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Differentiation in Cognitive Strategies Within Commercial and Recreational Sellers in Hybrid Digital Social Media Markets
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The Gut Feeling of Rational Acting: Differentiation in Cognitive Strategies within Commercial and Recreational Sellers in Hybrid Digital Social Media Markets

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Abstract:

In the realm of cybercrime, technologies that facilitate illicit activities also produce uncertainties based on the hybridity between digital communication and offline presence. Social media platforms have blurred the lines between types of drug sellers, bringing the recreational and the commercial into the same marketplace. In the Nordic data used in this paper, 52 text-based qualitative interviews with recreational and commercial sellers are analysed via process and variance analysis to identify the relationship between cognitive strategies and seller positions. We ask how sellers’ decision-making processes differ and intersect. Theoretically, we use cognitive sociology to enrich understandings of culture, trust, and rational decision-making in this context. Our findings reveal that recreational sellers often adopt a low-risk, low-gain strategy rooted in cognitive biases, reflecting the recreational nature of their engagement. In contrast, commercially competent sellers employ more complex cognitive strategies, including gut feelings, thus adjusting their decisions with less reliance on initial assessments, leading to a more calculated approach with higher risk tolerance. We conclude with a discussion of intervention strategies; here, we argue for the need for a dual strategy that targets and capitalizes on the differences in cognitive biases in an effective way that poses less harm to recreational sellers.

KEYWORDS: Digital criminology, Cognitive theory, Hybrid markets, cybercriminology, prevention
INTRODUCTION

With the advent of social media, new opportunities for illicit drug-selling practices have surfaced (J. Demant, Bakken, Oksanen, & Gunnlaugsson, 2019; Moyle, Childs, Coomber, & Barratt, 2019). The entry barriers to drug dealing are lowered when sellers start to rely on the digital network expansions of social media compared to the more traditional networks related to various forms of offline drug dealing (van der Sanden, Wilkins, Rychert, & Barratt, 2022b). Drug sellers have always been a blend of high-level commercial sellers and social supply dealers. However, social media platforms enable unprecedented potential to drift between seller types due to the lowered barriers of entry to more commercial positions (Goldsmith & Brewer, 2015).

The criminality of drug dealing has become hybrid on structural and personal levels. On the structural level, digital and networked technologies have provided the potential for digital markets to be built vis-a-vis more traditional markets (Aldridge & Askew, 2017; James Martin, 2013). This means that we now have open street markets and traditional network-based sellers working side-by-side with social media markets and darknet markets (Aldridge & Décary-Hétu, 2016; Jakob Demant, Munksgaard, Décary-Hétu, & Aldridge, 2018). The markets are separated not only by the way that they use technology but also in terms of how sellers can enter and profit from them. A specific risk structure also relates to the differentiated forms of selling, which is reflected in prices as an indicator (Moeller, Munksgaard, & Demant, 2021). However, we do not only face a more diverse and hybrid structure of drug markets. The emerging literature in the field shows that market types are also rather hybrid in themselves. Darknet markets and open street markets may at first appear less hybrid. The darknet markets make use of a number of encryption technologies and review systems that enable them to rely less on personal trust (Bancroft, Squirrel, Zaunseder, & Rafanell, 2020; Munksgaard, 2023). Street markets, on the other hand, rely on personal
trust and the potential for violence as a code of the streets (Anderson, 2017; Jacques & Wright, 2011). However, behind the technological surface of the darknet markets, sellers need to pursue gross net drug buying. This often takes place locally in established social networks (J. Martin, Munksgaard, Coomber, Demant, & Barratt, 2020). Additionally, street-based slingers may also be more involved in ring-and-bring services that include the use of encrypted apps (Friis Søgaard, Kolind, Birk Haller, & Hunt, 2019). All current market types are hybrid in this way. However, the case of social media drug selling is potentially one of the most hybrid types, as it will never rely dominantly on online or offline technologies. The emerging (but still scarce) literature in the field shows that this environment makes use of a combination of on- and offline technologies in a number of ways: fake or real personas on social media (J. Demant et al., 2019), communication forms to signal selling without being detected by law enforcement or platform moderation (S. A. Bakken, 2021), encrypted or phone-based lists for established customers (Moyle et al., 2019; van der Sanden, Wilkins, Rychert, & Barratt, 2022a), or encrypted communication for organizing concrete deals (McCulloch, 2019), all in combination with physical meetups with buyers and payment in cash. The sellers relate to this hybridity in different ways and try to mould it in relation to their risk assessment and willingness. More commercial sellers are advertising more openly and over longer periods, whereas less commercial sellers are moving back to a list-based approach as soon as they have sufficient customers (S. Bakken & Demant, 2019; van der Sanden et al., 2022b). Childs, Coomber, and Bull (Childs, Coomber, & Bull, 2020) argue that sellers in offline markets often do not engage in a cost–benefit analysis, which partly can be understood due to the nature of their circumstances. In online markets, we need to understand the circumstances for dealing and their bounded rationalities in the same way. Social supply curbs rationality, to some degree, as sellers act for a greater good of social relations.
Similarly, we acknowledge the structure of social media markets and their variations to understand sellers’ rationalities.

**Research Objective**

In this article, we address the puzzle of how drug sellers make decisions in this novel hybrid situation, which is characterized by both digital communication and more traditional place-based and embodied clues in the handing over of drugs. This puzzle is becoming more relevant as the various types of engagement in drug markets based on social media selling are no longer as contextually distinct. The overlap of groups of sellers on the same platforms makes it important to ask what cognitive processes determine a seller’s position in the market. The study adds to the literature of how risk assessment is related to market behaviour and how this knowledge can be applied in crime prevention developments. In particular, it adds to a more general question of how a market’s structure promotes differences in decision-making – a discussion that has appeared more clearly in the literature concerning the fragmentations of drug markets into various digital and hybrid forms (Childs et al., 2020; Moeller, 2022; Munksgaard, 2024).

