these themes, we then classified the participants into two groups based on whether they expressed self-efficacy at cooking meth. We considered participants as expressing criminal self-efficacy related to meth cooking if they conveyed that they were skilled at cooking meth, primarily based on their responses when asked whether they believed they were good meth cooks. In addition, we looked at the entirety of the interview to determine if they made other statements expressing their belief that they were skilled cooks. Using this approach, the first two authors independently grouped the women into the two categories based on previous coding. The first three authors then met to discuss any inconsistencies in classifications and come to unanimous agreement on which category to place the participants. Using this criteria, we classified 24 participants as expressing self-efficacy and 22 as not expressing criminal self-efficacy in relation to cooking shake.

We dichotomized participants into two groups: those who articulated self-efficacy and those who did not. For purposes of analysis, we believe the dichotomous variable allows us to show clear differences in how people perceive their competency in cooking meth and how this relates to perceptions of rewards and risks. In making this determination we rely on insights from Brezina and Topalli (2012), who divided the quantitative sample into two categories (high vs. low) and in the qualitative sample made a distinction between those with self-efficacy and those without. We recognize that self-efficacy may be a more continuous variable, with people falling on a scale of self-efficacy. However, like Brezina and Topalli (2012), we found that the vast majority of our sample either fell on the high or very low (i.e., absent) end of the self-efficacy spectrum. Thus, our decision to group participants into two categories reflects the nature of our sample and is consistent with previous research. In addition, these women did not express the same level of self-efficacy when discussing legitimate careers or other forms of illegal activity (e.g., thefts or frauds), which supported the claim that self-efficacy is domain-specific.

As is common in interview-based research, the location of the interviews (halfway house), the status of participants (women in recovery), and the status of the interviewers (women students) set the parameters of the research and encouraged informants to respond within those parameters (Presser, 2004). Furthermore, the nature of the project defined participants as meth cooks—they had to have manufactured meth to participate—and this may have influenced their responses and the topics they

introduced. The women came to the halfway house due to court-order after an arrest or voluntarily to escape abusive partners or to aid in their recovery, which may lead some to question whether these women differ from others who have not come in contact with police. There is little hard evidence that people recruited from criminal justice sources (e.g., those in halfway houses) think or act differently than those contacted through other means. In fact, Nee and Taylor (2000: 45) found a “striking similarity between studies using active and prison-based samples.” Despite these constraints, we gave participants flexibility in how they recounted their lives and careers in meth manufacturing. Still, caution should be taken if generalizing beyond the sample, as findings may be contingent on the context of the women’s surroundings and location.

Participants ranged in age from 20 to 54, with a mean age of 34. Of these, 46 of them identified as White, while 2 self-identified as Native American. This racial composition is consistent with other research that has found that meth to be consumed primarily by Whites (Boeri, 2013; Kerley et al., 2014). Participants were all lower- or working-class and lived in rural or suburban areas in central and north Alabama. Many of the women did not graduate high school and almost none had finished college, but several had enrolled in college classes while in residence at the halfway house. The majority did not have steady employment while cooking meth. Those who were employed tended to have menial, service, or blue-collar jobs, and they often failed to maintain these jobs through the duration of their cooking. Most of the women were mothers, although many did not have full custody of their children.

All participants in the sample cooked shake. Thirteen of these women also cooked using other methods including anhydrous or phosphorous methods. The length of time the women cooked ranged from two months to 30 years (off and on), but the mean amount of time they had spent cooking was almost five years. Many had trouble giving precise estimates of how long they cooked, partly because they had intermittent periods of cooking and not cooking.

