A NEW VIEW OF JAILS: EXPLORING COMPLEXITY IN JAILS-BASED RESEARCH

BY **REENA CHAKRABORTY**

The future of jails-based research lies in challenging traditional mental models of jails and building on system and complexity science.

It's time to rethink the way we view jails.

Jails — whether city, county, or regional — are integral to the local public safety and justice system. Their mission is to safely detain individuals with a diverse set of risks and needs at various phases of the criminal justice process — from arrest through adjudication, as well as post-adjudication.

In 2020, the 3,500 jails in the United States[1] processed more than 8.7 million intakes[2] and a similar number of releases; fewer than 4%, only 346,461 individuals, were admitted to state and federal prisons.[3] Although some individuals in jail exit to face charges in other jurisdictions, most, even if charged with serious offenses, reenter the community at release — many with the charges dismissed.[4] Jails hold most individuals for less than a year, with an expected length of stay of 28 days.[5]

"Mental models" are deeply held internal images of how the world works — images that limit us to familiar ways of thinking and acting. Often, we are not consciously aware of our mental models or the effects they have on our behavior.[6] Traditional mental models of jails include people, materials, and energy (especially emotional energy) and their flows. These traditional models inspire practices like audits, chain of custody, and accountability, as well as jail spaces designed to reduce stress and introduce normalcy. They do not lend themselves well to the dynamic environment of jails, where the needs of and risks posed by individuals detained can change significantly in a very short period.

Complexity-informed mental models of jails and their operations provide fodder for fresh inquiry and approaches to enhance how we understand jails and the practices within them.

In March 2020, the National Institute of Justice (NIJ) convened a virtual meeting of researchers and practitioners to explore the possibilities that arise from rethinking our view of jails. Participants discussed complementing traditional mental models by viewing jails as complex adaptive systems through the lens of complexity science, in which perception, cognition, and action continually interact and affect processes and outcomes. This article briefly introduces these concepts of complexity science relevant to jails and suggests areas for further research to help address persistent challenges in the field.

Human Complex Adaptive Systems

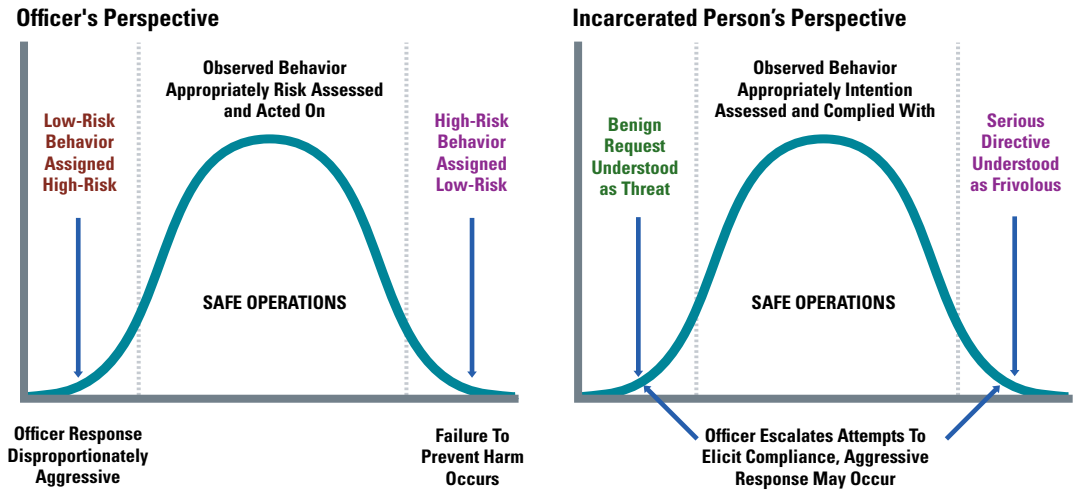
For the purposes of this discussion, a "system" is a functionally related group of interacting, interrelated, or interdependent elements contained by a boundary and separated from its "surroundings." A "complex system" is a highly interconnected system with many parts or agents that behave in ways that are hard to model and predict. The flow of material, energy, and information between different agents and levels is critical. Irreversible transitions occur between states, and new, unexpected, and unpredictable behaviors arise from relatively simple interactions between agents of complex systems. "Complex adaptive systems" modulate their behavior — or "adapt" — in response to feedback from their surroundings regarding system outputs or outcomes. Let us assert that jails are human complex adaptive systems (HCAS). The following discussion supports this assertion.