In addressing this puzzle, we focus very closely on sellers’ cognitive strategies and how these differ in relation to their perception of risk and behaviour. For this work, concepts related to recreational and commercial drug selling are combined with concepts concerning cognitive decision-making research. Based on a qualitative data set encompassing 52 sellers in the same social media markets, we acquired access to information on how sellers behave differently. This analysis enables us to zoom in on the differences between seller groups and focus specifically on their cognitive strategies for handling risk. Our findings on seller heuristics and biases contribute to the explanations of why some sellers continue selling low volumes, and, on the other hand, how sellers with more embodied “gut feelings” manage to
engage in “drug dealing proper.” (Cf. Coomber & Moyle, 2014) The advancement of current knowledge on these biases is central for future target intervention and policing of the respective groups.

STATE OF THE ART

Social Media: On-/Offline Embedded Drug Dealing

Social media drug markets share some similarities with established darknet platforms. In particular, sellers have a perceived anonymity that has been established as very important to the darknet markets (Tzanetakis, Kamphausen, Werse, & von Laufenberg, 2016). However, communication technologies on social media markets are not secured by encryption. Sellers on social media markets make use of fake personas and communicate on encrypted apps (S. Bakken & Demant, 2019), but they cannot work with more fully encrypted technologies and related operational security, as darknet market sellers do (Aldridge & Askew, 2017). They have to use a strategy of hiding in plain sight and providing less searchable advertisements for drugs via complicated combinations of emojis, pictures, and words (S. A. Bakken, 2021). Interestingly, the perceived risks of selling drugs on social media are low among groups of sellers (J. Demant et al., 2019), but no study has yet covered this phenomenon in comparison to darknet markets and offline markets.

In darknet markets and social media drug markets, recreational sellers operate alongside commercial sellers (J. Demant, S. A. Bakken, & A. Hall, 2020; Munksgaard & Martin, 2020; van der Sanden et al., 2022b). Before the introduction of various online markets, these types of sellers operated in more separate parts of the market. Recreational sellers relate to social supply (i.e., dealings with friends), whereas sellers with commercial engagement in terms of volume have an open network of buyers (e.g. Berger, Pedersen, & Sandberg, 2022; Jacques & Wright, 2015; May & Hough, 2004). We may speculate that
because social media markets do not call upon the same level of digital capital as in darknet markets, we may see an even higher degree of mixing between recreational and commercial sellers in social media markets (S. A. Bakken, Oksanen, & Demant, 2023).

Corresponding to darknet selling, sellers and buyers on social media must consider the risk of law enforcement in terms of theft or violence between buyers and sellers or between sellers (Bergeron, Decary-Hetu, & Ouellet, 2022; Munksgaard & Martin, 2020). Moeller argues that there is a difference between darknet and social media types of markets based on governance; network reputation is important for darknet market sellers, which makes them dependent upon the platforms’ administrators. In social media markets, where the same structure of reviews and reputation is not formally evident (J. Demant, S. Bakken, & A. Hall, 2020), sellers’ ability to act successfully in the market relate to how they work in the absence of hierarchical structures (Moeller, 2022). Further, underlining the above point from Moeller, as the typical course of SNS drug transactions involves sellers physically delivering the drugs (Al-Rawi, 2020; S. A. Bakken et al., 2023; Moeller, 2022; van der Sanden et al., 2022b), sellers become vulnerable to the risk of predation (rip-offs) from other sellers or buyers (Korshøj, 2023). The rip-off risk in social media markets relates to the hybrid nature of markets, in which most exchanges of drugs and money take place physically. Thus, when selling on social media, sellers are confronted with a hybrid information pole of online and offline clues: the digital clues embedded in the apps and the social media platforms used for communication with buyers, as well as clues involved in the physical situation of handing over money and drugs.

Finally, as social media markets are operated in groups or on platforms where moderators have limited control of posts, there is no institutionalized payment system and no escrow. Because of the fluid nature of social media – as platforms not designed for drug sales – establishing trust between actors is difficult (J Demant & Aagesen, 2022; van der Sanden et
al., 2022b). Accounts and selling groups are often taken down by platform moderators in combination with law enforcement. From existing research on illicit drug markets, trust has been identified as an important condition for establishing reliable exchange in a market regarding verifiability and enforceability (Bancroft et al., 2020). In overcoming these issues, Bakken (2021) demonstrates how sellers apply various signalling strategies. According to Bakken, sellers create posts signalling trust through the use of cultural and commercial references within their language use, thus performing distinctive sets of behavioural patterns in navigating this new hybrid reality.

Taken together, the emerging literature has established the modus operandi of selling and buying on various forms of social media platforms and has started to establish how risk is perceived in various forms of selling. Although the literature has been focused on market structure, meanings, motivations, and perceived risks, we have yet to understand how sellers in hybrid social media markets act on bounded information from online communications and offline clues. This paper is intended to address this gap related to cognitive processes and provide a step forward in explaining how sellers decide to stay in a more recreational role compared to a commercial position.