Criminal Self-Efficacy and Cooking Meth

Criminal self-efficacy occurs when people have confidence in their ability to be successful in crime (i.e., obtain rewards and avoid sanctions). Among our 46 participants, 24 expressed a belief that they were skilled at cooking meth. For these women, this skill meant that they produced a high-quality product, achieved various rewards from cooking, and could recognize and avoid risks associated with their cooking. Those with low self-efficacy ($n = 22$) related to cooking meth did not hold such optimistic beliefs. They expressed statements suggesting that they believed cooking meth was unpredictable in terms of quality and risk. They held fatalistic views about their long-term success and focused solely on gaining access to meth as their motivation for cooking. The two groups also varied by their role in the cooking process; that is, those who expressed cooking self-efficacy typically took a lead role when cooking, while those with low criminal self-efficacy typically were helpers or worked with others (see Deitzer et al., 2019). In what follows we describe the ways those with high and low self-efficacy perceived the risks and rewards of cooking. We then discuss implications of these beliefs for motivations for persistence.

Expressed Criminal Self-Efficacy

The 24 women who expressed having cooking self-efficacy saw themselves as skilled cooks who produced high-quality meth. For these women, cooking meth was a skill and talent that they had developed, which is likely why they took leadership positions when cooking, deciding when and where to cook and how to distribute the product. Elizabeth believed that she had a talent for cooking because she caught on “pretty quick.” As she said, “I’m pretty smart. I got common sense ... so I kinda sat around and watched people do it and just learned myself.” Many described that they developed confidence from watching others cook meth, much like Bandura’s vicarious experiences through social models (Bandura, 1994, 1997)—they “learned through observation,” as Jane Doe described.

Once they learned the basics, they believed they possessed the ability to control the quality of the meth, much like any good chef. They made boastful statements, such as Isabel, who said, “I had it down to that kinda art for real,” or Allie, who stated, “It was just something that I was really good at doing ... I could put it together in my mind, I could walk through it in my mind, and just kinda make it happen on my own.” Part of why they believed they had special talents was because they were devoted to the craft. They took time to learn proper techniques and ensured precision in the process. As Melanie said, “I took my time, didn’t rush it, you know, I did what I was supposed to, didn’t skip any steps, never changed anything, never change anything, important part. It was always good.”

When asked what kept them cooking, these women discussed a broad range of benefits or rewards they received from cooking shake, ranging from the tangible rewards of money and easy access to meth to the intangible rewards of feelings of excitement, empowerment, and enhanced status in the group. Some women who expressed cooking self-efficacy mentioned the potential to make money, while most emphasized the value of a steady supply of meth for personal use. According to Hannah, “A whole lot more money can be made if you manufacture it yourself, and then you can have all access to as much as you wanted to do.” Echoing this, Elizabeth said, “It was a little breathtaking knowing that I don’t have to spend my money on it no more, and I got all this, sell a little bit of it, have a pocket full of money, and a sack, so it was real addictive.” Mackenzie likewise explained her drive for making money, “I don’t care if it’s my last half gram or gram outta my pocket, I will sell it. If there’s money in my face, I will sell it. There’s always a way to get more in my opinion.” She later added that she wanted the money “just to have it. Just to say I did it. The glorification.” For Mackenzie and others, the added money from cooking meth allowed for an appealing lifestyle for themselves and their children.

Although some of the women spoke of large profits from cooking, this was not the norm among the group, which is consistent with prior research that found those who cook shake to not be motivated solely by a desire for money (Deitzer et al., 2019; Erickson et al., 2019). In fact, most said that the profits from cooking shake were quite slim and typically just enough to sustain the next cook. More common rewards of cooking expressed by those with cooking self-efficacy included the excitement, power, and social status. Even for the women who mentioned the monetary profits of meth,

that reward was often tied to other rewards of enhanced status (Mackenzie's glorification) and excitement (Elizabeth's thrill) associated with having money.

The women mentioned various social rewards, including social praise and validation, which seemingly served as verbal persuasion experiences that reinforced self-efficacy (Bandura, 1994, 1997). Cooking meth—especially meth considered by others to be good quality—brought heightened social status (Erickson et al., 2019; Jenkot, 2008). This included popularity and control. Amanda described that for meth cooks, “Everyone wants to be around you because you know how to do it.” Martha said, “You have something everyone wants and it’s a good quality product, so therefore more people want it. And you have the control to tell them yes or no.” Lucky echoed this sentiment, “If you cook dope, everybody needs you for something. So, it’s a sense of power and then money.”

