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Restricting the Use of Solitary Confinement

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solitary confinement, prison isolation, prison effects, conditions of confinement

Abstract

A robust scientific literature has established the negative psychological effects of solitary confinement. The empirical findings are supported by a theoretical framework that underscores the importance of social contact to psychological as well as physical well-being. In essence, human beings have a basic need to establish and maintain connections to others and the deprivation of opportunities to do so has a range of deleterious consequences. These scientific conclusions, as well as concerns about the high cost and lack of any demonstrated penological purpose that solitary confinement reliably serves, have led to an emerging consensus among correctional as well as professional, mental health, legal, and human rights organizations to drastically limit the practice.



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INTRODUCTION

The effects of being housed in solitary confinement are now well understood and documented in the scientific literature. There are numerous empirical studies that report robust findings—that is, consistent and corroborative data collected by researchers and clinicians from diverse backgrounds and perspectives, amassed over a period of many decades. With remarkably few exceptions, virtually every one of these studies has found that isolated prisoners experience negative psychological effects and are at a significant risk of serious harm.

In addition, these empirical findings are theoretically sound. That is, there are straightforward scientific explanations for the fact that solitary confinement—the absence of meaningful social contact and interaction with others—produces pain and suffering and can have harmful psychological consequences. Social exclusion and isolation from others is known to cause adverse psychological effects in contexts other than prison; it therefore makes perfect theoretical sense that this experience produces similar negative outcomes in correctional settings, where the isolation is rigidly enforced, the opprobrium and hostility directed at isolated prisoners are extreme, and the other associated deprivations are so severe. Although the significant risk of serious psychological harm exists for all prisoners, it is intensified for those who suffer from a pre-existing mental illness or other vulnerabilities.

As I discuss in this review, this theoretically grounded body of scientific knowledge has served as an important basis for an emerging consensus among scientific researchers as well as corrections professionals and mental health, legal, and human rights organizations on the need to significantly restrict the nature, frequency, and duration of solitary confinement and to exclude certain groups of prisoners from being subjected to it at all.

THE DEFINITION, USE, AND OPERATIONAL CONSEQUENCES OF SOLITARY CONFINEMENT

For perhaps obvious reasons, total and absolute solitary confinement—literally complete isolation from any form of human contact—does not exist in prison and never has. Instead, the term is generally used in correctional practice, law, and scholarship to refer to conditions of extreme (but not total) isolation from others. I have defined it elsewhere, in a way that is entirely consistent with its use in the broader correctional literature, as

[S]egregation from the mainstream prisoner population in attached housing units or free-standing facilities where prisoners are involuntarily confined in their cells for upwards of 23 hours a day or more, given only extremely limited or no opportunities for direct and normal social contact with other persons (i.e., contact that is not mediated by bars, restraints, security glass or screens, and the like), and afforded extremely limited if any access to meaningful programming of any kind (Haney 2009, p. 12, footnote 1).

The definition of what constitutes solitary confinement turns less on the exact amount of in-cell time to which a prisoner is subjected and more on the deprivation of normal, direct, and meaningful social contact and access to positive environmental stimulation. Thus, an isolated prisoner who was afforded considerable out-of-cell time during which he or she was denied normal and meaningful forms of direct social contact and positive stimulation or programming would still be in solitary confinement. “Normal” and “direct” contact means at least, as noted above, contact that is not mediated or interposed by such things as “bars, restraints, security glass or screens.” But the contact must also be “meaningful,” which, in this context, refers to contact with others in a setting

that provides access to actual programming and/or purposeful activities of common interest or consequence that allow for genuine social interaction and engagement with others.

From a correctional perspective, prisoners are placed in solitary confinement for a number of different reasons. In some instances, prisoners are placed in solitary confinement as punishment, typically a fixed amount of time in isolation meted out in response to a disciplinary infraction. Solitary confinement is also administratively imposed, often justified in vague terms (such as “the safety and security of the institution”), and for durations that last for indefinite amounts of time, targeting certain individuals or groups for whom prison officials deem it necessary. Many prison systems also use a form of solitary confinement to house protective custody prisoners who, for a variety of reasons, cannot be kept safe elsewhere in the prison system. Although protective custody prisoners certainly suffer the negative consequences of solitary confinement that result from the social and sensory deprivations that the experience entails, they are in a somewhat different position, psychologically, from those housed involuntarily in solitary confinement. Because of the ostensible physical protections it affords, solitary confinement may be preferred over what protective custody prisoners regard as more dangerous general population prison housing. Moreover, protective custody prisoners are likely to have some degree of perceived or actual control over their continued retention in solitary confinement, at least in those systems where their placement is considered truly voluntary. Protective custody prisoners in solitary confinement also may be more reluctant to acknowledge or complain about their negative psychological reactions to the experience (because they are highly dependent on the prison system to keep them safe). In any event, they should not be regarded as experiencing solitary confinement exactly as other prisoners do.

Riveland (1999, p. 3) has observed that solitary or segregated confinement typically occurs either in a “freestanding facility, or a distinct unit within a freestanding facility, that provides for the management and secure control of inmates” under conditions characterized by “separation, restricted movement, and limited access to staff and other inmates.” As the United States Department of Justice (2013, p. 5) has noted, “[a]n isolation unit means a unit where all or most of those housed in the unit are subjected to isolation.”

Although no precise calculation of how many prisoners are being held in solitary confinement in the United States is currently possible (in part because prison and jail systems do not officially identify and report these data on a reliable and consistent basis), recent estimates indicate that the number is not insignificant. For example, one national survey of prison administrators who reported figures for their jurisdictions concluded that “it is fair to estimate that some 80,000–100,000 people were in restricted housing in prisons in the fall of 2014” (Assoc. State Correct. Adm. et al. 2015, p. 10). This estimate does not include the sizable number of jail inmates who are housed in solitary confinement at any given time (e.g., Haney et al. 2015).

A Bureau of Justice Statistics (BJS) survey of a nationally representative sample of 91,177 adult inmates in the United States indicated that, on an average day in 2011–2012, “up to 4.4% of state and federal inmates and 2.7% of jail inmates were held in administrative segregation or solitary confinement” (Beck 2015, p. 1). Although these figures likely represent a modest underestimate (because the sample did not include those who, for various reasons, including their segregation status, could not complete the survey), they nonetheless translate into nearly 70,000 state and federal prisoners and approximately 20,000 jail inmates (estimated from population figures reported by Glaze & Parks 2012).

Even though fewer than 5% of prisoners on average are housed in solitary confinement at any given time, the fact that prisoners cycle in and out of these units means that a much higher number experience these conditions in the course of their prison or jail sentence. The same 2011–2012 BJS survey found that nearly one in five prisoners reported being housed in solitary confinement in the preceding year (Beck 2015). African Americans and “other-race” (a category that includes

American Indian, Asian, Native Hawaiians, and Pacific Islanders) inmates were significantly more likely to spend time in solitary confinement, as were mentally ill prisoners (Beck 2015). In fact, “[o]n every measure of past mental health problems, inmates who reported a problem were also more likely than other inmates to report that they had spent time in restrictive housing” (Beck 2015, p. 6).

In the nineteenth century, when long-term solitary confinement was actually the modal form of imprisonment in the United States and many other countries, its widespread use was premised on the mistaken belief that prisoners would benefit from the solitude and opportunity for self-reflection and penance that it supposedly afforded as well as from the complete separation from contaminating outside influences, including each other (Rothman 1971). When these beliefs were definitively disproven, in part by showing that solitary confinement was, in the words of Supreme Court Justice Miller, “found to be too severe” (*In re Medley* 1890, p. 168) and an “infamous punishment” that “always implies disgrace” (*In re Medley* 1890, p. 169), it was abandoned by the end of the century. When corrections officials resumed the practice in the latter part of the twentieth century in the United States, they were not pursuing some new and noble penological purpose that solitary confinement seemed likely to achieve. No new research had emerged to indicate that its rejection in the nineteenth century had been based on faulty premises. Instead, its increased use was little more than a correctional expedient, as prison officials attempted to respond to a problematic confluence of larger forces and events, including unprecedented levels of prison overcrowding, the abandonment of a commitment to the rehabilitative ideal and the corresponding loss of positive incentives with which to help manage inmate behavior, and the rise of a penal harm movement that legitimized a range of cruel practices designed to make prisoners suffer (Cullen 1995, Haney 2006).

In addition to the harmful effects of solitary confinement that I discuss in the following section, the emerging consensus that this practice should be significantly limited or eliminated appears to be based on its comparative costs as well as the growing awareness that it may be iatrogenic—that is, it does not achieve its intended objectives and may even worsen the problems it was designed to solve. Specifically, solitary confinement units incur significantly more costs—in their construction, operation, and in other terms—than other types of prison housing (e.g., ACLU Colo. 2011, Pawlaczyk & Hundsdorfer 2010, Shalev 2009). In addition, research has indicated that the introduction of long-term solitary confinement or “supermax” units into a prison system has unpredictable and sometimes counterproductive effects on the overall number of assaults on staff and/or inmates (Briggs et al. 2003, Sundt et al. 2008). There is also no evidence that the widespread use of solitary confinement has any appreciable effect on the size, number, or operation of prison gangs (e.g., Colvin 1992, Hunt et al. 1993, Shalev 2009). In addition, neither short-term nor long-term stays in solitary confinement achieve specific deterrent effects by reducing subsequent disciplinary infractions (e.g., Morris 2016, Reiter 2012) or, apparently, post-prison recidivism (Butler et al. 2017) among prisoners who have experienced it. In fact, ironically, some research suggests that time spent in solitary confinement may increase post-prison rates of re-offending (e.g., Lovell et al. 2007, Mears & Bales 2009). Moreover, whether or not they technically reoffend, many are likely to suffer isolation-related adjustment problems once released back into mainline prisons or free society (e.g., Kupers 2008).

SCIENTIFIC RESEARCH ON THE PAINFUL AND HARMFUL EFFECTS OF SOLITARY CONFINEMENT

It is useful to think about real-world conditions of solitary confinement along a continuum of harshness or severity, one comprising different dimensions that are imposed on and experienced by prisoners in differing amounts in any given unit. These dimensions include primarily the severity

or degree of social isolation and reduced positive environmental stimulation, which together form the core of the experience, as well as the amount of additional material deprivations, the number of restrictions on movement and other aspects of daily life, and the degree and extent of degrading or hostile treatment to which prisoners are routinely subjected. The different aspects of the experience are amplified by the length of confinement and the amount of control prisoners perceive themselves to have over whether and how they can end it (including whether they are indefinitely, involuntarily, or voluntarily isolated). These components of solitary confinement—which different facilities impose in varying degrees—primarily account for the negative effects and amount of psychological harm suffered. Rather than representing as some sort of Weberian ideal type, solitary confinement is only ever embodied in actual places, ones that exist in any given instance as an amalgam of different conditions that vary along the aforementioned dimensions of harshness and resulting risk of harm. For precisely this reason, the nature and magnitude of its negative effects are not expected to be independent of the particular form it takes, confirming a basic truism in social science: context—here, specific conditions of confinement—matter.

That said, we know that the essence of the experience of solitary confinement—extreme social isolation and the deprivation of positive environmental stimulation—places prisoners at significant risk of serious psychological harm. Prisoners may vary in terms of their vulnerability and resilience in response to this risk, but the risk itself is substantial, and it is typically impossible to determine at the outset of a prisoner’s exposure whether and how he or she will survive and at what psychological cost.

