

The History and Future of Prison Psychology

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Prisons are the quintessential government institution, with almost complete control over the lives of the people compelled to spend time in them. Depending on how they are run and what services they provide, they have the potential to change people's paths in life for the better or the worse, or indeed to leave people untouched. Furthermore, an enormous number of people spend time in prisons, particularly in the United States, so that the impact of imprisonment has serious consequences for society. In this article, we reflect on some of the major influences that psychology has had on prisons and imprisonment. We consider the importance of the scientist-practitioner model and the extent to which psychological evidence has permeated prison policy. We illustrate with four examples of how psychologists have contributed to understanding and influencing prisons: the Stanford Prison Experiment, the scientist-practitioner work of Hans Toch, the concepts of legitimacy and procedural justice, and the risk, needs, and responsivity principles of correctional rehabilitation. Looking to the future, we imagine how psychologically informed data science could expand its reach, and discuss ways in which prison psychologists could up our game in effectively communicating and embedding the findings of psychological science.

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Approximately 125 years ago, just as the American Psychological Association (APA) was forming, Dostoevsky's (Shapiro, 2006, p. 210) assertion that "the degree of civilization in a society is revealed by entering its prisons" first appeared in English.¹ This text was soaring to critical and popular acclaim across the U.S. in the late 1800s, both reflecting and galvanizing one of the more pervasive and influential ideas of that period: that prisons mattered. The underlying premise of this particular idea is that decency within the prison setting was (and is) tightly linked to the quality and intensity of civilized values—to the rule of law, justice, and rational governance. Not coincidentally, the pursuit of these same values were at the core of the APA, a body of scholars gathered in part to pursue a more efficient, less corrupt social order and rationalized governance (Ladd, 1894).

Scholars during the late 1800s had come to see prison as the quintessential government institution—bellwether because of the breadth of government reach within them and the polarization of power between the keepers and the kept. It was for this reason that the interest in, and hope for, prison reform was "so diffused through society that to identify proponents in political or regional labels belies the nature of the coalitions as well as motives" (Morris & Rothman, 1995, p. 120). Much like slavery and suffrage, prison reform was a centerpiece of grand political and

scholarly concern, permeating discourse and disciplines across the United States. Although the volume of writing, pamphlets, and speeches on prison reform "never quite matched the outpouring of material on the pros and cons of slavery, it came remarkably close" (Morris & Rothman, 1995, p. 117). It is for this reason that Morris and Rothman argued, "Those who wish to understand the special features of Jacksonian America must grapple with the origins and development of the prison" (p. vii). As the individuals forming the APA were both raised in and trained during the tail end of this period, it was within this cultural backdrop, and almost certainly with prisons on their minds, that a small group of scholars formed the APA.

We might expect that prisons were on their minds, in part, because at least some of the founders of the APA were actively involved in the prison reform movement. For example, G. Stanley Hall, the first president of the APA, was also a commissioned member of the World Prison Congress, a body of scholars and practitioners with enormous reach and consequence at the time (Henderson, 1910). Hall also wrote explicitly about applications of the new field of psychology to prisons and was likely the first to coin the phrase "prison psychology" (Hall, 1904, p. 392). Likewise, it is no surprise that George Trumbull Ladd's address as the second president of the APA culminated in the challenge, "Why should we not expect to see our science contributing to the improved conduct and character of men, in the school, in the courtroom, the prison, and the asylum?" (Ladd, 1894, p. 21). Future presidents of the APA continued and expanded on this explicit

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¹ Dostoevsky's *House of the Dead*, published in Russian in 1862, was first translated into English by H. S. Edwards in 1888 and hailed as an emerging classic just as the APA was forming in 1892 (see Frank (2003)). For a broader discussion of the impact of these authors on American and English discourse surrounding incarceration, see Morris and Rothman (1995).

intersection of the two fields of study. For example, Hugo Münsterberg, APA president in 1898, is widely recognized for having written the first forensic psychology text (Münsterberg, 1908) and developing applications of psychology to questions of crime and justice. James Jackson Putnam, another prominent psychologist (neurologist) of the day, was involved with protests against inhumane conditions in asylums (Putnam, 1905). Myriad other members from the early years of the APA likewise engaged in prison reform through scholarly discourse or serving as advisors or members of reform committees (Adler & Rieber, 1995; Benjamin, 2006; Evans, Sexton, & Cadwallader, 1992). And, of course, many of the actual psychologists of the day began working inside prisons themselves at the time the APA was formed (Charleroy, 2013).

The APA also played a key role in the evolution of American prisons indirectly. For example, prior to the APA, juvenile reformatories generally pursued “correction” via regimentation, physical discipline, and religious lectures (Morris & Rothman, 1995). Ideas regarding education and youth development as articulated (and championed) by John Dewey, the eighth APA president, led to dramatic reform in this regard. As such, children were placed into settings that allowed some sense of normalcy, work, and individualized reform “of the kind envisioned by the most famous progressive educator, John Dewey” (Morris & Rothman, 1995, p. 378). Whether or not Dewey played an active role advocating for these specific changes, it was his scholarship and that of his contemporaries that fostered these developments.

It is also important to note that this was not a one-sided exchange between the institutions of prison and psychology. Early psychologists were influenced, and some deeply influenced, by experience with reformatories, prisons, and asylums. Many psychologists entered prisons in order to apply their craft and pursue their particular science following the formation of the APA. Many of these everyday psychologists entered prisons at the turn of the 19th century “looking to gain professional status,” and, in doing so, “psychologists’ identity as clinicians and counselor gave them professional authority” (Charleroy, 2013, p. 144). It is likely that prisons themselves had substantive impact on theoretical and scientific developments produced by these practitioners.

Direct experience with prisons appears important for many of the luminaries of the field as well. G. Stanley Hall, for example, spent time during his studies in Germany gaining clinical experience in an asylum there. Then, in 1879, he toured asylums in Vienna and Italy (Taylor, 1994). By all accounts, these experiences were deeply important to his scholarly development, as he “expressed great shock at the conditions” (p. 45). Asylums then, as now, tended to serve similar populations to prisons, have similar structures and staff, and otherwise bear important resemblances to one another. Hall’s alarm at the conditions he found inside likely built an important foundation for, and explains, some of his later work on prison reform.

