HHS Public Access

Author manuscript

Soc Networks. Author manuscript; available in PMC 2023 May 01.

Published in final edited form as:

Soc Networks. 2022 May ; 69: 170–179. doi:10.1016/j.socnet.2019.09.005.

Charting the Hidden City: Collecting Prison Social Network Data

Corey Whichard[*],
University at Albany, SUNY

David R. Schaefer,
University of California, Irvine

Derek A. Kreager
Pennsylvania State University

1. Introduction

Penologists have long emphasized the importance of studying social relationships among prisoners to understand how people adapt to confinement. Imprisonment causes major shifts in one's interpersonal relationships, as "imprisonment is a social experience that places offenders in a unique social domain that qualitatively restructures their lives" (Nagin, Cullen, and Jonson 2009:125). Exemplifying this line of thought, seminal studies of prison life from the mid-twentieth century focused on understanding the nature of inmate society, such as its function in mitigating the pains of imprisonment (Sykes 1958), the "prisonization" of new prisoners to the prison's norms and codes (Clemmer 1940), and the extent to which prison culture is indigenous to the institution (Goffman 1961) versus a product of external forces imported into the prison context (Irwin and Cressey 1962; Jacobs 1977; for a review, see Kreager and Kruttschnitt 2018). Beyond understanding prison informal social order and its origins, several penological traditions clearly implicate social networks as an explanatory mechanism. For example, the "schools of crime" hypothesis proposes that incarceration intensifies criminality by allowing prisoners who are more deeply invested in criminal lifestyles to act as mentors to younger, less experienced peers (Clemmer 1940; Harris, Nakamura, and Bucklen 2018). Similarly, scholars have theorized that incarceration may impact health by exposing prisoners to a cramped social environment that facilitates the diffusion of illness and disease (Johnson and Raphael 2009; Massoglia 2008). In addition, solidarity among incarcerated individuals is believed to be causally related to prison order (DiIulio 1987; Skarbek 2014; Sykes 1958). Given this longstanding interest in prison interpersonal processes (social influence, contagion, cohesion, informal social control), it is surprising how rarely network methods have been applied in carceral contexts.

[*]Direct correspondence to Corey Whichard, School of Criminal Justice, 209C Draper Hall, University at Albany, SUNY, 135 Western Ave., Albany, NY, 12222, cwhichard@albany.edu, tel: 518.442.4217.

The absence of network research on prison life is conspicuous for two reasons. First, network approaches are well-equipped to investigate research questions related to the structural characteristics of social systems, and the dynamic interplay between individual outcomes and social structure (Robins 2015). Second, during the last two decades, network research has flourished throughout the social sciences, including in the closely related fields of criminology and criminal justice (e.g., Faust and Tita 2019; McGloin 2005; McGloin and Kirk 2010; Papachristos 2014; Radil, Flint, and Tita 2010). The clear promise of the network perspective for advancing research on prison society (Kreager et al. 2016a) and its increased visibility in criminology begs the question: "Why have penologists been slow to incorporate social networks into their research?"

We suspect that the answer to this question lies in the challenges, both real and perceived, of collecting social network data in the prison setting. Prisoners are a unique population with layers of gatekeepers charged with protecting them and restricting their interactions with the outside world (e.g., IRBs, wardens), making research access appear daunting. Moreover, though it is often assumed that incarcerated individuals crave the interpersonal attention offered by survey interviews and are willing to share their personal stories, norms in the criminal world limit what prisoners are willing to divulge about their peers. Within the prison context, network data itself becomes sensitive information. As a result, prison social networks are largely hidden from public view. Ironically, in the U.S. and other democratic nations, the public knows exactly who is incarcerated, where they are confined, and generally for how long. So while this population is not "hidden" in the conventional sense (i.e., compared to cases that lack a sampling frame, have no clear network boundary, or where concealment is intentional, such as dark networks or stigmatized populations), the secretive nature of prison life poses problems for gathering social network data. These and other concerns (elaborated below) represent a constellation of factors that has historically served as a barrier to prison research more broadly (Fox, Lane, and Turner 2018) and loom even larger for prison-based network data collections. Although challenges to network data collection exist in other institutional settings (e.g., schools and workplaces), we argue that it is the *unique confluence of challenges* within the prison context that discourage prison network data collection.

The purpose of this article is to outline how researchers may surmount these compounded challenges. Successfully collecting network data from prisoners can be achieved by carefully adapting methods to the peculiarities and constraints of the prison setting. We draw upon experiences from the Prison Inmate Networks Study (PINS) and its associated projects in five Pennsylvania prisons to construct a framework for understanding and overcoming the obstacles to network data collection in prisons. We focus specifically on gathering data from prisoners about their relations to one another and suggest that our insights can be extended to relations involving other prison actors (e.g., correctional officers, counselors, visitors).

2. Prison as a Social Environment

> "If men in prison were locked forever in their cells, cut off from all intercourse with each other … the inmate population would be an aggregate rather than a social group, a mass of isolates rather than a society" (Sykes 1958:5).

The historical origins of the American prison system provide a vivid illustration of the longstanding salience of network ideas for understanding prison life. During colonial times, it was standard for criminals to be temporarily jailed until they were sentenced to corporal punishment, such as flogging or branding (Hirsch 1992). Near the end of the 18th century, religious organizations sought to reform this system by promoting long-term confinement as a more humane alternative but were concerned that grouping convicted individuals in jails would only intensify criminality by enabling the spread of corrupting influences (Johnston 1994). As a result, when the world's first penitentiaries were created in New York and Pennsylvania, they initially required that prisoners be placed in solitary confinement for the entire duration of their sentences (McKelvey 1936). By the mid-19th century, the widespread use of solitary confinement had been discontinued over concerns that it was inefficient at harnessing prisoner labor and appeared to drive prisoners insane (McLennan 2008). In contrast to the "mass of isolates" envisioned by America's first penal practitioners (Sykes 1958:5), subsequent prisoners were, for the most part, placed in communal living arrangements and inundated with social interaction. Writing during the mid-20th century, Goffman (1961:28) highlighted "forced interpersonal contact" as a feature of prison life, an element that, for the majority of prisoners, has only intensified since Goffman's day.

Although solitary confinement continues to play a (perhaps outsized) role in contemporary incarceration (Haney 2018), a relatively small percentage of the total prison population is exposed to this condition (Frost and Monteiro 2016). Rather, given the 650% growth in the prison population from 1973 to 2009 (Travis, Western, and Redburn 2014) and subsequent prison overcrowding (Carson 2018), interaction with fellow incarcerated individuals is inescapable for the overwhelming majority of modern prisoners. Moreover, the physical layout and administrative regime of most U.S. correctional facilities ensures that virtually all prisoners will experience incarceration in a semi-continuous "collective" state—consistently surrounded by a relatively small and stable collection of other people. Indeed, architectural design and management of correctional facilities have increasingly emphasized open-plan housing units, such as the "podular direct supervision" approach, where centrally-located correctional officers can monitor common areas where prisoners congregate when not locked into their cells (Wener, Frazier, and Farbstein 1985; Wener 2006). Long regarded as the best practice for modern corrections, podular designs focus on regulating social interaction as a means of achieving a safe and orderly prison environment (Bogard, Hutchinson, and Persons 2010). At the heart of this approach is the recognition that social interaction is a powerful force in the prison setting that may influence whether the institution functions properly.

