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THE SCIENCE OF SOLITARY: EXPANDING THE HARMFULNESS NARRATIVE

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ABSTRACT—The harmful effects of solitary confinement have been established in a variety of direct observations and empirical studies that date back to the nineteenth century, conducted in many different countries by researchers with diverse disciplinary backgrounds. This Essay argues that these effects should be situated and understood in the context of a much larger scientific literature that documents the adverse and sometimes life-threatening psychological and physical consequences of social isolation, social exclusion, loneliness, and the deprivation of caring human touch as they occur in free society. These dangerous conditions are the hallmarks of solitary confinement. Yet they are imposed on prisoners in far more toxic forms that exacerbate their harmful effects, are incurred in addition to the adverse consequences of incarceration per se, and operate in ways that increase their long-term negative impact. This broader empirical and theoretically grounded scientific perspective expands the harmfulness narrative about solitary confinement and argues in favor of much greater restrictions on its use.

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INTRODUCTION

Knowledge about the psychological and physical harms inflicted by solitary confinement has evolved considerably over the last several decades.[1] Ironically, growing awareness of its serious adverse effects coincided with the increasingly widespread use of the practice during the era of mass incarceration that began in the 1970s.[2] This recent several-decade period of prison growth also represents the "modern era" of solitary confinement in corrections, in contrast to its widespread—and, for a time, nearly universal—use in the nineteenth century. Over a century ago, the terrible effects that solitary confinement had on prisoners led to condemnation of the practice

[1] "Solitary confinement" is a term of art in corrections, one whose longstanding negative connotations have spawned a number of seemingly less pejorative alternative descriptors across different jurisdictions (including "administrative segregation," "close management," "security housing," and what appears to be the current favorite, "restrictive housing"). In this Essay, I will use the original term to encompass all of these variations. From a psychological perspective, "solitary confinement" is defined less by the purpose for which it is imposed, or the exact amount of time during which prisoners are confined to their cells, than by the degree to which they are deprived of normal, direct, meaningful social contact and denied access to positive environmental stimulation and activity. Thus, even a regime incorporating a considerable amount of out-of-cell time during which a prisoner is simultaneously prohibited from engaging in normal, direct, meaningful social contact and positive stimulation or programming would still constitute a painful and potentially damaging form of solitary confinement. Especially in a prison context, the terms "normal" and "direct" mean that the contact itself is not mediated or obstructed by bars, restraints, security glass or screens, or the like. "Meaningful" refers to voluntary contact that permits purposeful activities of common interest or consequence that takes place in the course of genuine social interaction and engagement with others.

[2] For several different perspectives on this pivotal era in the United States' criminal justice history and its consequences for prisoners and the larger society from which they were drawn, see MICHELLE ALEXANDER, THE NEW JIM CROW: MASS INCARCERATION IN THE AGE OF COLORBLINDNESS (rev. ed. 2012); MARIEKE LIEM, AFTER LIFE IMPRISONMENT: REENTRY IN THE ERA OF MASS INCARCERATION (2016); NAT'L RESEARCH COUNCIL OF THE NAT'L ACADS., THE GROWTH OF INCARCERATION IN THE UNITED STATES: EXPLORING CAUSES AND CONSEQUENCES (Jeremy Travis, Bruce Western & F. Stevens Redburn eds., 2014).

and a long period of relative disuse. Thus, even by the mid-nineteenth century, many state prison systems had concluded that the once widely used harsh form of complete isolation was "impracticable, inhuman, and intolerably expensive."[3]

Of course, solitary confinement—"the hole"—was never completely eliminated. Most prisons and jails retained special cells in which prisoners could be kept for relatively brief periods of time to separate them from others for safety reasons, or as a form of punishment for disciplinary infractions. For example, in Gresham Sykes's classic account of a typical maximum-security prison in the United States in the mid-1950s, he reported that solitary confinement was used sparingly "for those prisoners who are being punished for infractions of the prison rules."[4] Moreover, even before the era of mass incarceration produced widespread overcrowding and countenanced harsh treatment of prisoners more broadly, some especially troubled and cruel prisons did utilize solitary confinement as a form of severe punishment. For example, in the mid-1950s, Mississippi's Parchman prison farm built a special "Maximum Security Unit" (or MSU), described as a "low-slung brick-and-concrete bunker in the middle of a former cotton field, surrounded by four guard towers, two razor-wire fences, and a series of electric gates" that housed the state's new gas chamber and a solitary confinement unit.[5] The latter was used "for the isolation and punishment of disruptive convicts" that one prisoner recalled as a place "where they just beat the living crap out of you. . . . Nobody left there without bumps and busted bones."[6]

However, the widespread use of longer-term solitary confinement returned with a vengeance in the 1970s. Changes brought about in the recent modern era of the use of solitary confinement saw significant increases in the numbers of persons who were subjected to it and the lengths of time they were kept there. Not only have prisoners been placed in solitary confinement for months and years rather than days or weeks, but increasing numbers of prisoners have been subjected to this form of harsh treatment.[7] Its renewed

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[3] *Adoption of the Separate System in the States of Central Europe,—and Its Prospects Else-Where*, 12 PA. J. PRISON DISCIPLINE & PHILANTHROPY 79 (1857).

[4] GRESHAM M. SYKES, THE SOCIETY OF CAPTIVES: A STUDY OF A MAXIMUM SECURITY PRISON 7 (First Princeton Classic ed. 2007) (1958). As an indication of exactly how sparingly even short-term solitary confinement was employed, the offense of "possession of home-made knife, metal, and emery paper" resulted in "5 days in segregation with restricted diet." *Id.* at 43.

[5] DAVID M. OSHINSKY, "WORSE THAN SLAVERY": PARCHMAN FARM AND THE ORDEAL OF JIM CROW JUSTICE 228 (1996).

[6] *Id.* at 229.