Although I concentrate in this review primarily on the socially isolating aspects of the experience, the sensory deprivation components of solitary confinement can contribute significantly to its harmful effects. Some solitary confinement units do, in fact, approximate early psychological experiments on near-total sensory deprivation—darkened cells, little or no sound, and so on. But they are relatively rare nowadays. More commonly in contemporary prisons, solitary confinement subjects prisoners to what has been termed “reduced environmental stimulation”—a term that acknowledges the fact that there is not total (or even nearly total) deprivation of sensory input of any kind but that the meaningful and stimulating aspects of the environment are lacking. Thus, prisoners in solitary confinement are exposed to reduced and monotonous sensory input—an extremely limited and repetitive perceptual and experiential sameness in the physical environment around them. In other instances, however, they are subjected to a great deal of stimulation, but it is aversive or noxious in nature—loud noise, bright lights, foul smells—and they are exposed to these things under circumstances that they typically cannot control. In these cases, the reduction in their environmental stimulation refers to the lack of positive stimuli, despite being bombarded with aversive stimuli that are beyond their control. All of these different but nonetheless problematic sensory aspects of the experience can be harmful to normal, healthy psychological functioning.

In any event, in the admitted absence of a single “perfect” study of the phenomenon (which, for obvious reasons, is practically and ethically proscribed), there is a substantial body of published literature that clearly documents the distinctive patterns of psychological harm that can and do occur when persons are placed in solitary confinement. These outcomes have been consistently identified in accounts written by persons confined in isolation, in descriptive studies authored by mental health professionals and others who worked in many such places, and in a large body of systematic, scientific research conducted on the nature and effects of social isolation more widely—that is, conducted not only in solitary confinement specifically but also in other psychologically similar settings. The studies have been carried out over a period that now spans many decades (and if historical documentation is considered, much longer) and in locations across several continents by researchers with different kinds of professional expertise, ranging from psychiatrists and

sociologists to historians and architects (e.g., Arrigo & Bullock 2008, Cloyes et al. 2006, Grassian 2006, Haney 2003, Haney & Lynch 1997, Smith 2006).

Even prisoners in solitary confinement who are double-celled (i.e., housed with another prisoner) may nonetheless suffer many of the negative psychological effects that are described in the following pages. In fact, in some ways, prisoners who are double-celled in prison solitary confinement units have the worst of both worlds: they are overcrowded by virtue of being confined nearly around-the-clock with another person inside a typically very small cell, but they are also—and this is the crux of their isolation—simultaneously kept apart from the rest of the mainstream prisoner population as well as being deprived of even minimal freedom of movement, prohibited from access to meaningful prison programs, and denied opportunities for normal, meaningful social interaction. This is especially problematic if prisoners are involuntarily double-celled, have little or no choice over the identity of the person with whom they are housed, and have no practical or feasible means of changing cellmates if they are (or become) incompatible. Because of the inevitable tensions that are created by forcing persons to live around-the-clock in such cramped, deprived conditions, double-celling in solitary confinement units tends to increase the likelihood of violent conflict.

As I noted above, researchers and practitioners know that meaningful social interactions and social connectedness can have a positive effect on people's physical and mental health and, conversely, that social isolation, in general, can undermine health and psychological well-being (e.g., Cacioppo & Cacioppo 2012, DeWall et al. 2011, Fiorillo & Sabatini 2011, Hafner et al. 2011, Karremans et al. 2011, Thornicroft 1991). The long-standing literature on the significant risk that solitary confinement poses for the mental health of prisoners needs to be understood in this theoretical context. In addition to the absence of meaningful human contact and social interaction and the enforced idleness and inactivity, the oppressive security and surveillance procedures and the accompanying hardware and other paraphernalia that are brought or built into these units combine to create extremely harsh, dehumanizing, and deprived conditions of confinement. These conditions predictably impair the psychological functioning of many of the prisoners who are subjected to them (e.g., Arrigo & Bullock 2008, Cloyes et al. 2006, Grassian 2006, Haney 2003, Haney & Lynch 1997, Smith 2006). For some prisoners, the negative effects can be permanent and life-threatening, including an increased likelihood of self-harm and suicide (e.g., Kaba et al. 2014).

A number of the early studies of solitary confinement began with what is now considered a somewhat outmoded theoretical framework, focusing primarily on sensory rather than social deprivation (e.g., Gendreau et al. 1972, Scott & Gendreau 1969, Walters et al. 1963). Even so, the authors of one of the early studies of solitary confinement summarized their findings by concluding that “[e]xcessive deprivation of liberty, here defined as near complete confinement to the cell, results in deep emotional disturbances” (Cormier & Williams 1966, p. 484).

A decade later, Toch's (1975) large-scale psychological study of prisoners in crisis in New York State correctional facilities included important observations about the effects of isolation. After he and his colleagues had conducted numerous in-depth interviews with prisoners, Toch concluded that “isolation panic” was a serious problem in solitary confinement. The symptoms that Toch (1975) reported included rage, panic, loss of control and breakdowns, psychological regression, and a buildup of physiological and psychic tension that led to incidents of self-mutilation. He noted that although isolation panic could occur under other conditions of confinement it was “most sharply prevalent in segregation” (Toch 1975, p. 54). Moreover, it marked an important dichotomy for prisoners: the “distinction between imprisonment, which is tolerable, and isolation, which is not” (Toch 1975, p. 54).

More recent studies also identified a wide range of adverse psychological reactions that frequently occur in solitary confinement. The specific symptoms include stress-related reactions

(such as decreased appetite, trembling hands, sweating palms, heart palpitations, and a sense of impending emotional breakdown); sleep disturbances (including nightmares and sleeplessness); heightened levels of anxiety and panic; irritability, aggression, and rage; paranoia, ruminations, and violent fantasies; cognitive dysfunction, hypersensitivity to stimuli, and hallucinations; loss of emotional control, mood swings, lethargy, flattened affect, and depression; increased suicidality and instances of self-harm; and, finally, paradoxical tendencies to further social withdrawal. As I discuss in more detail in the following section, the latter reaction—social withdrawal—is related to a broader set of social pathologies that prisoners may experience as they attempt to adapt to the long-term absence of meaningful social contact (for reviews of and citations to the literature in which these specific adverse reactions are documented, see Arrigo & Bullock 2008, Cloyes et al. 2006, Grassian 2006, Haney 2003, Haney & Lynch 1997, Smith 2006).

Solitary confinement is employed more broadly and imposed for longer periods of time in the United States than elsewhere in the world (e.g., Shalev 2009). However, other countries have used solitary confinement, and some still do (e.g., Ross 2013). Thus, there is a large international literature on its adverse psychological effects. Barte's (1989, p. 52) study of the practice in French prisons concluded it had such "psychopathogenic" effects that prisoners placed there for extended periods of time could become schizophrenic instead of receptive to social rehabilitation, rendering the practice unjustifiable, counterproductive, and "a denial of the bonds that unite humankind." Koch's (1986, pp. 124–25) study of "acute isolation syndrome" among detainees in Denmark determined that it occurred after only a few days in isolation and included "problems of concentration, restlessness, failure of memory, sleeping problems and impaired sense of time and ability to follow the rhythm of day and night" and could, if the isolated confinement persisted for "a few weeks" or more, lead to "chronic isolation syndrome," which includes intensified difficulties with memory and concentration, "inexplicable fatigue," a "distinct emotional lability" that included "fits of rage," hallucinations, and the "extremely common" belief among isolated prisoners that "they have gone or are going mad." Volkart et al.'s (1983a) study of penal isolation in Switzerland concluded that when prisoners in normal conditions of confinement were compared to those in solitary confinement, the latter were found to display considerably more psychopathological symptoms, which included heightened feelings of anxiety, emotional hypersensitivity, ideas of persecution, and thought disorders (see also Bauer et al. 1993, Volkart 1983, Volkart et al. 1983b, Waligora 1974.)

The prevalence of psychological symptoms (that is, the percentage of prisoners in these units who suffer from these and related signs of psychological distress) appears to be extremely high. For example, in an early study conducted at the Security Housing Unit (SHU) at Pelican Bay State Prison in California, a very severe solitary confinement facility (e.g., Haney 1993, *Madrid v. Gomez* 1995, Reiter 2016), structured interviews were conducted to systematically assess a randomly selected, representative sample of 100 prisoners to determine the prevalence of symptoms of psychological stress, trauma, and isolation-related psychopathology (Haney 2003). The interviews included a number of demographic questions, brief social and institutional histories, and systematic assessments consisting of 25 specific items, based on the Omnibus Stress Index (Jones 1976) and on others similar to those used in Brodsky & Scogin (1988). Virtually every symptom of psychological stress and trauma but one (fainting) was suffered by more than half of the prisoners who were assessed (with many of the symptoms being acknowledged by two-thirds or more of the prisoners and some by nearly everyone). Well over half of the prisoners in the sample reported a constellation of symptoms—headaches, trembling, sweaty palms, and heart palpitations—that are known to be distress related.

In addition, high numbers of prisoners reported suffering from isolation-related symptoms of pathology. Thus, nearly all of the Pelican Bay SHU prisoners acknowledged ruminations or intrusive thoughts, an oversensitivity to external stimuli, irrational anger and irritability, difficulties with

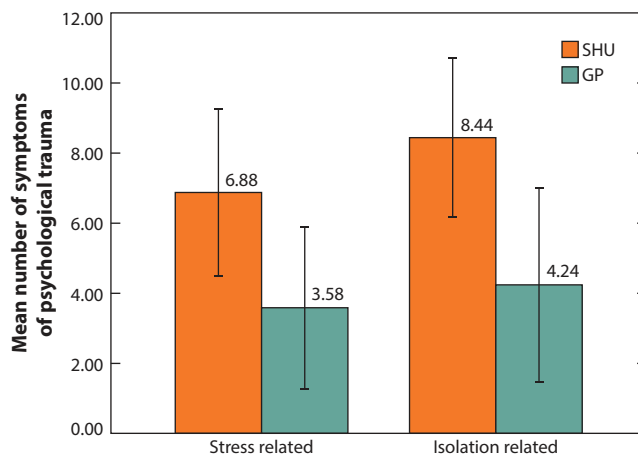


Figure 1

Number of stress- and isolation-related trauma symptoms reported by solitary confinement versus general population prisoners. Error bars show standard deviation of each group's scores. Abbreviations: SHU, security housing unit; GP, general population.

attention and often with memory, and a tendency to socially withdraw. Almost as many prisoners reported a constellation of symptoms indicative of mood or emotional disorders—concerns over emotional flatness or losing the ability to feel, swings in emotional response, and feelings of depression or sadness that did not go away. Finally, sizable minorities of the prisoners reported symptoms that are typically only associated with more extreme forms of psychopathology—hallucinations, perceptual distortions, and thoughts of suicide.