While the collective nature of contemporary prison life is more humane than keeping prisoners in isolation, the population characteristics and environmental stressors present in the average prison setting pose substantial risks for interpersonal violence and other forms of disorder. The U.S. prison population mostly consists of men housed in state correctional facilities (Kaeble and Cowhig 2018), many of whom have extensive criminal histories (Durose, Cooper, and Snyder 2014:6) and are serving time for a violent crime (Carson 2018). The state prisoner population also suffers from a host of concomitant social disadvantages. Compared to adults in the general U.S. population, state prisoners are substantially less likely to have completed high school (Harlow 2003), and have significantly

higher rates of cognitive disabilities (Bronson, Maruschak, and Berzofsky 2015) and mental illness (Bronson and Berzofsky 2017). On top of bringing large numbers of troubled individuals together in the same setting, incarceration exposes them to deeply stressful living conditions. Incarcerated individuals are subjected to a collection of degradations that Sykes (1958:106) termed the "pains of imprisonment." Correctional institutions offer prisoners little beyond the provision of basic necessities, with opportunities for comfort and luxury either radically restricted or formally forbidden, making the incarceration experience a combination of severe austerity, petty frustrations, and boredom. Given the composition of the prison population and inherent strains of imprisonment, it is not unusual for incarcerated individuals to engage in serious acts of violence against one another and staff (e.g., Mumola 2005; Noonan 2016). Incarceration thus concentrates a large group of people—many of whom have pronounced antisocial tendencies—in a confined and psychologically taxing setting with oversight from a much smaller number of correctional staff. This arrangement has several consequences for the quality of social interaction among prisoners, as well as between prisoners and correctional staff.

2.1. Prisoner Peer Interactions

Ethnographic research reveals that *trust* is central to relationship dynamics between prisoners (Crewe 2009). Prisoners are deeply concerned with being exploited or physically harmed by their peers, particularly during the initial months of their sentences (Kaminski 2004; Schmid and Jones 1991; Toch 1976). Moreover, because it is common for incarcerated individuals to violate prison rules to acquire prohibited items or engage in forbidden conduct, they are at risk of other prisoners reporting their behavior to prison officials (Goffman 1961; Sykes 1958). Though prisoners may be able to protect themselves from these threats by developing alliances with their peers, incarceration impedes the development of trust by constraining opportunities for prisoners to reliably evaluate each other's character (Crewe 2009:307). For example, because prisoners have virtually no opportunities to interact in private, the highly public nature of social life promotes a self-conscious approach to impression management that inhibits authenticity. Jacobs (1979:15) observed a similar phenomenon, noting that "inmates live as if in fish tanks where behavior is continuously scrutinized." As a result, it is often unclear whether a prisoner's social conduct is sincere or contrived. Because prisoners are often unsure whether their peers are misrepresenting themselves or motivated by hidden agendas, they are generally reluctant to establish socially intimate bonds (Clemmer 1940; Crewe 2009; Kruttschnitt and Gartner 2005).

2.2 Prisoner-Staff Interactions

Official protocol requires that correctional staff maintain social distance from inmates and faithfully enforce prison rules, but ethnographic research suggests that interdependence between staff and prisoners profoundly complicates this dynamic (Crewe 2009; Sykes 1958). For example, because correctional officers and prisoners spend lengthy periods in close proximity, it is not feasible for officers to remain completely aloof toward those they are charged with guarding. Moreover, while correctional officers have nominal authority over prisoners, they are greatly outnumbered by the incarcerated population. While working as a correctional officer, Conover (2001:34, 92) observed that officers who succeeded in

performing their job duties possessed “people-skills” that allowed them to interact well with inmates, with particularly effective officers recognizing that “at the root of the job was the inevitability of a kind of relationship between us and them.” Though a certain amount of rapport between prisoners and correctional staff may be beneficial, penologists have noted that staff-inmate social ties are also a source of considerable tension. For instance, prisoners are highly sensitive to the possibility that a fellow inmate might share information with correctional authorities that could negatively impact another prisoner (i.e., “snitching”). Sykes (1958:87–89) invokes network imagery to describe this dilemma, observing that prisoners and staff belong to separate “circuits” within a “network of communication” where the “flow” of information between groups is prohibited; this promotes heightened concerns with “deception, hypocrisy, spying, and betrayal” that lead prisoners to regard staff-inmate ties with intense suspicion. Similarly, correctional staff are wary of co-workers who seem overly sociable toward inmates (Conover 2001; DiIulio 1987; Jacobs 1977).

While correctional officers are directly charged with maintaining order among prisoners, within the paramilitary organizational structure of security staff, correctional officers are low-ranking employees positioned near the bottom of the official chain of command. At the same time, however, correctional officers are expected to act as authority figures and maintain control over a population of potentially resistant or hostile prisoners. While working as a correctional officer, Conover (2001:95) observed how stressful it was to occupy this position in the prison’s bifurcated power structure, noting that correctional officers “were sandwiched between two groups: Make a mistake around the white-shirts and you would get in trouble; make a mistake around the inmates and you might get hurt.” Compounding this tension, in a typical prison, large numbers of prisoners are overseen by a small number of correctional staff. For example, the average state prison operates with a ratio of one correctional officer to five prisoners (Stephan 2008:5). Over the course of a work shift, a single correctional officer may be responsible for supervising as many as 72 incarcerated individuals at a time (Bogard, Hutchinson, and Persons 2010:27). This organization is itself a source of strain for correctional officers (Conover 2001; Crewe 2009; Lambert, Hogan, and Allen 2006), though supportive relationships with co-workers can help buffer work-related stress and burnout (Cullen et al. 1985; Dollard and Winefield 1995; Keinan and Malach-Pines 2007; Lambert, Hogan, and Tucker 2009; Steiner and Wooldredge 2015). The difficult role correctional officers occupy informs how they interact with prisoners and others within the prison, including researchers.

3. Collecting Prison Network Data: Problems and Solutions

Though a network approach has significant value for penology, network research on prison life is rare. During the sixty-year period following Moreno’s (1932) seminal study of group psychotherapy networks in Sing Sing prison, only a handful of projects have applied network methods to investigate the informal structure of prisons (Clarke-McLean 1996; Killworth and Bernard 1974; MacRae 1960; Moreno 1934; Schrag 1954). In the last two decades, while network research has proliferated in the social sciences, network studies of prison life remain scarce. Indeed, the Prison Inmate Network Study (PINS; Kreager et al. 2016a) is a rare case of recent penological research using network methods to map prison social structure. More studies have followed an egocentric network approach, which carries

fewer obstacles (Kreager et al. 2016b; Rengifo and DeWitt 2018; Volker et al. 2016), or in one case, adopted the sociometric tradition (Goldweber, Cauffman and Cillessen 2013).

While it remains unclear why there are so few prison network studies, we suspect one reason is the apparent challenges of collecting network data from a prison population. Conducting primary research inside of correctional facilities involves a host of difficulties (Fox, Lane, and Turner 2018). Moreover, many research problems in penology that are amenable to network science are best addressed by gathering whole network data, which poses its own complications (adams 2019; Borgatti, Everett, and Johnson 2013). For whole network studies of prison actors, researchers are forced to navigate both sets of challenges simultaneously.

In the interest of encouraging future network research on prison life, the following section summarizes some of the primary obstacles to conducting whole network studies with incarcerated respondents and offers strategies for addressing each obstacle. To this end, we reference the work of other researchers who collected primary data in prison and draw on our own experiences collecting prison network data to describe the sequence of stumbling blocks and solutions that scholars may face as they set out to gather prison network data.

3.1. Gaining Access to the Network Site

An initial set of challenges surround gaining access to the prison population, including negotiating with institutional review boards (IRBs), receiving permission from institutional officials to collect data, and coordinating the logistics of data collection with potentially resistant institutional actors. Clearly, these are common hurdles for many forms of primary research within organizations. For any bounded setting, permission must be granted to conduct a survey, both by one's IRB and by leaders in the setting. In terms of IRBs, schools offer a close corollary to prisons as both children and prisoners are protected populations requiring extra caution. As we discuss below, a key difference here is that network surveys in prison carry more risk for participants than network surveys of school children. As a result, it is important to take steps to minimize harm, and convey these precautions to one's IRB and the prisoners themselves through the informed consent process. Moreover, the number of schools outnumber the number of jails and prisons in the U.S. by a 20:1 ratio (NCES 2018; Sawyer and Wagner 2019) and, whereas schools are generally located proximate to the places where people (e.g., researchers) live, correctional facilities are intentionally situated in more remote locations (Martin and Myers 2005). As a result, when it comes to finding a suitable setting, school-based researchers often have multiple possibilities within a reasonable distance, whereas prison researchers have fewer options and these are often at greater distance (and cost). Thus, the prison-researcher has less margin for error in courting administrators than school (or workplace) researchers.