**Terminologies**

In the current study, we focus on the differences between retail sellers who sell larger volumes and those who sell lower volumes. In drug market literature, there are numerous terminologies for these two categories. While elaborating on differences in terminologies is outside the scope of this paper, an overview and summarization of terminologies is presented in Table 1.
Table 1: Terminologies in Illicit Markets for Drugs**

<table>
<thead>
<tr>
<th>STUDY/CATEGORIES</th>
<th>Seller typologies</th>
<th>Overall market type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Munksgaard &amp; Martin, 2020</td>
<td>Small, Medium, Large</td>
<td>Darknet markets</td>
</tr>
<tr>
<td>Taylor &amp; Potter, 2013</td>
<td>Social Supply, Real dealing</td>
<td>Offline cannabis drug markets</td>
</tr>
<tr>
<td>Coomber &amp; Moyle, 2014</td>
<td>Social Supply, Minimally commercial supply</td>
<td>Offline drug markets</td>
</tr>
<tr>
<td>Moyle, Childs, Coomber, &amp; Barratt, 2019</td>
<td>App-mediated supply, Commercial</td>
<td>Social media markets</td>
</tr>
<tr>
<td>Demant, Bakken, Oksanen, &amp; Gunnlaugsson, 2019</td>
<td>Amateur, Professional</td>
<td>Social media markets</td>
</tr>
<tr>
<td>Van der Sanden, Wilkins, Rychert, &amp; Barratt, 2023</td>
<td>Social Supply, Social Supply Supernets, commercial</td>
<td>Social media markets</td>
</tr>
</tbody>
</table>

Caption: The table presents an overview of different studies and categories related to illicit drug markets, including market sizes, types of supply, and qualitative assessments.*

For this paper, we adapt the concepts of recreational and commercial selling to account for the distinction between sellers who operate only as sellers and those who operate both as sellers and buyers in social media markets. This conceptual distinction rests upon the works of Coomber and Moyle (2014) as well as Taylor and Potter (2013), who identified that some sellers have a more recreational pattern compared to otherwise commercial dealing. Such sellers may be both users and sellers but with sales extending beyond the narrow networks of social supply sellers. Across the terminologies, it is agreed upon that recreational sellers have minimal commercial seller behaviour and that they stay engaged with drug dealing as buyers and intermediate sellers to friends and larger networks.

This pair of concepts is focused on how sellers behave in the market – as dominantly engaged for the profits or as a more mixed form of user and seller. In contrast to the concept of professional sellers, the terminology commercial sellers does not imply that sellers receive all their economical intake from selling drugs, and neither do we imply that the sellers are related to organized crime. The concept of recreational sellers refers to some aspects in the intention for selling; that is, sellers sell on a more casual or temporary basis, and they obtain drugs for selling and for their consumption.
THEORY

The current state of the art in drug market research shows a gap regarding decision-making processes. Although choice-based theories have historically been prominent in criminology (Akers, 1990; Cornish & Clarke, 1987), the field has, to some degree, not engaged in an examination of how drug sellers perceive and act upon specific information available on online platforms. By applying an analytical perspective from cognitive sociology, we aim to expand the understanding of criminal behaviour as a result of cultural meaning, rational calculations, or drifting processes. This approach can provide the underlying cognitive and emotional components of drug sellers’ decision-making processes in the online context of uncertainty. For this exploration, the interplay of contexts, emotional reactions, and cognitive decision-making processes, such as those involving heuristics, provides a necessary contribution to how situational and setting-based manipulation (Felson & Eckert, 2018) can help identify applied crime-prevention instruments (Akers, 2005).

*Contextual Factors and Decision-Making*

Newer research on decision-making stresses that people’s decisions and behaviours are highly sensitive to contextual cues and information (see for example Bruch & Feinberg, 2017; Tversky & Kahneman, 1981; Vaisey & Valentino, 2018). As Bruch and Feinberg (2017) emphasized, although prior decision-making research has limited and isolated contextual effects, recent research on decision-making has devoted considerable attention to how contextual effects trigger and shape people’s choices and behaviours. Within this line of research, “context” typically (in a behavioural–economic way) denotes the choice architecture of an environment, the importance of a default option, limitations in time and imperfect information, and others’ choices. Thus, the overwhelming findings that people’s decision-making is context sensitive implies an embeddedness of decision-making within
social structures. Hence, decision-making does not occur in a vacuum but is intertwined in life courses, societal structures, and norms (as DiMaggio, 1997; Granovetter, 1978 debated). In criminological literature, it can be argued that the focus on culture as context has driven research development from classical studies (Becker, 1953; 1984) into schools as cultural criminology (Hayward & Young, 2004) or narrative criminology (Presser & Sandberg, 2019). However, while cognition has not been a central focus of the more contextual and cultural perspectives in sociology, it has been even less so regarding criminology.

This embeddedness and the contextual dimension of people’s decision-making echo the concept of bounded rationality, which emphasizes that decision-making is bounded by limited working memory, limited access to information, and limited time for learning and judging choice alternatives (Simon, 1985). As implied by the concept, people’s decision-making is bounded by cognitive capacities and contextual components such as time pressure and access to information. That is, situations rarely supply unlimited access to information, and even if they did, the brain’s cognitive capacity could not process every piece of it. As an efficient strategy to keep information-processing demands within the bounds of the brain, limited cognitive abilities include the adaption and use of heuristics (Newell et al., 2015; Gigerenzer & Goldstein, 1996). As a concept, heuristics are understood as “fast and frugal” rules of thumb or shortcuts, which efficiently and effortlessly guide decision-making processes (Gigerenzer & Goldstein, 1996). One of the most famous heuristics is the satisficing or take the best strategy (Simon, 1985), which enables one to undertake an efficient search of information and alternatives with limited costs while obtaining a satisfying result. However, not all heuristics are efficient. Whether a heuristic is efficient and beneficial depends on its adaption to specific environmental structures and expectations. Different environments require different heuristics that easily exploit the information structures to inform ecological decisions (Gigerenzer, 2007).
Decisions, Social Context, and Emotions

Decisions have two central contextual frameworks: one relates to contexts and the other to emotional reactions. Both are relevant in the analysis of hybrid behaviour, because a seller has much contextual knowledge about the online platforms and via communication with a buyer. The analysis also involves more embodied perspectives that particularly relate to learnings from meeting with buyers.