Several participants described that the power of cooking was particularly appealing for them as women because women who use meth are often stigmatized and mistreated (Copes et al., 2016). Aspen described how others in the meth circles viewed women users:

They think you’re just a junkie. But when you’re cooking, you might be a junkie, but yet they need you, so they’re not gonna disrespect you or treat you wrong because they need you more than you need them... I gained a lot more respect after I started cooking cause then they didn’t look at me just a meth head. “She knows how to make meth now so she don’t need me. I need her, so now I have to show her some respect.”

These women made clear connections among cooking meth and earning power, respect, and popularity (Erickson et al., 2019; Jenkot, 2008). The added sense of control over their lives and others was empowering (Grundetjern & Miller, 2019).

The personal rewards of cooking meth were also common among this group. Nearly all the women with cooking self-efficacy described gaining a sense of excitement from the process of cooking meth. As described with Bandura’s physiological affective states, they described feeling a physiologically rewarding “rush” from cooking. Melanie said that cooking felt “like I was top of the world” and Delaine described it as “a high on top of a high.” Several of the women, like Jewel, expressed that this rush led them to be “more addicted to making it” than to using it. As Isabel described, “It goes from like, you have this drug addiction but then you have an addiction to *making* meth. And then you just all the sudden acquired a new addiction. And then you’re addicted to cooking it, and making it, and the whole process!”

Part of the rush and the addiction stemmed from obtaining meth. As Sandra said, “It’s like watching gold fall when you see the white flakes falling. It’s like that much excitement for a meth addict.” Additionally, the women interpreted their ability to produce the meth as personally fulfilling and alluring. As Carson said, “it just fascinated me that you could take that many different household items and make a drug that people are actually addicted to. ... The drug was addictive also, but the way it all worked together to make that drug was fascinating me.”

Yet another part of the excitement resulted from an appraisal of the *risks* as rewarding. As Mackenzie described, it was about “the smell of it. The fear of it. Just knowing that anytime you were going down like the Titanic. I mean that got me high all on its own.” Clearly, creating the product provided strong intrinsic rewards to the women

with cooking self-efficacy; moreover, it was common for these cooks to perceive the threat of potential risks as a physiological reward (Jacobs & Cherbonneau, 2019; Lyng, 2004).

This group of women described the risks as present, but not particularly concerning. Mackenzie said that she “really never worried about anything,” Melanie reported that she believed her ability to cook and avoid risk was “something nobody else could do,” while Martha described feeling “invincible.” The women with cooking self-efficacy generally exhibited confidence in their ability to avoid the risks of cooking (e.g., arrest, victimization, and explosions) because they employed risk avoidance strategies. This was a key difference in the way those with cooking self-efficacy differed from the others. Christine said:

When you're stupid, you gotta be smart. You can't be dumb and dumb. I mean, just paying attention to everything around you. You can't get careless or anything like that. You have to be pretty much on top of your game or you are setting yourself for some kind of stupidity.

Similarly, Kelsey said that she had “more sense” than other meth cooks, because of her ability to avoid physical injury even when fires or explosions did happen. Aspen reported being most concerned with not losing her kids, but that she “thought it would never happen. I thought I was a genius.”

To avoid being detected and arrested by police, those with cooking self-efficacy sought to maintain secrecy and developed relationships only with trusted customers and affiliates. Elizabeth said she avoided arrest by “staying in my own little circles. Keeping the squares outta the circle.” Similarly, Aspen said, “I had a few set people that I entrusted. That I knew wouldn't rat on me.” To ward off victimization from would be robbers and thieves, they presented tough personas and threatened retaliation. Christine believed that “you have to stand your ground or anybody's gonna run over you, you know what I'm saying. There's not much I am scared of and they all know that.” To protect against explosions or fires when cooking, these women used careful and safe cooking practices such as sticking to routines, ensuring the cooking space was clean, and only including those who they trusted. Hannah described those who did experience explosions:

They're stupid. They've probably been up for weeks and was not paying attention ... Shake and bake is highly flammable, it's like a bomb that you're holding in your hand, but my God, if you don't, if you haven't been up for two weeks or if you're not too paranoid about who's fixing to kick in your door, then you'll be okay.