3.1.1 Institutional Review Boards—In response to prior research abuses of (often involuntary) prisoner participants (Hornblum 1997), institutional review boards (IRBs) consider prisoners a vulnerable population and add specific requirements for research project approval, including a prisoner representative on the review board and adequate protections against coercion, perceptions of favorable parole decisions due to participation,

or risks beyond those of a non-prison participant. Every effort to avoid additional risks to a vulnerable population must be secured. Perhaps most critical from an IRB perspective, however, is justification that the proposed research is necessary to understand the causes, conditions, and consequences of the carceral experience (Department of Health and Human Services 2018). Prisoners should not be targeted for research simply because they may be a more convenient or willing population than other groups. Rather, research should be undertaken with an eye toward understanding pressing issues, such as the consequences of solitary confinement, visitation, victimization, and prison programming for prisoner health and post-release outcomes, as well as designing and testing interventions that improve prisoner health and safety.

Network research carries the potential for several unique forms of risk that must be ameliorated. Of particular concern within the prison setting is deductive disclosure, which occurs if some combination of individual attributes and network position enables the identification of specific persons (adams 2019). Certain kinds of relations or behaviors (e.g., trading contraband) may be illegal or violate prison rules, such that corresponding data could be used to sanction respondents and/or their named alters. Negative consequences may also ensue if prisoners themselves obtained network data and used it to infer alliances or animosities between one another. A second risk arises if someone is known to have talked to researchers (knowledge which is unavoidable within such a close, compact system) who were asking sensitive questions that could implicate fellow prisoners. Such a person could be perceived as a “snitch” and sanctioned as such regardless of the information they provided.

Keeping respondents and/or network nominations anonymous can help solve these problems and may be practical when collecting egocentric data, but this approach is not feasible for complete network data where the goal is to link named alters to their own responses. For complete network data collections, one solution is to limit data collection to relations and behaviors that are innocuous enough that disclosure would not put prisoners at risk. For example, asking about peer ties of trust or confidence are much less problematic than are ties of dislike, violence, or co-offending. An IRB proposal must make clear how network data collection poses minimal risk to participants. Data from pilot testing or focus groups with prisoners can help to gauge the riskiness of particular topics or relational questions. It is also critical to develop a well-conceived data security plan that safeguards identifiable data and restricts dissemination of de-identified data. For example, the National Institutes of Health provides “Certificates of Confidentiality” that provide extensive protection to research subjects to prevent the involuntary distribution of identifiable information (NIH 2017). Lastly, investigators must assure their IRB (and prisoner respondents) that study participation in no way can be perceived as influencing parole decisions or result in staff punishment. This is achieved through explicit language in the informed consent process and, as much as possible, keeping the recruitment and participation process independent of correctional staff.

3.1.2 Prison Officials—Prisons are secure facilities explicitly designed to prevent unauthorized entry or exit. From a network perspective, this feature of correctional institutions is useful for establishing a fairly unambiguous network boundary—every person

who moves in and out of the premises is known. However, the physical and institutional barriers separating prisons from the external community present a variety of obstacles for data collection. An initial challenge is that researchers must obtain permission to conduct their research within the correctional institution (Fox, Lane, and Turner 2018). Acquiring access requires a top-down approach in which researchers must successfully petition multiple prison officials who act as gatekeepers, from wardens down to and including prison superintendents and unit managers. Moreover, penologists have noted that gaining entry to the U.S. correctional system has grown more difficult over time (Wacquant 2002). During the mid-19th century, the rehabilitative ethos of America's correctional system promoted a favorable view of social science that facilitated access for early prison ethnographers, who enjoyed the support of prison officials and benefited from great latitude in conducting their research (e.g., Clemmer 1940; Sykes 1958; Ward and Kassebaum 1966). During the 1970s, however, as the system embraced a more punitive correctional philosophy and prison administrators were increasingly targeted with lawsuits introduced by the prisoners' rights movement, prison officials became less interested in sponsoring penological research (DiIulio 1987; Jacobs 1977). More recently, scholars conducting primary research on prison actors have described the need to negotiate with officials who are concerned about the prospect of being criticized or exposed to negative publicity (Crewe 2009; Kruttschnitt and Gardner 2005). As Simon (2000:303) put it, the "involvement of sociologists with prisons is virtually all political risk for prison administrators." Indeed, while attempting to conduct ethnographic research on the experiences of correctional staff in New York State, Conover (2001) encountered such intense institutional resistance that he resorted to working as a correctional officer to carry out his study.

Prison officials may also be reluctant to authorize primary research that appears to require too much effort from correctional staff or that might otherwise be seen as potentially disruptive to the daily operation of the prison. From this perspective, an advantage of the typical approach to collecting prison data—embedded ethnographies, paper surveys delivered en masse by correctional staff, compiling administrative records—is their minimal burden for institutional actors. By contrast, research on sensitive topics, using complicated questionnaires, or gathering qualitative data may be better suited for face-to-face interviews with individual prisoners. Such approaches may face heightened resistance from prison officials simply because the logistical requirements make them seem especially obtrusive.

One strategy for increasing the likelihood of access is to align one's research with the priorities of the correctional administration. This can be done by working with prison administration or, ideally, a research division within the administrative organization overseeing the prison. Such prison administrators can act as liaisons to institutional staff and connect researcher activities to broader correctional priorities, particularly in state systems with centralized administrations. Such alignment may take the form of including department-specific questions in a survey instrument or planning a companion study focused on a department-relevant topic. Prison administrators are likely to be unfamiliar with network methods, thus it is helpful to identify concrete examples of the types of questions such data can answer to justify the burden. For example, in the Therapeutic Community Prison Inmate Network Study (TC-PINS), we collected longitudinal network data from prisoners participating in an intensive drug and alcohol treatment program (Kreager et al.,

2018). Participants lived in a dedicated housing unit reserved exclusively for prisoners enrolled in the "therapeutic community," a group-based treatment program where prisoners participate in each other's recovery by discussing their problems with substance abuse and encouraging one another to commit to sobriety (De Leon 2000). The main reason we were able to conduct this study is because the prison administration wanted to understand whether the treatment program was effective. Since the treatment was believed to operate through a social network process (i.e., peer influence), prison administrators saw the value in collecting network data and authorized the study.

This process requires researchers to learn more about the specific concerns of correctional authorities through direct conversations or published documents (Fox, Lane, and Turner 2018). Demonstrating a willingness to assist in correctional needs builds inter-organizational trust and potentially creates relationships that may open future opportunities. Of course, if the research findings are ultimately critical of correctional policies or functioning, future opportunities may be foreclosed. Our own experience, however, suggests that centralized prison authorities are open to critical research findings as long as they are forewarned of their publication and are able to link them to their own evaluation efforts.

3.1.3 Correctional Staff—Researchers must coordinate day-to-day data collection with correctional staff (Fox, Lane, and Turner 2018). This can be challenging in light of the prison's overarching emphasis on security. Correctional officers must devote time to verifying researchers' entrance documents, searching their possessions for forbidden items, and personally escorting them to different areas of the facility. Moreover, unlike other settings where network data is collected (e.g., schools and workplaces), access to every potential respondent is facilitated individually by staff at the institution. Correctional staff may be required to schedule formal appointments for each inmate to meet with an interviewer, individually provide inmates with written passes, or escort each inmate to their interview. Officers may also be uncomfortable allowing researchers to conduct face-to-face interviews with prisoners in private settings (especially when female interviewers meet with male inmates) and may resent the perceived obligation to regularly check-up on interviewers. This conflicts with the needs of collecting network data from prisoners, which is a highly sensitive task that is best conducted in private settings (e.g., staff offices). To maximize respondent privacy and minimize risk for interviewers, researchers may be able to arrange for interviews to be conducted in rooms with see-through glass windows, which is a common safety feature for administrative and treatment areas. This allows officers to maintain visual contact with the interview team without hearing confidential information. In addition, interviewers may be outfitted with personal alarms that summon correctional officers when activated.