Early psychologists were likely influenced indirectly as well. For example, George Stuart Fullerton, the fifth president of the APA, was lecturing in Germany when World War I broke out. He was quickly arrested and interned in a German prison for the duration of the war. Suffering years of starvation, physical violence, and other forms of abuse, the once vibrant scholar and Dean of the University of Pennsylvania returned to the United States too weak to do more than teach the occasional class. He never recovered physically or mentally from the experience, eventually taking

his own life in 1925. It would be difficult to presume that colleagues were unaware of, or lacked an interest in, prisons when faced with the harsh impact of incarceration on their colleagues.

To summarize, members of the APA quickly became important partners in the development and operation of Western prisons. In only a few decades, psychology and the APA had evolved from “the most nearly embryonic—of all similar scientific bodies” (Ladd, 1894, p. 1) to a key scientific institution driving correctional policy and practice (Charleroy, 2013). By 1920, many prisons had hired credentialed psychologists and instituted policy by which inmates would undergo diagnostic evaluations and individualized treatment for mental health or behavioral disorders. By all means, the sophistication of diagnostic and treatment tools available to psychologists of the day were meager, and perhaps even laughable by today’s standards. But the point here is that their involvement represented, and led to, a major paradigm shift toward the ideas that science was relevant and that individualized diagnosis and treatment should be pursued. It was not that psychologists offered great answers to correctional problems. Rather, it was that they offered a great strategy: The application of science over time would necessarily improve the ability to help inmates. As such, prisons in 1920 were almost wholly unrecognizable from (and unambiguously better than) their counterparts of only three decades prior (Morris & Rothman, 1995). Psychologists played an important role in this change (Charleroy, 2013).

Some may see the synergy between prison reform and the emergence of the APA as a mere artifact of a remarkable but unique historic period. Certainly, the late 1800s saw a boom in political movements as well as creation of scientific bodies and ideas. But the synergy was not limited to this period. Rather, this synergy was a persistent theme in the development of both fields throughout the last 125 years. Psychology has continued to generate critical and important insights in correctional practices, including several paradigm shifts in the relatively recent past. Likewise, prisons remain a fertile contextual ground that challenges psychologists to sharpen their ideas, develop theories, and test and refine interventions with respect to human behavior.

What Is Prison Psychology Today?

Psychology and psychologists interact with prisons in a variety of ways. First, and perhaps most pervasive, they engage in clinical work within prisons. Psychologists design, engage, and supervise treatment programs, crisis intervention, and therapeutic sessions for inmates. They may also provide clinical programming or other assistance to staff. Second, psychologists often act as researchers and translators of correctional science, be it social, cognitive, or other specific subdisciplines. They may evaluate treatment programming, test hypotheses, and contribute to policy making. In these cases, prison psychologists might create scientific reports or articles for internal consumption or to be published in scientific journals. Third, the term refers to those who create, refine, or use forensic tools such as risk-screening instruments, polygraph, interviews, and similar tactical applications of the field. The term “prison psychology,” then, is broad. In this article, we acknowledge all these aspects of psychology in prisons. Thus, “prison psychologist,” as we use the term, might be a practitioner within a prison who takes on a single role (clinician) or many of these roles (forensic, clinician, social psychological researcher), as well as

those external to prison engaging in work to the benefit of correctional practice. We see these various roles and categories of psychological work as deeply intertwined with respect to the history and future of prisons.

Prisons Continue to Matter

Prisons today continue to represent the quintessential context in which government has unparalleled access to, and obligation to intervene in, the lives of individuals as well as opportunity to control them. People's rights are more restricted in prison than at most any other time or place in their lives. The saturation of government in restricting or imposing choices on individuals in prison is more all-encompassing than nearly any other social location in Western societies. This enormous reach means that the competence and benevolence, or lack thereof, of government is magnified in this context.

First, prisons remain important because there are a lot of prisoners. Overall, the world prison population at the end of 2015 was approximately 11 million, and the average imprisonment rate was 144 per 100,000 (Walmsley, 2016), though there is important variation across nations. According to the World Prison Population List (Walmsley, 2016), in the United Kingdom, approximately 86,000 people were incarcerated at the end of 2015, or 148 per 100,000. In contrast, Scandinavian nations typically have much lower incarceration rates (e.g., 55 per 100,000 in Sweden). The United States is exceptional in that it incarcerates an extraordinarily high percentage of its population. At any given time, approximately 2 million U.S. citizens (i.e., 1% of the adult population, or 698 people per 100,000) are in prison. The lifetime prevalence of exposure to prison is high on average, but especially so for some subgroups. For example, one in three Black males born in the 1990s will spend some time incarcerated in their lifetime within the United States (Mauer, 2006).

Second, imprisoned people are often disadvantaged. A large portion of prisoners are high school dropouts, nearly half are functionally illiterate, and many wrestle with mental health deficits (Petersilia, 2003). As a whole, inmates tend to lack personal or social capital; they are often born into communities marked by poverty, and they are disproportionately likely to have suffered exploitation, neglect, and abuse. In brief, prisoners as a class are highly vulnerable individuals. This implies extraordinary need for intervention and service. It also magnifies the impact and relevance of prisons for society.

Finally, prisoners almost always come home (Petersilia, 2003). Parolees have enormous potential to do harm when released or, conversely, to contribute positively to their families and communities. Because the potential for harm versus benefit is so large, the stakes for government are high. When detained, government has unparalleled access to engage in high-dosage and comprehensive interventions. Prisons represent an important moment in the life of offenders by which to change criminal trajectories.

The continued importance of prisons explains why they have attracted the attention of diverse disciplines. Economists, sociologists, historians, Criminologists, and other academic disciplines have continued to focus their unique perspectives and tools on the issue of incarceration, and, in doing so, led to insights and valuable reforms. Likewise, those engaged in applied professions—be it clergy, social work, medicine, journalism, or other fields—have effectively contributed to the evolution and improvement of pris-

ons over time. Alongside these fields, and often in collaboration with them, psychology has also helped to guide and influence the character and operations of prison. However, it is important to note that psychologists have also presented some unique value to the history of prisons. Their unique contributions suggest a special legacy of the field that is worth pausing to consider.