[7] *See, e.g.*, *infra* note 8; *see also* John J. Gibbons & Nicholas de B. Katzenbach, *Confronting Confinement: A Report of the Commission on Safety and Abuse in America's Prisons*, 22 WASH. U. J.L.

popularity continued until recently, despite accumulating evidence that solitary confinement fails to achieve the penological purposes for which it is ostensibly used, is far more expensive to implement and operate than other correctional regimes, and produces negative psychological and physical consequences that raise serious questions about its constitutionality and its status as a form of torture.[8]

My own involvement in prison research and litigation examining the psychological effects of isolation parallels the recent resurgence of this condemnable punishment in the late 1970s and early 1980s. The early challenges to solitary confinement in which I was involved focused on what were sometimes termed "lock-up" units in different parts of the country. These cases resulted in narrowly drawn court opinions concerned largely with the degraded environmental conditions inside these facilities and whether prisoners were deprived of the "basic necessities of life," interpreted to mean "adequate food, clothing, shelter, sanitation, medical care, and personal safety."[9] The era of mass incarceration was already underway when these challenges were brought, which meant that overcrowded prison systems throughout the country were struggling to maintain order in the face of an unprecedented influx of prisoners. In an attempt to meet this and other demands, prison administrators often adopted an exigent strategy: to segregate prisoners whom they viewed as disruptive or problematic. The

& POL'Y 385, 461–62 (2006) (reporting that between 1995 and 2000 the overall number of prisoners in segregation or solitary confinement increased 40%, and the number in "disciplinary segregation" increased 68%); Ryan T. Sakoda & Jessica T. Simes, *Solitary Confinement and the U.S Prison Boom*, CRIM. JUST. POL'Y REV. (Dec. 29, 2019), https://journals.sagepub.com/doi/full/10.1177/0887403419895315 [https://perma.cc/QY8H-2B4E] (reporting the increasing use and especially the increasing lengths of stay in solitary confinement units in the Kansas prison system that roughly coincided with the era of mass incarceration in the United States).

[8] See the studies and statements reviewed and summarized in *Consensus Statement of the Santa Cruz Summit on Solitary Confinement and Health*, 115 NW. U. L. REV. 335 (2020) [hereinafter *Santa Cruz Summit*]; Craig Haney & Shirin Bakhshay, *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: AN INTERDISCIPLINARY APPROACH 139 (Metin Başoğlu ed., 2017); Craig Haney, *Restricting the Use of Solitary Confinement*, 1 ANN. REV. CRIMINOLOGY 285 (2018) [hereinafter Haney, *Restricting Solitary Confinement*]; *see also* Federica Coppola, *The Brain in Solitude: An (Other) Eighth Amendment Challenge to Solitary Confinement*, 6 J.L. & BIOSCIENCES 1 (2019); Jules Lobel, *Prolonged Solitary Confinement and the Constitution*, 11 U. PA. J. CONST. L. 115 (2008). Relatedly, philosopher Kimberley Brownlee has argued that social deprivation, which she defined as "a persisting lack of minimally adequate opportunities for decent or supportive human contact including interpersonal interaction, associative inclusion, and interdependent care," represents a deprivation of a basic human right. Kimberley Brownlee, *A Human Right Against Social Deprivation*, 63 PHIL. Q. 199, 199 (2013).

[9] Hoptowit v. Ray, 682 F.2d 1237, 1258 (9th Cir. 1982) (opining on conditions of confinement in the isolation, segregation, and protective custody units in Washington State Penitentiary).

decisions to do so were often reached on vague, unspecified, and questionable bases. Some appeared to stem from racially tinged fears about prisoners of color becoming politically militant and better organized, including those accused of "practic[ing] Black Pantherism."[10] As Heather Thompson's book about the tragic 1971 Attica prisoner rebellion notes, by the start of the 1970s several New York prisons operated dreaded solitary confinement units that were used to house prisoners whom correctional officials perceived to be political activists, many of whom were prisoners of color.[11] Her compelling account is also replete with examples of the role that law enforcement and prison officers' racial fears of and animosities toward

[10] This was one of the specific justifications for the continued retention of members of the "Angola 3" in a form of solitary confinement inside Louisiana's Angola Prison Farm for approximately four decades. *See* ALBERT WOODFOX WITH LESLIE GEORGE, SOLITARY 192 (2019). The extremely long-term, indefinite solitary confinement of prisoners—lasting a decade or more—was often reserved for prisoners perceived to be members of prison gangs, a designation that frequently had racial or ethnic implications. *See, e.g.*, Keramet A. Reiter, *Parole, Snitch, or Die: California's Supermax Prisons and Prisoners, 1997-2007*, 14 PUNISHMENT & SOC'Y 530 (2012); Keramet Reiter, Joseph Ventura, David Lovell, Dallas Augustine, Melissa Barragan, Thomas Blair, Kelsie Chesnut, Pasha Dashtgard, Gabriela Gonzalez, Natalie Pifer & Justin Strong, *Psychological Distress in Solitary Confinement: Symptoms, Severity, and Prevalence in the United States, 2017-2018*, 110 AM. J. PUB. HEALTH SUPPLEMENT S56, S58 (2020); *see also* Scott N. Tachiki, *Indeterminate Sentences in Supermax Prisons Based upon Alleged Gang Affiliations: A Reexamination of Procedural Protection and a Proposal for Greater Procedural Requirements*, 83 CALIF. L. REV. 1115, 1117–49 (1995). Comprehensive surveys and individual statewide investigations have documented the overrepresentation of prisoners of color in solitary confinement units. For example, a self-report survey of a very large sample of U.S. correctional jurisdictions conducted from 2017 to 2018 by the Association of State Correctional Administrators (ASCA) and the Yale Law School's Liman Center for Public Interest Law found that among the thirty-three jurisdictions that provided racial breakdowns, there were modest racial disproportions in solitary confinement overall—including an especially large overrepresentation of African-American women in solitary confinement compared to their white counterparts—and wide variations between jurisdictions. THE ASS'N OF STATE CORR. ADM'RS & THE LIMAN CTR. FOR PUB. INTEREST LAW AT YALE LAW SCHOOL, REFORMING RESTRICTIVE HOUSING: THE 2018 ASCA-LIMAN NATIONWIDE SURVEY OF TIME-IN-CELL (2018), https://law.yale.edu/centers-workshops/arthur-liman-center-public-interest-law/liman-center-publications [https://perma.cc/68A2-KZXH]; *see also* Margo Schlanger, *Prison Segregation: Symposium Introduction and Preliminary Data on Racial Disparities*, 18 MICH. J. RACE & L. 241 (2013) (reporting racial disproportions in the use of solitary confinement in several different state prison systems); Sakoda & Simes, *supra* note 7 (reporting racial disproportions in the use of solitary confinement in the Kansas prison system, especially in the durations of time spent in solitary confinement by young African-American men); Michael Schwirtz, Michael Winerip & Robert Gebeloff, *The Scourge of Racial Bias in New York State's Prisons*, N.Y. TIMES (Dec. 3, 2016) https://www.nytimes.com/2016/12/03/nyregion/new-york-state-prisons-inmates-racial-bias.html?_r=0 [https://perma.cc/529Y-MJDX] (reporting that African-American prisoners were 65% more likely to be sent to solitary confinement than whites). *See generally* Andrea C. Armstrong, *Race, Prison Discipline, and the Law*, 5 U.C. IRVINE L. REV. 759 (2015).