In their paper "Transitions From Prison to Community: Understanding Individual Pathways," Christy Visher and Jeremy Travis proposed a model to explain the reasons for and the dimensions of an individual's success or failure in reentry. This model consists of a system, the components of which are an individual accused of criminal activity, the local public safety and justice system and its agencies (including the jail, the individual's family, the neighborhood, and other institutions of state), and all the human agents within each of them. The components of this system may interact on multiple levels, such as between organizations or components, or between individuals within the components. Visher and Travis established that the well-being of this system irreversibly and progressively deteriorates each time the individual comes into contact with the local public safety and justice system, including jails.[7] This system and its agents exhibit complexity — specifically, each interaction between the individual and the local public safety and justice system and its agencies, which includes jail, results in irreversible changes to both the individual and the system because their behavior is interconnected, interrelated, and co-evolves. This is true for individuals who are detained in jail and for the jail itself. The researchers adopted an individual-centric perspective of the system; however, a jail-centric view of the system leads to similar insights.

Visher and Travis' system is also adaptive, meaning that responses are modulated by behavior outcomes.[8] Complex adaptive systems[9] modify behavior based on rules and information feedback from system outputs. They have many dimensions and levels, and high variability. Materials, energy, and information are interchanged or flow across them. Phenomena must be studied on affected levels.[10] Where interactions exist, interrelated complex adaptive system agents must be considered — they cannot be viewed in isolation.

Human beings and the organizations they create (family, community, social networks, formal and organization structures) are all examples of HCAS. Local public safety and justice systems and their agencies (including jails) and the remaining

Exhibit 1. Cognition Challenges in Jails and Safety Outcomes



Note: Viewed through a complexity-informed lens, it becomes clear that persistent safety-related challenges in jails often have a strong cognition-related component, from the perspectives of both officers and those incarcerated.

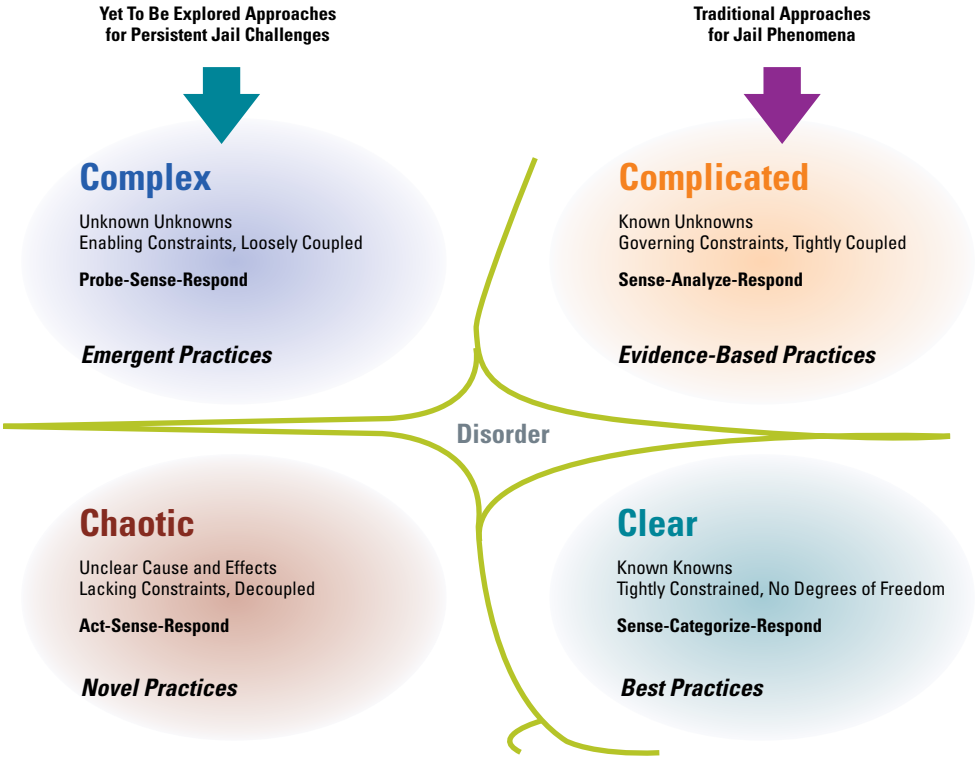
components of the system — individuals, families, neighborhoods, and state — are HCAS. Jails are thus HCAS.