While researchers are highly dependent on staff assistance to navigate the prison environment, staff members have no vested interest in the research project and invariably experience it as an intrusion into their regular work shift. Because they are constantly inundated with requests from prisoners, staff members commonly present themselves as aloof and readily deflect nonessential claims on their time. At the same time, staff members —particularly correctional officers—are reluctant to allow civilians to independently operate in the prison setting. This can create a dilemma in which staff members insist

that researchers directly involve them in carrying out minor tasks, while simultaneously resisting (or even ignoring) requests for assistance. Ironically, this type of staff resistance forces researchers to spend more time inside the prison facility to achieve the sufficient response rate complete network analysis requires (Smith and Moody 2013), intensifying the institutional burden posed by data collection.

Within this setting, the researcher assumes the role of the hub in the well-known "forbidden triad" (Granovetter 1973), as they must develop and maintain cooperative relations to two institutional actors who share a longstanding distrust and enmity. Because researchers are dependent on correctional staff to access respondents and navigate the high-security prison environment, they must maintain a basic level of rapport with staff members. Due to the precarious nature of custodial control over prisoners (Conover 2001; Sykes 1958), correctional staff are acutely sensitive to signs of disrespect or behavior that challenges their authority. Thus, as researchers it can help to adopt a polite, deferential posture toward correctional staff. Researchers must nonetheless be mindful of how they interact with correctional staff in the presence of prisoners, as researchers who seem to be on familiar terms with correctional workers are likely to be regarded with deep suspicion by prisoners. Given the inherent risk of activating "snitching" concerns while administering network surveys to prisoners (discussed below), researchers must be careful not to magnify these fears by appearing to fraternize with correctional staff. At the same time, researchers must engage with prisoners sufficiently to encourage participation, but not appear too friendly with prisoners lest they irritate correctional staff and diminish the latter's willingness to assist researchers. Thus, researchers must carefully balance the need to privately sustain positive relations with both staff and prisoners while simultaneously avoiding public displays that might signal allegiance with either group.

In our experience inside five state prisons, effectively interacting with resistant correctional staff was consistently the most difficult aspect of data collection. If researchers overstay their welcome in a given facility, disgruntled correctional staff have nearly endless opportunities to undermine data collection. It is important for researchers to acknowledge this fact before embarking on a network study involving incarcerated respondents. One approach can be to incentivize staff. In a non-PINS project, a member of our research team would routinely bring treats for staff during a two-week data collection period (e.g., donuts, pizzas). However, note that regulations in some states may prohibit such a tactic. Another approach is to design the data collection process to minimize staff burden and increase the likelihood that correctional workers will not only tolerate the intrusion, but sincerely assist with the project—if only to ensure that researchers will get out of their hair as quickly as possible.

3.2 Collecting Network Data from Prisoners

Once researchers have gained access to prisoners, they must obtain the consent of incarcerated individuals to participate in the study and persuade them to faithfully answer network questions, all while maintaining an adequate level of data quality. These are fundamental issues for data collection generally; however, the prison environment complicates data collection in ways that are unlikely to emerge in other organizations.

Schools (and workplaces oftentimes) tend to be characterized by norms of doing one's best and completing one's work, which can carry over to similar tasks like completing a survey. By contrast, the norms within prison lead inmates to distrust outsiders and approach tasks with a more utilitarian "what's in it for me" logic. Thus, schoolchildren are a generally compliant bunch, inclined to defer to researchers and adults more generally. Similarly, employees are inclined to follow requests from their managers (though perhaps less than schoolchildren). These institutional factors likely compound pre-existing differences between the prisoner and other populations, such as cognitive and educational deficits. Furthermore, complete network studies require high response rates, but the low-trust nature of prison life and widespread prohibitions against divulging information about fellow prisoners increase the risk of respondent resistance to network items. Indeed, we have first-hand experience with asking inmates to answer network questions that they felt violated prison norms. While much can potentially go wrong when collecting prison network data, we have found that many prisoners are willing—even eager—to speak with researchers about incarceration.

3.2.1 Survey Administration and Design—While there are many options for collecting network data (adams 2019; Borgatti, Everett, and Johnson 2013), face-to-face interviews have many advantages when gathering social network data from prisoners. Based on our experience administering computerized network surveys to prisoners face-to-face, it was common to encounter respondents who struggled with reading comprehension, requested that the interviewer repeat the question or answer choices, required a prolonged period of reflection to settle on a response, and relied on assistance from the interviewer to maintain focus on completing the questionnaire. Face-to-face interviews can overcome these disadvantages. Face-to-face interviews can also provide prisoners with opportunities to share their perspective on incarceration with an attentive and sympathetic listener in a private setting, a rare event for this population. We suspect that respondents in the Prison Inmate Network Study (PINS) were motivated to participate in the absence of material incentives because the interviewers were kind, respectful, genuinely interested in what they had to say (Fox, Lane, and Turner 2018), and offered a confidential and judgement-free outlet to express their thoughts about the incarceration experience. This type of interpersonal exchange is simply not possible with other modes of data collection. In PINS, interviewers sitting alongside the respondents and directly entering responses on laptop computers resolved these issues and served to build trust with the respondent (which diffused through the sampled unit).

With face-to-face surveys, open-ended survey items can be incorporated to help build rapport and the trust needed to complete network items. The utility of such questions is that they promote a positive experience by granting prisoners license to expound on whatever dimension of a particular subject they find most salient. The advantages of open-ended survey items became apparent during the first wave of data collection for PINS, as the initial questionnaire consisted primarily of closed-ended questions. PINS interviewers found that respondents had much to say about the topics raised during survey administration, but the closed-ended format did not accommodate respondents' desires to elaborate on their survey answers. This often resulted in either respondent frustration, or multiple "sidebar"

monologues that prolonged the length of the interview. During subsequent iterations of the PINS survey, the research team incorporated additional open-ended items at strategic points, such as the beginning of the questionnaire, the end, and to cap off subsections where respondents might have more to add on that topic. Interviewers found it especially effective to start surveys with open-ended items designed to encourage respondents to speak at length about different dimensions of the prison experience. This helped establish an affable atmosphere in which to conduct the interview. However, because open-ended questions can substantially lengthen survey administration, interviewers must be mindful of how much time they are allotting for each open-ended item and trained on how to politely interrupt lengthy replies.

Gathering network data with face-to-face interviews is time-intensive. Space constraints and security concerns may limit the number of interviewers who can be working at any one time, and prison routines and lockdowns can limit the number of hours during which interviews can be conducted. Thus, unlike many organizational and educational settings where self-administered network surveys can be delivered en masse, network data collection within a prison can take days, if not weeks. Because respondents inevitably communicate with one another during a multi-day data collection period, it is relatively easy for information about the project to spread and develop its own reputation. The best-case scenario is that the research team acquires growing legitimacy. In contrast, the worst-case scenario is that the survey develops a reputation for being boring, taxing, intrusive, or insensitive, any of which can discourage participation. In the case of PINS, which targeted prisoners living on the same housing block, the concern was that if the network questions made our respondents uncomfortable then this impression would quickly spread and prevent us from achieving our target response rate. As luck would have it, we found that our first few interviews were with some of the highest status “old head” (Kreager et al. 2017) unit residents. These prisoners had a sufficiently positive experience and were sufficiently convinced of our benign nature that their participation granted legitimacy to the project that carried over to other residents on the unit. Legitimacy is a powerful means to promote research participation (Dillman 2011). However, in the prison context, it is less clear who could offer such legitimacy. It is certainly not the prison officials that have authority over the prisoners. Instead, it is likely to be fellow inmates whose judgment can be looked to as a precedent in one’s own decision to participate. Thus, future research may benefit from early targeting of high-status prisoners who are respected by their peers and use the natural diffusion process to carry this information to other potential respondents.