The Legacy of Psychology: Presence and Paradigms

A key legacy of psychology is its pervasive presence inside of prison walls. It would be unusual to find a prison in any Western nation that has a person with a doctoral degree in economics, history, or even sociology working within and applying that field's training to the operation and goals of corrections. In contrast, it would be hard to find a prison in the Western world without at least one psychologist dedicated to applying their training to the operation of the prison. And, as noted above, this is not a new phenomenon. It is a trend that has been true for approximately the last century (Charleroy, 2013; Morris & Rothman, 1995). In general, psychologists on the inside are primarily practitioners solving everyday and critical problems. They are diagnosing the mentally ill, designing, supervising, and delivering a variety of treatment programs, responding to suicide attempts, and supporting wardens and staff on myriad policy problems. In many cases, this leaves little time for engaging in research, although some psychologists do manage to combine practitioner work with a research career. One example is Glenn Walters, a psychologist who spent the prior two decades running these sorts of clinical functions within a U.S. federal prison. Also during that time, he published more than 100 peer-reviewed articles. Many of these appeared in the top journals in psychology as well as criminology, and he has received more than 7,000 scholarly citations in all. By any reasonable standard, Walters's combined achievement of applied and scholarly contributions is stellar and is an optimal example of the scientist-practitioner.²

Even prison psychologists who do not engage in research or publishing often play a crucial role in the production of scientific research. In general, outside scholars who wish to do research in a prison—whether sociological, econometric, anthropological, or another field—must make a proposal to the prison warden. In deciding on the merits of that proposal, wardens tend to consult individuals representing two key institutions within their prison: the lawyer and the psychologist. Why the latter? Because prison psychologists are often the sole ambassador for social science within prisons (Charleroy, 2013). The process of becoming a psychologist requires at least moderate competency in data science, the ability to find and read published research, and some level of interest in doing so. It is difficult to work day-in and day-out with a warden in the application of psychology within a prison without communicating about the emerging science on whatever topic is pressing that day, explaining why one set of ideas is more evidence-based or reliable than another, or otherwise showing competence with respect to research and its applied

² We use the term "scientist-practitioner" broadly, referring to all who engage in scientific research as well as applications in the field. We do not distinguish between those who do more versus less of these two functions, although we acknowledge that some have found it useful to do so (e.g., to also use the distinct term "practitioner-scientist" to communicate the growing number of PsyD degrees that emphasize applied work more so than research).

utility. Thus, even when not conducting their own research, prison psychologists are often the core advocate for outside researchers who wish to conduct studies within prisons, they are a key gatekeeper protecting the prison from supporting junk or unethical science, and they are likely to be the individual who directly facilitates the actual research projects that occur within prison walls. Without psychologists having spent the last century working inside prisons, the accumulation of research on prison today, regardless of discipline, would likely be far smaller and far poorer in quality. Collectively, their pervasive presence within prison walls is unique among the social sciences and represents a unique and important legacy.

There is a second and related legacy of psychology: paradigm shifts. Psychologists have been key to the creation and/or delivery of scientific information that served as turning points in corrections history. They have both assisted in the introduction of useful insights and also helped buffer against erroneous and sometimes dangerous turning points in the field. This particular history is described in Frank Cullen's Presidential Address to the American Society of Criminology, "The 12 People Who Saved Corrections" (Cullen, 2005). Many of his examples derive from psychologists who produced voluminous amounts of high-quality research, especially randomized control trials, which challenged dubious correctional strategies. They challenged broad movements in the United States, for example, toward correctional environments focused on physical discomfort as a correctional strategy (Mackenzie, Wilson, & Kider, 2001), warehousing rather than treatment (Mackenzie, 2001), executions for juvenile offenders Steinberg (2013), long-term solitary confinement (Haney, 2003), and other types of approaches to corrections that were politically appealing at the time but grounded in erroneous factual assumptions (Bonta & Andrews, 2016).

Although the task of selecting examples from this enormous body of work is fraught with difficulty, in the next section, we draw attention to four instances of applied psychological research that we believe exemplify the contribution that modern psychology can make to the production of decent and effective correctional paradigms. We must emphasize that these are *examples*, chosen from an enormous range of research areas that have greatly impacted upon policy and practice in prison management. We do not intend to suggest that these four instances have had greater sway than, for instance, the excellent research into psychological impact of prolonged solitary confinement, or research into the causes and reduction of prison violence, or research into characteristics of effective correctional staff, to name but a few other important examples (see MacKenzie, 2001, for additional examples). However, we believe that the four examples we have selected all illustrate the how psychological research can potentially lead to a paradigm shift in the way corrections are performed.

Paradigm Shifts in Modern Corrections

The Psychology of Staff-Prisoner Relationships: A Classic Psychological Experiment

It would be impossible to reflect on the historical contribution of psychological research on prisons without discussing what is probably the most well-known psychological experiment of all in relation to prisons: the Stanford Prison Experiment (SPE; Zim-

bardo, 1972). In this experiment, Zimbardo (1972) randomly assigned psychologically healthy students to take the role of either guard or prisoner in a mock prison. Very quickly, those in the guard role began to abuse their power, treating the prisoners harshly and inventing new ways to torment them and restrict their activity and interaction. Those in the prisoner role began to show signs of resistance and distress. The experiment, as is well known, was abandoned after just a few days because of concerns about harm, and now operates as a cornerstone of ethical training for researchers of all disciplines.

The SPE has been widely criticized (e.g., Kulig, Pratt, & Cullen, 2016) but remains a landmark experiment with a powerful point to make about the dynamics of relationships within a prison setting. In his more recent reflections on the experiment, Zimbardo (2008, 2016) has proposed that it should be understood as a failure of leadership and an underestimation of the power of the situation and the system to produce behaviors that, as human beings, we do not like to think we are capable of. In particular, Zimbardo has stressed that a prison system needs to have a clear, consistent, and unambiguous purpose and set of values. His instruction to the "guards" in the SPE created ambiguity for the guards in what they were supposed to achieve, and this led them to overemphasize control at the expense of decency and humanity. In turn, the "prisoners" either retaliated against the efforts to dominate them or submissively accepted them. Neither reaction was conducive to a rehabilitative (corrective) experience of imprisonment.