These and similar strategies are common among those who sell or manufacture drugs (see Moeller et al., 2016). Only those who expressed cooking self-efficacy discussed following clear strategies for managing potential risks.

Many of the women with cooking self-efficacy described risk perceptions that had lowered over time. Aspen said, “I was more scared the first time but after that it got to like it was like easy. First or second time I was like really scared but after that it was like I could do it in my sleep.” Kelsey described how she gained confidence with experience:

I don't think you get less scared. I think you get more cocky that you've done it. ... In the beginning, you're nervous, and you don't really know what you're doing, and

everything's a risk. But after you've done it for three years, then it kind of just becomes a routine. You get a little bit of that cocky and that ego, that you know it's fine, nothing's gonna happen. You get so wrapped up in it that consequences, you know that they're there, and you still worry about them, but they don't mean as much, because the mission at hand outweighs the risk. If that makes any sense. Right, what I need to do is more important. It outweighs the feeling of I might get caught. ... I was seriously afraid I was gonna blow my house up. But we didn't and then I was like "oh well this is easier than I thought." People are crazy, we're not gonna blow anything up, it's fine.

Avoiding the risks from cooking meth served as an enactive mastery experience, heightening their perceptions of self-efficacy related to cooking (Bandura, 1994, 1997), and lowering their perceptions of the risks. Risk perceptions changing over time is consistent with literature on both deterrence and criminal self-efficacy; both suggest that risk perceptions lower and confidence increases with time and experience (Bandura, 1986; Meenaghan et al., 2020; Nee & Meenaghan, 2006; Shover, 1985; Waldo & Chiricos, 1972).

Most of the women did report eventually experiencing arrests, explosions, or other costs as a result of involvement at meth cooking; in fact, the majority of the women at the center were there as a result of mandatory criminal justice sanctions. The women who expressed self-efficacy related to cooking had lengthy careers cooking before becoming residents of the halfway house, with an average length of time cooking of approximately seven years according to their best estimates. Many of the women reported more than one of these experiences, but only a few reported experiences with risk that deterred them from cooking meth. Most continued cooking meth if they had the ability to do so (i.e., were not under correctional supervision). For example, after being asked whether she was more worried after her first arrest, Christine said:

Maybe a little. Not very much though. I was very secure in my comfort zone. I wasn't just one of those people who would jump out anywhere and do it. I had one designated spot that I done it for 18 years.

The women persisted even in the face of potentially severe risks, confident in their ability to overcome them using their management strategies. Samantha illustrated this confidence, "I've got the three manufacturing charges, three trafficking charges, but I've beat all of them, only by the grace of God. I'm not gonna say I was smarter than them, but I'm not as dumb as they thought I was."

The women pointed to a variety of rewards from cooking as a motivation to continue despite the risk. For example, when asked when she continued cooking meth, Melanie mentioned, "Probably the popularity. Maybe the feeling of being able to do something nobody else could do. I had more friends than I knew what to do with." Likewise, many of the women drew back to the analogy of being addicted to cooking meth or the overall lifestyle. Patricia said, "The meth itself probably [is the main motivation] but that's just something you get sicker, addicted to it. It's hard to let go, too. The cooking, the power."