[11] HEATHER ANN THOMPSON, BLOOD IN THE WATER: THE ATTICA PRISON UPRISING OF 1971 AND ITS LEGACY (2016).

African-American prisoners played in fueling their overreactions before, during, and after their violent, deadly retaking of the prison.

It is important to note that the era of mass incarceration and increased use of solitary confinement followed on the heels of the civil rights and Black Power movements of the 1960s and 1970s. Both are now understood as having "empowered marginalized groups to engage in protest that demanded a radical redistribution of political, social and economic power."[12] In the larger society, and certainly in U.S. prisons, the attempted power redistribution was met with forceful resistance that was designed to suppress and eliminate it. The fact that "the American penal system [was] a locus of black power activism"[13] was arguably one factor that contributed to the rise of long-term solitary confinement. In my experience, a disproportionate number of the prisoners who were placed in solitary confinement, and especially those who were subjected to extremely long-term solitary confinement—stays measured in years or even decades—were prisoners of color.[14] The often unverified perception that their radical political views—as much or more than their specific actions—posed a "threat to the safety and security of the institution" served as the premise for their lengthy, often indefinite isolation.

In any event, prisoners began to be crammed inside makeshift lockup units for expediency more than anything else,[15] and the nineteenth century's lessons about the harmfulness of solitary confinement were either forgotten

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[12] Zoe Colley, *War Without Terms: George Jackson, Black Power and the American Radical Prison Rights Movement, 1941–1971*, 101 HISTORY 265, 266–67 (2016). See also historian Joe Street's speculation that the postprison demise of former Black Panther Party leader Huey Newton was caused not only by unrelenting police harassment but also the "soul break[ing]" effects of his experiences in solitary confinement. Joe Street, *The Shadow of the Soul Breaker: Solitary Confinement, Cocaine, and the Decline of Huey P. Newton*, 84 PAC. HIST. REV. 333, 336–37, 345 (2015).

[13] Colley, *supra* note 12, at 267; *see also* DAN BERGER, CAPTIVE NATION: BLACK PRISON ORGANIZING IN THE CIVIL RIGHTS ERA (2014); DONALD F. TIBBS, FROM BLACK POWER TO PRISON POWER: THE MAKING OF JONES V. NORTH CAROLINA PRISONERS' LABOR UNION (2012); Angela A. Allen-Bell, *Perception Profiling & Prolonged Solitary Confinement Viewed Through the Lens of the Angola 3 Case: When Prison Officials Become Judges, Judges Become Visually Challenged, and Justice Becomes Legally Blind*, 39 HASTINGS CONST. L.Q. 763, 766 (2012) (discussing the legal implications of the Angola 3 case and the prolonged solitary confinement to which they were subjected).

[14] *See supra* note 10; *see also* Johnson v. Wetzel, 209 F. Supp. 3d 766 (M.D. Pa. 2016) (ordering the release from solitary into general population of an African-American prisoner who, despite suffering ongoing psychological harm, was held in solitary confinement for thirty-six years in the absence of credible evidence that he posed a threat to institutional security).

[15] *See, e.g.*, Toussaint v. Rushen, 553 F. Supp. 1365, 1374–75 (N.D. Cal. 1983) (opining on the fact that prisoners were being "arbitrarily placed and retained in segregated housing" as a way "to simply warehouse" them, including "for reasons other than their conduct").

or ignored in the face of what were perceived as more pressing concerns.[16] The devolution of the federal penitentiary in Marion, Illinois is an instructive example. Marion was opened in 1963 and was intended to replace the high-security federal prison at Alcatraz, which closed the same year.[17] Although it was designated as the highest security level prison in the federal system, as Stephen Richards noted, "In effect, Marion was a small version of a 'mainline' penitentiary."[18] A "control unit" with a limited number of cells was constructed within Marion penitentiary in 1973, and was operated as a dedicated solitary confinement unit in which prisoners were intended to be housed in nearly complete isolation for extremely long periods of time. However, largely in response to the lethal violence that occurred within the control unit in October 1983, the entire prison was "locked down" and began to be operated as a long-term lockup prison. Thus, after 1983, Marion was "the first federal prison operated entirely as a high-security isolation supermax."[19]

That same year, psychiatrist Stuart Grassian published an in-depth clinical assessment of a group of prisoners in a solitary confinement unit in a prison in Walpole, Massachusetts. His findings helped to raise awareness about the potentially severe psychiatric consequences of this kind of extreme prison isolation.[20] Increased concern about the issue came at an especially opportune time, as more prison systems in the United States were beginning a return to the long-abandoned practice of solitary confinement. In fact, a number of prison systems reacted to the unprecedented influx of prisoners in the 1970s and 1980s (that included a significant number of mentally ill prisoners whose needs penal institutions were thoroughly ill-equipped to address) by creating what was essentially a new prison form. Sometimes called "supermax" prisons, these facilities were explicitly designed to impose extreme levels of isolation (often made possible by the introduction

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[16] In an often-quoted passage from a late nineteenth-century case, *In re Medley*, 134 U.S. 160, 168 (1890), Justice Samuel Miller summarized the consensus view that the once widespread practice of solitary confinement was "too severe." He noted that "[a] considerable number of the prisoners fell, after even a short confinement, into a semi-fatuous condition, from which it was next to impossible to arouse them, and others became violently insane; others still, committed suicide; while those who stood the ordeal better were not generally reformed, and in most cases did not recover sufficient mental activity to be of any subsequent service to the community." *Id.*

[17] Stephen C. Richards, *USP Marion–The First Federal Supermax*, 88 PRISON J. 6, 9 (2008).

[18] *Id.*

[19] *Id.* at 10, 18; *see also* THE MARION EXPERIMENT: LONG-TERM SOLITARY CONFINEMENT & THE SUPERMAX MOVEMENT (Stephen C. Richards ed., 2015). A "high tech" federal supermax, ADX, was opened in 1994, and Marion was eventually converted into a medium-security prison in 2007.