Emotions, another focal point of interest, play an important role in decision-making as well. Traditionally, emotions have been understood as dissimilar to human rationality, yet newer work has emphasized that emotions – both strong emotions, such as anger and fear, as well as more salient emotions, such as affect – play an important role in decision-making (G. L. Loewenstein, J. S., 2002; Slovic, Finucane, Peters, & MacGregor, 2004). For instance, studies on risk assessment have demonstrated that people typically evaluate the risks and benefits of a situation based on their emotional responses (G. Loewenstein, 2001). Furthermore, people tend to judge intuitively how a specific outcome feels by consulting an “affect pool” of positive and/or negative feelings associated with a particular outcome. As such, emotions are understood as reactions to situational information and physical signals.

An emerging field of decision-making research has focused on an emotion perspective on the “gut feeling’s” influence on behaviour (Gigerenzer, 2007). Generally, the gut feeling is understood as an activated bodily experience as a response to situational information telling the brain how to react. Gigerenzer (2007) defined the gut feeling as follows: a) occurring quickly in consciousness, b) occurring without people being aware of the underlying reasons, and c) powerful enough to be acted upon. Activations of gut feelings are often based on surprisingly little information. Social structures and environments are
often characterized by absent or limited available information, yet people intuitively understand how to navigate efficiently within contexts of uncertainty. Cognitive science widely recognizes that the brain intuitively and effortlessly fills in “blank spots” of information, performing “best guesses” based on available information in the situation as well as referring to prior experiences with similar situations/experiences. Importantly, the social situation and its environmental structures determine whether a gut feeling or a heuristic is beneficial. Studies on commercial decision-making processes, such as those involving firefighters, doctors, and stockbrokers, have documented the significance of gut feelings in navigating critical and uncertain situations (Harteis & Gruber, 2008; Klein, Calderwood, & Clinton-Cirocco, 1986; Morris, 2016). When examining how firefighters make decisions under extreme time pressure during rescue operations, Klein (1986) demonstrated that trained firefighters frequently depend on situational awareness, highlighting how their gut feelings play a pivotal role in shaping their decision-making in hazardous scenarios.

Hence, the activation of gut feelings is understood as an intuitive bodily heuristic or rule of thumb that is highly sensitive to situational information and social structures. Moreover, existing research on gut feelings has emphasized the importance of social learning; that is, the development of strong and beneficial gut feelings/heuristics depends on people’s exposure to and learning about social structures in a particular environment.

METHOD

Data collection was based on qualitative text-based interviews with online sellers and buyers conducted in Denmark, Finland, Iceland, Norway, and Sweden. Data were collected from September to December 2017 in each country’s national language (J Demant, 2023). The full data set consists of 107 interviews with sellers and buyers of illicit drugs on social media. In
the full set, the mean age is 23. Interviewees were recruited primarily through the social media on which they were actively buying or selling. In the recruitment process, a large number of sellers and buyers were unsuccessfully contacted. This implies that the sample consists of those who voluntarily and with full informed consent agreed to participate in the study. Interviews were conducted using the encrypted messenger app Wickr Me. Besides being a familiar app to those in the drug trades, Wickr Me offered the flexibility of time and space, which made it easier for the interviewees. The interviews had a differentiated quality in terms of depth, which reflects the challenges of providing data quality when the interviewer had less control (in terms of the online encrypted nature). The lack of control over the interview situation is reflected in the very large variations in the interview length (They lasted between half an hour and two months) (See S. Bakken, 2021).

We follow the principles of process tracing in the qualitative interviews via retroduction. Here, we establish the circumstances required for a specific cognitive assessment (Meyer & Lunnay, 2013). To establish this, we focus on what is described as a positive pole in the data material – for us, a situation involving both a description of sale and risk that allows us to provide the micro analysis. We unpack the cognitive mechanism within this context (Kaas, Cecinni, & Beach). Secondly, we relate the understanding of the processes to a variance analysis. This categorizing strategy leans on the state of the art to code participants as recreational and commercial sellers. This process removes context to understand if the categories differ in terms of the processes involved in selling. Within this design, we lean upon both the contextual and the general aspects of the qualitative data (Delmar, 2010) in an attempt to provide categorizing and connecting strategies for generalization (J. Maxwell & Miller, 2008). There are some limitations to our design that make it impossible to provide the strictest, most realistic process- and variation-oriented
explanations, particularly in relation to the categories of commercial/recreational and the timing of the actual behaviour (J. A. Maxwell, 2010).

**Qualitative Interview Selection and Data Description**

For this analysis, a subset of 52 text-based qualitative interviews with Nordic drug sellers constituted the empirical data. To be included, interviews had to conform to the following inclusion criteria: Sellers must have had prior experience selling drugs on social media (e.g., advertising, establishing contact, negotiating sales). Interviews with sellers who were only active on the darknet were excluded. Second, interviews must have encompassed sufficient information on the modes of selling. Therefore, interviews that were suddenly interrupted (e.g., the seller stopped replying to the interviewer) and/or were of poor interview quality (e.g., the seller did not provide enough information on selling modes) were excluded. These inclusion and exclusion processes are illustrated in Figure 1 below. For an overview of the included interviews, their basic demographics and seller types based on a coding of intention to sell and to whom sellers sell, please see Table 2.