Lack of Criminal Self-Efficacy

We classified 22 women as expressing little or no self-efficacy regarding their meth cooking. These women did not talk about a sense of empowerment that came from

cooking. Instead, they pointed to pressures from men (or others) to cook and the desire for easy access to meth. These women did not report a strong desire to cook, did not have much confidence in the quality of the meth that they produced, and did not believe they could do much to overcome challenges. They took limited roles in the cooking process and leaned heavily on the abilities of their partners, most commonly men, to ensure the cook was successful. As Irene described, "I didn't want to risk it coming out bad. He already knew how to do it and it was good. It wasn't really something I wanted to do." Likewise, Sabrina said, "By myself I probably would have sucked, but my husband was always there with me."

The women without cooking self-efficacy did not describe having strategies to improve the quality of their meth or to avoid bad batches. After being asked how she ensured the quality, Lucy said, "There's no way to ensure. You just, you know your process, you do it the same way every time, but the humidity, the outside temperature, anything can affect the outcome of it, sometimes you can do the whole thing and you get nothing. So there's no way to ensure it." In addition to exhibiting clear differences in how they talked about cooking meth and how they described their product, the two groups of women differed in the rewards they associated with cooking and in how they evaluated and responded to risks of meth cooking.

The women without cooking self-efficacy associated minimal rewards with cooking shake and felt little personal empowerment or enhanced respect among the group. They downplayed the financial aspect of cooking, arguing that the small financial rewards from cooking were merely enough to fund the next cook or keep them stocked in basic commodities, cigarettes, food, and energy drinks. As Jackie said:

The money you do make from drugs you're using it to make drugs again, or to get supplies or just to eat. Buy cigarettes. And my boyfriend, or my ex-boyfriend, I just broke up with him, he's still out there sellin' dope and it's almost like it's really not worth it 'cause all you're doing is making money to eat, buy cigarettes, you're not going nowhere, you're just going in a circle.

Instead, many were driven to cook almost exclusively for easier access to meth. Amelia mentioned that, for her, cooking was able to "give me what I wanted so I could go on about my business."

These women also downplayed the respect that was given to cooks. When asked if cooks got more respect than others, Muriel said, "They ain't nobody that respects a dope cook. They may kiss their butt just to get dope out of 'em, but nobody respects 'em. It's not respectable, it's pretty much selling death." Others said that the alleged respect was just an illusion. Irene explained, "I guess there's some sort of hierarchy there, but it's probably not respect. It's not. It's all a game."

Some of these women, like those with cooking self-efficacy, did describe an adrenaline rush associated with cooking meth; however, they interpreted this as a negative, "nerve-wracking" experience that they perceived as more anxiety-producing than pleasurable. Carmen mentioned, "I really hated it. From the get go." Echoing this Ginger said, "I was a nervous wreck the whole time every time." Jessica said:

It always made me nervous, even up to the last time I seen it done it made me nervous. A lot of people would get like a rush off it and like doing it. I never did, it always scared me, 'cause I knew the consequences.

Jessica and others who lacked cooking self-efficacy cooks had a persistent fear of cooking and believed they had little to no control over the outcome of the cook or the risks that emerged during the cooking process.

To the women who lacked cooking self-efficacy, the risks of meth cooking were many, and sometimes seen as so high that they were unavoidable. As Renee described:

I mean you've got the legal repercussions, you've got the moral repercussions, it was all risk. It's not like it was something that you felt good about when you went to bed. You don't know if the dope you make could've killed somebody. The whole thing was a risk. But unfortunately in addition that's, it's kinda like being a perpetual gambler, you're just putting odds against odds. And always taking risks.

These women described meth cooking as bringing about serious and inevitable risks, which they viewed as entirely out of their control. These women seldom reported using risk avoidance strategies. When asked directly what they did to avoid arrest, victimization, or cooking explosions, these women often just shrugged and said they did not do much. Jessica exemplified these women's thoughts when it came to avoiding risks: "There's nothing you can do." These fatalistic views permeated their descriptions of avoiding arrest, fires, and victimization. Commenting on having avoided explosions in her time cooking, Ginger said, "I guess, I was lucky." Similarly, when discussing how she avoided cooking mishaps, Tiffany chalked it up to a higher power: "I don't know, I guess by the grace of God." Rather than acknowledging personal agency in the fact that they had avoided a risk, women cooks without cooking self-efficacy interpreted any risk avoidance as resulting from pure luck or divine intervention. This differed from those who expressed self-efficacy related to cooking, who believed they were skilled even after experiencing arrests or explosions.