HCAS have been called "information flow structures" — interactions between perception, cognition, and action affect the processes and outcomes.[11] Information involves a broad spectrum of signals and formats, including sounds, tactile clues, odors, and visual observations. If we apply this to jails, we see refined mental models in which a human sensor network of officers provides safety. Sensors are replaced on each shift, seven days a week. During shift transitions, however, there is often little meaningful exchange of safety-related information and little transition time. Some individuals in jail and other nefarious agents also operate human sensor networks that challenge the safety sensors and search for weaknesses that can be exploited. This constitutes a significant shift in how safety in jails is understood to be provided and challenged. Safety depends not only on an individual officer's perceptions but also on the quality and effectiveness of the shared understanding of the overall officer sensor network. These mental models offer fresh perspectives on safety challenges in jails and can lead to new insights and ways to improve safety.

Cognition failures ignite systemic failures in HCAS. These occur when people fail to understand the meaning of the signals they receive, often repeatedly over an extended period. This contributes to successive failures in communication, coordination, and control — which then cause systemic failure.[12] HCAS fail when agents engage in outmoded behaviors, work at cross purposes, or deplete resources needed to respond to threats.[13] Resilience has been defined as a system's ability to anticipate and adapt to the potential for surprise and failure,[14] for example, when confronted by novel threats that exploit vulnerabilities. Resilience engineering[15] offers tools and techniques to strengthen the ability of HCAS to successfully respond to such threats. It considers errors and tolerance in nontraditional ways.[16]

This work suggests fresh ways to view jails, the role of information sources and flows in jails, and the roles and cognition challenges of those who interact with them (see exhibit 1). It also suggests a complementary set of tools that could help empower jail practitioners to address persistent safety-related challenges. These tools could be used in conjunction with tools derived from high reliability organization theory, including identifying and adopting best and evidence-based practices, engaging in sentinel events reviews as a

Exhibit 2. Cynefin — A Domain-Specific Response Framework



Source: Based on David J. Snowden and Mary E. Boone, "A Leader's Framework for Decision Making," *Harvard Business Review,* November 2007, https://hbr.org/2007/11/a-leaders-framework-for-decision-making.

continuous learning practice, engaging in continuous organizational learning to foster resilience, and adopting Incident Command Systems appropriately.[17]

Addressing Safety Challenges

Cognition science has advanced considerably. Key developments include understanding trauma and its impact on perception, cognition, and action (behavior),[18] as well as the transmission of intergenerational or historical trauma-adapted behavior and its impact.[19] The science of transformative processes, including addiction and recovery, has evolved,[20] as has the science of cognition and learning[21] and of cognition as it affects human complexity sciences.[22] However, cognition in a jail context — particularly the impact of cognitive impairments on safety — merits study.

In 2007, David Snowden and Mary Boone published a paper describing the Cynefin framework, which offers practitioners a practical way to implement domain-specific strategies to respond to challenges.[23] The Cynefin framework illustrates how information flows affect practices (see exhibit 2). It has five domains characterized by constraints, the nature of unknowns, and cause and effect relationships. Effectiveness requires distinct practices and response strategies.

In the Cynefin framework, best practices are effective in the "clear" domain, where there are no degrees of freedom and knowns are known. Evidence-based practices are effective in the "complicated" domain, where tightly coupled governing constraints prevail and unknowns are known. Emergent practices are effective in the "complex" domain, with its loosely coupled enabling constraints and unknown unknowns.