[20] Stuart Grassian, *Psychopathological Effects of Solitary Confinement*, 140 AM. J. PSYCHIATRY 1450, 1450–54 (1983).

of a new generation of correctional technology) and to do so on a long-term basis.[21] As Chase Riveland observed in the late 1990s, in addition to an expedient attempt to manage such an unexpectedly large numbers of prisoners, the proliferation of supermax prisons was also in part motivated by the fact that they were seen as "politically and publicly attractive" facilities that, at the time, had "become political symbols of how 'tough' a jurisdiction ha[d] become."[22]

My first experience inside a truly modern supermax prison occurred in 1990, when I toured the recently opened Security Housing Unit (SHU) at the Pelican Bay State Prison in California. At the time, Pelican Bay's reputation as one of the nation's first and most draconian supermax prisons was just being established. By then, I had been inside many makeshift solitary confinement units where prison systems were beginning to isolate increasingly large numbers of prisoners for what would eventually amount to unprecedented amounts of time. I had learned that many prisoners in these units struggled to adapt to and survive the degraded conditions, enforced idleness, and extreme social deprivation to which they were subjected. However, researchers like myself were just beginning to understand and document the depth and breadth of the suffering.

In contrast to the crowded, noisy, and dirty lockup units I visited in places like San Quentin and Folsom State Prisons, the Penitentiary of New Mexico, and the Washington State Penitentiary, the free-standing SHU at Pelican Bay was stark and frightening for an entirely different reason: it gave no indication that it was a place that housed actual human beings. Although I had been inside many prisons before my first visit to Pelican Bay, I had never seen one like this, resembling a massive storage facility where inanimate objects are housed. The sights and sounds of human activity or evidence that real people lived there—the sorts of things that every prison manifested—were nowhere to be found. Even inside the housing units, or

[21] CHASE RIVELAND, NAT'L INST. CORR., U.S. DEP'T JUSTICE, SUPERMAX PRISONS: OVERVIEW AND GENERAL CONSIDERATIONS 2 (1999). Riveland correctly noted in 1999 that "[t]here is no universal definition of what supermax facilities are and who should be placed in them." *Id.* at 4. Although there is still no precise definition for what constitutes a "supermax" prison, they are generally identified by: (1) the extent to which the facility itself is devoted to isolating prisoners (i.e., typically a freestanding facility rather than a unit within a prison that otherwise does not utilize isolation); (2) the heightened degree of isolation they impose (primarily because most were explicitly designed to isolate prisoners and tend to be somewhat newer facilities that employ correctional technology in order to more effectively do so); and (3) the reasons or justifications for placing prisoners in solitary confinement, with a disproportionate number of prisoners confined there because of who the prison system perceives them to be, including representing generalized threats to the safety and security of the institution, rather than specific acts for which they are being punished. *See id.* at 4–6.

[22] *Id.* at 5.

"pods," there was an eerie, unsettling quiet, and a reliance more on technological than human forms of control. These conditions led *60 Minutes* correspondent Mike Wallace to exclaim, when he first entered one of the Pelican Bay housing units, that it "looks a little bit like a spaceship or a space station."[23]

In 1992, after the prison had been operating for only a few years, I began a series of court-ordered visits there to interview a large sample of prisoners, selected randomly from the prison roster, to try to determine whether and how they were being affected by the experience. The level of suffering and trauma they reported shocked me and led me to spend the next several decades studying the effects of prison isolation in scores of prisons and correctional systems around the country. When I returned to Pelican Bay some twenty years later, it was a bittersweet reunion with several of the men from my original sample—ones who, tragically, had never left the SHU in the intervening two decades.[24]

The basic harmfulness of solitary confinement is now a largely settled scientific fact. A number of articles published in recent years have comprehensively catalogued a wide range of studies demonstrating the adverse psychological effects and other consequences that befall persons who are subjected to this cruel form of imprisonment.[25] A few outlier studies

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[23] *60 Minutes: Wallace at Pelican Bay* (CBS television broadcast Sept. 12, 1993), https://www.cbs.com/shows/60_minutes/video/c77u_9DB_JMZCukdtURkP9SUu0TFLlK8/from-the-archives-60-minutes-first-pelican-bay-report/ [https://perma.cc/RPS7-YBFB].

[24] As I will describe later in this Essay, I returned to the SHU at Pelican Bay in 2011 to conduct interviews with a representative sample of prisoners who had been confined there on an extremely long-term basis (i.e., ten years or more). *See infra* notes 130–136 and accompanying text. I was also able to separately interview a number of men who had been in the SHU essentially since it had opened in 1989, including several from my original 1992 sample. *See* Craig Haney, *Solitary Confinement, Loneliness, and Psychological Harm* [hereinafter Haney, *Solitary Confinement, Loneliness, and Psychological Harm*], *in* SOLITARY CONFINEMENT: EFFECTS, PRACTICES, AND PATHWAYS TOWARD REFORM 129, 134–35 (Jules Lobel & Peter Scharff Smith eds., 2020).

[25] These many studies have been carefully reviewed in a number of publications. *See, e.g.*, Kristin G. Cloyes, David Lovell, David G. Allen & Lorna A. Rhodes, *Assessment of Psychosocial Impairment in a Supermaximum Security Unit Sample*, 33 CRIM. JUST. & BEHAV. 760 (2006); Stuart Grassian, *Psychiatric Effects of Solitary Confinement*, 22 WASH. U. J.L. & POL'Y 325 (2006); Craig Haney & Mona Lynch, *Regulating Prisons of the Future: A Psychological Analysis of Supermax and Solitary Confinement*, 23 N.Y.U. REV. L. & SOC. CHANGE 477 (1997); Haney, *Restricting Solitary Confinement*, *supra* note 8; Peter Scharff Smith, *The Effects of Solitary Confinement on Prison Inmates: A Brief History and Review of the Literature*, 34 CRIME & JUST. 441 (2006); *see also*, Mimosa Luigi, Laura Dellazizzo, Charles-Édouard Giguère, Marie-Hélène Goulet & Alexandre Dumais, *Shedding Light on "the Hole": A Systematic Review and Meta-Analysis on Adverse Psychological Effects and Mortality Following Solitary Confinement in Correctional Settings*, FRONTIERS IN PSYCHIATRY, Aug. 2020.

that purport to find little or no harm have been largely debunked,[26] and many professional mental health, medical, legal, human rights, and correctional organizations have promulgated strong position statements that urge or require significantly limiting the use of solitary confinement and even prohibiting it entirely for especially vulnerable groups of prisoners.[27] Placement in solitary confinement can have dramatic, even lethal, effects; for example, research continues to show that the highest rates of self-harm and suicide in prison occur in conditions of isolation.[28] However, even those prisoners who survive the experience of solitary confinement often suffer long-lasting physical and psychological damage.[29]

In this Essay, I address several separate but interrelated issues that are often only alluded to in discussions about the nature and effects of solitary confinement. Although sometimes overlooked, they importantly expand the narrative about the harmfulness of this increasingly unjustifiable practice. These issues are critical to make explicit and to directly address, in part to respond to the occasional but persistent claims minimizing the magnitude of the harm inflicted by solitary confinement. A very small number of defenders of solitary confinement continue to advance three specific minimizing arguments, namely that: (1) there is simply not enough evidence to establish the harmfulness of solitary confinement; (2) although the negative effects may be real, their impact is *de minimis*; and (3) whatever effects do occur will dissipate quickly over time, so that persons adversely affected soon regain their prior level of psychological well-being.