For the most part, these women relied on others to ensure that the cooking process was successful. They saw themselves more as helpers or assistants rather than as leading the cooking operation. These secondary roles are likely why, despite fearing the consequences of cooking, the women continued cooking meth. That is, the stable, high risk perceptions may have driven the women to avoid taking on primary roles. As Emily described, "I stayed pretty scared about it for real. I didn't like doing it by myself." As Jackie put it, "I'm too scared to do all the big boy stuff." Breonna explained that she would never cook without her boyfriend:

I would be scared. I probably could do it, but I would be so scared because you gotta know like the weather, the way the weather is. If the weather's bad, like moisture in the air, it can blow it up. I mean, you do not want to do it. And I would be so scared to try to put hands on it and knowing it could blow me up or whoever else, and if anybody was around it would blow them up. So, I was scared, that scared me to death, but I wanted to get high.

Although quite fearful of the process, Breonna, like most of those who did not express cooking self-efficacy, discussed cooking as a necessary evil due to her drug addiction. For most of these women, they continued to cook because of access to meth and persuasion by their partners, with an average length of time cooking of approximately three years according to their best estimates.

Discussion

Our findings suggest that women who cook shake vary in whether they express self-efficacy relating to cooking. We identified a group of women meth cooks who expressed cooking self-efficacy and a group that did not, similar to studies of criminal self-efficacy among men (Brezina & Topalli, 2012). The women who expressed self-efficacy seldom dwelled on risks; rather, they underscored the personal and social benefits of cooking meth and emphasized their skills to overcome the risks. The women who did not express cooking self-efficacy did not view many benefits of meth cooking beyond access to the drug, and saw the risks as high and uncontrollable. They waited for the inevitable consequences and often continued cooking only to maintain personal access to meth or because of the insistence of those around them (in this case, usually men). Such fatalistic attitudes towards crime were common among those who did not express cooking self-efficacy, while more agentic views towards cooking were common among those who expressed cooking self-efficacy. Criminal self-efficacy may thus help rectify two divergent views of those who commit crime: agentic, skilled persons who see crime as a successful role (Erickson et al., 2019; Grundetjern & Miller, 2019; Nee & Meenaghan, 2006) versus passive persons with little hope for the future (Brezina et al., 2009; Piquero, 2016). Both may be accurate depictions of people who engage in crime, depending on people's levels of criminal and conventional self-efficacy.

Brezina and Topalli (2012) found criminal self-efficacy to be associated with a greater likelihood of intending to persist in crime. In this study, we also explored women's perceptions of risk and rewards to further explain why this may be. We found cooking self-efficacy to coincide with higher perceptions of rewards, lower perceptions of risk, and the increased use of risk-avoidance strategies. Though we cannot determine temporal ordering in this study, we show that these factors are intricately linked. This informs our understanding of the reasons why individuals with high criminal self-efficacy are especially likely to re-offend, even after experiencing sanctions that should ostensibly threaten this perception. For policy and practice, this can help explain why some people may be less "deterable" (Pogarsky, 2002), and underscores the importance of addressing successful criminal identities in programs designed to rehabilitate or prevent recidivism.

These findings are in line with previous research on expertise and crime, which shows that experts are more likely to recognize and attempt to manage risks than are novices (Nee et al., 2019). Highly experienced offenders tend to have lower risk perceptions and much higher reward perceptions, consistent with our findings (Loughran et al., 2009). These results suggest that perceiving oneself as successful likely alters how one responds to sanction threats. These perceptions affect responses even if not accurate; in fact, most of the women who expressed cooking self-efficacy were at the halfway house due to correctional system involvement.