Although prisons, and the housing units therein, provide clear-cut boundaries with which to define a population, these boundaries are not impermeable. Prisoners are routinely transferred in and out of housing units. This poses problems for protracted network data collection that carries the goal of capturing an overhead “snapshot” view at a particular point in time. Over the course of a week, multiple unit residents may come and go and bring into question the exact study population. Is the sample anyone on the unit on a given date, or anyone present throughout data collection? This also poses a challenge for which ties to consider, as newcomers may not have had time to develop relationships with their peers. Logistically, if one is using a roster for network nominations, then the possibility for changes in the unit composition require routine, if not daily, checks and updates to the roster.

A unique challenge for collecting network data from incarcerated respondents is that the basic process of gathering social network nominations risks violating powerful norms concerning how prisoners speak about each other with third parties. Incarcerated individuals may be ostracized or even victimized for "snitching" in prison (Irwin 1980; Irwin and Cressey 1962; Kaminski 2004; Skarbeck 2014; Sykes 1958), and common methods for soliciting network nominations are eerily reminiscent of this exact behavior. While gathering prison network data, we discovered that simply showing respondents nomination rosters could trigger anxious responses.

We can attest that while "snitching" norms do present barriers for collecting network data from prisoners, incarcerated respondents will nevertheless answer network items if the tie label is sufficiently neutral. The issue revolves around whether providing a network nomination can reasonably be construed as either slandering a fellow inmate's reputation or providing researchers with actionable information that could be used by prison authorities to punish a fellow prisoner. For example, the original PINS questionnaire contained the following four network items: (1) "Who are the unit residents you get along with most?"; (2) "Who are the unit residents you feel are the most powerful and influential?"; (3) "Who are the unit residents you hear the most information about the prison or unit from?"; and (4) "Who are the unit residents you trade things with the most? For example, commissary items, food, etc." Respondents exhibited such intense resistance to the "hear information from" and "trade with" items that we dropped these questions from this and future surveys. Several respondents explained to interviewers why these two items were problematic.

Many respondents noted their opposition to the "hear information from" item was because it amounted to labeling peers as gossips, rumor-mongers, or people who otherwise spoke too freely and indiscreetly. Though some respondents acknowledged that the wording of the question allowed room for less derogatory interpretations, the risk that a fellow prisoner could *hypothetically* take offense at receiving such a nomination was high enough that few respondents were willing to answer the question. The problem with the "trades with" network question was less ambiguous: institutional policy formally forbade inmates from trading with each other. The rationale behind this policy was that trading could enable predatory lending behavior, allowing some prisoners to develop "debts" to others that could result in exploitation, extortion, and violence. However, this policy was nearly impossible to enforce, and respondents noted that it was commonplace for prisoners to share material resources (particularly cigarettes and coffee) with their associates. Though respondents openly acknowledged that all prisoners engaged in some form of trading, providing researchers with a list identifying the inmates they traded with was a clear violation of "snitching" norms. As a result, virtually no respondents provided nominations for this network item.

It is worth emphasizing that each PINS interview was individually conducted behind closed doors, out of earshot of other people, and preceded by a thorough informed consent process that stressed the confidential and voluntary nature of the respondent's involvement in the survey. The fact that respondents were unwilling to answer these two (seemingly) innocuous network items under such conditions highlights the profound sensitivity surrounding the disclosure of information about fellow prisoners. Consequently, we speculate that many

important prison phenomena that are uniquely amenable to network analysis—contraband distribution, the spread of sexually transmitted infections, gang membership, victimization—may prove too difficult to study using self-report sociometric data from prisoners.

In contrast, respondents were willing to provide nominations for the "get along with most" and "power/influence" networks with only minor questions or hesitation. Though incarcerated respondents appear much more open to providing nominations for benign tie labels, researchers must be careful with item wording even when seeking to measure positive ties. In the prison context, for example, the notion of "friendship" between prisoners is often a contentious issue (Crewe 2009). Many prisoners express that friendship—with its connotations of trust, support, and social intimacy—is simply not possible in prison and are reluctant to use this word to describe their relationships with other prisoners.

To avoid potential problems with network questions arising from unforeseen semantic differences between researchers and prisoners, it is important for researchers to familiarize themselves with the cultural context of incarceration before designing their survey (see also, Borgatti, Everett, and Johnson 2013; Church 2001). For example, before starting data collection in each prison, members of the PINS research team piloted preliminary surveys with focus groups of prisoners not in the sampled unit and solicited advice on appropriate wording. As a result, PINS relied on the more neutral terms of "get along with" over "friends" to specify peer relationships (see Schaefer et al., 2017). This wording has generated little resistance from incarcerated respondents across five different prisons and we strongly recommend that other researchers use it to measure prisoner peer relationships. In comparison, some PINS respondents were initially hesitant to provide nominations for the "power/influence" network and often asked interviewers to clarify what the question was trying to measure. Interviewers were trained to respond to questions about this item first by acknowledging that prisoners could be considered powerful and influential for a variety of reasons, and then expressing that respondents should use their own interpretation to answer the question. Ultimately, we found that respondents were receptive to providing nominations for the "power/influence" network once they had a moment to inspect the item and determine that it was appropriately neutral. Thus, an additional advantage of the face-to-face format for administering social network surveys to prisoners is that it creates opportunities for interviewers to defuse resistance to network items.

3.2.2 Recruitment—One of the final challenges for conducting primary research with incarcerated respondents is persuading prisoners to participate (Fox, Lane, and Turner 2018; Giallombardo 1966; Jewkes and Wright 2016). In schools and workplaces, leaders are more-or-less respected authorities. Their authorization of a study confers its legitimacy to the study population, which promotes participation. By contrast, prisons are polarized settings where correctional staff and prisoners approach each other with suspicion and mistrust (Sykes 1958). Consequently, other means must be used to motivate respondents. One common method to entice research participation is to offer financial or other valued incentives. However, researchers often face significant restrictions in their use of incentives to encourage participation among incarcerated research subjects (Jewkes and Wright 2016). For example, 56% of jurisdictions in the U.S. (26 states and the Federal Bureau of Prisons) forbid researchers from using any form of compensation for incarcerated research subjects

(Smoyer, Blankenship, and Belt 2009). In the state of Pennsylvania, we were prohibited from offering any incentives whatsoever. Consequently, researchers may find themselves requesting that incarcerated respondents sacrifice important moments of their day for no tangible benefit.

This leaves researchers with incentives that derive from participating in the research itself. Though one might assume that prisoners will agree to take part in research simply because they are bored, this is likely not a necessary nor sufficient motivation. The sudden presence of civilians in the facility is likely to pique inmates' curiosity, but the low-trust nature of the prison environment makes a welcoming response to inquisitive strangers unlikely. Personal disclosure can have dramatic consequences in prison, and it is difficult to establish whether someone may be operating with a hidden agenda (Crewe 2009; Kaminski 2004). As a result, the novelty of participating in social science research is undermined by prisoners' defensive aversion to sharing information with outsiders. In addition, many prisoners have developed rigid daily routines that may be disrupted by participating in data collection. Depending on the institution, prisoners may have few opportunities throughout the day to make phone calls, visit the commissary, attend mandatory rehabilitation classes, eat meals in the cafeteria, or exercise in the yard. Moreover, many incarcerated individuals rely on hourly wages from in-prison employment for financial support. Contrary to the image of the idle prisoner eagerly participating in research as a reprieve from boredom, many of the incarcerated individuals we have met are busy people who may refuse to meet with interviewers if it conflicts with their daily schedule.