However, I argue that these assertions can and should be turned on their heads. Indeed, their *opposite* is actually true. First, we now know that solitary

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[26] *See, e.g.*, Craig Haney, *The Psychological Effects of Solitary Confinement: A Systematic Critique*, 47 CRIME & JUST. 365 (2018) [hereinafter Haney, *Psychological Effects of Solitary Confinement*].

[27] *See, e.g.*, *WMA Statement on Solitary Confinement*, WORLD MED. ASS'N (Nov. 28, 2019), https://www.wma.net/policies-post/wma-statement-on-solitary-confinement/ [https://perma.cc/S8TW-8X2Y] (prohibiting the use of solitary confinement with children, pregnant women, women less than six months postpartum, breastfeeding mothers and those with infants, prisoners with "mental health problems," and those with "physical disabilities or other medical conditions where their conditions would be exacerbated by such measures").

[28] *See, e.g.*, Louis Favril, Rongqin Yu, Keith Hawton & Seena Fazel, *Risk Factors for Self-Harm in Prison: A Systematic Review and Meta-Analysis*, 7 LANCET PSYCHIATRY 682 (2020); Fatos Kaba, Andrea Lewis, Sarah Glowa-Kollisch, James Hadler, David Lee, Howard Alper, Daniel Selling, Ross MacDonald, Angela Solimo, Amanda Parsons & Homer Venters, *Solitary Confinement and Risk of Self-Harm Among Jail Inmates*, 104 AM. J. PUB. HEALTH 442 (2014); Paolo Roma, Maurizio Pompili, David Lester, Paolo Girardi & Stefano Ferracuti, *Incremental Conditions of Isolation as a Predictor of Suicide in Prisoners*, 233 FORENSIC SCI. INT'L e1, e1 (2013). Prisoners appear to be at greatest risk of suicide early in their stay in solitary confinement, but they remain at risk throughout. *See* Bruce B. Way, Donald A. Sawyer, Sharen Barboza & Robin Nash, *Inmate Suicide and Time Spent in Special Disciplinary Housing in New York State Prison*, 58 PSYCHIATRIC SERVS. 558, 559 (2007).

[29] *See infra* notes 142–153 and accompanying text.

confinement research represents a subset of a much larger scientific literature where the adverse consequences of analogous experiences have been *extensively* documented and are beyond question. Second, the effects of solitary confinement are hardly *de minimis*, especially because they occur *in addition* to the baseline and very substantial harms of imprisonment per se. And finally, the harmful effects can persist long after a person leaves solitary confinement. In fact, sometimes the most disabling consequences manifest themselves most clearly and strongly upon release.

I. THE EFFECTS OF SOLITARY CONFINEMENT ARE SITUATED WITHIN A BROAD AND WELL-ESTABLISHED SCIENTIFIC LITERATURE

It is commonplace and entirely appropriate in scientific circles to repeat the mantra that "more research is needed." In so many words, most empirical articles end with a form of this admonition. It is always a defensible and sometimes necessary refrain. There is really no research topic on which additional data would not be at least marginally useful and some for which, given the relatively undeveloped state of our knowledge, it would be essential. However, that claim that we simply do not have enough data to conclude that solitary confinement is harmful to prisoners is sometimes employed for a different reason—to justify its continued use. Yet the assertion is incorrect and inapt. As I noted earlier, we now have more than sufficient data to conclude that solitary confinement is a harmful practice. The findings that support this conclusion are robust and derive from an array of studies conducted from the nineteenth century onwards by researchers with different kinds of scientific training, employing a variety of methods, and operating in several different continents. Thus, statements to the effect that "existing literature documenting the effects of segregation . . . is inconclusive" are made by authors who are either unaware of the full extent of the research on solitary confinement and what it shows or who, for some reason, fail to consider the larger body of scientific knowledge of which it is a part.[30]

However, beyond ensuring that the *entire* database that bears directly on the issue is taken into account, it is also important to understand that although solitary confinement is often discussed as if it were *sui generis*—a distinct, unique phenomenon that only occurs and therefore can only be studied and assessed in prison settings—it has clear analogues in the free world. These civilian analogues are critical for prison scholars and researchers as well as litigators, correctional policymakers, and legal

[30] Carl B. Clements, Richard Althouse, Robert K. Ax, Phillip R. Magaletta, Thomas J. Fagan & J. Stephen Wormith, *Systemic Issues and Correctional Outcomes: Expanding the Scope of Correctional Psychology*, 34 CRIM. JUST. & BEHAV. 919, 925 (2007).

decision-makers to consistently acknowledge, advert to, and rely on. They serve as the broad and deep scientific underpinnings of research that demonstrates the harmful effects of solitary confinement per se. Thus, knowledge about solitary confinement does not exist in an empirical or theoretical vacuum. Instead, what we know about the negative psychological effects of prison isolation is situated in a much larger scientific literature about the harmfulness of social isolation, loneliness, and social exclusion in society more generally. There is now a wealth of scientific knowledge about the adverse consequences of these negative experiences as they occur in contexts and settings outside prison.

This broader literature about the deleterious impact of isolation is the scientific framework through which the effects of solitary confinement should be understood and interpreted, in part because prison research is notoriously difficult to conduct and even more difficult to conduct properly. Prisons are the quintessential closed institutions in our society to which meaningful access is especially challenging, if not often impossible, to arrange.[31] Moreover, even those intrepid researchers who do obtain access to prisons typically lack control over where and how prisoners are housed and for how long, as these decisions are governed by correctional staff rather than scientific contingencies.[32] Solitary confinement units are especially closed off to outsiders and dominated by nonnegotiable correctional mandates and practices. Absent these constraints in the world outside prison, researchers from a wide variety of disciplines have been able to conduct a vast number of scientific studies on the effects of social isolation and social exclusion and the related experience of loneliness. This extensive literature forms the much larger empirical database and theoretical framework in which the results of research on solitary confinement in prison are situated.