Findings are also consistent with research on rational choice showing that experiencing successes (i.e., committing crime while avoiding risk) tends to lower risk perceptions, while experiencing failures (i.e., arrests) tend to heighten them (Anwar & Loughran, 2011; Lochner, 2007; Matsueda et al., 2006). Scholars have additionally found that some people are more or less likely to adjust risk perceptions and

behavioral intentions consistent with the information they receive about risks (Jacobs, 2010; Piquero et al., 2011; Schulz, 2014; Thomas et al., 2013). Individual differences in traits and states, including constructs such as criminal self-efficacy, can explain these processes. Understanding how people form risk perceptions and respond to risk is particularly important for the rational choice perspective, which assumes that people will alter their behavior based on changes in assessments of risk and reward. Thus, unpacking the influence of criminal self-efficacy can help refine models of crime and shape policy.

The results also further demonstrate the impact of rewards on criminal motivation, in a way that is as important or even more important than the risks (Loughran et al., 2016; Pratt et al., 2008) and more influential amongst a certain group. Namely, whether the women in our sample expressed cooking self-efficacy differentiated their perceived rewards. Among those who expressed self-efficacy related to cooking, rewards appeared to hold more salience than the risks, for example, in Kelsey's statement that the "mission at hand outweighs the risk." The risks were often reframed as rewards among this group, signifying that the women who expressed cooking self-efficacy did not simply avoid risk — they preferred it. This has implications for crime continuance, as risk-seeking, sensation-seeking, and reward dominance are important correlates of criminal behavior (Arneklev et al., 1993; Burt et al., 2014; Petry et al., 1998). The physiological "rush" or feeling of excitement held special importance to the women who expressed criminal self-efficacy related to cooking, highlighting the "seductions of crime" (Katz, 1988). The current findings thus suggest that criminal self-efficacy is another lens through which we can examine disparate perceptions and reactions to both risk and reward.

Having self-efficacy often leads people to be more resilient and continue a line of behavior, even when failing and experiencing consequences. In turn, those with criminal self-efficacy are more likely to adapt to the risks by changing their *modus operandi* than by giving up crime altogether. A related body of literature on restrictive deterrence describes how people may respond to these risks by changing their offending patterns, rather than completely ceasing their criminal behavior altogether (see Jacobs, 2010). Indeed, the use of risk management strategies has been identified across many offending types (e.g., Carroll & Weaver, 2017; Cherbonneau & Copes, 2006; Jacobs, 1993, 1996a, 1996b; Moeller et al., 2016). Recent research on restrictive deterrence shows that various psychological disinhibitors shape when and how people employ risk reduction strategies when committing crime (Moeller et al., 2016). Self-efficacy may be one of the psychological traits that shape when people implement or give up on strategies to avoid arrest. Namely, those with criminal self-efficacy are likely to see sanction threats or other risks as challenges to be overcome and persist with their line of behavior.

It is true that all the women in this sample persisted in cooking—we had no women in the sample who cooked once and then quit. Additionally, we have no way of determining whether the women persisted in meth cooking after leaving the center. As such, our ability to speak about those factors that lead to cooking continuance are limited. Nevertheless, we can discuss how the two groups varied in their motivations to persist and what this may mean for criminal careers. Among those who did

not express self-efficacy related to cooking, pressures from others and addiction to meth motivated persistence. For them, cooking was simply a way to ward off the potential for withdrawals and the desire to get high, as well as deal with external pressures from others in the meth world. Among those who did express cooking self-efficacy, the motivations for persistence were many, and they had cooking careers that consisted of various roles, including primary roles as cooks. Not only did they get consistent access to meth and at least some financial rewards, but they also derived numerous personal benefits, including empowerment, excitement, and respect. Giving up behaviors that bring such personal benefits can be difficult, even if the behaviors are illegal and risky (Grundetjern & Miller, 2019).