A subsequent study conducted at the same facility found that these kinds of symptoms were prevalent among a sample of extremely long-term isolated prisoners and experienced at much higher levels and greater intensities than long-term general population prisoners. The same structured interview and systematic assessment format as in the earlier study were used to compare the prevalence of symptoms of psychological stress, trauma, and isolation-related psychopathology in a randomly selected sample of extremely long-term SHU prisoners (who had spent ten years or more in continuous solitary confinement) with a randomly selected sample of general population (GP) prisoners who had spent ten years or more in continuous imprisonment (Haney 2017).¹ The structured interview format and assessment instrument were identical to the ones employed in the earlier study. All of the prisoners in both groups were otherwise mentally healthy; that is, no one from either group was currently on the prison system's mental health caseload.²

As **Figure 1** indicates, Haney (2017) found that the extremely long-term isolated SHU prisoners reported nearly twice the mean number of symptoms of both stress-related trauma ($M = 6.88$ versus 3.58 , $t = 5.36$, $df = 62$, $p < 0.001$, Cohen's $D = 1.36$) and isolation-related pathology ($M = 8.44$ versus 4.24 , $t = 6.63$, $df = 64$, $p < 0.001$, Cohen's $D = 1.66$) overall, as compared to

¹Access to both groups was permitted pursuant to a court order in *Ashker v. Brown* (2014). I am grateful to attorneys from the Center for Constitutional Rights, the California Attorney General's Office, and staff members from the California Department of Corrections and Rehabilitation for their assistance and cooperation in facilitating data collection.

²As a result of a federal court decision, *Madrid v. Gomez* (1995), no prisoner on the California Department of Corrections and Rehabilitation's mental health caseload is permitted to be housed in the Pelican Bay Security Housing Unit. To ensure comparability of the samples in this respect, long-term GP prisoners who were currently on the mental health caseload were not included in the study.

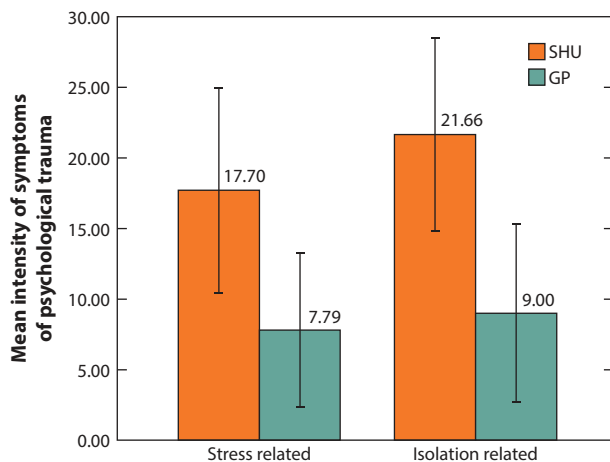


Figure 2

Intensity of stress- and isolation-related trauma symptoms reported by solitary confinement versus general population prisoners. Respondents who reported experiencing the specific symptom during the last three months were asked “how often” and responded with the following measures of intensity: 1, rarely; 2, some; 3, often; or 4, constantly. Error bars show standard deviation of each group’s scores. Abbreviations: SHU, security housing unit; GP, general population.

the GP prisoners who had been in prison for similar amounts of time (i.e., ten years or more). In addition, as **Figure 2** indicates, the SHU prisoners who were subjected to extremely long-term solitary confinement reported suffering much greater stress- and trauma-related symptom intensity ($M = 17.7$ versus 7.79 , $t = 5.7$, $df = 62$, $p < 0.001$, Cohen’s $D = 1.53$), and much greater intensity of isolation-related pathology ($M = 21.66$ versus 9.00 , $t = 7.46$, $df = 64$, $p < 0.001$, Cohen’s $D = 1.91$) than the long-term GP prisoners. A sequential multiple linear regression was used to determine whether current solitary confinement status explained the difference in the intensity of these isolation-related pathological symptoms. In fact, being in solitary confinement was by far the largest contributor to the intensity of the various negative symptoms that the prisoners suffered, even after controlling for age, marital status, and estimated total time in prison. Finally, Haney (2017) found that the prisoners in long-term solitary confinement were not only significantly more lonely than the long-term GP prisoners ($t = 4.64$, $df = 64$, $p < 0.001$, Cohen’s $D = 1.15$), as measured by the UCLA Loneliness Scale (e.g., Russell et al. 1980), but also reported extremely high levels of loneliness rarely found anywhere in the literature.

Although the Haney (2017) study did not include prisoners who were currently identified as suffering from mental illness, the concentration of mentally ill prisoners who are confined in solitary confinement units is often disproportionately high (e.g., Hodgins & Cote 1991, Lovell et al. 2000). This is especially problematic because, for perhaps obvious reasons, mentally ill prisoners are generally more sensitive and reactive to psychological stressors and emotional pain. The harshness and severe levels of deprivation that they experience in solitary confinement are in many ways the antithesis of the kind of benign and socially supportive atmosphere that mental health workers seek to create in genuinely therapeutic environments. Not surprisingly, then,

mentally ill prisoners are more likely to deteriorate and decompensate when they are subjected to the harshness, stress, and deprivations of solitary confinement.³

In addition to the specific signs and symptoms of psychological and isolation-related distress cited above, placement in solitary confinement can lead to other negative, even fatal, outcomes. For example, Patterson & Hughes (2008, p. 678) attributed higher suicide rates in solitary confinement units to the heightened levels of environmental stress that are generated by the “isolation, punitive sanctions, [and] severely restricted living conditions” that exist there. They noted that “the conditions of deprivation in locked units and higher-security housing were a common stressor shared by many of the prisoners who committed suicide” (Patterson & Hughes 2008, p. 678). Lanes (2011) found that prisoners with extensive histories of self-injury were especially likely to be placed in solitary confinement, despite research showing that self-injurious behaviors persist at a disproportionately high level in these units (Lanes 2009). In fact, a team of researchers in New York found that “[i]nmates punished by solitary confinement were approximately 6.9 times as likely to commit acts of self-harm after we controlled for the length of jail stay, SMI [whether the inmate was seriously mentally ill], age, and race/ethnicity” (Kaba et al. 2014, p. 445).

It is also important to note that, although social deprivation and the lack of positive stimulation and programming are the sources of the greatest psychological pain that prisoners experience in solitary confinement and what places them at the greatest risk of harm, these units typically deprive prisoners of many other things as well. Solitary confinement commonly includes high levels of repressive control, enforced idleness, and physical and material deprivations that also produce psychological distress and can exacerbate the negative consequences of social deprivation and lack of positive stimulation. Indeed, most of the things that we know are beneficial to prisoners, such as opportunities for meaningful physical exercise or recreation, programming, and visitation (e.g., Wooldredge 1999), are either functionally denied or greatly restricted for prisoners who are housed in solitary confinement. These deprivations combine with the other stressors to which isolated prisoners are subjected and exacerbate their negative psychological effects.

For example, we know that people in general require a certain level of mental and physical activity to remain mentally and physically healthy (e.g., Bize et al. 2007, Penedo & Dahn 2005). Simply put, human beings need movement and exercise to maintain normal functioning. The severe restrictions that are imposed in isolation units—typically no more than an hour or so a day out of their cells—can negatively impact prisoners’ well-being. Denying prisoners access to normal and necessary human activity places them at risk of psychological harm.

Similarly, apart from the profound social, mental, and physical deprivations that solitary confinement can produce, prisoners housed in these units experience prolonged periods of monotony and idleness. Many of them experience a special form of sensory deprivation or reduced environmental stimulation—there is an unvarying sameness to the physical stimuli that surround them. Prisoners in solitary confinement exist within the same limited spaces and are subjected to the same repetitive routines, day in and day out. There is little or no external variation to the experiences they are permitted to have or can create for themselves. They not only see and experience the same extremely limited physical environment but also have minimal, routinized, and superficial contacts with the same very small group of people again and again, sometimes for years on end.

³It is important to note that a prisoner’s official designation as mentally ill or not depends on a number of factors, including the criteria used, the nature and circumstances under which s/he is evaluated, and the quality of the staff and procedures by which the judgment is made. Even in prison systems with otherwise adequate mental health care, there are typically a number of emotionally vulnerable prisoners who have not been formally designated as mentally ill but nonetheless are likely to be especially adversely affected by solitary confinement.

This loss of perceptual and cognitive or mental stimulation may result in the atrophy of important skills and capacities (e.g., Grassian 1983, Haney 2003, Miller & Young 1997).

Indeed, the pain, suffering, and psychic damage that can occur in solitary confinement are underscored by the fact that it is commonly used in so-called brainwashing and certain forms of torture. In fact, many of the negative effects of solitary confinement are analogous to the acute reactions suffered by torture and trauma victims, including post-traumatic stress disorder (PTSD) and the kind of psychiatric sequelae that plague victims of what are called deprivation and constraint torture techniques (e.g., Lippman 1994, Shallice 1974, Somnier & Genefke 1986, Whittaker 1988). For example, Foster (1987, p. 136) listed solitary confinement among the most common “psychological procedures” used to torture South African detainees and concluded that “[g]iven the full context of dependency, helplessness and social isolation common to conditions of South African security law detention, there can be little doubt that solitary confinement under these circumstances should in itself be regarded as a form of torture” (see also Haney & Bakhshay 2017).

Although the empirical consensus on the harmfulness of solitary confinement is broad and deep, there is one notable, albeit highly controversial exception to this generalization. The so-called Colorado Study of one year in administrative segregation (O’Keefe et al. 2010, 2013) purported to find that solitary confinement not only did not put prisoners at a significant risk of harm but actually enhanced the psychological well-being of many of them (including many who were mentally ill). As soon as the study was released, critics from a variety of disciplines identified a range of very serious methodological problems that appeared to completely discredit its findings (e.g., Grassian & Kupers 2011, Rhodes & Lovell 2011, Shalev & Lloyd 2011, Smith 2011). Without cataloging the entire list of all of the serious flaws from which the study suffered, two of them were fatal to any meaningful interpretation of the results. The first such flaw occurred at the outset of the study, when all groups (including the intended control participants) were exposed to a severe form of the key treatment variable—solitary confinement—for nontrivial durations that averaged 30 days (O’Keefe 2017, p. 2). Once the study period was underway, the second fatal flaw occurred. Specifically, both the control and treatment groups were contaminated by being sporadically comingled with one another (that is, more than half of the prisoners in both general population and administrative segregation were placed in the opposite group, or in some other kind of confinement, during the study period). This confounded any possible interpretation of the comparisons between the groups. These and numerous other serious methodological problems led Lovell & Toch (2011, p. 4) to succinctly note in their critique of the study that “[d]espite the volume of the data, no systematic interpretation of the findings is possible.”⁴

The Colorado Study’s purported findings notwithstanding, two of the leading research consultants on the project subsequently acknowledged that “[i]solation can be harmful to any prisoner” and noted that the adverse effects of isolation can include “anxiety, depression, anger, cognitive disturbances, perceptual distortions, obsessive thoughts, paranoia, and psychosis” (Metzner & Fellner 2010, p. 104). In fact, their deep concerns over the harmfulness of solitary confinement led them to recommend that professional organizations “should actively support practitioners who work for changed segregation policies and they should use their institutional authority to press for a nationwide rethinking of the use of isolation” in the name of a “commitment to ethics and human rights” (Metzner & Fellner 2010, p. 107).

⁴A recent meta-analysis claiming to comprehensively and quantitatively summarize the scientific literature on the psychological effects of solitary confinement (Morgan et al. 2016) was unfortunately compromised by the fact that half or more of the key effect sizes on which the authors relied to address this specific issue were derived directly from the fatally flawed O’Keefe et al. (2010) study, making the results of the meta-analysis similarly uninterpretable.

SOLITARY CONFINEMENT, SOCIAL CONTACT, AND SOCIAL PATHOLOGY

Although the specific symptoms of psychological stress and trauma and the psychopathological effects of isolation are numerous and well-documented and provide important indices of the risks to which isolated prisoners are subjected, there are additional adverse effects that extend beyond these specific symptoms and reactions. Depriving people of normal social contact and meaningful social interaction over long periods of time can damage or distort their social identities, destabilize their sense of self, and, for some, destroy their ability to function normally in free society.