Lastly, the cognitive deficits present in this population also require attention during the informed consent process. Some individuals may not have the cognitive capacity to offer "informed consent." Following guidance from the National Institutes of Health (https://grants.nih.gov/grants/policy/questionablecapacity.htm), PINS interviews began implementing a short survey at the beginning of the interview that made sure respondents understood the research, their rights, and had the capacity to consent. Those that did not meet the established threshold were not included in subsequent analyses.

4. Discussion

Based on our experience across multiple facilities, we have found it challenging but not impossible to collect whole network data in the prison environment. While aspects of collecting complete prison-based network data are identical to gathering network data within other contexts (or collecting non-network prisoner data), the confluence of both "prison" and "network" obstacles in the same data collection pose a unique set of challenges. The field of survey research is sophisticated and, individually, each of the challenges of prison-based network data collection outlined above can be overcome. However, the confluence of multiple challenges at every level means that researchers must devote careful and sustained attention to developing a data collection strategy. Our hope is that by understanding the nature of these challenges, including the motivations and concerns of the range of actors involved, that future researchers can devise means to forestall major impediments. In particular, researchers who wish to pursue whole network studies of prisoners must deploy data collection strategies that account for the high-security, low-trust nature of the prison

environment. Due to the substantial variation in institutional practices and organizational culture across correctional facilities (DiIulio 1987), there is no singular "best practice" plan that will guarantee a successful data collection effort. Indeed, it is likely that researchers who enter prisons in pursuit of whole network data will encounter obstacles that we have not described here. Throughout this article, however, we have drawn on our own experiences with the data collection process to help researchers understand the essential challenges involved and to develop strategies to surmount them.

We are hopeful that researchers will incorporate social network methods into future studies of the prison setting. Much remains unknown about how prisoners experience incarceration, an issue that has been described as the "black box" problem of modern prison research (Gendreau, Goggin, and Cullin 1999). Though scholars have argued that incarceration is fundamentally a *social* experience (Nagin, Cullen, and Jonson 2009), penologists have traditionally relied on research methods that are not well-suited to the task of systematically studying social structure or interpersonal processes. The internal social dynamics of prison life—the "hidden city" within each correctional facility—have largely evaded precise and replicable analysis. This is a significant limitation for penology, particularly in light of the discipline's longstanding contention that social relationships among prisoners drive the consequences of incarceration. Over sixty years ago, Sykes (1958: 134) proposed that "whatever the influence of imprisonment on the man held captive may be, it will be a product of the patterns of social interaction which the prisoner enters into day after day." Presently, the extent to which prisoner social experiences mediate the effects of incarceration on both in-prison behavior and post-release outcomes remains unknown. As just one example, it is still unclear how prisoner experiences *during* confinement relate to reintegration and recidivism *after* release (Cochran and Mears, 2013; Maruna and Toch, 2005; Visher and Travis, 2003). We argue that applying a social network perspective to incarceration—and collecting network data from prisoners—is a promising avenue for addressing such questions and unpacking the "black box" of prison experiences (Kreager et al. 2016a).

While prison network data has clear utility for studying incarceration, we suggest that such data has value for network researchers more generally. Social network data from prisoners provides common metrics for comparison between prison contexts, and also between prisons and non-prison settings (Schaefer et al. 2017). Such data thus has the potential to test broader theoretical questions about social dynamics within "closed" institutions or societies. For example, Kreager et al. (2017) used the PINS "power/influence" network data to investigate the informal status hierarchy on the housing unit. Beginning with qualitative analyses of open-ended responses regarding why respondents nominated each alter as powerful or influential, the authors found "respondents stated that the wisdom of older and more experienced inmates was associated with prison status and that prison leaders contributed to community stability and well-being" (Kreager et al. 2017:709). The authors confirmed this "old head" narrative with exponential random graph models (ERGM) and found that older prisoners who had lived on the housing unit for longer periods of time were central to the unit's status network. This study illustrates how social network data from prisoners can be used to examine general theoretical questions, such as how social order emerges within groups. Moreover, Kreager et al. (2017) suggest how institutional forces may

shape this process. While the housing unit's status hierarchy was organized around "old head" prisoners who served a prosocial function, the authors note that the unit's designation as an "honor block" (i.e., misbehavior resulted in reassignment to a different unit) likely influenced how this particular social structure came about. This highlights the importance of examining networks within a broad set of prisons with varying institutional regimes, would help to answer theoretical questions about how ecology shapes networks that can complement studies of schools (McFarland et al. 2014).

As another example, Haynie et al. (2018) analyzed the PINS "get along with" network data to examine the relationship between prison integration and health. Theoretically, the goal of this study was to evaluate whether the well-established health benefits of social integration (House, Landis, and Umberson 1988) also emerged in the prison context. Results from an ERGM indicated that "the most integrated inmates were less likely to smoke or be depressed and more likely to exercise daily, have greater muscularity, and report that their health has improved since coming to prison" (Haynie et al. 2018:327). Supplementary subgroup analyses revealed that the highest concentration of positive health outcomes emerged in groups organized around shared religious/racial identity and exercise routines. In conjunction with the ERGM results, these analyses indicated that while social integration was related to better health, clustering in health behaviors suggests that group-level factors (e.g., compliance with Black Muslim standards of healthy living) are another avenue through which social structure shapes individual wellbeing.

While Kreager et al. (2017) and Haynie et al. (2018) demonstrate the potential for prison network data to address questions of theoretical significance beyond penology, these studies also showcased the utility of prison-based network studies for informing correctional policy and designing interventions to improve outcomes for people in prison. For example, it is likely no coincidence that the prosocial "old head" status hierarchy observed in Kreager et al. (2017) emerged in a housing unit reserved for well-behaved prisoners. The existence of such "honor blocks" may improve prison safety and social order by creating opportunities for prisoners to informally develop prosocial communities in protected segments of the larger prison facility. Similarly, the results from Haynie et al. (2018) indicate that individuals who are poorly integrated into the prison community may be at greater need for mental health counseling. To promote positive physical health, one possibility is for prison officials to expand on opportunities for prisoners to become involved in informal social activities centered around exercise. Clearly, more research is needed before any confident policy recommendation can be made. Nevertheless, by focusing attention on the connection between informal social structure and individual outcomes, we are hopeful that evidence from studies using prison network data could eventually contribute to innovations in evidence-based correctional practices.

We should also note that, even though we attempt to cover the most pressing challenges of prison network research, the variability in carceral settings open numerous additional considerations for such research. For example, gender differences in prison experiences have implications for network studies in women's prisons. The greater prevalence of romantic and sexual relationships among inmates in women's prisons (Owen 1998) makes these social ties of research interest, but also introduce challenges in how to measure them. Similarly, gender

and interviewer-subject interactions is a complex topic that we did not cover but is worth considerable attention (Jewkes and Wright 2016). Additionally, network studies in local jails would provide substantial contributions given the majority of incarcerated individuals reside in these settings (Kaeble and Cowhig 2018), although the high turnover in these settings create additional challenges for the network researcher. Finally, prisoners are not the only actors in prison settings, and studies of ties among correctional staff and between staff and prisoners could make important contributions. We encourage future researchers to not only undertake such studies, but also share their lessons learned and best practices. In the end, a widening portfolio of network studies in correctional settings provides a greater understanding of an important, understudied, and mysterious institution with implications for organizational and criminological theory and criminal justice policy.

Acknowledgments

The PINS projects received grant support from the National Science Foundation (1457193), National Institutes of Health (NIAAA 1R211AA023210), and National Institute of Justice (2016-MU-MU-0011). The content of this manuscript is solely the responsibility of the authors and does not necessarily represent the official views of these agencies.