![Figure 1: Inclusion and Exclusion of Data Sample](image)

Table 1: Descriptive Presentation of Sellers included in the dataset [At end of document]
Operationalization

Following our theoretical focus on socially situated decision-making strategies, we operationalized decision-making strategies based on dual-process theory. First, decision-making strategies were identified based on the sellers’ descriptions of decision-making tasks in the micro context of selling drugs on social media. To capture a wide range of decisions, we applied a broad definition of decision-making encompassing fast and slow cognitive processes, such as the sellers’ judgments, reasoning, feelings, choices, identified and interpreted opportunities, and actions related to selling drugs. Then, these decision-making descriptions were subjected to a close examination of how micro situational cues within various contexts informed their decision-making strategies – for instance, how the sellers identify, evaluate, and choose to act on a situation’s risks and benefits and how they perceive choices to be efficient and beneficial in relation to specific environmental structures and expectations. The analysis is a process analysis (i.e., what leads to what and in what temporal position).

Ethics and Open Science Statement

The Academic Ethics Committee of Copenhagen University approved the study in September 2017. The anonymity of interviewers and interviewees was maintained using the encrypted app Wickr Me. No person-identifiable data were collected, and data have been further assessed for potential identifiable information.

ANALYSIS

RECREATIONAL SELLERS

Formalized Knowledge Strategies
Consistently throughout the interviews, recreational and commercial sellers reported navigating within a social context of familiarity and with communication forms already established prior to selling, which tended to make it difficult for them to put words to what they do. As shown below, most sellers find it “easy” to sell on social media and “just do it,” even though cognitive science theorizes that it involves many processes to perform the behaviour.

ICE3 (commercial seller): “Because it is the easiest, what other ways?”

SEK5 (recreational seller): “It’s easier on those (social media). I use other ways too, but social media is for getting more customers. It’s just a tool to reach more buyers that didn’t exist before.”

Even though most sellers report finding it “natural” to deal in the online context, variation appeared in cognitive decision-making strategies between recreational and commercial sellers, especially related to how they acquire and apply formalized knowledge structures (less embodied) and techniques to guide deliberative decision-making processes. As shown in the following examples, many of the recreational sellers have learned and obtained formalized knowledge strategies and techniques. These strategies are commonly employed as efficient responses to the micro context of decision-making tasks related primarily to preparing drug sales, such as learning how to create fake profiles or use encrypted communication on platforms such as Wickr Me to blur their identities, as shown in the quote below.
DK18: “If it’s done from a fake profile and then through a VPN, I don’t see any risk at all. The police don’t have the time to deal with small-time criminals that once sold some prescription drugs. So, you can be certain that it is not the police that you make deals with as long as you are not selling big amounts.”

Usually, this knowledge is acquired through online communities and friend networks where sellers share competences, for example, in technology use and rational considerations. For the majority of sellers, recreational as well as commercial, friends have initially invited them into closed social media groups as buyers. As a result, many of the sellers have been able to observe the online practices of drug dealing, such as using fake profiles, and established expectations for how drug dealing is conducted online.

DK19: “I was invited by a friend with my private (Facebook) profile, and afterwards, I created a fake profile so I could sell anonymously. (…) It took around a year (from hearing about selling on social media) until I used social media because I was very uncertain about it in the beginning. So, I just had to check it out.”

These formalized knowledge structures and techniques acquired from online communities become a reference frame through which recreational sellers detect what is normative and what is abnormal in selling situations. In mastering the uncertainty of selling on social media, most recreational sellers tend to organize abstract risks into smaller units, making them easier to comprehend and act on. For example, creating fake profiles and using VPNs, as recreational seller DK18 expressed, allows them to comprehend and transform intangible risks into tangible ones. As a decision-making strategy, this limits their attention towards
very specific decision-making tasks about which they can make fast decisions, most notably, only selling to friends and staying a “small fish” (low quantities), as the Norwegian seller describes below.

NO4: “I have always used my real profile for all transactions I have completed. I have a simple vision on me and my friends: We are such small fish that it will take a looooot [sic] before the authorities interfere in our transactions. (…) I have never bought or sold from anyone I didn’t know, never – it both was and is unacceptable to me.”

These fast decision-making operations illustrate a utilization of simple heuristics that tend to follow a rule-based structure. As such, most recreational sellers rely on some rules of thumb or cognitive shortcuts that allow relatively effortless processing of contextual information. Furthermore, these decision-making operations reflect a lower willingness to take risks. To put this another way, recreational sellers stay away from situations in which they would be required to make the same type of contextual reading as a commercial seller. Rather than moving around and beyond established rules, recreational sellers restrict themselves to selling mainly small amounts and/or to their own social networks and, as such, rely on strategies that work accordingly.

Attention towards Online Properties

In detecting danger signals, the majority of recreational sellers indicated paying limited attention to identifying normative relations and abnormalities in patterns of interacational dynamics, such as noticing the pace of exchanging text messages or assessing the use of emojis and slang expressions. Very rarely, recreational sellers described identifying risk factors based on interpreting offline patterns of interacational dynamics with buyers. Instead,
recreational sellers’ decision-making strategies on judging appropriate, safe behaviour in dealing situations revolved around detecting and interpreting signals related to online properties, for example, social networks, profile pictures, and the profile text potential buyers used. This finding indicates that recreational sellers’ detection and interpretation of situational signals are limited by merely detecting normative behaviour and abnormalities based on formalized knowledge structure as their reference frame. That is, they make deliberate rational decisions based on social expectations of online properties (e.g., the use of fake or real profiles) while tending to neglect subtle interactional expressions and social gestures as conveying danger signals in drug-dealing situations. That interpretative work is directed towards online properties and shapes recreational sellers’ decision-making, as illustrated in the following quotation:

DK23: “I never deal with fake profiles. (...) I always check common friends, et cetera. I’m pretty critical about who I sell to. (...) If I can tell from a profile that it’s a young guy who parties a lot and stuff, then I reject him.”