The theoretical explanation for the pain, suffering, and risk of harm of solitary confinement is relatively straightforward. Indeed, psychological science has long recognized the critical role of social contact in establishing and maintaining emotional health and well-being. As one researcher put it: “Since its inception, the field of psychology emphasized the importance of social connections” (DeWall 2013, p. 301). For example, the importance of “affiliation”—the opportunity to have meaningful contact with others—in reducing anxiety in the face of uncertain or fear-arousing stimuli is long established in social psychological literature (e.g., Schachter 1959, Sarnoff & Zimbardo 1961). In addition, one of the ways that people determine the appropriateness of their feelings—indeed, how we establish the very nature and tenor of our emotions—is through contact with others (e.g., Fischer et al. 2003, Saarni 1999, Schachter & Singer 1962, Tiedens & Leach 2004, Truax 1984). Prolonged social deprivation is painful and destabilizing in part because it deprives persons of the opportunity to ground their thoughts and emotions in a meaningful social context—to know what they feel and whether those feelings are appropriate.

Since the early research was conducted on the importance of affiliation, numerous scientific studies have further established the critical psychological significance of social contact, connectedness, and belonging. Researchers have concluded, among other things, that the human brain is literally “wired to connect” to others (Lieberman 2013). Thwarting the need to establish and maintain connections to others not only undermines psychological well-being but increases physical morbidity and mortality. Recognizing the importance of the human need for social contact, connection, and belongingness, social psychologists and others have written extensively about the harmful effects of its deprivation—what happens when people are subjected to social exclusion and isolation.

Years ago, Kelman (1976) argued that denying persons contact with others was a form of dehumanization. More recently, others have documented the ways in which social exclusion is not only “painful in itself,” but also “undermines people’s sense of belonging, control, self-esteem, and meaningfulness, reduces pro-social behavior, and impairs self-regulation” (Bastian & Haslam 2010, p. 107; internal references omitted). Indeed, the subjective experience of social exclusion can result in what have been called cognitive deconstructive states in which there are emotional numbing, reduced empathy, cognitive inflexibility, lethargy, and an absence of meaningful thought (Twenge et al. 2003). DeWall (2013, p. 302) summarized the serious threat that social exclusion represents to psychological health and well-being by noting that it produces “increased salivary cortisol levels. . . and blood flow to brain regions associated with physical pain” and “sweeping changes” in attention, memory, thinking, and self-regulation as well as changes in aggression and prosocial behavior. As he put it: “This dizzying array of responses to social exclusion supports the premise that it strikes at the core of well-being” (DeWall 2013, p. 302).

In addition, the social deprivation and social exclusion imposed by solitary confinement can engender broader forms of social pathology, brought about by forcing prisoners to adapt to an environment devoid of normal, meaningful social contact (Haney 2003). That is, to exist and function in the socially pathological environment of solitary confinement, where their day-to-day

life is devoid of meaningful interaction and closeness with others, prisoners have little choice but to adapt in socially pathological ways. Over time, they gradually change their patterns of thinking, acting, and feeling to cope with the profoundly asocial world in which they are forced to live, as they attempt to adapt to the absence of social support and the routine feedback that comes from normal, meaningful social contact.

Although these adaptations are functional—even necessary—under the isolated conditions in which prisoners live, eventual adjustment to the absence of others does not mean that social deprivation ceases to be painful. Prisoners liken the absence of meaningful contact and the loss of closeness with others to a dull ache or pain that never goes away. Many of them remain acutely aware of the relationships that have ended and the feelings of closeness to others that they fear can never be rekindled.

Indeed, some prisoners cope with the painful, asocial nature of their isolated existence by paradoxically creating even more distance between themselves and others. The absence of meaningful social contact becomes so painful that they convince themselves that they do not need it—that people are a nuisance, and the less contact with them they have, the better. As a result, these prisoners socially withdraw further from the world around them, receding even more deeply into themselves than the sheer physical isolation of solitary confinement and its attendant procedures require. Others move from initially being starved for social contact to eventually being disoriented and even frightened by it. As they become increasingly unfamiliar and uncomfortable with social interaction, they are further alienated from others and made anxious in their presence (e.g., Cormier & Williams 1966, Haney 2003, Miller & Young 1997).

Finally, these functional (even necessary) social pathologies tend to be internalized and can persist long after the prisoner's time in isolation has ended. Thus, the adaptations move from being consciously employed survival strategies or reactions precipitated by immediate conditions of confinement to more deeply ingrained ways of being. Prisoners may develop extreme habits, tendencies, perspectives, and beliefs that are difficult or impossible for them to relinquish once they are released. Although their adaptations may have been functional under conditions of isolation (or appear to be so), they are highly dysfunctional in the social world most prisoners are expected to re-enter. In extreme cases, these ways of being may be internalized so deeply that they become disabling, interfering with the capacity to live a remotely normal or fulfilling social life. Thus, the experience of long-term isolation can make prisoners' subsequent adjustment—either to the general prison population or to free society—painful and challenging, especially if they are not afforded meaningful assistance in making this transition.

In addition, many solitary confinement units prohibit contact visiting. This means that prisoners are deprived for months, years, or longer of the opportunity to give and receive caring human touch. Yet, psychologists have long known that “Touch is central to human social life. It is the most developed sensory modality at birth, and it contributes to cognitive, brain, and socio-emotional development and childhood” (Hertenstein et al. 2006, p. 528; see also Hertenstein & Weiss 2011). Indeed, the need for caring human touch is so fundamental that early deprivation is a risk factor for neurodevelopmental disorders, depression, suicidality, and other self-destructive behavior (e.g., Cascio 2010, Field 2005). Later deprivation is associated with violent behavior in adolescents (e.g., Field 2002). Recent theory and research now indicate that “touch is a primary platform for the development of secure attachments and cooperative relationships,” is “intimately involved in patterns of caregiving,” serves as a “powerful means by which individuals reduce the suffering of others,” and also “promotes cooperation and reciprocal altruism” (Goetz et al. 2010, p. 360).

The uniquely prosocial emotion of compassion “is universally signaled through touch,” meaning that persons who live in a world without touch are denied the experience of receiving or

expressing compassion in this way (Stellar & Keltner 2014, p. 337). Researchers have found that caring human touch conveys a sense of security and place, of shared companionship, and of being nurtured as well as feelings of worth and competence, access to reliable alliance and assistance, and guidance and support in stressful situations (e.g., Weiss 1995). A number of experts have argued that caring human touch is so integral to our well-being that it is highly therapeutic; it has been recommended to treat a host of maladies, including depression, suicidality, and learning disabilities (e.g., Dobson et al. 2002, Field 2005).

Of course, not every isolated prisoner suffers all of the previously described adverse psychological reactions to their socially and sensory-deprived conditions of confinement. However, the overall nature and magnitude of the negative psychological reactions that I have documented in my own research and that have been reported by numerous others in the scientific literature underscore the stressfulness and painfulness of this kind of confinement, the lengths to which prisoners must go in their attempt to adapt and adjust to it, and the risk of serious and sometimes permanent harm that it creates. As I noted, the potentially devastating effects of these conditions are reflected in the characteristically high numbers of suicide deaths and incidents of self-harm and self-mutilation that occur in many of these units.

Moreover, especially in light of the large number of prisoners who are exposed to solitary confinement in the course of their prison or jail terms—in any given year, an estimated one in five overall (Beck 2015), as I noted earlier—it is important to note that at least some of the negative psychological effects of solitary confinement are likely to persist long after their time in isolation has ended. Of course, prison and jail systems typically release prisoners from solitary confinement directly back into general population correctional settings, where the aftereffects of isolation may impede their successful reintegration into prison society. More problematic still, many prison systems release prisoners directly from solitary confinement back into free society, often with little or no advance preparation. Reliable estimates of the extent of this practice are difficult to come by, but the 2013 ASCA (Association of State Correctional Administrators)-Liman survey of correctional jurisdictions indicated that nearly 4,500 prisoners had been “released directly from administrative segregation to the streets” that year and that the overwhelming number of prison systems who engaged in the practice nonetheless “did not have a specific policy” for how such releases were to be handled (Assoc. State Correct. Adm. et al. 2015, p. 29).

THE SCIENTIFIC CONSENSUS ON THE SIGNIFICANT RISK OF SERIOUS PSYCHOLOGICAL HARM IMPOSED BY SOLITARY CONFINEMENT

The accumulated scientific evidence and theoretical framework that I summarized above have established that the experience of solitary confinement can produce a range of very serious adverse psychological effects. We clearly know what happens to people in prison and elsewhere in society when they are deprived of normal social contact for extended periods of time. The research consistently documents and details the risk of psychological harm that social isolation creates, including mental pain and suffering and the increased incidence of self-harm and suicide. The relevant psychological literature underscores the importance of meaningful social contact and interaction, in essence establishing these things as identifiable human needs. Over the long-term, they may be as essential to a person’s psychological or mental health as adequate food, clothing, and shelter are to his or her physical well-being.

A number of prominent scholarly, scientific, and medical organizations and expert panels have issued statements reflecting this consensus about the harmfulness of solitary confinement. For example, in 2006, a landmark report was published that was based in large part on a series of

fact-finding hearings conducted across the United States by the bipartisan Commission on Safety and Abuse in America's Prisons (Gibbons & Katzenbach 2006). In the course of the hearings, diverse groups of nationally recognized experts, stakeholders, and policy makers testified about a wide range of prison-related issues. Among other things, the Commission concluded that solitary and supermax-type units were "expensive and soul destroying" (Gibbons & Katzenbach 2006, p. 59). The next year, in 2007, an international group of prominent mental health and correctional experts meeting on psychological trauma in Istanbul, Turkey, issued a joint statement on "the use and effects of solitary confinement" (Int. Psychol. Trauma Symp. 2007). In what has come to be known as the Istanbul Statement, they acknowledged that the "central harmful feature" of solitary confinement is its reduction of meaningful social contact to a level "insufficient to sustain health and well being." Similarly, the American Public Health Association (2013) issued a statement in which it detailed the public health harms posed by solitary confinement, including that "[p]risoners in long-term solitary confinement are subject to significant mental suffering and deterioration" and "may develop anxiety, panic attacks, paranoia, cognitive impairment, social withdrawal, somatic symptoms, hypersensitivity to external stimuli, and perceptual disturbances."

In 2014, a National Academy of Sciences committee noted that "there are sound theoretical bases for explaining the adverse effects of prison isolation," that being housed on a long-term basis in solitary confinement "can inflict emotional damage" (Nat. Res. Council. 2014, p. 186) and that "direct studies of prison isolation document a broad range of harmful psychological effects" (Nat. Res. Council. 2014, p. 187). Even more recently—in April 2016—the National Commission on Correctional Health Care (NCCCHC), a professional organization of prison health-care providers, issued a Position Statement on solitary confinement. Relying on many of the scientific sources I cited earlier, the NCCCHC declared the "inherent restriction in meaningful social interaction and environmental stimulation and the lack of control adversely impact the health and welfare of all who are held in solitary confinement" and that "[e]ven those without a prior history of mental illness may experience a deterioration in mental health," such that "the very nature of prolonged social isolation is antithetical to the goals of rehabilitation and social integration" (Nat. Comm. Correct. Health Care. 2016, p. 258). And the American Psychological Association (2016) acknowledged that solitary confinement was associated with heightened risk of self-mutilation and suicidality, a range of adverse psychological symptoms such as anxiety, depression, sleep disturbance, paranoia, and aggression, and the exacerbation of pre-existing mental illness and trauma-related symptoms.