Novel practices are required in the "chaotic" domain, with completely unfamiliar events, lacking constraints and unclear cause and effect relationships. In the final domain, "disorder," uncontrolled information flows prevail and effectiveness requires action to exit to any other domain. Domain-specific effective practices build progressively on each other. Established knowledge is retained, and new insights from exploring the complex and chaotic domains augment identified best and evidence-based practices.

Traditional mental models of jails emphasize best practices and evidence-based practices, which are associated with the clear and complicated domains. The complex and chaotic domains — and the impact of associated emergent and novel practices — are yet to be acknowledged, studied, and understood in jails. This is important because a jail's ability to consistently implement best practices and evidence-based practices is often confounded by co-evolving and ever-emerging challenges in providing safety. Many of these challenges originate in the complex or chaotic domains. When faced with a novel situation, or an emerging threat or vulnerability, jails must and do respond often from the domain of a novel practice or an emerging practice. These practices and outcomes are often shared with peer jails and are successively refined — consider, for example, the evolution of the understanding of COVID transmission and infection-control practices in jails. Practice evolves from the chaotic domain to the complex domain to the complicated domain — and finally to the clear domain. Knowledge practitioners' acceptance of practices evolves in the opposite order. As jails address problems in the complex and chaotic domains by seeking, testing, and building the capacity to generate and deploy effective novel and emergent practices, they may be able to more consistently and successfully address safety challenges.

Moving Forward

Information flows — neglected to date for jails — are integral to HCAS. Transmitters and receivers in diverse and dynamic forms influence jail safety and interpersonal dynamics. Researchers must identify and characterize these dynamics in jails. Practitioners must understand these dynamics beyond intuitively. As mental models of jails evolve to include information flows, so too will the design, execution, and outcomes of "basic research" and practice (for example, developing appropriate emergent and novel practices). Complexity-informed mental models of jails and their operations provide fodder for fresh inquiry and approaches to enhance how we understand jails and the practices within them. Researchers must study jail processes, practices, and dynamics for various agents across many levels — individuals, networks, and systems.

Researchers must also study jails in the context of the local community and its institutions to evolve understanding; improve processes, practices, and policies; and achieve better individual, family, and community outcomes. At the most macroscopic level, a systems science perspective recognizes that jails respond to the needs and governing dynamics of the local public safety and justice system. Researchers should study factors upstream and downstream of the jail that affect its use and ability to meet desired public safety outcomes. In applying a local public safety and justice system lens, it may be insightful to study calls for service data, neighborhood law enforcement strategies, arraignment practices, and release outcomes, along with jail use. Researchers, practitioners, and policymakers could then understand jails in a more meaningful context.

Localities need guidance on how to assess their existing service capacity and level of need in each reentry area and identify gaps. Planning guidelines would help them make informed decisions about investments, implementation times, and public safety impact for various strategies. Characterizing systemwide practices could help communities make more efficient and cost-effective decisions and achieve desired public safety and justice outcomes. This will support rigorous, sound, locality-specific efforts to address detention needs based on their operating reality. Such research is critical to achieving jail operations that meet community needs given resource limitations and desired reentry outcomes.

Researchers must ask how localities can best support community integration of individuals released from jail and allay collateral consequences of jail stays while "preventatively detained." Robust and reliable information regarding the paths by which individuals arrive at jail and their reentry experiences after exit is desperately needed and sorely lacking. Researchers must fill this void.

Opportunities exist for jails researchers to apply a complexity-informed lens to inspire fresh inquiry; expand understanding of jails and jail-based processes, interactions, and phenomena; and develop and test new insights into persistent challenges. The way forward for jails research builds on system and complexity science. Researchers must incorporate relevant insights into theories regarding jails and people incarcerated. Practitioners must operationalize these insights to strengthen practice and improve outcomes.

About the Author

Reena Chakraborty, Ph.D., is the chief of strategic planning and analysis for the DC Department of Corrections. She served as a former practitioner in residence at the National Institute of Justice.

Notes

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