References

adams jimi. 2019. Gathering Social Network Data. Thousand Oaks: Sage.

Bogard David, Hutchinson Virginia A., and Persons Vicci. 2010. Direct supervision jails: The role of the administrator. US Department of Justice, National Institute of Corrections.

Borgatti Stephen P., Everett Martin G., and Johnson Jeffrey C. 2013. Analyzing social networks. Sage.

Bronson Jennifer, and Berzofsky Marcus. 2017. “Indicators of mental health problems reported by prisoners and jail inmates, 2011–12.” Washington, DC: Bureau of Justice Statistics.

Bronson Jennifer, Stroop Jessica, Zimmer Stephanie, and Berzofsky Marcus. 2017. “Drug use, dependence, and abuse among state prisoners and jail inmates, 2007–2009.” Washington, DC: Bureau of Justice Statistics.

Bronson Jennifer, Maruschak Laura M., and Berzofsky Marcus. 2015. “Disabilities among prison and jail inmates, 2011–12.” Washington, DC: Bureau of Justice Statistics.

Carson Ann E. 2018. “Prisoners in 2016.” U.S. Department of Justice, Office of Justice Programs. Washington, DC: Bureau of Justice Statistics.

Church Allan H. 20010 “Is there a method to our madness? The impact of data collection methodology on organizational survey results.” Personnel Psychology 54(4): 937–969.

Clarke-McLean Janet G. 1996. “Social networks among incarcerated juvenile offenders.” Social Development 5(2): 203–217.

Clemmer Donald. 1940. The Prison Community. New Braunfels, TX, US: Christopher Publishing House.

Conover Ted. 2001. New Jack: Guarding Sing Sing. New York, NY: Vintage Books.

Crewe Ben. 2009. The prisoner society: Power, adaptation and social life in an English prison. Oxford: Oxford University Press.

Cullen Francis T., Link Bruce G., Wolfe Nancy T., and Frank James. 1985. “The social dimensions of correctional officer stress.” Justice Quarterly 2(4): 505–533.

Leon De, George. 2000. The Therapeutic Community: Theory, Model, and Method. New York, NY: Springer.

Department of Health and Human Services. 2018. “Subpart A of 45 CFR Part 46: Basic HHS Policy for Protection of Human Subjects.” Office of the Assistant Secretary for Health, Officer for Human Research Protections.

DiIulio John J. 1987. Governing Prisons: A Comparative Study of Correctional Management. New York, NY: The Free Press.

Dillman Don A. 2011. Mail and Internet surveys: The tailored design method−−2007 Update with new Internet, visual, and mixed-mode guide. John Wiley & Sons.

Dollard Maureen F., and Winefield Anthony H. 1998. "A test of the demand–control/support model of work stress in correctional officers." Journal of occupational health psychology 3(3): 243. [PubMed: 9684215]

Durose Matthew R., Cooper Alexia D., and Snyder Howard N. 2014. "Recidivism of prisoners released in 30 states in 2005: Patterns from 2005 to 2010." U.S. Department of Justice, Office of Justice Programs. Washington, DC: Bureau of Justice Statistics.

Fandos Nicholas. 2018. "Senate Passes Bipartisan Criminal Justice Bill." The New York Times. December 18, 2018.

Faust Katherine, and Tita George E. 2019. "Social networks and crime: Pitfalls and promises for advancing the field." Annual Review of Criminology (2): 99–122.

Foucault Michel. 1977. Discipline and Punish: The Birth of the Prison. New York: Vintage Books.

Fox Kathleen A., Lane Jodi, and Turner Susan F. 2018. Encountering Correctional Populations: A Practical Guide for Researchers. University of California Press.

Frost Natasha, and Monteiro Carlos. 2016. Administrative segregation in US prisons. Washington, DC: US Department of Justice, Office of Justice Programs, National Institute of Justice.

Giallombardo Rose. 1966. Society of women: A study of a women's prison. New York: Wiley.

Goffman Erving. 1961. Asylums: Essays on the Social Situation of Mental Patients and Other Inmates. Garden City, NY: Anchor.

Goldweber Asha, Cauffman Elizabeth, and Cillessen Antonius HN. 2014. "Peer status among incarcerated female offenders: Associations with social behavior and adjustment." Journal of research on adolescence 24(4): 720–733. [PubMed: 25598649]

Haney Craig. 2018. "The psychological effects of solitary confinement: A systematic critique." Crime and Justice 47(1): 365–416.

Harlow Caroline Wolf. 2003. "Education and Correctional Populations." Washington, DC: Bureau of Justice Statistics.

Harris Heather M., Nakamura Kiminori, and Bucklen Kristofer Bret. 2018. "Do cellmates matter? A causal test of the schools of crime hypothesis with implications for differential association and deterrence theories." Criminology 56(1): 87–122.

Haynie Dana L., Whichard Corey, Kreager Derek A., Schaefer David R., and Wakefield Sara. 2018. "Social Networks and Health in a Prison Unit." Journal of Health and Social Behavior. 59(3): 318–334. [PubMed: 30070603]

Hirsch Adam. 1992. The Rise of the Penitentiary: Prisons and Punishment in Early America. Yale University.

Hornblum Allen M. 1997. "They were cheap and available: prisoners as research subjects in twentieth century America." BMJ 315(7120): 1437–1441. [PubMed: 9418095]

House James S., Landis Karl R., and Umberson Debra. 1988. "Social relationships and health." Science 241(4865): 540–545. [PubMed: 3399889]

Irwin John and Cressey Donald R. 1962. "Thieves, Convicts and the Inmate Culture." Social Problems 10(2):142–55.

Irwin John. 1980. Prisons in turmoil. Boston, MA: Little, Brown.

Jacobs James B. 1977. Stateville: The Penitentiary in Mass Society. Chicago, IL: University of Chicago Press.

Jacobs James B. 1979. "Race relations and the prisoner subculture." Crime and justice 1: 1–27.

Jewkes Yvonne, and Wright Serena. 2016. "Researching the prison." Pp. 659–676 in Handbook on Prisons: Second Edition, edited by Jewkes Yvonne, Crewe Ben, and Bennett Jamie. New York, NY: Routledge.

Johnson Rucker C., and Raphael Steven. 2009. "The effects of male incarceration dynamics on acquired immune deficiency syndrome infection rates among African American women and men." The Journal of Law and Economics 52(2): 251–293.

Johnston Norman Bruce, Finkel Kenneth, and Cohen Jeffrey A. 1994. Eastern state penitentiary: crucible of good intentions. Philadelphia: Philadelphia museum of art.

Kaeble Danielle, and Cowhig Mary. 2018. “Correctional Populations in the United States, 2016.” U.S. Department of Justice, Office of Justice Programs. Washington, DC: Bureau of Justice Statistics.

Kaminski Marek M. 2004. Games prisoners play: The tragicomic worlds of Polish prison. Princeton University Press.

Keinan Giora, and Ayala Malach-Pines. 2007. “Stress and burnout among prison personnel: Sources, outcomes, and intervention strategies.” Criminal Justice and Behavior 34(3): 380–398.

Killworth Peter, and Bernard H. Russell. 1974. “Catij: A new sociometric and its application to a prison living unit.” Human Organization 33(4): 335.

Kreager Derek A. and Kruttschnitt Candace. 2018. “Inmate Society in the Era of Mass Incarceration.” Annual Review of Criminology 1(1):261–83.