Current scientific knowledge on the effects of social isolation and social exclusion is based on a wealth of methodologically sophisticated studies, many of which have been conducted over the last three decades. The data

[31] It is a truism among researchers that "[p]risons are far more shrouded from publicity" than other aspects of the criminal justice system. Aaron Doyle & Richard V. Ericson, *Breaking into Prison: News Sources and Correctional Institutions*, 38 CANADIAN J. CRIMINOLOGY 155, 180 (1996). The lack of direct access affects the nature, amount, and quality of the scholarship as well as news coverage that is devoted to these facilities. *See, e.g.*, Beth Schwartzapfel, *Inside Stories*, COLUM. JOURNALISM REV. (Mar./Apr. 2013), https://archives.cjr.org/cover_story/inside_stories.php [https://perma.cc/6VD7-C4UD].

[32] The inability of researchers to exercise proper control over their prisoner participants doomed several well-intentioned longitudinal studies of solitary confinement, ones in which normal correctional decision-making resulted in unacceptable and confounding levels of attrition and the contamination of research conditions that doomed any meaningful interpretation of the results. *See, e.g.*, Haney, *Psychological Effects of Solitary Confinement*, *supra* note 26.

produced have corroborated, underscored, and deepened what many of us who have been studying prison solitary confinement have learned as well—namely, that meaningful social contact is a fundamental human need whose deprivation has a range of potentially very serious psychological and even physical effects. Because the research on the harmfulness of social isolation in general is so extensive, I am able to review no more than a representative sample of its most important findings in this Essay. However, even this brief summary establishes that there is now an extremely impressive body of scientific knowledge that enables us to more fully understand and appreciate the nature and significance of the adverse effects of solitary confinement in prison.[33]

The need to belong, to be socially connected, and to have social contact with others has been recognized for decades in psychology and other behavioral sciences.[34] Psychologists have long known that social contact is fundamental to establishing and maintaining emotional health and well-being. In fact, years ago, social psychologist Herbert Kelman argued that denying persons contact with others was a form of "dehumanization"—it denied people something that was fundamental to their humanity.[35] As one researcher put it more recently: "Since its inception, the field of psychology emphasized the importance of social connections."[36] Social psychologists have also demonstrated, in classic research conducted decades ago, that "affiliation"—the opportunity to have meaningful contact with others—helps reduce anxiety in the face of uncertainty or fear-arousing stimuli.[37] Indeed, one of the ways that people not only determine the appropriateness of their feelings but also how we establish the very nature and tenor of our emotions is through the social contact we have with others.[38] Thus, prolonged

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[33] *See* Coppola, *supra* note 8, at 186–87 (discussing some of the legal implications of this broader literature for the regulation and elimination of solitary confinement).

[34] *See* Roy F. Baumeister & Mark R. Leary, *The Need to Belong: Desire for Interpersonal Attachments as a Fundamental Human Motivation*, 117 PSYCHOL. BULL. 497, 497 (1995).

[35] Herbert C. Kelman, *Violence Without Moral Restraint: Reflections on the Dehumanization of Victims and Victimizers*, 29 J. SOC. ISSUES 25 (1973).

[36] C. Nathan DeWall, *Looking Back and Forward: Lessons Learned and Moving Ahead*, *in* THE OXFORD HANDBOOK OF SOCIAL EXCLUSION 301, 301 (C. Nathan DeWall ed., 2013).

[37] *See* STANLEY SCHACHTER, THE PSYCHOLOGY OF AFFILIATION: EXPERIMENTAL STUDIES OF THE SOURCES OF GREGARIOUSNESS (1959); Irving Sarnoff & Philip G. Zimbardo, *Anxiety, Fear, and Social Affiliation*, 62 J. ABNORMAL & SOC. PSYCHOL. 356, 356 (1961); Philip Zimbardo & Robert Formica, *Emotional Comparison and Self-Esteem as Determinants of Affiliation*, 31 J. PERSONALITY 141 (1963).

[38] *See* CAROLYN SAARNI, THE DEVELOPMENT OF EMOTIONAL COMPETENCE (1999); Agneta H. Fischer, Antony S.R. Manstead & Ruud Zaalberg, *Social Influences on the Emotion Process*, 14 EUR. REV. SOC. PSYCHOL. 171 (2003); Stanley Schachter & Jerome E. Singer, *Cognitive, Social, and Physiological Determinants of Emotional State*, 69 PSYCHOL. REV. 379, 383–84 (1962); Steven R. Truax,

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.

In addition, Naomi Eisenberger and Matthew Lieberman and others have concluded that there is a neurological basis for "social pain"—the feelings of hurt and distress that come from negative social experiences such as social deprivation, exclusion, rejection, or loss. They and their colleagues have found that the neurological underpinnings of social and physical pain are related; both kinds of feelings share some of the same neural circuitry and computational mechanisms (i.e., they are processed in some of the same ways).[39] Moreover, as they observed, unlike the experience of physical pain, which is largely transitory, social pain is more susceptible to being relived. Indeed, although persons who experience physical pain can recall the qualities and degree of intensity of the painful experience, they are largely unable to reexperience the sensation. Social pain, on the other hand, engages the affective pain system and can be actually relived months, or even years, later.[40]

Not surprisingly then, numerous scientific studies have established the psychological significance of social contact, connectedness, and belongingness. Among other things, researchers have concluded that, as Lieberman put it, the human brain is literally "wired to connect" to other

Determinants of Emotion Attributions: A Unifying View, 8 MOTIVATION & EMOTION 33 (1984). *See generally* THE SOCIAL LIFE OF EMOTIONS (Larissa Z. Tiedens & Colin Wayne Leach eds., 2004).

[39] *See* Naomi I. Eisenberger, *The Pain of Social Disconnection: Examining the Shared Neural Underpinnings of Physical and Social Pain*, 13 NATURE REVS.: NEUROSCIENCE 421, 421 (2012). Eisenberger's and related research found that, although physical and social pain are "not the same experience," they do "share some underlying neural substrates," and there is "a common experiential element" to them both that "motivates individuals to terminate or escape the negative stimulus" they represent. Naomi I. Eisenberger, *Social Pain and the Brain: Controversies, Questions, and Where to Go from Here*, 66 ANN. REV. PSYCHOL. 601, 621 (2015); *see also* Naomi I. Eisenberger, Matthew D. Lieberman & Kipling D. Williams, *Does Rejection Hurt? An fMRI Study of Social Exclusion*, 302 SCIENCE 290 (2003); Naomi I. Eisenberger & Matthew D. Lieberman, *Why Rejection Hurts: A Common Neural Alarm System for Physical and Social Pain*, 8 TRENDS COGNITIVE SCI. 294, 294 (2004); Meghan L. Meyer, Kipling D. Williams & Naomi I. Eisenberger, *Why Social Pain Can Live On: Different Neural Mechanisms Are Associated with Reliving Social and Physical Pain*, PLOS ONE (June 10, 2015) [hereinafter Meyer et al., *Why Social Pain Can Live On*], https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0128294 [https://perma.cc/GDU5-P26T].