Minimizing the Pool of Selling Opportunities

The direction of interpretative work in online properties, while displaying inattention towards interactional gestures in detecting danger signals, suggests that recreational sellers’ decision-making strategies are to search for and target social information available online prior to a sale. Hence, most recreational sellers only sell to someone they encounter via Facebook’s network functions and whom they can identify as being inside an extended network or with whom they have done prior deals. The extended friends network on social media makes it
possible to expand their selling patterns beyond individuals known offline. As this Swedish seller explains,

SE6: “I also have [a] regular job. So that’s nothing that happens on a large scale. [...] I sell mostly to those who are my friends, sometimes on Facebook.”

The networks are used to assess buyers, as the Danish seller (DK23) explains above. However, they are also used to provide some form of network expansion (Donath, 2007), as we see with the Swedish seller (SE6) here. For the Danish seller above (DK23), the affordance of Facebook’s more identity-focused structure established the expansion of a network (he can check potential customers that are part of his extended network) (Cf. Tsay-Vogel, Shanahan, & Signorielli, 2018). For others (most evident with the commercial sellers), there are also more traditional network effects of reaching a slightly larger buyer group. However, most recreational sellers rarely sell to complete strangers, and if so, they gather what they consider relevant information, for example, from online profiles or offline reputation, as shown in the following quotation. In most cases, this means they restrict themselves to selling to friends or friends of friends and stay out of situations in which they have to interpret offline clues from persons they have not vetted online with the extended network rationale.

Interviewer: “How do you trust buyers? Because you mostly sell to friends and friends of friends, it may be more relevant to ask, is there anyone who you do not want to sell to?"

DK9: “Friends whose friends I don’t like.”

Interviewer: “Is that because you don’t trust them or because you don’t want to extend them the service? If it can be put like that?”
However, beyond using search strategies to attend to the specific relevant information based on available online properties, this finding further indicates how social–cognitive preconditions suppress opportunities in the choice architecture of social media drug selling. That is, although social media platforms provide access to multiple selling opportunities, searching and decision-making strategies among recreational sellers limit the choices, to some extent. Hence, although recreational sellers tend to perform deliberative rational decisions that follow rule-like structures, their decision-making strategies minimize the pool of options and choices experienced as available. As such, although the choice architecture (or what can also be referred to as affordances) of social media may provide an extensive number of drug-selling opportunities, only few of these are seriously detected and considered relevant for recreational sellers. They become irrelevant because selling will involve an unacceptable risk, and as such, they are not feasible within the framework of a relatively low willingness to take such risks. As a result, recreational sellers are often limited to dealing socially with a closed market circle, demarcated by their own extended social network of friends and friends of friends.

**COMMERCIAL SELLERS**

When selling on social media, decision-making strategies that recreational sellers apply tend to be established by formalized knowledge structures and techniques for mastering contextual uncertainty. Our analytical findings suggest that commercial sellers’ decision-making strategies are strongly informed by an interplay of embodied emotional–cognitive processes as well as a more formalized approach. In particular, our analytical findings show that commercial sellers’ decision-making processes tend to be informed by gut-feeling intuition.
The decision-making interplay of gut-feeling intuition and formalized knowledge structures largely occur in situations in which the commercial seller interacts with a potential buyer – for example, in evaluating a person’s trustworthiness.

SE22: “You notice pretty quickly if there is something sketchy. And then I always refuse to meet, regardless if it is me that buys or sells.”

This Swedish seller has some prior experiences with deals that ended with him being robbed. As such, he does not describe the Facebook-based marketplaces as risk free. On the other hand,

SE22: No, it’s extremely sketchy. You don’t know who you talk to. You can 1. Get robbed or 2. Get scammed, or 3. The police could be watching you [...] I got robbed of my money. They were also pretty young. [it happened] One time when I was young and when I was about to buy vodka through someone on Facebook.

This seller presents getting robbed as a consequence of being inexperienced in the market. Below, we will address how it affects the decisions that he makes when acting in the market. However, it also has consequences for how he tends to present himself in the market. In this case, the seller appears visually in Facebook groups to attract new customers or to buy larger quantities for resale. He is only visible when necessary. This way of behaving in the market shows that for some commercial sellers, their patterns of visibility are not very different from those of recreational sellers. They enter the market with visible accounts to expand their
network and remove their posts when no longer needed to minimize the risk of violent predation from other actors or the police.

Activating the Gut Feeling: Attention to Interactional Patterns

While recreational sellers displayed limited attention towards interactional patterns of abnormalities, most commercial sellers expressed directing strong attention towards interactional deviations from situational expectations. Although some interactional behaviours are deemed expected for the situation, others signal abnormality or even signs of danger. This finding indicates that commercial sellers have developed situational sensitivity concerning classifying actions as either normative or deviating from situational expectations of suitable behavioural patterns in the online hybrid context of social media drug dealing. For example, sellers might assess whether someone replies too quickly or too slowly or analyse their style of writing, as two Danish sellers express below.

DK11: “I was going to buy some LSD from a guy and resell it. And I had actually made a post on (name of Facebook group) where I asked for some LSD, a larger portion. And there was this guy who contacted me. And we wrote back and forth. And I don’t know what is was, but my gut feeling told me that I shouldn’t get into this. And so, I didn’t. But it was mainly because of the way he wrote. And it took such a long time before he answered. And when it’s about drug dealing, things ought to go fast, right?”