These variations in motivations for persistence have pronounced implications for programs aimed at getting people off drugs (or desisting from crime more broadly). Effective rehabilitation programs require specialized delivery (Andrews et al., 1990). This specialized delivery includes targeting high risk people and targeting criminogenic needs. Our findings suggest that people's self-efficacy may affect their needs. The multitude of rewards perceived by those with criminal self-efficacy may make desistance harder for them than for those without self-efficacy. For those without cooking self-efficacy, addressing addiction, removing the desire for the drug itself, and severing harmful connections with others who use drugs may be enough to promote desistance. Those with cooking self-efficacy must not only overcome the physiological hardships associated with chronic meth use, but they must find new sources of excitement, respect, and empowerment. Programs aimed at encouraging desistance from drug use may need to alter current programming to be effective for this group.

Although we offer important insight into how perceptions of risks and rewards coincide with criminal self-efficacy, caution should be taken in generalizing our findings. Like many studies looking at variation in accounts and narratives in a single point of time, our interviews were retrospective, preventing us from appropriately establish the temporal ordering of cooking self-efficacy, perceptions of rewards, risk, and development of risk management strategies. While we cannot determine whether perceptions of risk and rewards leads to one's sense of criminal self-efficacy, or whether one's sense of criminal self-efficacy leads to these perceptions—inferring from the theory, it is likely both are true. For example, lower certainty of getting caught may be linked to a higher sense of criminal self-efficacy (Zhang et al., 2009). Yet, we also know that those with high criminal self-efficacy report a higher likelihood of re-offending, even after experiencing incarceration (Brezina & Topalli, 2012). We do recognize that these perceptions are impacted by other factors as well, such as technique, expertise, and criminal experience; however, Brezina and Topalli (2012) found evidence that criminal self-efficacy was associated with a lower likelihood of desisting from crime even when controlling for many of these factors. Future research should examine these relationships, which are likely reciprocal, longitudinally.

In addition, this study represents a specific drug market (shake meth market), and our sample of rural, women meth cooks may not generalize to other drug markets (even other meth markets). Indeed, the features of the specific risks and the risk management strategies associated with cooking shake will differ from other drug markets. The finding that those women who did not express self-efficacy were also likely to

persist may be specific to this context; namely, as most meth manufacturers were also meth users, the allure, both psychological and physiological, of the drug may have been strong enough to encourage persistence even among those who were not confident in their skills. The importance of being crime-specific in deterrence research is long established (Cornish & Clarke, 1986); accordingly, our findings regarding the specific strategies used are limited to similar drug markets. Nevertheless, we do believe that the larger connections between self-efficacy, reward assessment, risk management, and persistence are likely to occur in other criminal contexts and hope to see future research using samples gleaned from other drug markets and criminal enterprises.

Moreover, our study sample includes only *women* who cooked shake. Without a male comparison sample, we do not know the extent to which the link between criminal self-efficacy and perceptions of risk and reward are gendered. Comparative studies of offenders suggest that men and women have similar motives for engaging in crime, but differ in their execution of them, which is often rooted in the gender-stratified nature of crime markets (Jacobs & Miller, 1998; Miller, 1998). We suspect that the risks and rewards relating to cooking shake are likely similar, regardless of gender or other background characteristics (with the possible exception that women may fear personal victimization more than men and see gaining respect as more appealing; Erickson et al., 2019). Again, more research needs to be conducted to make such claims about gender, self-efficacy, and risk management of cooking meth.

Overall, our findings reveal the importance of considering criminal self-efficacy when examining people's perceptions of the rewards and risks of crime and their behavioral responses to these perceptions. Including criminal self-efficacy in investigations of offending is a fruitful avenue for criminologists and practitioners alike, as it can add to our understanding of the sources of perceptions of risk and reward, different responses to the threat of or experience to sanctions, and the motivations behind persistence. Indeed, if criminal self-efficacy is linked to enduring criminal behavior, we might consider how these perceptions can be challenged to disrupt persistence in the face of risk among those with criminal self-efficacy.

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