The SPE produced two interrelated paradigm shifts. First, it showed that the problem of abuse and violence between staff and prisoners is a function of structure. To use Zimbardo's (2008) analogy, abuse of power is derived not only from bad apples but also (perhaps often) from flawed barrels. Second, it revealed, powerfully, that prisoners and guards were not so very different from each other (or the rest of us). Both the keepers and the kept responded to their environment, and they did so with far more capacity and range of moral motion than was thought possible. It was the watershed moment by which academics and policymakers came to realize the structure of prisons as well as the character of staff and inmates all operated in a synthetic and dynamic interplay. The paradigmatic shift took corrections from a compartmentalized conceptualization of component aspects of prisons (e.g., guards, prisoners, administrators, facilities) toward a view of prisons as comprising interconnected actors and situational prompts. This more nuanced understanding shows prison to be a place with more potential for behavioral change than previously presumed.

Hans Toch and the Popularization of the Scientist-Practitioner Model

Hans Toch is arguably the most prolific example of the prison psychologist as scientist-practitioner. His work, spanning almost 60 years, addressed, among numerous other things, the experience of incarceration, the causes of prison violence, the value of peer mentoring between prisoners, innovative ways of giving prisoners more voice, and reducing the pains of long-term imprisonment. But his impact was far more than the accumulation of scientific facts. Rather, it was popularization of the scientist-practitioner model from which this exceptional level of production emerged. The common feature to all his endeavors is the painstaking application of science and theory to real-world problems in real-world

settings. As he wrote, “In doing psychology it must be the *doing* as much as the *psychology* that counts as productivity” (Toch, 2014, p. xvi). His guiding principle throughout his career was to emulate the words of his mentor, Hadley Cantril:

For many years it has been my firm condition that only by studying real, full-blooded problems can the blood of life be kept in the scientific pursuit we know of as “psychology.” If too many psychologists for too long a time lose sight of the problems living human beings define as “problems,” psychology will . . . smother itself in the study of trivia. (Cantril, 1958, p. x)

These ideas became institutionalized in the 1950s during the Boulder, Colorado, APA meeting, culminating in a broader interest and pursuit of the scientist-practitioner model (Baker & Benjamin, 2000; Benjamin, 2006; Trierweiler & Stricker, 2013). The scientist-practitioner approach assumes, first, that scientific insights translate into practice with more fidelity when delivered by a scientist, and, second, that one asks better questions and pursues better science when deeply aware of the nuances of applied practice. Its derivative, the practitioner-scholar model, shares the same fundamental assumption: that applied psychological practice attends to, and is driven by, scholarly understanding of the scientific evidence base. Toch set the standard for psychologists in prisons to understand and embrace this approach. He used psychological science to address many problems with and in prisons, and he was unremitting in his abhorrence of inhumane or harmful practices in prisons that were justified in the name of psychology but that actually represented junk science or nonscholarly misapplications of psychological theory. For example, he furiously criticized the “horrifying application of primitive learning theory” (Toch, 2014, p. 155) in the design of so-called incentive schemes intended to promote positive prison behavior.

The legacy of Hans Toch’s work on prison psychology must be the juxtaposition of strong values of humanity and decency with the principles of science. In Toch’s work, it is clear that spending one’s time on the inside of prison walls, engaged daily with inmates in their struggle to understand and improve their lives, leads one away from casual academic studies and toward work defined by pressing relevance. Psychological research on imprisonment should be driven by a genuine concern for the people who live in prisons, recognizing that they deserve the best that psychology has to offer, rather than being mere research subjects for matters of academic interest. Toch not only inspired and reinvigorated other scientist-practitioners but also reshaped a tradition among purer academics toward focusing intensely on understanding and solving real-world problems.

Legitimacy and Procedural Justice

Social psychologist Tom Tyler has written extensively about the importance of legitimacy in determining the extent to which people comply with societal norms and obey the law (e.g., Tyler, 1988, 2003, 2006, 2017). According to considerable psychological research, people are most likely to perceive the authorities as legitimate when they are treated with *procedural justice*: when the authority acts respectfully and ethically (e.g., sanctions are reasonable), when decisions are perceived as fair and transparent, when the individual has a voice in the decision-making process, and when there is an ability to appeal decisions believed inaccurate.

When people perceive the authorities as legitimate, people are more motivated to obey the law—even when it is not convenient to do so. Similarly, people tend not to comply with, or even become defiant toward, authority figures perceived as procedurally unjust (Sherman, 1993). Although these ideas have become most popularized within the field of courts (e.g., Tyler, 2006), their development is deeply rooted in the prison literature that came before it (Sykes, 1958; Toch & Gibbs, 1977).

The concepts of procedural justice are exceptionally important to prisons. In prisons, decisions and acts of authority are pervasive and, because of diminished liberty, even the most trivial acts of authority take on magnified relevance. Research has identified procedural justice (or injustice) at play in qualitative research into prison order and violence (e.g., Sparks & Bottoms, 1995), among more complicated longitudinal models tracking prisoner cohorts over time (Beijersbergen, Dirkzwager, Eichelsheim, & Van der Laan, 2015; Beijersbergen, Dirkzwager, Eichelsheim, Van der Laan, & Nieuwebeerta, 2014; Beijersbergen, Dirkzwager, Mollmann, Van der Laan, & Nieuwebeerta, 2015; Beijersbergen, Dirkzwager, & Nieuwebeerta, 2016), and via randomized control trials in which prisoners serve terms at prisons polarized on criteria relevant to procedural justice (Franke, Bierie, & MacKenzie, 2010). Collectively, these studies show that when prisons are run in procedurally just ways, the result is reduced prison violence, increased prosocial change, and lowered recidivism. Procedural justice is also important to prison staff, where it is associated with less punitive and more rehabilitative attitudes as well as greater job satisfaction (Lambert, 2003; Lambert, Hogan, & Barton-Bellessa, 2011; Lambert, Hogan, & Griffin, 2007).

It is not necessarily difficult to operate a procedurally just prison. By merely answering formal inmate complaints in a timely way, for example, prisons tend to observe significant declines in serious prison violence (Bierie, 2013). By providing clean, quiet, and humane facilities, prisons tend to experience significantly less prison disorder (Bierie, 2012). These aspects of procedural justice are both easy and cheap to attain, once the prison administration understands what it is trying to achieve and how to achieve it. It is, for example, easy to clean a prison—there is a surplus of cheap labor there. It is easy to set up efficient systems for answering complaints, once people believe that this is the right thing to do. But more important than these easy-yet-powerful tools for reducing prison violence, a focus on procedural justice reconceptualizes the role of prison staff in an exciting way. Rehabilitation need no longer be seen as the express concern and domain of specialist therapists running classes sprinkled throughout an inmate’s week. Rather, the actions of every correctional officer and administrator matter in the reform effort because they provide pervasive, constant, meaningful exchanges with inmates. The daily duties of correctional officers—instructing an inmate to pack their cell and move to a new pod, to report to a new job post, to clean up a lunch another person spilled, that there will be no trip to the library today, and that visits are cancelled—can have a tremendous impact on prison order and inmate rehabilitation depending on whether that instruction is delivered with procedurally just connotations (e.g., reasonable orders, fairly administered to all, allowing an inmate to explain an objection if they have one and to file a complaint later if they felt the order was problematic). An understanding of the exceptional potential of procedural justice leads us to once again declare correctional officers as relevant to correcting.