The scientific consensus reflects the view that the adverse effects of solitary confinement can inflict real harm. The resulting damage is sometimes so severe that it is irreversible. Indeed, for some prisoners, the attempt to cope with isolated confinement sets in motion a series of long-lasting cognitive, emotional, and behavioral changes that can persist beyond the time that the prisoners are housed in isolation, leading to long-term disability and dysfunction. As the National Academy of Sciences committee put it, solitary confinement "can create or exacerbate serious psychological change in some inmates" that is so negative and severe that it "make[s] it difficult for them to return to the general population of a prison or to the community outside prison" (Nat. Res. Council. 2014, p. 201).

THE MOVEMENT TO RESTRICT WHETHER, FOR HOW LONG, AND ON WHOM SOLITARY CONFINEMENT CAN BE IMPOSED

The increasingly broad and deep scientific consensus on the painfulness and harmfulness of solitary confinement, combined with the increased expense and overall ineffectiveness of such units, has led a number of prominent professional legal, mental health, human rights, and even correctional organizations to issue policy statements and recommendations that mandate

significant restrictions on whether solitary confinement should or can be used, the maximum duration that it can be imposed, and the prohibition against imposing it on certain vulnerable groups of prisoners. In this section of the review, I summarize just some of the mandates and directives that have been issued in recent years.

The first issue on which professional consensus has been reached is to limit the use of solitary confinement to an absolute minimum—only those rare instances in which it is deemed absolutely necessary (if, indeed, it is permitted to be used at all). In fact, in recognition of the adverse mental health effects of segregated, solitary, or isolated confinement, the American Bar Association’s *Standards for Criminal Justice on the Treatment of Prisoners* (2011) mandate that “[s]egregated housing should be for the briefest term and under the least restrictive conditions practicable.” Moreover, the ABA requires that the mental health of all prisoners in segregated housing “should be monitored” through a process that should include daily correctional staff logs “documenting prisoners’ behavior,” the presence of a “qualified mental health professional” inside each segregated housing unit “[s]everal times a week,” weekly observations and conversations between isolated prisoners and qualified mental health professionals, and “[a]t least every [90 days], a qualified mental health professional should perform a comprehensive mental health assessment of each prisoner in segregated housing” (unless such assessment is specifically deemed unnecessary in light of prior individualized observations). In addition, at intervals “not to exceed [30 days], correctional authorities should meet and document an evaluation of each prisoner’s progress” in an evaluation that explicitly “should also consider the nature of the prisoner’s mental health,” and at intervals “not to exceed [90 days], a full classification review” should be conducted that addresses the prisoner’s “individualized plan” in segregation with “a presumption in favor of removing the prisoner from segregated housing” (Am. Bar Assoc. 2011, Standard 23–2.9).

The NCCHC recommended that “[s]olitary confinement as an administrative method of maintaining security should be used only as an exceptional measure when other, less restrictive options are not available, and then for the shortest time possible” (Natl. Comm. Correct. Health Care. 2016, p. 260). The American Public Health Association (2013) urged correctional authorities to “eliminate solitary confinement for security purposes unless no other less restrictive option is available to manage a current, serious, and ongoing threat to the safety of others,” and recommended that “[p]unitive segregation should be eliminated.” The group of international trauma and mental health experts who issued the Istanbul Statement on “the use and effects of solitary confinement” concluded that it should be carefully restricted or abolished altogether: “As a general principle solitary confinement should only be used in very exceptional cases, for as short a time as possible and only as a last resort” (Int. Psychol. Trauma Symp. 2007). A National Academy of Sciences committee concluded similarly that the practice of solitary confinement “is best minimized, and accompanied by specific criteria for placement and regular meaningful reviews for those that are thus confined” (Natl. Res. Council. 2014, p. 201). Another group—the bipartisan Commission on Safety and Abuse in America’s Prisons—went even further, recommending that prison systems “end conditions of isolation” (Gibbons & Katzenbach 2006, p. 57).

In addition, various faith-based organizations have issued similar policy statements and recommendations urging significant reductions in or an outright abolition of solitary confinement. For example, the New York State Council of Churches (2012) passed a resolution in 2012 opposing the use of prison isolation and urging all members of the faith to participate in work to “significantly limit the use of solitary confinement” [see also Presbyt. Church (USA) 2012]. Similarly, that same year, the Rabbinical Assembly (2012) called on prison authorities to end prolonged solitary confinement.

Thus, a broad range of mental health, legal, and human rights standards and recommendations concerning solitary confinement acknowledge that the risk of psychological harm from isolation is

significant, and that the harm that can result is substantial and perhaps irreversible. As a result, they mandate that solitary confinement should be imposed, if at all, only as infrequently as possible—i.e., under extraordinary circumstances to accomplish a legitimate penological goal for which there is literally no less-intrusive or less-dangerous alternative available to the person on whom it is imposed.

The second issue on which a widespread professional consensus has emerged in recent years is that, if it is to be used at all, solitary confinement must be limited to very short periods, durations that are measured in hours, days, or weeks, rather than months or years. That is, because the risks of harm from isolated confinement are time- or dose-dependent—i.e., all other things being equal, the risks of psychological and physical damage are expected to increase as a function of the increased length of exposure—the use of solitary confinement should be limited to the briefest amount of time possible. This consensus includes a number of human rights and legal organizations. For example, the Special Rapporteur on Torture and Other Cruel, Inhuman or Degrading Treatment or Punishment (2011) for the United Nations wrote that in his opinion solitary confinement lasting more than 15 days can constitute “torture.” The American Bar Association’s (2011) Standards for Criminal Justice hold that “[s]egregated housing should be for the briefest term and under the least restrictive conditions practicable” [Standard 23–2.6(a)] and that at intervals “not to exceed [90 days], a full classification review” should be conducted that addresses the prisoner’s “individualized plan” in segregation with “a presumption in favor of removing the prisoner from segregated housing” (Standard 23–2.9). The New York State Bar Association (2013) called on state officials to significantly limit the use of solitary confinement and recommended that solitary confinement for longer than 15 days be proscribed. Similarly, NCCCHC’s Position Statement specified that solitary confinement of longer than 15 days constitutes “cruel, inhumane, or degrading treatment of inmates” and that correctional health professionals should not employ it (Natl. Comm. Correct. Health Care 2016, p. 260).

The final issue on which there is widespread agreement is that solitary confinement should never be used for certain vulnerable groups of prisoners. That is, numerous expert, legal, and human rights organizations have recommended that because of the increased grave risk of serious harm to which solitary confinement exposes vulnerable prisoners, they should be exempted from being placed in solitary confinement. For example, the NCCCHC Position Statement mandated not only that solitary confinement never exceed 15 days continuous duration but also that juveniles, mentally ill individuals, and pregnant women should be “excluded from solitary confinement of any duration,” and that health care staff should advocate to correctional officials that they bar juveniles and mentally ill prisoners entirely from such confinement (Natl. Comm. Correct. Health Care 2016, p. 260).

The Special Rapporteur on Torture and Other Cruel, Inhuman or Degrading Treatment or Punishment (2011) for the United Nations concluded that solitary confinement for longer than 15 days constitutes torture and that juveniles and people with mental illness should never be held in solitary confinement. The American Academy of Child and Adolescent Psychiatry issued a statement opposing “the use of solitary confinement in correctional facilities for juveniles,” stating that “any youth that is confined for more than 24 hours must be evaluated by a mental health professional,” and aligning AACAP with the United Nations Rules for the Protection of Juveniles Deprived of their Liberty, which includes among “disciplinary measures constituting cruel, inhuman or degrading treatment” the use of “closed or solitary confinement or any other punishment that may compromise the physical or mental health of the juvenile concerned” (Am. Acad. Child Adolesc. Psychiatry 2012). Similarly, and most recently, the American Psychological Association (2016) took an official position on solitary confinement by supporting “efforts to eliminate the practice” for juveniles. Calls for the prohibition of the use of isolated confinement

for vulnerable populations such as juveniles underscore the widespread recognition that it is a psychologically painful and potentially very harmful environment.

The same message is conveyed by the numerous calls to significantly limit the duration of solitary confinement or to eliminate its use altogether with prisoners who are mentally ill. Thus, the American Psychiatric Association (2012) recommended that “prolonged segregation” (which it defined as segregation lasting longer than four weeks) of adult prisoners with serious mental illness, “with rare exceptions, should be avoided due to the potential for harm to such inmates.” Similarly, Mental Health America’s (2011) position on seclusion and restraints included their “urg[ing] abolition of the use of seclusion. . . to control symptoms of mental illnesses.” The National Alliance on Mental Illness (2016) issued a statement “oppos[ing] the use of solitary confinement and equivalent forms of extended administrative segregation for persons with mental illnesses.” The American Public Health Association (2013) observed that mentally ill prisoners are at risk of being “placed in segregation as punishment for behavior that is a product of their illness,” and may “deteriorate and experience an exacerbation of symptoms” once housed there. With this in mind, they recommended categorically that “[p]risoners with serious mental illness should be excluded from placement in solitary confinement” and also that all prisoners “should be closely monitored and removed from solitary confinement if continued placement becomes clinically contraindicated.” The position statement of the Society of Correctional Physicians (2013) acknowledged “that prolonged segregation of inmates with serious mental illness, with rare exceptions, violates basic tenets of mental health treatment” and recommended against holding these prisoners in segregated housing for more than four weeks (see also Stern 2014.) The Rabbinical Assembly (2012) called on prison authorities to end the use of solitary confinement for juveniles and for people with mental illness. Finally, the National Science Foundation concluded that “[l]ong-term segregation is not an appropriate setting for seriously mentally ill inmates” and that “[i]n all cases, it is important to ensure that those prisoners who are confined in segregation are monitored closely and effectively for any sign of psychological deterioration” (Natl. Res. Council. 2014, p. 201).

In many ways, the *Standard Minimum Rules for the Treatment of Prisoners* (known as the Mandela Rules) that were approved by the Commission on Crime Prevention and Criminal Justice (2015) of the United Nations codified many of the mandates and standards recommended by other diverse professional groups. The Mandela Rules contain several provisions that are explicitly designed to significantly regulate and limit the use of solitary confinement (which, according to Rule 44, is defined as “confinement of prisoners for 22 hours or more a day without meaningful human contact”). Specifically, Rule 43.1 prohibits the use of “indefinite” and “prolonged” solitary confinement as well as the placement of prisoners in a “dark or constantly lit cell.” More generally, Rule 45.1 provides that solitary confinement “shall be used only in exceptional cases as a last resort, for as short a time as possible. . .” and Rule 45.2 prohibits its use entirely “in the case of prisoners with mental or physical disabilities when their conditions would be exacerbated by such measures.” The Commission on Crime Prevention and Criminal Justice’s (2015) *Standard Minimum Rules for the Treatment of Prisoners* passed by the United Nations defined “prolonged solitary confinement” as lasting “for a time period in excess of 15 consecutive days” and mandated that such prolonged confinement “shall be prohibited” (Rules 43.1 and 44).