The quote shows commercial sellers’ attentiveness to interpersonal gestures that signal a threat, for example, the wrong use of words or offline appearance, based on which the sale is
consequently cancelled. This finding implies that an activation of the commercial sellers’
intuitive gut feelings occurs as patterns of interactional dynamics are interpreted as deviating
from situational expectations. Hence, the activation of an intuitive gut feeling reflects its
embeddedness in situational structures and normative order, as further emphasized in the
following quote on assessing and establishing trust:

**DK1:** “It’s hard to explain. But it’s their choice of words and how they write. You can feel if
they are used to contacting a seller. For example, it’s good if they write in a relaxed way, use
slang, emojis, or negotiate the price. But if they are concise and want to buy a lot, I get a
little distrustful. (...) Oh, and most of them write ‘friend’ at the end of the sentence, that’s a
good sign as well.”

In drug-dealing situations, commercial sellers and their buyers collaborate to establish a
definition of the situation and sustain a moral norm to build trust. This is shown in the second
quote, as the commercial seller explains how trust is established between seller and buyer. To
establish trust, sellers and buyers engage in providing evidence of being trustworthy, such as
using the right types of emojis and slang or by writing “friend.” Still, the decision-making
strategies commercial sellers employ indicate that attention is directed towards any action
that can be experienced as “out of line” (Goffman, 1967) in terms of expected behaviour in a
drug-selling situation, as both quotes express.

*An Interplay of Gut-Feeling Intuition and Formalized Knowledge Strategies*
Notably, this finding on the activation of gut feelings does not restrict commercial sellers from utilizing formalized knowledge structures in their decision-making strategies. The majority of commercial sellers have established systems of preparation (for example, selling from fake profiles), and they gather relevant information through online properties, such as buyer profiles. An interplay between formalized knowledge structures and intuitive emotional responses shape commercial sellers’ decision-making strategies (Evans, 2010; Evans & Stanovich, 2013; Lizardo et al., 2016). Such an interplay is exemplified in the quotation below. Here, a Danish seller describes attaining relevant information through online properties, yet he relies on his emotional responses to judge the situation.

*DK2: “When you are selling on Facebook, I often look at the person’s profile when they write to me. It’s pretty easy to get an idea of what kind of person you are dealing with. It’s hard to describe how I judge it, but it’s probably mostly just intuition.”*

Although commercial sellers cannot always explicitly justify the emergence of these physical signals in offline selling situations, these signals are experienced strongly enough to enact their gut feeling and, as such, incite them to step away or proceed with the drug deal. Such embodiment is illustrated in the following quotations, showing how feelings inform commercial sellers’ decision-making strategies and, ultimately, their choices not to meet buyers. Here, we also see that the seller’s decision includes an assessment of the psychical situation, which is considered to contain important clues about the person with whom they are dealing.
“They (the police) are dressed like hooligans but have the wrong clothes for being hooligans. Stereotypical. And they... I mean, you can just see it. If I feel uncertain, I don’t sell.”

Across interviews with 33 commercial sellers, many expressed how intuitive gut feelings inform and shape their decisions in crucial situations. This finding suggests that an embodied expertise is achieved, which allows commercial sellers to navigate efficiently in situations characterized by great uncertainty and with the potential of fateful consequences (Daipha, 2015). As commercial sellers encounter new buyers, they utilize an emotionally driven and embodied decision-making strategy to assess the situation. Thus, the emotional component should not be mistaken as the commercial sellers acting irrationally (Gigerenzer, 2007). On the contrary, their decision-making actions are reflexive precisely because the intuitive gut feelings that inform their decision-making strategies are activated.

DISCUSSION

Study Limitations

There are some limitations to our design that make it impossible to provide the strictest, most realistic process- and variation-oriented explanations, especially in relation to the commercial/recreational categories and the timing of the actual behaviour (J. A. Maxwell, 2010). Observations have been preferable to describing behaviour (Jerolmack & Khan, 2014), especially in the study of cognitive processes. Due to the hard-to-reach and hidden populations, drug sellers’ decisions were difficult to observe before markets became partly digital (Enghoff & Aldridge, 2019). The digitalisation of parts of the drug markets has provided stronger research as data traces have become observable. This progress has mostly
been capitalized upon in the expanding field of darknet drug studies. However, as Lavorgna (2021) argues, digital traces need to be combined with studies that assign more social science perspectives to behaviours. Qualitative interview data can provide some of the needed methods to shed light on this matter (Marres, 2017). Even though it is argued that text-based interviewing can allow respondents to take more time to formulate their responses (Holt, 2010), some of the more contextual and bodily clues are missed (S. Bakken, 2021), limiting the process analysis of behaviour. Secondly, the use of text-based interviews, coupled with sellers’ reluctance to provide detailed accounts (particularly regarding quantities sold), has hindered achieving the desired saturation of material, which could enhance the variance analysis. Thus, the text-based and encrypted interviews make the data suboptimal. Still, under the limitations, the data set provides access to a case that allows us to compare the processes across various seller profiles within a marketplace. Despite its limitations, this study adds to the needed qualitative explanations of how various sellers react to risk in these novel markets. Future studies should aim to establish better self-reported data quality and, ideally, incorporate triangulation with observational methods or aim for (semi-)experimental designs.

*Differences in Cognitive Decision-Making Strategies*

We find that rational choices are not only bound within limited knowledge and the uncertainty of anonymity concerning fake profiles’ operational security, encrypted apps, and so on. This discussion relates most to the structural aspects of markets and governance (Moeller, 2022; Munksgaard, 2024). We have added empirical evidence regarding how these structures work in digital interactions between sellers and buyers online as well as from the perspective of offline meetings with a buyer. Even though most sellers find it “natural” to deal in the online context, cognitive decision-making strategies differ between recreational and commercial sellers. As also suggested by Childs and colleagues (Childs et al., 2020), one’s position in the market may influence one’s rationality. This influence is especially
related to how sellers acquire and apply formalized knowledge structures and techniques to guide deliberate decision-making processes. This finding indicates that different patterns of decision-making strategies are applied in the micro context of decision-making tasks in drug selling. Although there is a partial overlap between decision-making processes among the empirical coding of commercial and recreational sellers, commercial sellers act based on gut feelings and are more confident, whereas recreational sellers’ actions are more restricted and formal.