The Risk- Need- Responsivity (RNR) Model of Effective Rehabilitation

Every prison psychologist is familiar with the RNR model and the body of work by Don Andrews and Jim Bonta that support it, set out in the six editions of their work *The Psychology of Criminal Conduct* (Bonta & Andrews, 2016). In short, Andrews and Bonta introduced a strategy that emphasizes militant empiricism in order to identify the most important risk factors for offending (i.e., the most consistent across populations and crimes, and those with the largest effect size) as well as empirically valid (i.e., evidence-based) principles by which to alter those risk factors that are potentially changeable (“dynamic”). A plethora of studies and meta-analyses have supported the RNR principles, and their reach has extended to include the development of robust risk and need assessment tools as well as the implementation and evaluation of literally hundreds of rehabilitation programs (Bonta & Andrews, 2016). The RNR model has pushed prisons to focus their various services on the people who need them the most and to provide services in the form that will be most effective. It also led to a much-needed refocus on the scientist-practitioner principles of evidence-based practice, which had, to some extent, been dulled in the 1970s and 1980s in favor of more intuitive approaches (Benjamin, 2006). Of course, such a body of influential research has also been heavily critiqued, leading to vigorous debate about, for example, the value of individualization versus prescription in how services are delivered, the similarities and differences between risk factors for men and women, the possibility of expanding RNR principles beyond formal interventions to less formal interactions in correctional settings, and the potential for better outcomes that might result from taking a strengths-based rather than risk-based approach. These debates have raised further exciting research questions that, if properly tested, will mean that psychology continues to break new ground in understanding how to best assist people convicted of crime while they are in prison.

Lessons Learned From the History of Prison Psychology

There is no doubt that Western prisons have improved over time. This is true in broad terms, such as the quality of life for those detained (Morris & Rothman, 1995), and it is true among objective measures of prison functioning and outcomes. For example, Wines (1867) documented a suicide rate of 220 per 100,000 inmates and an overall mortality rate of over 5,000 per 100,000 inmates in the famous Eastern Penitentiary in the 1860s (p. 300). Similar statistics are found in other statistical reports of that era (e.g., see *Boston Prison Discipline Society, 1855*). The *Bureau of Justice Statistics* (2008) reports the suicide rate fell to 129 per 100,000 inmates in 1983. Further, this decline continued to 47 per 100,000 inmates in 2002 and then remained relatively stable at that rate though the most recent iteration of national data (Noonan, 2016). Homicide in prison has declined in similarly dramatic fashion, to a rate that is now actually lower than in the general public. Prisons that were defined by physical danger, disease, and death at the turn of 19th century have become one of the safest places to live in the United States by 2002, with four homicides per 100,000 inmates (Mumola, 2005). Once again, this

rate has remained relatively stable through the most recent iteration of national data (Noonan, 2016).

As we argued above, it seems likely that some of this improvement is due to the accumulation and application of social science. Further, it seems likely that psychologists have been important to this process as producers of scientific insights, proponents and facilitators of research by scholars from other disciplines, and translators and advocates of scientific findings within prison walls. At the same time, it is critical to observe that progress is not linear over time or universal across prisons. Prisons, as a whole, have demonstrated dramatic shifts back and forth over the 20th century between evidence-based and rehabilitative philosophies versus control orientations with a disinterest in social science (MacKenzie, 2001). It is not hard to find examples today in which programs shown ineffective are indulged, programs that are shown effective and cost-beneficial are ignored, and those that are evidence-based are implemented with poor fidelity or dosage (Latessa, 2004; Rhine, Mawhorr, & Parks 2006).

What lessons can we learn from the failure of prison psychology to fully embed its knowledge into prison policy? The first lesson here is that intuition is a constant and, at times, harmful antagonist to science in corrections. In studying the persistent reemergence of ineffective correctional programs, Cullen, Blevins, Trager, and Gendreau (2005) found that “‘common sense’ is often used as a powerful rationale for implementing correctional programs that have no basis in criminology and virtually no hope of reducing recidivism” (p. 53). In some cases, those designing or implementing prison operations are unaware of scientific evidence itself. In other cases, those presented with evidence do not understand it or why they should care. Absent *effective* communication of scientific knowledge, and its relevance, decisions are likely to be made based on intuition instead.

This pattern is true of many disciplines; it is not unique to corrections or criminology. It is not hard to find individuals, organizations, or policies in medicine, engineering, or other fields that ignore or misconstrue scientific evidence (Strassheim & Ketunen, 2014). But the problem is probably more pronounced in corrections. As Latessa (2004) notes, “If I studied quantum physics, few people would offer their opinions about how I should go about my business, but because I study criminal behavior and corrections, everyone offers me advice” (p. 551). The problem, he explains, is not only that intuition is more readily substituted for science in this field but also that intuition is often erroneous or harmful in this context. A large portion of people, even correctional professionals, believe erroneous facts regarding the causes of crime or effective correctional strategies (Latessa, 2004). Further, many of those intuitive facts are grounded in presumption that correctional institutions are intended to punish offenders and coerce compliance (Latessa, 2004). This perspective can dehumanize inmates and encourage a “‘we versus them’ mentality that manages offenders but fails to view them as part of the community” (MacKenzie, 2001, p. 309).

The second key lesson appears to be one of strategy. Latessa (2004) suggests that it is important to engage prison staff at all levels of leadership. It is imperative, though not sufficient, to engage wardens or other executives alone with respect to science. One must also communicate with and achieve buy-in among line staff and others who run day-to-day operations. Failing to broadly communicate scientific knowledge, and articulate why that knowl-

edge is useful, makes it very difficult for scientific insights to take hold (Bonta & Andrews, 2016). When scientist-practitioners have engaged leaders and line staff, and have explained what works and what does not, and why we can be confident in those facts, then prison systems have shown tremendous improvement (Latessa, 2004).