Kreager Derek A., Schaefer David R., Bouchard Martin, Haynie Dana L., Wakefield Sara, Young Jacob, and Zajac Gary. 2016a. “Toward a criminology of inmate networks.” Justice Quarterly 33(6): 1000–1028. [PubMed: 27616815]

Kreager Derek A., Palmen Hanneke, Dirkzwager Anja JE, and Nieuwbeerta Paul. 2016b. “Doing your own time: Peer integration, aggression and mental health in Dutch male detainment facilities.” Social Science & Medicine 151: 92–99. [PubMed: 26794247]

Kreager Derek A., Young Jacob TN, Haynie Dana L., Bouchard Martin, Schaefer David R., and Zajac Gary. 2017. “Where “old heads” prevail: Inmate hierarchy in a men’s prison unit.” American sociological review 82(4): 685–718. [PubMed: 29540904]

Kreager Derek A., Bouchard Martin, George De Leon David R. Schaefer, Soyer Michaela, Young Jacob TN, and Zajac Gary. 2018. “A Life Course and Networks Approach to Prison Therapeutic Communities.” In Social Networks and the Life Course, pp. 433–451. Springer, Cham.

Kruttschnitt Candace, and Gartner Rosemary. 2005. Marking time in the golden state: Women’s imprisonment in California. Cambridge University Press.

Lambert Eric G., Hogan Nancy L., and Tucker Kasey A. 2009. “Problems at work: Exploring the correlates of role stress among correctional staff.” The Prison Journal 89(4): 460–481.

Lambert Eric G., Hogan Nancy Lynne, and Allen Reva I. 2006. “Correlates of correctional officer job stress: The impact of organizational structure.” American Journal of Criminal Justice 30(2): 227–246.

MacRae Duncan. 1960. “Direct factor analysis of sociometric data.” Sociometry 23(4): 360–371.

Martin Randy, and Myers David L. 2005. “Public response to prison siting: Perceptions of impact on crime and safety.” Criminal Justice and Behavior 32(2): 143–171.

Massoglia Michael. 2008. “Incarceration as exposure: the prison, infectious disease, and other stress-related illnesses.” Journal of health and social behavior 49(1): 56–71. [PubMed: 18418985]

McFarland Daniel A., Moody James, Diehl David, Smith Jeffrey A., and Thomas Reuben J. 2014. “Network ecology and adolescent social structure.” American Sociological Review 79:1088–1121. [PubMed: 25535409]

McGloin Jean Marie, and Kirk David S. 2010. “Social network analysis.” In Handbook of quantitative criminology. New York, NY: Springer: 209–224.

McGloin Jean Marie. 2005. “Policy and intervention considerations of a network analysis of street gangs.” Criminology & Public Policy 4(3): 607–635.

McKelvey Blake. 1936. American Prisons: A Study in American Social History Prior to 1915. Chicago, IL: University of Chicago Press.

McLennan Rebecca. 2008. The Crisis of Imprisonment: Protest, Policies, and the Making of the American Penal State, 1776–1941. New York, NY: Cambridge University Press.

Moreno Jacob Levy, Jennings Helen Hall, and Whitin Ernest Stagg. 1932. Group method and group psychotherapy. No. 5. Beacon House.

Moreno Jacob Levy. 1934. Who Shall Survive? A New Approach to the Problem of Human Interrelations. Washington, DC: Nervous and Mental Disease Publishing Company.

Mumola Christopher J. 2005. “Suicide and Homicide in State Prisons and Local Jails.” Washington, DC: Bureau of Justice Statistics.

Nagin Daniel S., Cullen Francis T., and Jonson Cheryl Lero. 2009. “Imprisonment and Reoffending.” Crime and Justice 38(1):115–200.

National Institutes of Health (NIH). 2017. “Notice of Changes to NIH Policy for Issuing Certificates of Confidentiality.” Retrieved September 6, 2019. (https://grants.nih.gov/grants/guide/notice-files/NOT-OD-17-109.html)

National Center for Education Statistics (NCES). 2017. “Digest of Education Statistics: 2017.” Retrieved September 6, 2019. (https://nces.ed.gov/programs/digest/d17/index.asp)

Noonan Margaret E. 2016. “Mortality in State Prisons, 2001–2014.” Washington, DC: Bureau of Justice Statistics.

Owen Barbara A. 1998. In the mix: Struggle and survival in a women’s prison. New York: SUNY Press.

Papachristos Andrew V. 2014. “The network structure of crime.” Sociology Compass 8(4): 347–357.

Radil Steven M., Flint Colin, and Tita George E. 2010. “Spatializing social networks: Using social network analysis to investigate geographies of gang rivalry, territoriality, and violence in Los Angeles.” Annals of the Association of American Geographers 100(2): 307–326.

Rengifo Andres F., and DeWitt Samuel E. 2018. “Incarceration and Personal Networks: Unpacking Measures and Meanings of Tie Strength.” Journal of Quantitative Criminology: 1–39.

Robins Garry. 2015. Doing Social Network Research. London: Sage.

Sawyer Wendy and Wagner Peter. 2019. “Mass Incarceration: The Whole Pie 2019.” Prison Policy Initiative. Retrieved September 6, 2019. (https://www.prisonpolicy.org/reports/pie2019.html)

Schaefer David R., Bouchard Martin, Young Jacob TN, and Kreager Derek A. 2017. “Friends in locked places: an investigation of prison inmate network structure.” Social networks 51: 88–103.

Schmid Thomas J., and Jones Richard S. 1991. “Suspended identity: Identity transformation in a maximum security prison.” Symbolic Interaction 14(4): 415–432.

Schrag Clarence. 1954. “Leadership among prison inmates.” American Sociological Review 19(1): 37–42.

Simon Jonathan. 2000. “The Society of Captives’ in the era of hyper-incarceration.” Theoretical Criminology 4(3): 285–308.

Skarbek David. 2014. The social order of the underworld: How prison gangs govern the American penal system. Oxford University Press.

Smith Jeffrey A., and Moody James. 2013. “Structural effects of network sampling coverage I: Nodes missing at random.” Social networks 35(4): 652–668.

Smoyer Amy B., Blankenship Kim M., and Belt Brandis. 2009. “Compensation for incarcerated research participants: diverse state policies suggest a new research agenda.” American journal of public health 99(10): 1746–1752. [PubMed: 19696389]

Steiner Benjamin, and Wooldredge John. 2015. “Individual and environmental sources of work stress among prison officers.” Criminal Justice and Behavior 42, no. 8 (8): 800–818.

Stephan James J. 2008. “Census of State and Federal Correctional Facilities, 2005.” Washington, DC: Bureau of Justice Statistics.

Sykes Gresham. 1958. The Society of Captives. Princeton, NJ: Princeton University.

Toch Hans. 1976. Peacekeeping: Police, prisons, and violence. Lexington, MA: Lexington Books.

Travis Jeremy, Western Bruce, and Redburn F. Stevens. 2014. The Growth of Incarceration in the United States: Exploring Causes and Consequences. Committee on Causes and Consequences of High Rates of Incarceration. Committee on Law and Justice, Division of Behavioral and Social Sciences and Education. Washington, DC: The National Academies Press.

Volker Beate, De Cuyper Ruben, Mollenhorst Gerald, Dirkzwager Anja, van der Laan Peter, and Nieuwbeerta Paul. 2016. “Changes in the social networks of prisoners: A comparison of their networks before and after imprisonment.” Social Networks 47: 47–58.

Wacquant Loïc. 2002. “The curious eclipse of prison ethnography in the age of mass incarceration.” Ethnography 3(4): 371–397.

Ward David Andrew, and Kassebaum Gene Girard. 1966. Women’s prison: Sex and social structure. Transaction Publishers.

Wener Richard, Frazier William, and Farbstein Jay. 1985. “Three generations of evaluation and design of correctional facilities.” Environment and Behavior 17(1): 71–95.

Wener Richard. 2006. “Effectiveness of the direct supervision system of correctional design and management: A review of the literature.” Criminal Justice and Behavior 33(3): 392–410.

Highlights

- We have experience collecting whole network data from inmates in five prisons.
- We describe the challenges associated with gathering network data from prisoners.
- Prison norms against “snitching” pose problems for collecting network data.
- Interviewer interactions with prisoners and staff generates a “forbidden triad.”