In addition to the scientific evidence on the harmful psychological consequences of denying people opportunities for meaningful social contact and the consensus that has emerged among professional groups that solitary confinement is so dangerous that it must be significantly restricted, correctional systems around the country are themselves rethinking the justification for its continued use. In addition to its greater comparative expense, there is little or no evidence that solitary confinement effectively accomplishes any of the goals for which it is allegedly employed. As I noted earlier, its record on reducing various forms of inmate misbehavior or in stemming the

proliferation or influence of prison gangs is, at best, mixed and problematic; it may have the opposite of its intended effects. Even the goal of safeguarding certain groups of vulnerable prisoners by placing them in protective custody could be handled in a less restrictive and more humane way so that they are not subjected to severe social and sensory deprivations (and in essence forced to trade their psychological well-being for their physical safety).

The Association of State Correctional Administrators have acknowledged that the “prolonged isolation of individuals is a grave problem in the United States” (quoted in Assoc. State Correct. Adm. et al. 2016, p. 5). In fact, over the past several years, prison systems as diverse as California, Colorado, Idaho, Maine, and North Dakota have recognized the problem in their own prison systems and taken steps to drastically reduce the number of prisoners housed in solitary confinement (e.g., Buntin 2010, Egelko 2016, Heiden 2013, Raemisch 2012, Tapley 2011). In addition, several states have closed their primary solitary confinement units altogether. For example, in January 2013, the Illinois Department of Corrections closed its supermax prison located at the Tamms Correctional Center (Ill. Dep. Correct. 2013). And in the state where the infamous Colorado Study was conducted, not long after the study was released, the Department of Corrections began significantly reducing their administrative segregation population and closed an entire prison that had been recently built as a dedicated solitary confinement facility (Mitchell 2012, Raemisch & Wasko 2015). In fact, most recently, the director of that state’s prison system announced that he had ended long-term solitary confinement, so that even prisoners “who commit serious violations like assault will now spend at most 15 days in solitary” (Raemisch 2017, p. A25).

For several years now the Vera Institute of Justice, with funding from United States Department of Justice, has operated a Safe Alternatives to Segregation (SAFE) Initiative, whose explicit goal is to assist state and county correctional systems to reduce their use of segregation and solitary confinement by developing effective alternatives. The 11-member Vera SAFE Initiative Advisory Board includes several state corrections secretaries and deputy secretaries, including those in Colorado, New Mexico, Pennsylvania, and Washington, who are publicly committed to developing ways of achieving significant reductions in the use of prison isolation. Finally, the United States Department of Justice (2016) completed a review of solitary confinement practices in the Federal Bureau of Prisons that recommended significant reductions in its use, including a ban on confining juveniles, pregnant women, and, except in exceptional circumstances, seriously mentally ill prisoners, placing prisoners in the “least restrictive setting necessary,” eliminating the use of disciplinary segregation for low-level offenses, and urging reductions in the amount of time prisoners spend in solitary confinement for other more serious offenses, so that prisoners could be returned “to less restrictive conditions as promptly as possible.” In an editorial written by President Barack Obama (2016), he noted that “solitary confinement has the potential to lead to devastating, lasting psychological consequences,” including depression and “a reduced ability to interact with others,” and urged that the Department of Justice’s “common-sense principles” for limiting the use of solitary confinement be broadly implemented in the criminal justice system.

In summary, the conclusion that long-term solitary confinement subjects prisoners to a significant risk of serious psychological harm continues to have widespread and growing empirical support, is theoretically sound, and now reflects the overwhelming consensus view of numerous scientific organizations. In addition, there is a movement calling for reform among professional, legal, human rights, and mental health groups that have carefully considered the issue. Corrections officials in various parts of the country are beginning to heed those calls. As ASCA/Liman authors put it, solitary confinement now “has come to be understood by many as a problem in need of a solution” (Assoc. State Correct. Adm. et al. 2016, p. 15).

CONCLUSION

Solitary confinement has a long and controversial history in the United States and elsewhere in the world (e.g., Arrigo & Bullock 2008, Grassian 2006, Haney & Lynch 1997, Shalev 2009, Smith 2006). During the era of mass incarceration in the United States, increasing numbers of prisoners were subjected to these extremely severe conditions of confinement—as many as an estimated 100,000 at any given time—some of them for periods that lasted years and even decades. Yet the scientific knowledge on the negative effects of isolated confinement is long-standing, robust, and empirically well-documented. The harmful effects include a range of psychological and physical maladies, including a host of specific problematic symptoms of stress, trauma, and the psychopathological effects of isolation, a range of ultimately problematic and dysfunctional adaptations to this form of enforced asocial existence, and heightened levels of morbidity and mortality (including increased self-harm and suicidality). Furthermore, these empirical findings are theoretically well-grounded. In recent years, new insights about the fundamental human need for meaningful social contact and for caring human touch provided important theoretical dimensions to an already existing and widespread appreciation of the adverse medical and psychological consequences of isolation and social exclusion. They have added considerable conceptual weight to the long-standing scientific consensus about the pains, risks, and harms of solitary confinement.

The scientific consensus about the harmfulness of solitary confinement has served as the basis for an emerging movement among professional, mental health, legal, and human rights organizations, calling for the drastic reduction if not elimination of the practice. Recognition of the significant risk of serious harm that solitary confinement imposes has led to newly implemented standards and policies mandating that solitary confinement be used only as an absolute last resort (if at all) and for the shortest amount of time that is absolutely necessary to achieve legitimate penological goals. The time periods should be limited to hours, days, or weeks but never months or years. Moreover, the new standards and policies prohibit the use of solitary confinement with otherwise vulnerable groups such as juveniles and the seriously mentally ill. In addition to the positions taken by these various organizations, an increasing number of correctional officials have finally begun to acknowledge that solitary confinement incurs significant human and economic costs in the absence of commensurate benefits in the form of reliably achieved penological purposes or goals and, accordingly, have taken steps to drastically reduce its use.

The American criminal justice system appears to be coming full circle—again—on the controversial practice of solitary confinement. Armed with much more scientific evidence than nineteenth-century prison reformers and a stronger theoretical framework with which to understand the harmful effects of solitary confinement, an intellectual and human rights consensus has emerged to significantly restrict if not eliminate this punitive, destructive practice.

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LITERATURE CITED

- ACLU Colo. 2011. *The High Cost of Solitary Confinement*. Denver, CO: ACLU
- Am. Acad. Child Adolesc. Psychiatry. 2012. *Solitary Confinement of Juvenile Offenders*. Washington, DC: AACAP. https://www.aacap.org/aacap/Policy_Statements/2012/Solitary_Confinement_of_Juvenile_Offenders.aspx

- Am. Bar Assoc. 2011. *ABA Standards for Criminal Justice: Treatment of Prisoners*. Washington, DC: Am. Bar Assoc. 3rd ed. https://www.americanbar.org/content/dam/aba/publications/criminal_justice_standards/Treatment_of_Prisoners.authcheckdam.pdf
- Am. Psychiatr. Assoc. 2012. *Position Statement on Segregation of Prisoners with Mental Illness*. Arlington, VA: APA
- Am. Psychol. Assoc. 2016. *Solitary Confinement of Juvenile Offenders*. Washington, DC: APA. <https://www.apa.org/about/gr/issues/cyf/solitary.pdf>
- Am. Public Health Assoc. 2013. *Solitary Confinement as a Public Health Issue*. Washington, DC: APHA. <https://apha.org/policies-and-advocacy/public-health-policy-statements/policy-database/2014/07/14/13/30/solitary-confinement-as-a-public-health-issue>
- Arrigo B, Bullock J. 2008. The psychological effects of solitary confinement on prisoners in supermax units: reviewing what we know and what should change. *Int. J. Offender Ther. Comp. Criminol.* 52:622–40
- Ashker v. Brown*, 4:09-cv-05796-CW (ND Cal. 2014).
- Assoc. State Correct. Adm., Yale Law Sch., Arthur Liman Public Interest Progr. 2015. *Time-in-cell: the ASCA-Liman 2014 National Survey of Administrative Segregation in Prison*. ASCA-Liman Rep., Yale Law Sch., New Haven, CT. https://law.yale.edu/system/files/area/center/liman/document/asca-liman_administrativesegregationreport.pdf
- Assoc. State Correct. Adm., Yale Law Sch., Arthur Liman Public Interest Progr. 2016. *Aiming to reduce time-in-cell: reports from correctional systems on the numbers of prisoners in restricted housing and on the potential of policy changes to bring about reforms*. ASCA-Liman Rep., Yale Law Sch., New Haven, CT. <https://law.yale.edu/system/files/area/center/liman/document/aimingtoreducetic.pdf>
- Barte H. 1989. L'Isolément carcéral. *Perspect. Psychiatr.* 28:252–55
- Bastian B, Haslam N. 2010. Excluded from humanity: the dehumanizing effects of social ostracism. *J. Exp. Soc. Psychol.* 46:107–13
- Bauer M, Priebe S, Haring B, Adamczak K. 1993. Long-term mental sequelae of political imprisonment in East Germany. *J. Nerv. Ment. Dis.* 181:257–62
- Beck A. 2015. *Use of restrictive housing in U.S. prisons and jails, 2011–2012*. Bur. Justice Stat. Rep. NCJ 249209, US Dep. Justice, Washington, DC
- Bize R, Johnson J, Plotnikoff R. 2007. Physical activity level and health-related quality of life in the general adult population: a systematic review. *Prev. Med.* 45(6):401–15
- Briggs C, Sundt J, Castellano T. 2003. The effect of supermax security prisons on aggregate levels of institutional violence. *Criminology* 41:1341–76
- Brodsky S, Scogin F. 1988. Inmates in protective custody: First data on emotional effects. *Forensic Rep.* 1:267–280
- Buntin J. 2010. Exodus: how America's reddest state—and its most notorious prison—became a model of corrections reform. *Governing* 23:20–27
- Butler H, Steiner B, Makarios M, Travis L. 2017. Assessing the effects of exposure to supermax confinement on offender postrelease behaviors. *Prison J.* 97(3):275–95
- Cacioppo S, Cacioppo J. 2012. Decoding the invisible forces of social connections. *Front. Integr. Neurosci.* 6(51): 1–7
- Cascio C. 2010. Somatosensory processes in neurodevelopmental disorders. *J. Neurodev. Disord.* 2:62–69
- Cloyes K, Lovell D, Allen D, Rhodes L. 2006. Assessment of psychosocial impairment in a supermaximum security unit sample. *Crim. Justice Behav.* 33:760–781
- Colvin M. 1992. *The Penitentiary in Crisis: From Accommodation to Riot in New Mexico*. Albany, NY: State Univ. New York Press
- Comm. Crime Prev. Crim. Justice. 2015. *United Nations Standard Minimum Rules for the Treatment of Prisoners*. New York: UN Econ. Soc. Council.
- Cormier B, Williams P. 1966. Excessive deprivation of liberty. *Can. Psychiatr. Assoc. J.* 11:470–84
- Cullen F. 1995. Assessing the penal harm movement. *J. Res. Crime Delinq.* 32:338–58
- DeWall C. 2013. Looking back and forward: lessons learned and moving forward. In *The Oxford Handbook of Social Exclusion*, ed. C DeWall, pp. 301–3. New York: Oxford Univ. Press
- DeWall N, Deckman T, Pond R, Bonser I. 2011. Belongingness as a core personality trait: how social exclusion influences social functioning and personality expression. *J. Personal.* 79:979–1012