The third lesson has to do with the quality of scientific research. Facts that are derived from studies of poor quality, samples that are not generalizable, findings that are not replicated, or designs that otherwise lack rigor can do tremendous harm (Bonta & Andrews, 2016). This is well illustrated by Martinson's (1974) famous report that reviewed all scientific studies to date and concluded that "nothing worked" (see MacKenzie, 2001, for discussion). This led to a great disinvestment in science and evidence-based corrections. The real lesson in this study, however, was not that "nothing worked"—it was that a huge portion of correctional research lacked rigor, and therefore one could not tell what types of interventions worked and what types did not. But, regardless, a critical point heard by prison staff and policymakers was that science was not actionable.

This lesson regarding scientific quality extends far beyond the Martinson report or the mere production of shoddy studies. The lesson extends to the generation of decent studies but incomplete research agendas or breadth of research designs. The gold standard in psychological experimentation is the random controlled trial, and without a doubt, we need to conduct more of these in prisons. But random controlled trials do not answer all the questions posed to prison psychologists. The research into *Scared Straight* is a good example—an avowed example of correctional quackery, scientists have shown that this type of program does not work and indeed may have an iatrogenic effect (Petrosino, Turpin-Petrosino, Hollis-Peel and Lavenberg, 2013). But the RCTs do not tell us why this is. As a result, similar programs continue to run, claiming that they are "different" in some nuanced way from a program in a prior RCT and therefore should not be cancelled. The same can be said of drug courts, boot camps, and myriad other programs.

The opposite is also true: Knowing a program works is not enough. Prison sex offender treatment is an excellent example. Over and over again, meta-analyses conclude that some programs work and some do not, usually with an overall small effect (e.g., Schmucker & Lösel, 2015). Though we can tell what programs work, we cannot tell what features separate the programs that work from the programs that fail (Hoberman, 2016). After 30-plus years of immense research activity in the field of sex offender treatment, alongside the existence of several organizations and journals focused entirely on this topic, we still hardly have any idea what constitutes the ideal content or process for sex offender treatment. We do not know whether it should be offense-focused or generic (Travers, Mann, & Hollin, 2014); whether it should be risk-focused or strengths-based; whether it should involve 100 hours or 8 years of weekly sessions; or whether it should be offered in group of individual sessions (Ware, Mann, & Wakeling, 2009)—and we do not know what the key features of its content should be (Mann & Barnett, 2013; Ware & Mann, 2012). In short, although psychologists champion the evidence-based approach, we do not always have the details executives would wish for, and this can frustrate policymakers and administrators who want more definitive answers.

The lessons learned, then, are that the field needs to pursue comprehensive research agendas in terms of questions asked and methods used in order for prison executives to make better decisions and to fully engage social sciences. The lessons learned, be it from Martinson or more recent pools of research, are that if social scientists produce shabby work, ignore important questions in their research agendas, or otherwise fail to produce relevant and actionable facts, then those working in prison are likely to recognize this (eventually) and substitute intuition in designing policy and procedures.

Overall, the history of psychologists in prisons described above paint a picture of great promise, as this history has been, on the whole, positive. The dual legacy of "presence" and "paradigms" associated with psychologists helps explain this general trend. But the failures in the history of psychology and prisons are also informative. In general, those who study the limits of scientific advances across prisons have suggested a number of useful lessons. Two issues of particular concern here have to do with the quality of science and its translation. It is important that the field produce high-quality and relevant scientific facts. It is also important that the field engage in active effort to communicate the content of science to all of those working with prisons and to explain why those facts are valuable. With these lessons in mind, we offer some suggestions about the future of prison psychology below.

What Might the Future Look Like?

In many respects, the future of the prison-psychology nexus is likely to look similar to the recent past. Prisons will continue to be places that are well served by psychologists who engage in treatment and operate as scientist-practitioners. Psychologists will continue to attempt to understand and prevent suicide, disorder, and recidivism. They will continue to study and attempt to advise and implement actions that increase the safety and well-being of staff and inmates. And they will continue to identify and challenge ineffective programs and strategies. One difference that we hope will emerge, however, is an increased intensity by which the members of the APA invest in this institution of corrections, and the willingness of correctional institutions to accept far more help from these scientist-practitioners.

The Future of Psychologically Informed Data Science

Psychology has had important and positive impacts on prisons, as described above. But it has also been constrained relative to what it could be in the near future. To understand what is meant by constrained, it is helpful to consider the advances and roles of data science in other industries outside of corrections. Nearly every private industry that is currently known for extraordinary success places considerable emphasis on data science; they invest heavily in social scientists, measurement, randomized trials, data analysis, and the generation of knowledge (Davenport & Harris, 2007). Goldman Sachs, Netflix, Amazon, Google, Facebook, Microsoft, McDonald's, and Marriott all succeed because of their analytics; their competitors, who did not invest heavily in data science, failed to compete and withered into distant memories or are now completely forgotten (Ayres, 2007; Baker, 2008).

The most successful companies of the private sector exhibit a deep dedication to analytics, pursuing a breadth of topics and

methodologies in producing research (Davenport & Harris, 2007). They are routinely mining operational data, deploying surveys, consulting emerging literature and theories, and engaging in randomized trials. Facebook runs thousands of randomized control trials on any given day, as does Google, Amazon, Netflix, Harrah's Entertainment, and myriad other companies, all with the intent of optimizing and improving what they do (Baker, 2008). Scientific research, both data mining and theoretically informed hypothesis testing, is deeply ingrained into the structure and culture of these businesses. A defining feature of these most successful companies is that science and scientists are highly valued, have important roles embodying access to decision makers, and are sought after (Derman, 2004). In the private sector, analytic companies not only employ large numbers of social scientists but also empower them. That means that routine as well as exceptional decisions are informed by results of scientific studies that are constantly arriving. Executives and managers at these companies care deeply about the presence and quality of evidence for decisions being made. In short, science is embedded into the very fabric of these companies—and embedded science is a critical and pervasive feature of success in the private sector over the prior 50 years (Davenport & Harris, 2007).