[40] Meghan L. Meyer and her colleagues noted that "reliving a socially painful event could lead to other affective experiences besides pain, such as feelings of sadness, loss, or even anger." Meyer et al., *Why Social Pain Can Live On*, *supra* note 39.

persons.[41] Thwarting this need to connect not only undermines psychological well-being but also increases physical morbidity and mortality.[42] Social contact is crucial to normal human development, and when it is impaired, disrupted, or denied, a host of interrelated maladies occur in children as well as adults.[43] Thus, the deprivation of something as fundamentally important as social contact produces a range of predictably negative effects.

Some of the most dramatic demonstrations of the harmful effects of social deprivation have been found in animal research, where researchers are able to employ more intrusive scientific procedures and controls than with humans. These studies have found that social isolation actually alters the brain's neurochemistry, structure, and function. Thus, social isolation operates as a chronic stressor that can change the brain chemistry of animals in ways that negatively affect the cellular mechanisms of aging,[44] precipitate depression-like behavior in mammals,[45] and suppress the animal immune response to illness.[46] Social isolation also leads to anxiety-like behavior in animals, impairs their working memory, and disrupts their brain activity.[47] It also modifies their neuroendocrinal responses in ways that exacerbate the effects of stress,[48] which suggests that isolation is not only stressful in its own

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[41] MATTHEW D. LIEBERMAN, SOCIAL: WHY OUR BRAINS ARE WIRED TO CONNECT (2013). Lieberman wrote that: "Our brains evolved to experience threats to our social connections in much the same way they experience physical pain . . . . The neural link between social and physical pain also ensures that staying socially connected will be a lifelong need, like food and warmth." *Id.* at 4–5.

[42] *See infra* notes 65–81 and the studies cited therein.

[43] *See, e.g.*, Linda A. Chernus, *"Separation/Abandonment/Isolation Trauma:" What We Can Learn from Our Nonhuman Primate Relatives*, 8 J. EMOTIONAL ABUSE 469, 470 (2008) (discussing the harmful developmental consequences of early social deprivation in the form of maternal loss for humans and nonhuman primates).

[44] *See* Jennie R. Stevenson, Elyse K. McMahon, Winnie Boner & Mark F. Haussmann, *Oxytocin Administration Prevents Cellular Aging Caused by Social Isolation*, 103 PSYCHONEUROENDROCRINOLOGY 52, 52–53 (2019).

[45] *See* Yu Gong, Lijuan Tong, Rongrong Yang, Wenfeng Hu, Xingguo Xu, Wenjing Wang, Peng Wang, Xu Lu, Minhui Gao, Yue Wu, Xing Xu, Yaru Zhang, Zhuo Chen & Chao Huang, *Dynamic Changes in Hippocampal Microglia Contribute to Depressive-Like Behavior Induced by Early Social Isolation*, 135 NEUROPHARMACOLOGY 223 (2018).

[46] *See* John P. Capitanio, Stephanie Cacioppo & Steven W. Cole, *Loneliness in Monkeys: Neuroimmune Mechanisms*, 28 CURRENT OPINION BEHAV. SCI. 51, 51 (2019); Wenjuan Wu, Takeshi Yamaura, Koji Murakami, Jun Murata, Kinzo Matsumoto, Hiroshi Watanabe & Ikuo Saiki, *Social Isolation Stress Enhanced Liver Metastasis of Murine Colon 26-L5 Carcinoma Cells by Suppressing Immune Response in Mice*, 66 LIFE SCI. 1827, 1827–28 (2000).

[47] *See* Candela Zorzo, Magdalena Méndez-López, Marta Méndez & Jorge L. Arias, *Adult Social Isolation Leads to Anxiety and Spatial Memory Impairment: Brain Activity Pattern of COx and c-Fos*, 365 BEHAV. BRAIN RES. 170, 170–71 (2019).

[48] *See* Juliano Viana Borges, Betânia Souza de Freitas, Vinicius Antoniazzi, Cristophod de Souza dos Santos, Kelem Vedovelli, Vivian Naziaseno Pires, Leticia Paludo, Maria Noêmia Martins de Lima & Elke Bromberg, *Social Isolation and Social Support at Adulthood Affect Epigenetic Mechanisms, Brain-*

right, but also compromises an organism's ability to tolerate and manage stress more generally.[49]

In fact, the damaging effects of social isolation on laboratory animals are so well documented that they have led governmental and scientific funding organizations, such as the National Research Council, to prohibit researchers from placing animals in completely isolated conditions for prolonged periods.[50] Such treatment is considered unethical and constitutes a basis for denying or revoking funding to scientists who violate this prohibition. As a result, university research facilities that conduct animal research have "institutional animal care and use committees" that promulgate guidelines for conducting animal research, virtually all of which include limitations on the degree to which laboratory animals can be subjected to any form of social isolation.[51]

Derived Neurotrophic Factor Levels and Behavior of Chronically Stressed Rats, 366 BEHAV. BRAIN RES. 36, 36–37 (2019); Marishka K. Brown, Ewa Strus & Nirinjini Naidoo, *Reduced Sleep During Social Isolation Leads to Cellular Stress and Induction of the Unfolded Protein Response*, 40 SLEEP 1, 1 (2017).

[49] Some researchers have discerned what they believe is a relationship between isolation and an animal world analogue of PTSD, noting, for example, that socially isolated mice manifest "an exacerbation of aggressive behavior and . . . an increase in anxiety- and depressive-like behaviors, as well as . . . exaggerated contextual fear responses and impaired fear extinction." Andrea Locci & Graziano Pinna, *Social Isolation as a Promising Animal Model of PTSD Comorbid Suicide: Neurosteroids and Cannabinoids as Possible Treatment Options*, 92 PROGRESS NEURO-PSYCHOPHARMACOLOGY & BIOLOGICAL PSYCHIATRY 243, 244 (2019) (citation omitted).