- Dobson S, Upadhyaya S, Conyers J, Raghavan R. 2002. Touch in the care of people with profound and complex needs. *J. Learn. Disabil.* 6:351–62
- Egelko R. 2016. Isolation of inmates cut greatly. *San Francisco Chronicle*, Oct. 25, pp. C1, C4.
- Field T. 2002. Violence and touch deprivation in adolescents. *Adolescence* 37:735–49
- Field T. 2005. Touch deprivation and aggression against self among adolescents. In *Developmental Psychobiology of Aggression*, ed. D Stoff, E Susman, pp. 117–40. New York: Cambridge
- Fiorillo D, Sabatini F. 2011. Quality and quantity: the role of social interactions in self-reported individual health. *Soc. Sci. Med.* 73:1644–52
- Fischer A, Manstead A, Zaalberg RR. 2003. Social influences on the emotion process. In *European Review of Social Psychology*, Vol. 14, ed. M Hewstone, W Stroebe, pp. 171–202. Hoboken, NJ: Wiley
- Foster D. 1987. *Detention & Torture in South Africa: Psychological, Legal & Historical Studies*, Cape Town: David Philip
- Gendreau P, Freedman N, Wilde G, Scott G. 1972. Changes in EEG alpha frequency and evoked response latency during solitary confinement. *J. Abnorm. Psychol.* 79:54–59
- Gibbons J, Katzenbach N. 2006. *Confronting Confinement: A Report of the Commission on Safety and Abuse in America's Prisons*. New York: Vera Inst. Justice
- Glaze L, Parks E. 2012. *Correctional populations in the United States, 2011*. Bur. Justice Stat. Rep. NCJ 239972, US Dep. Justice, Washington, DC
- Goetz J, Keltner D, Simon-Thomas E. 2010. Compassion: an evolutionary analysis and empirical review. *Psychol. Bull.* 136:351–74
- Grassian S. 1983. Psychopathological effects of solitary confinement. *Am. J. Psychiatry* 140:1450–54
- Grassian S. 2006. Psychiatric effects of solitary confinement. *Wash. Univ. J. Law Policy* 22:325–83
- Grassian S, Kupers T. 2011. *The Colorado Study versus the reality of supermax confinement*. *Correct. Ment. Health Rep.* 13(1):1–16
- Hafner S, Emeny R, Lacruz M, Baumert J, Herder C, et al. 2011. Association between social isolation and inflammatory markers in depressed and non-depressed individuals: results from the MONICA/KORA study. *Brain Behav. Immun.* 25:1701–7
- Haney C. 1993. “Infamous punishment”: the psychological consequences of isolation. *Natl. Prison Proj. J.* 8(3):3–7, 21
- Haney C. 2003. Mental health issues in long-term solitary and “supermax” confinement. *Crime Delinq.* 49:124–56
- Haney C. 2006. *Reforming Punishment: Psychological Limits to the Pains of Imprisonment*. Washington, DC: Am. Psychol. Assoc. Books
- Haney C. 2009. The social psychology of isolation: why solitary confinement is psychologically harmful. *Prison Serv J.* 181:12–20
- Haney C. 2017. The dimensions of “social death”: psychological reactions to extremely long-term solitary confinement. Unpublished manuscript
- Haney C, Bakhshay S. 2017. Contexts of ill-treatment: the relationship of captivity and prison confinement to cruel, inhuman, or degrading treatment and torture. In *Torture and Its Definition in International Law*, ed. M Basoğlu, pp. 139–78. New York: Oxford Univ. Press
- Haney C, Lynch M. 1997. Regulating prisons of the future: the psychological consequences of solitary and supermax confinement. *N. Y. Rev. Law Soc. Change* 23:477–570
- Haney C, Weill J, Bakhshay S, Lockett T. 2015. Examining jail isolation: what we don’t know can be profoundly harmful. *Prison J.* 96:121–52
- Heiden Z. 2013. *Change Is Possible: A Case Study of Solitary Confinement Reform in Maine*. Portland, ME: ACLU Maine. <https://www.aclu.org/report/change-possible-case-study-solitary-confinement-reform-maine>
- Hertenstein M, Keltner D, App B, Bulleit B, Jaskolka AR. 2006. Touch communicates distinct emotions. *Emotion* 6:528–533
- Hertenstein M, Weiss S, eds. 2011. *The Handbook of Touch: Neuroscience, Behavioral, and Health Perspectives*. New York: Springer
- Hodgins S, Cote G. 1991. The mental health of penitentiary inmates in isolation. *Can. J. Criminol.* 33:177–82

- Hunt G, Reigel S, Morales T, Waldorf D. 1993. Changes in prison culture: Prison gangs and the case of the Pepsi generation. *Soc. Probl.* 40:398–409
- Ill. Dep. Correct. 2013. *Efficiencies Fact Sheet – FY2013 Budget*. Springfield, IL: Ill. Dep. Correct. <https://www.illinois.gov/gov/budget/Documents/Budget%20Book/FY%202013/FINAL%20Efficiencies%20Fact%20Sheet%20-%20FY2013%20Budget.pdf>
- In re Medley*, 134 U.S. 160 (1890)
- Int. Psychol. Trauma Symp. 2007. Istanbul statement on the use and effects of solitary confinement. *Int. Psychol. Trauma Symp., Istanbul*, Dec. 9. http://www.univie.ac.at/bimtor/dateien/topic8_istanbul_statement_effects_solconfinment.pdf
- Jones D. 1976. *The Health Risks of Imprisonment*. Lexington, KY: Lexington Books
- Kaba F, Lewis A, Glowa-Kollisch S, Hadler J, Lee D, et al. 2014. Solitary confinement and risk of self-harm among jail inmates. *Am. J. Public Health* 104:442–47
- Karremans J, Heslenfeld D, van Dillen L, Van Lange P. 2011. Secure attachment partners attenuate neural responses to social exclusion: an fMRI investigation. *Int. J. Psychophysiol.* 81:44–50
- Kelman H. 1976. Violence without restraint: reflections on the dehumanization of victims and victimizers. In *Varieties of Psychobiology*, ed. G Kren, L Rappaport, pp. 282–314. New York: Springer
- Koch I. 1986. Mental and social sequelae of isolation: the evidence of deprivation experiments and of pretrial detention in Denmark. In *The Expansion of European Prison Systems*, ed. B Rolston, M Tomlinson, pp. 119–29. Florence, Italy: Eur. Group Study Deviance Soc. Control
- Kupers T. 2008. What to do with the survivors? Coping with long-term effects of isolated confinement. *Crim. Justice Behav.* 35:1005–16
- Lanes E. 2009. The association of administrative segregation placement and other risk factors with the self-injury-free time of male prisoners. *J. Offender Rehabil.* 48:529–46
- Lanes E. 2011. Are the “worst of the worst” self-injurious prisoners more likely to end up in long-term maximum-security segregation? *Int. J. Offender Rehabil.* 55:1034–50
- Lieberman M. 2013. *Social: Why Our Brains Are Wired to Connect*. New York: Random House
- Lippman M. 1994. The development and drafting of the United Nations Convention Against Torture and Other Cruel, Inhuman or Degrading Treatment or Punishment. *Boston Coll. Int. Comp. Law Rev.* 27:275–335
- Lovell D, Cloyes K, Allen D, Rhodes L. 2000. Who lives in super-maximum custody? A Washington State study. *Fed. Probat.* 64(2):33–38
- Lovell D, Johnson L, Cain K. 2007. Recidivism of supermax prisoners in Washington. *Crime Delinq.* 53:633–56
- Lovell D, Toch H. 2011. Some observations about the Colorado Segregation Study. *Correct. Ment. Health Rep.* 13(1):3–4, 14–15
- Madrid v. Gomez*, 889 F. Supp. 1146 (1995)
- Mears D, Bales W. 2009. Supermax incarceration and recidivism. *Criminology* 47:1131–66
- Ment. Health Am. 2011. *Position Statement 24: Seclusion and Restraints*. Alexandria, VA: MHA. <http://www.nmha.org/positions/seclusion-restraints>
- Metzner J, Fellner J. 2010. Solitary confinement and mental illness in U.S. prisons: a challenge for medical ethics. *J. Acad. Psychiatry Law* 38:104–8
- Miller H, Young G. 1997. Prison segregation: administrative detention remedy or mental health problem? *Crim. Behav. Ment. Health* 7:85–94
- Mitchell K. 2012. Colorado prisons turn away from heavy use of solitary confinement. *Denver Post*. June 3. <http://www.denverpost.com/2012/06/03/colorado-prisons-turn-away-from-heavy-use-of-solitary-confinement/>
- Morgan R, Gendreau P, Smith P, Gray A, Labrecque R, et al. 2016. Quantitative synthesis of the effects of administrative segregation on inmates’ well-being. *Psychol. Public Policy Law* 22:439–61
- Morris R. 2016. Exploring the effect of exposure to short-term solitary confinement among violent prison inmates. *J. Quant. Criminol.* 32:1–22
- Natl. Alliance Mental Illn. 2016. *Public Policy Platform of the National Alliance on Mental Illness*. Arlington, VA: NAMI. 12th ed. <https://www.nami.org/About-NAMI/Policy-Platform>