Marriott is perhaps an astute example (and counterpoint) for corrections. Much like large prison systems, they are a multi-billion-dollar agency with thousands of residents and hundreds of staff at each location. They must operate 24 hours a day, 7 days a week. The hotel corporation is responsible for offering safe housing; preventing disease, which would otherwise flourish in small, dense living areas with high transience; finding ways to feed, protect, and communicate with diverse and demanding residents; maintaining control and policy adherence across numerous facilities and broad geography; and complying with countless regulations. Marriott has more than 1,000 data scientists churning out scientific discoveries, program evaluations, innovations, and statistical tests (Davenport & Harris, 2007). They have accumulated decades of statistical and scholarly insights into the causes of core outcomes (e.g., safety, misconduct, turnover, training, efficient operations of physical plants, wellbeing of staff and residents, and predicting future stays by residents).

State and federal prison systems also have enormous budgets and operate many physical buildings spread over great distances—each often containing thousands of residents and hundreds of staff. They must also operate constantly; they can never close for a day or a shift. They have complex demands related to safety, housing, food services, communicating with diverse and transient populations, monitoring and preventing disease outbreaks, seeking efficient ways to operate physical plants, enhancing the well-being of staff and residents, and predicting future stays by residents. Of course there are many differences in the clientele, goals, and legal structures of hotels versus prisons. But there are enough similarities to make the following point: The private sector has shown that an investment in science generates enormous improvements with respect to the kinds of decisions and problems faced by prison administrators.

For this reason, it is critical to observe that the investment in science as a strategy is far smaller in Western prisons relative to the private sector. The most recent census of state and federal prisons in the United States shows a median of 14 professional staff in each of the 1,600 prisons (Bureau of Justice Statistics,

2008). This term “professional” refers to psychologists, social workers, nurses, doctors, and dentists (combined). It is certainly likely that there are some prison systems (or prisons themselves) that have greater versus lesser investment in psychologists and data science. But it is fair to say that the role of data science is more limited in government prisons than it is in analogous private sector industries.

In Western prisons, even in the most innovative prisons, science is generally seen as something special and rare. Some of these prisons facilitate one or even a few scientific studies in a given year. By all means, this is important and valuable; collectively, it represents the slow growth of scientific knowledge we laud above. But how many prisons (or prison systems) engage in embedded scientific production—turning out constant, timely, and high-quality insights that are quickly integrated into policy and structure? We are not aware of any prison or prison service that engages in scientific self-study with a similar level of empowerment, breadth, timeliness, and relevance as is the case in the private sector.

So what would prisons look like if a similar strategy as the private sector was used? We would likely see far greater consumption of scientific and theoretical knowledge emerging from academia and tested within the prison domain. We would likely see a far broader array of methodologies deployed to answer questions relevant to prisons—data mining, routine surveys of inmates and staff, focus groups, observational and qualitative work, and especially randomized trials (when ethical to do so). We would likely see prisons that have large teams of highly trained data scientists from diverse backgrounds turning out scientific studies on topics relevant to the operation and goals of prisons. We would likely see social and cognitive psychologists enter prisons with as much commitment as clinical psychologists have to date. We would likely see other disciplines as well, including computer scientists, statisticians, and economists, ideally working in collaboration with psychologists.

If prisons mimicked the intensity and seriousness with which the private sector invests in science, we would hope for an explosion of high-quality studies exploring myriad aspects of prison management that might benefit the well-being of staff, prisoners, the tax payer, and the communities to which these inmates eventually return. For example, we know far too little about the impact of cell assignments, commissary quality and access, living quarters, noise, temperature, crowding, cell size, food diversity and quality, schedules, classroom organization, staff training, visit length and frequency, disciplinary processes, inmate wages, correctional officer values, shift assignments and composition, and a thousand other examples of the minutia of prison life that may have small or large benefits for the ability of prisons to create healthy environments and maximize the quality of treatment delivered. There are a spattering of studies on some of these topics. Over the past century, a slow accumulation of insight has had a real impact. But imagine, instead, if there were thousands of studies on any given day conducted with similar rigor as found in the best companies of the private sector. If we as a society can create a structure and culture that generates this kind of scientific investment for selling products on Amazon or hotel rooms to travelers, why would we settle for less when talking about public safety?

Is This Vision Achievable?

There are likely three reasons that data science has had such a small footprint to date (and also why the future looks far brighter). The first reason is that social scientists, including psychologists, of past generations often had too few tools to enable a larger data-science presence throughout prisons. The private sector, led by Wall Street in the early 1970s, bought in to data science in part because of a flood of exceptionally skilled physicists and mathematicians seeking high returns for their expertise (Derman, 2004). These scholars had exceptional skill, and those skills were well matched to the finance sector, such that they quickly generated value. As such, their footprint grew across the private sector and their role became institutionalized.

The statistical and technical skill sets of social scientists were generally less well-developed than observed among physicists entering Wall Street. As noted above, a key value of psychologist to corrections has not been that they had all the answers. Rather, it has been their advocacy for science as a method to eventually discover and refine those answers. For much of the 20th century, social scientists, including psychologists, had few validated diagnostic tools or measures, limited quantitative training, and a reliance on theoretical work that had undergone too little empirical testing and refinement. As such, it would have been difficult for social scientists to scale up their roles in corrections at the same time and in the same way as observed in the private sector. However, that has now largely changed. The social sciences, and psychology in particular, have seen an explosion in the savvy and reliability of tools for measurement and analysis. This includes increased a number of empirically validated survey instruments and diagnostic tools. It also includes an increase in quality and breadth of data analysis tools, statistical methods, and, crucially, a theoretical understanding of behavioral outcomes. Collectively, this allows psychologists to not merely mine data but to do so in ways that are informed by and contribute to a deep understanding of corrections. Psychologists are ready for action now more than ever before.

The second reason psychologists have had relatively less impact in prisons than the private sector is that there was not always useful data to exploit in the prison domain. The world of corrections has remained a paper industry for most of its history. It is only in the last 20 years that computers have been introduced to most prisons, and in the most recent 5 to 10 years that many prisons have started investing in data collection and storage structures that make data reasonable to study. With the advent of improved databases recording transactional and other data within prisons, the foundation for data science exists in magnitude and accessibility as never before. Now, many prisons record myriad important outcomes and have the data needed to study, understand, predict, and change those outcomes—be it suicide, violence, recidivism, literacy, or physical diseases. These data systems are routinely collecting, organizing, and integrating information about inmates, staff, and facilities over time. Such a revolution in data architecture has only recently come to fruition, and it is fertile but mostly underexplored ground for the application and development of psychologically informed data science.