One of this study’s strengths is that, to some degree, the commercial and recreational sellers operated in the same structural environment of social media platforms. From a behavioural perspective, it was clear that they did not act in the same ways. All the commercial sellers interacted more with strangers, but most of the recreational sellers restricted themselves from dealing outside their extended friendship networks. As such, there is an overlap between a group of the recreational sellers and social supply sellers. van der Sanden and colleagues’ conceptualization of this group as “social supply supernet” sellers (van der Sanden, Wilkins, Rychert, & Barratt, 2023) describes precisely how the “more-than-social-supply sellers” continue to sell in a partially open network This paper adds explanatory power to why recreational sellers restrict themselves from larger-volume selling and how commercial sellers navigate the potential in this market.

Within this environment, one of the clear strategies for decision-making among recreational sellers is to limit their information to knowledge available online. Recreational sellers restrict selling to a small group and make few adjustments based on contextual clues. They act on the general heuristics related to “classes” of buyers based on an assessment of buyers’ online profiles: “Do they look like me?” If not, they will not deal with such a buyer. A central bias in their assessment is that recreational sellers have little or no regard for the factors that limit predictive accuracy. They maintain an assessment that restricts potential
buyers to a very limited number of trades. In contrast, commercial sellers trust their own decision-making. The cognitive perspective concerning commercial sellers aligns with the findings of Bakken and colleagues (2023), indicating a form of Bourdieusian capital that intertwines digital competences with a revitalized street capital. Our contribution to this perspective lies in elucidating how this capital transforms into an implicit practice, revealing what we term embodied decision-making.

Our exploration goes beyond viewing this capital merely as a resource for commercial sellers; instead, it sheds light on the inherent biases that accompany it. Commercial sellers act on assessments of buyers as not fraudulent or related to law enforcement, creating a bias towards not acting on predictive accuracy. They underestimate risk, but as such, they have a larger group of buyers. However, in contrast to recreational sellers, commercial sellers tend to react to what happens in interactions and at meetups. If something “fishy” appears, they move towards not selling. They apply what we have theorized as a gut feeling. In addition, that gut feeling provides the possibility to adjust their bias and act more fluidly within the market.

Our unfolding analysis demonstrates that this cognitive capital is not only instrumental in facilitating commercial selling but also embodies certain biases. By focusing on these biases, we pinpoint more precisely the areas of the online environment that an intervention could target for restructuring. Understanding these cognitive biases offers a nuanced approach to designing interventions, allowing for a more effective and tailored response to reshape the dynamics of the online drug market (e.g. Akers, 2005; Tversky & Kahneman, 1981).

Recommendations for Intervention Strategies

Differing cognitive strategies among sellers can be applied to perspectives of prevention and policing. Our understanding of their cognitive processes shows that recreational sellers are very sensitive to a risk assessment of law enforcement, and disruption in their selling
environment could potentially trigger their cognitive bias towards not selling. In contrast, commercial sellers have a cognitive bias towards continuing to sell even if information is unclear. These findings give reason to differentiate two forms of policing strategies. One should relate to a proactive information-disruption strategy, and the other should continue to focus on more traditional reactionary police work.

For recreational sellers, interventions should leverage cognitive bias, particularly the inclination to distance themselves from selling if trust within the friend or friend-of-a-friend network is compromised. Small disruptions in assessing customers may prompt sellers to refrain from engaging with those on the outer fringes of their expanded online networks. Such small disruptions could be modelled around landing pages informing about platforms’ and/or law enforcements’ knowledge of crime. Proof of concept has been developed concerning some light hacking behaviour (Moneva & Leukfeldt, 2023). Drawing on Dunbar’s classic study regarding the limited number of individuals one can know within a group privately, a friends-friends-friends network might comprise approximately 150 persons (Dunbar, 1993). Disrupting the assessment of these connections as private could significantly reduce this number of perceived “trusted friends.” Such a strategy could push recreational sellers who benefit from network expansions of social media platforms back into a more limited customer base of “friends of friends.” We can hypothesise that we could push the network number from 150 to 50 and, as such, eradicate recreational sellers by making them more traditional social suppliers. Such a prevention model could have an overall effect on the market (deterrence effect) and a harm reduction effect on recreational sellers, as it will circumvent some aspects of drift.

Based on the findings, this strategy may prove ineffective for commercial sellers, given their cognitive bias towards operating with higher risks. Less extreme interventions that prove effective for recreational sellers will not change commercial sellers’ cognitive
strategies. Here, deterrence policing will still prove most effective (Bushway & Reuter, 2011). Such a perspective should also be focused upon communication towards sellers, as its effect should lean upon changes in perceived risk of arrest.

In light of these distinctions, we propose interventions that align with the concept of “splitting the herd.” This involves guiding recreational sellers to revert with minimal efforts, while commercial sellers need to be directed towards “darker” platforms with fewer network expansion affordances, necessitating a more traditional policing effort. Channelling commercial sellers into platforms such as Telegram can render their products less searchable, and network expansion would only be possible through direct references in a given Telegram list. Such a strategic approach is intended to tailor interventions based on sellers’ cognitive biases and the nature of their operations in online drug markets.
LITTERATURE


doi:10.1080/17440572.2020.1806826


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doi:10.1080/17440572.2022.2156863


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Caption: Table provides an overview of the seller types based on a coding of intention to sell and to whom sellers sell. Categories are not proved via a precise amount of selling (as most sellers was not willing to provide this information).