- Natl. Comm. Correct. Health Care. 2016. Position statement: solitary confinement (isolation). *J. Correct. Health Care* 22:257–63
- Natl. Res. Counc. 2014. *The Growth of Incarceration in the United States: Exploring Causes and Consequences*. Washington, DC: Natl. Acad. Press
- New York State Bar Assoc. 2013. *Committee on Civil Rights Report to the House of Delegates: Solitary Confinement in New York State*. Albany, NY: NYSBA. <http://www.nysba.org/WorkArea/DownloadAsset.aspx?id=26699>
- New York State Counc. Churches. 2012. *Resolution Opposing the Use of Prolonged Solitary Confinement in the Correctional Facilities of New York State and New York City*. Albany, NY: New York State Counc. Churches. <https://sites.google.com/site/nyscouncilofchurches/priorities/on-solitary-confinement>
- Obama B. 2016. Why we must rethink solitary confinement. *Washington Post*, Jan. 25. https://www.washingtonpost.com/opinions/barack-obama-why-we-must-rethink-solitary-confinement/2016/01/25/29a361f2-c384-11e5-8965-0607e0e265ce_story.html?utm_term=.2367a0d39f64
- O’Keefe M. 2017, March. Reflections on Colorado’s Administrative Segregation Study. *Nif J.* 287:1–7
- O’Keefe M, Klebe K, Stucker A, Sturm K, Leggett W. 2010. *One Year Longitudinal Study of the Psychological Effects of Administrative Segregation*. Colorado Spring, CO: Colo. Dep. Correct.
- O’Keefe M, Klebe K, Metzner J, Dvoskin J, Fellner J, Stucker A. 2013. A longitudinal study of administrative segregation. *J. Am. Acad. Psychiatry Law* 41:49–60
- Patterson R, Hughes K. 2008. Review of completed suicides in the California Department of Corrections and Rehabilitation, 1999–2004. *Psychiatr. Serv.* 59:676–82
- Pawlaczyk G, Hundsdorfer B. 2010. Tamms supermax: expensive but is it necessary? *State Journal Register*, Jan. 2, <http://www.sj-r.com/article/20100103/NEWS/301039984>
- Penedo F, Dahn J. 2005. Exercise and well-being: a review of mental and physical health benefits associated with physical activity. *Curr. Opin. Psychiatry*. 18:189–93
- Presbyt. Church (USA). 2012. *Commissioners’ Resolution 11–22. On Prolonged Solitary Confinement in U.S. Prisons*. Louisville, KY: Presbyt. Church (USA). [https://pc-biz.org/MeetingPapers/\(S\(em2ohnl5h5sdehz2rjteqxtn\)\)/Explorer.aspx?id=4389](https://pc-biz.org/MeetingPapers/(S(em2ohnl5h5sdehz2rjteqxtn))/Explorer.aspx?id=4389)
- Rabbin. Assembl. 2012. *Resolution on Prison Conditions and Prisoner Isolation*. New York: Rabbin. Assembl. <http://www.rabbinicalassembly.org/story/resolution-prison-conditions-and-prisoner-isolation?tp=377>
- Raemisch R. 2012. My night in solitary. *New York Times*, Febr. 20, http://www.nytimes.com/2014/02/21/opinion/my-night-in-solitary.html?_r=0
- Raemisch R. 2017. Why we ended long-term solitary confinement in Colorado. *New York Times*, Oct. 12, p. A25. <https://www.nytimes.com/2017/10/12/opinion/solitary-confinement-colorado-prison.html>
- Raemisch R, Wasko K. 2015. *Open the Door: Segregation Reforms in Colorado*. Colorado Springs, CO: CDOC. <https://drive.google.com/file/d/0B30yLl0I1yBRY2h2UDBCZ0Q5WIE/view>
- Reiter K. 2012. Parole, snitch, or die: California’s supermax prisons and prisoners, 1997–2007. *Punishm. Soc.* 14:530–63
- Reiter K. 2016. 23/7: *Pelican Bay Prison and the Rise of Long-Term Solitary Confinement*. New Haven, CT: Yale Univ. Press
- Rhodes L, Lovell D. 2011. Is “adaptation” the right question? Addressing the larger context of administrative segregation: commentary on one year longitudinal study of the psychological effects of administrative segregation. *Correct. Ment. Health* 21:1–9
- Riveland C. 1999. *Supermax Prisons: Overview and General Considerations*. Washington, DC: US Dep. Justice. <http://static.nicic.gov/Library/014937.pdf>
- Ross J, ed. 2013. *The Globalization of Supermax Prisons*. New Brunswick, NJ: Rutgers Univ. Press
- Rothman D. 1971. *The Discovery of the Asylum: Social Order and Disorder in the New Republic*. Boston: Little Brown
- Russell D, Peplau L, Cutrona C. 1980. The Revised UCLA Loneliness Scale: concurrent and discriminant validity evidence. *J. Personal. Soc. Psychol.* 39:472–80

- Saarni C. 1999. *The Development of Emotional Competence*. New York: Guilford Press
- Sarnoff I, Zimbardo P. 1961. Anxiety, fear, and social affiliation. *J. Abnorm. Soc. Psychol.* 62:356–63
- Schachter S. 1959. *The Psychology of Affiliation: Experimental Studies of the Sources of Gregariousness*. Stanford, CA: Stanford Univ. Press
- Schachter S, Singer J. 1962. Cognitive, social, and physiological determinants of emotional state. *Psychol. Rev.* 69:379–99
- Scott G, Gendreau P. 1969. Psychiatric implications of sensory deprivation in a maximum security prison. *Can. Psychiatr. Assoc. J.* 12:337–41
- Shalev S. 2009. *Supermax: Controlling Risk Through Solitary Confinement*. Cullompton, UK: Willan Publ.
- Shalev S, Lloyd M. 2011. If this be method, yet there is madness in it: commentary on one year longitudinal study of the psychological effects of administrative segregation. *Correct. Ment. Health* 21:1–7
- Shallice T. 1974. Solitary confinement—a torture revived? *New Scientist*, Novemb. 28, pp. 666–67
- Smith P. 2006. The effects of solitary confinement on prison inmates: a brief history and review of the literature. In *Crime and Justice*, Vol. 34, ed. M Tonry, pp. 441–528. Chicago: Univ. Chicago Press
- Smith P. 2011. The effects of solitary confinement: commentary on one year longitudinal study of the psychological effects of administrative segregation. *Correct. Ment. Health* 21:1–11
- Soc. Correct. Physicians. 2013. *Position Statement, Restricted Housing of Mentally Ill Inmates*. Littleton, CO: ACCP. http://accpmed.org/restricted_housing_of_mentally_ill.php
- Sommier F, Genefke I. 1986. Psychotherapy for victims of torture. *Br. J. Psychiatry* 149:323–29
- Spec. Rapp. Torture Other Cruel Inhuman Degrading Treat. Punishm. 2011. *Interim Report of the Special Rapporteur of the Human Rights Council on Torture and Other Cruel, Inhuman or Degrading Treatment or Punishment*, U.N. Doc A/66/268, pp. 76–78, August 5, <http://solitaryconfinement.org/uploads/SpecRapTortureAug2011.pdf>
- Stellar J, Keltner D. 2014. Compassion. In *Handbook of Positive Emotions*, ed. M Tugade, M Shiota, L Kirby, pp. 329–41. New York: Guilford
- Stern M. 2014. Society of Correctional Physicians calls for caution placing mentally ill in solitary: an important band-aid. *J. Correct. Health Care* 20:92–94
- Sundt J, Castellano T, Briggs C. 2008. The sociopolitical context of prison violence and its effect in Illinois. *Prison J.* 88:94–122
- Tapley L. 2011. Reform comes to Maine supermax: new commissioner cuts population by more than half; prisoner rights advocates help in the reform. *Portland Phoenix*, Sept. 15, <https://www.prisonlegalnews.org/news/2011/sep/15/reform-comes-to-maine-supermax-new-commissioner-cuts-population-by-more-than-half-prisoner-rights-advocates-help-in-the-reform/>
- Thornicroft G. 1991. Social deprivation and rates of treated mental disorder: developing statistical models to predict psychiatric service utilization. *Br. J. Psychiatry* 158:475–84
- Tiedens L, Leach C, eds. 2004. *The Social Life of Emotions*. New York: Cambridge Univ. Press
- Toch H. 1975. *Men in Crisis: Human Breakdowns in Prisons*. Chicago: Aldine Publ.
- Truax S. 1984. Determinants of emotion attributions: a unifying view. *Motiv. Emot.* 8:33–54
- Twenge J, Catanese K, Baumeister R. 2003. Social exclusion and the deconstructed state: time perception, meaninglessness, lethargy, lack of emotion, and self awareness. *J. Personal. Soc. Psychol.* 85:409–23
- US Dep. Justice. 2013. Letter to the Honorable Tom Corbett, Re: *Investigation of the State Correctional Institution at Cresson and Notice of Expanded Investigation*, May 31, 2013, at p. 5, http://www.justice.gov/crt/about/spl/documents/cresson_findings_5-31-13.pdf
- US Dep. Justice. 2016. Report and Recommendations Concerning the Use of Restrictive Housing. <https://www.justice.gov/archives/dag/report-and-recommendations-concerning-use-restrictive-housing>
- Volkart R. 1983. *Einzelhaft: Eine Literaturübersicht* (Solitary confinement: A literature survey). *Psychol. -Schweiz. Z. Psychol. Und Ihre Anwend.* 42:1–24
- Volkart R, Dittrich A, Rothenfluh T, Werner P. 1983a. *Eine Kontrollierte Untersuchung über Psychopathologische Effekte der Einzelhaft* (A controlled investigation on psychopathological effects of solitary confinement), *Psychologie - Schweizerische Zeitschrift für Psychologie und ihre Anwendungen* 42:25–46
- Volkart R, Rothenfluh T, Kobelt W, Dittrich A, Ernst K. 1983b. *Einzelhaft als Risikofaktor für Psychiatrische Hospitalisierung*. *Psychiatr. Clin.* 16:365–77

- Waligora B. 1974. *Funkcjonowanie Człowieka W Warunkach Izolacji Wieziennej* (How men function in conditions of penitentiary isolation). *Ser. Psychol. Pedagog.* 34:1–123
- Walters R, Callagan J, Newman A. 1963. Effect of solitary confinement on prisoners. *Am. J. Psychiatry* 119:771–73
- Weiss R. 1995. The attachment bond in childhood and adulthood. In *Attachment Across the Life Cycle*, ed. C Parkes, J Stevenson-Hinde, P Marris, pp. 66–76. London: Routledge
- Whittaker S. 1988. Counseling torture victims. *Couns. Psychol.* 16:272–78
- Wooldredge J. 1999. Inmate experiences and psychological well-being. *Crim. Justice Behav.* 26:235–50

Contents

The Discipline

- Reflections on Disciplines and Fields, Problems, Policies, and Life
James F. Short 1
- Replication in Criminology and the Social Sciences
William Alex Pridemore, Matthew C. Makel, and Jonathan A. Plucker 19

Crime and Violence

- Bringing Crime Trends Back into Criminology: A Critical Assessment
of the Literature and a Blueprint for Future Inquiry
Eric P. Baumer, María B. Vélez, and Richard Rosenfeld 39
- Immigration and Crime: Assessing a Contentious Issue
Graham C. Ousey and Charis E. Kubrin 63
- The Long Reach of Violence: A Broader Perspective on Data, Theory,
and Evidence on the Prevalence and Consequences of Exposure
to Violence
Patrick Sharkey 85
- Victimization Trends and Correlates: Macro- and Microinfluences
and New Directions for Research
Janet L. Lauritsen and Maribeth L. Rezey 103
- Situational Opportunity Theories of Crime
Pamela Wilcox and Francis T. Cullen 123
- Schools and Crime
Paul J. Hirschfeld 149

Punishment and Policy

- Collateral Consequences of Punishment: A Critical Review
and Path Forward
David S. Kirk and Sara Wakefield 171

Understanding the Determinants of Penal Policy: Crime, Culture, and Comparative Political Economy <i>Nicola Lacey, David Soskice, and David Hope</i>	195
Varieties of Mass Incarceration: What We Learn from State Histories <i>Michael C. Campbell</i>	219
The Politics, Promise, and Peril of Criminal Justice Reform in the Context of Mass Incarceration <i>Katherine Beckett</i>	235
The Prison	
Inmate Society in the Era of Mass Incarceration <i>Derek A. Kreager and Candace Kruttschnitt</i>	261
Restricting the Use of Solitary Confinement <i>Craig Haney</i>	285
Developmental and Life-Course Criminology	
Desistance from Offending in the Twenty-First Century <i>Bianca E. Bersani and Elaine Eggleston Doherty</i>	311
On the Measurement and Identification of Turning Points in Criminology <i>Holly Nguyen and Thomas A. Loughbran</i>	335
Economics of Crime	
Gun Markets <i>Philip J. Cook</i>	359
Offender Decision-Making in Criminology: Contributions from Behavioral Economics <i>Greg Pogarsky, Sean Patrick Roche, and Justin T. Pickett</i>	379
Police and Courts	
Policing in the Era of Big Data <i>Greg Ridgeway</i>	401
Reducing Fatal Police Shootings as System Crashes: Research, Theory, and Practice <i>Lawrence W. Sherman</i>	421
The Problems With Prosecutors <i>David Alan Sklansky</i>	451

Monetary Sanctions: Legal Financial Obligations in US Systems of Justice <i>Karin D. Martin, Bryan L. Sykes, Sarah Shannon, Frank Edwards, and Alexes Harris</i>	471
Forensic DNA Typing <i>Erin Murphy</i>	497

Errata

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<http://www.annualreviews.org/errata/criminol>