The third reason that success has been relatively constrained in the recent past is perhaps the most powerful. Unlike the prior two obstacles, this one remains: There is little inherent incentive to try.

In the private sector, free markets generally create a platform of accountability and pressure toward quality and efficiency. This competitive market quickly weeds out those who do not invest in successful strategies (e.g., serious investment in research). The presence of a clear metric (e.g., price for a good) creates a fairly transparent mechanism of accountability.

In many government institutions, such as prisons, there is far less competition or transparency than in the private sector with respect to performance. Lacking free-market-style accountability implies far less pressure to enhance efficiency and effectiveness. To be sure, there are prison policymakers, wardens, and others who choose to pursue a scientifically informed approach to prison management. They may do so out of the belief that science is relevant to running prisons (a personal value). Or they may do so because they are ordered to; a specific law or regulation may demand that decisions are evidence-based and that programs demonstrate that they are effective. These are incentives toward the pursuit of scientific engagement, and both have played a role in moving evidence-based policy forward. But both have important limitations as a strategy for the future.

When the use of science is merely a function of personality, two problems emerge. First, no single individual has that much influence (regardless of role). The development of a program based on personal dispositions of a *particular executive* might be accepted begrudgingly or with indifference by other staff. Likewise, a warden that likes science might be able to set aside resources to hire a good social scientist. But the warden is unlikely to be able, if the only person interested in this, to carve off funds to hire 10. So the first problem is that the size and reach of a data science team will be inadequate if based solely on the personal values of select executives. The second is longevity. The agenda and integration of a data science operation is at risk in the face of leadership change, and, of course, leadership change is inherent to democratic societies. There will be a new governor or other executive every few years. Even if one can obtain resources to hire and support a program of intense analytics, how does it persist in the face of a new administration that may or may not care about such things? Without question, having a leader who is deeply interested in, and is a competent consumer of, science is helpful. But relying on this as the sole source of support could lack longevity and fidelity.

Pursuit of evidence-based programs can also be enhanced by law or regulation demanding performance metrics (see Gaes, Camp, Nelson, & Saylor, 2004). The *Second Chance Act (2007)*, for example, requires prisons in the United States to measure their recidivism rates and report them publicly. Implied in the act is that there will be some sort of accountability for prisons that are outliers—those that have far more failures than expected. These types of laws often rely on prisons to evaluate themselves but leave room for designs that lack rigor. If a prison administrator is not particularly excited to generate an accurate measure of recidivism in their self-evaluation, they have plenty of opportunity to bend the measures toward a metric or propensity-score-matching method that makes their result look good (Eterno & Silverman, 2010, 2006; Gaes et al., 2004). Again, if political dispositions emerge that encourage wardens or other executives to merely report metrics that they wish were true, or to judge the quality of a fact on its convenience, then the strategy of merely presenting performance

metrics will likely fail to generate great advances (or investments) in the science of corrections.

The common thread in our criticism of both the above approaches is that they rely on hierarchical structures to accomplish the goal of generating an interest and competence in the pursuit of evidence-based correctional policy (Latessa, 2004). The future of psychology in corrections, in contrast, likely hinges on whether or not there is a broadly held interest, and competence, in science among the public. This includes the hundreds of thousands of correctional officers and other staff operating prisons and jails as well as the general voting public that elects and holds policymakers accountable. To the degree that the broader public demands that policy be driven by facts, that programs work, that data and measures be valid, and that studies are legitimate, policy within corrections will likely follow suite. This is, of course, the fundamental premise of democratic societies—that government will, ultimately, respond to the will of the people. To the degree that the public is less knowledgeable about science, is indifferent to it, or even feel animosity toward it, decision making by government will likely become worse. For example, we know that as education levels decline, states see more corruption, poorer outcomes, and a stagnation or retraction in quality of governance (Glaeser & Saks, 2006). The opposite is also true. It is for this reason that John F. Kennedy (1963, p. 1, paragraph 3) argued, “For the nation, increasing the quality and availability of education is vital to both our national security and our domestic well-being. A free Nation can rise no higher than the standard of excellence set in its schools and colleges.”

The core challenge to the APA, then, is to engage and educate the public about the role that science can and should play in policy making and the running of government institutions such as prisons. It behooves the scientist-practitioners to continue to speak truth to power by producing and declaring scientific facts as an alternative to conjecture, propaganda, or simple error. Likewise, the field must continue and enhance engagement with “nonacademic” institutions that have a voice among correctional staff. For example, it is likely critical that psychologists continue to translate obtuse academic studies into briefs for trade journals, to offer to speak at correctional officer meetings, to answer e-mails from wardens, and to otherwise engage in types of work and in types of ways that create trust and value for these important stakeholders for correctional science.

In addition, the field must increase the breadth and quality of education so that fewer and fewer in the general public can be fooled by ridiculous claims or decisions. If the public, and the correctional staff in particular, were familiar with the travesties that occur when science is ignored, and had the skill to see the difference between junk and quality science, then it is likely that accountability for creating and implementing evidence-based practices would also be more deeply and reliably ingrained into government. In short, they would hold policymakers accountable and would do so accurately.

The APA and similar organizations are certainly poised to lead this charge. In the United States, for example, there are nearly 21 million students enrolled in higher education—more than at any other time in history.³ This pool of students contains the correctional officers of the future; they are the individuals who will either support or ignore research and scientific innovators who arrive at the gates of their prisons. Universities also contain the future

governors, mayors, and others required to fully and broadly implement embedded science as a strategy. In addition, students represent an enormous voting block that, if trained properly, would likely demand high levels of scientific investment and rigor from their elected officials. Thus, the degree to which universities engage and train these students well—to truly ingrain a care for, and deep competence in, science—is likely to play a pivotal role in determining whether there is pervasive and broad support for the continuation and improvement of scientific research within the correctional setting. It is our hope that the APA will continue to play a leading role in this regard. After all, it is in the nature of this organization to do so—to create the platform for more efficient, less corrupt social order and rationalized governance (Ladd, 1894).

³ National Center for Education Statistics, retrieved from https://nces.ed.gov/programs/digest/d15/tables/dt15_105.20.asp?current=yes.

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