[50] The National Research Council cautions researchers that, because "[a]ppropriate social interactions among members of the same species" are "essential to normal development and well-being," the "[s]ingle housing of social species should be the exception and justified based on experimental requirements or veterinary-related concerns about animal well-being," "limited to the minimum period necessary," and "enrich[ed]" either by other forms of species-compatible (and even human) contact. INST. FOR LAB. ANIMAL RESEARCH, NAT'L RESEARCH COUNCIL OF THE NAT'L ACADS., GUIDE FOR THE CARE AND USE OF LABORATORY ANIMALS 64 (8th ed. 2011); *see also* Alka Chandna, *Commentary: A Belmont Report for Animals: An Idea Whose Time Has Come*, 29 CAMBRIDGE Q. HEALTHCARE ETHICS 46, 47–48 (2020) (referencing studies documenting the suffering and self-destructive behavior engaged in by laboratory animals confined in "ethologically inappropriate environments" such as social isolation, including the pathological reactions that occur "when primates are deprived of companionship, sufficient space, and sufficient environmental complexity").

[51] For example, Emory University's animal care guidelines mandate "environmental enrichment" for nonhuman primates used in research. The enrichment is aimed at "identifying and providing the environmental stimuli necessary for psychological and physiological wellbeing." INSTITUTIONAL ANIMAL CARE AND USE COMM., EMORY UNIV., ENVIRONMENTAL ENRICHMENT FOR NONHUMAN PRIMATES 1 (2019), http://www.iacuc.emory.edu/documents/policies/360_Environmental_Enrichment_for_Nonhuman_Primates.pdf [https://perma.cc/5UTL-8YJ5] (citation omitted). The Emory guidelines mandate that "all nonhuman primates must be housed with one or more members of the same species." *Id.* at 2. Any exception to this policy requires advanced approval and is "reviewed by the Attending Veterinarian every 30 days." *Id.*

Of course, the results of animal studies are not directly transferable to human populations. However, hundreds of studies done with human participants have reached many of the same conclusions. As I noted above, the scientific literature that documents these adverse effects is far too voluminous to comprehensively review. In the summary that follows, to narrow the focus to a manageable, yet representative sample of studies, I will concentrate primarily on those published in just the last several years.

Scientists have continued to add to existing knowledge about the ways in which social isolation and loneliness in society at large are significant risk factors for a wide range of mental health problems.[52] Specifically, social isolation increases the prevalence of depression and anxiety among

[52] Although very closely related, the experiences of "loneliness" and "social isolation" are not identical. Loneliness is the negative *subjective* feeling of being isolated or disconnected from others, whereas social isolation is the *objective* condition of that disconnection. For obvious reasons, animal studies focus only on the effects of social isolation; studies with human participants may examine one or another or both experiences. *See, e.g.*, Nancy E.G. Newall & Verena H. Menec, *Loneliness and Social Isolation of Older Adults: Why It Is Important to Examine These Social Aspects Together*, 36 J. SOC. & PERS. RELATIONSHIPS 925, 926–27 (2019); Kimberley J. Smith & Christina Victor, *Typologies of Loneliness, Living Alone, and Social Isolation, and Their Associations with Physical and Mental Health*, 39 AGEING & SOC'Y 1709, 1710 (2019); Jingyi Wang, Brynmor Lloyd-Evans, Domenico Giacco, Rebecca Forsyth, Cynthia Nebo, Farhana Mann & Sonia Johnson, *Social Isolation in Mental Health: A Conceptual and Methodological Review*, 52 SOC. PSYCHIATRY & PSYCHIATRIC EPIDEMIOLOGY 1451 (2017). Not surprisingly, there are high levels of loneliness among prisoners housed in the extreme social isolation of solitary confinement. *See* Haney, *Solitary Confinement, Loneliness, and Psychological Harm*, *supra* note 24, at 136. In my review of the broader scientific literature, I will refer to the experience—loneliness or social isolation—as it is identified in the research itself.

adolescents and adults[53] and is also related to psychosis,[54] paranoia,[55] and suicidal behavior.[56] Among those persons who already have been diagnosed or identified as suffering from psychiatric disorders in free society, isolation has been implicated in the persistence of delusional or psychotic beliefs,[57] a lack of insight into one's psychiatric symptoms,[58] and a higher rate of

[53] *See, e.g.*, Joshua Hyong-Jin Cho, Richard Olmstead, Hanbyul Choi, Carmen Carrillo, Teresa E. Seeman & Michael R. Irwin, *Associations of Objective Versus Subjective Social Isolation with Sleep Disturbance, Depression, and Fatigue in Community-Dwelling Older Adults*, 23 AGING & MENTAL HEALTH 1130 (2019); Nathaniel A. Dell, Michelle Pelham & Allison M. Murphy, *Loneliness and Depressive Symptoms in Middle Aged and Older Adults Experiencing Serious Mental Illness*, 42 PSYCHIATRIC REHABILITATION J. 113 (2019); S. Häfner, R.T. Emeny, M.E. Lacruz, J. Baumert, C. Herder, W. Koenig, B. Thorand & K.H. Ladwig, *Association Between Social Isolation and Inflammatory Markers in Depressed and Non-Depressed Individuals: Results from the MONICA/KORA Study*, 25 BRAIN, BEHAV., & IMMUNITY 1701 (2011); Lisa M. Jaremka, Rebecca R. Andridge, Christopher P. Fagundes, Catherine M. Alfano, Stephen P. Povoski, Adele M. Lipari, Doreen M. Agnese, Mark W. Arnold, William B. Farrar, Lisa D. Yee, William E. Carson, III, Tanios Bekaii-Saab, Edward W. Martin, Jr., Carl R. Schmidt & Janice K. Kiecolt-Glaser, *Pain, Depression and Fatigue: Loneliness as a Longitudinal Risk Factor*, 33 HEALTH PSYCHOL. 948 (2014); C. Richardson, E. Oar, J. Fardouly, N. Magson, C. Johnco, M. Forbes & R. Rapee, *The Moderating Role of Sleep in the Relationship Between Social Isolation and Internalising Problems in Early Adolescence*, 50 CHILD PSYCHIATRY & HUM. DEV. 1011 (2019); Ilse M. J. van Beljouw, Eric van Exel, Jenny de Jong Gierveld, Hannie C. Comijs, Marjolijn Heerings, Max. L. Stek & Harm W. J. van Marwijk, *"Being All Alone Makes Me Sad": Loneliness in Older Adults with Depressive Symptoms*, 26 INT'L PSYCHOGERIATRICS 1541 (2014); Lixia Ge, Chun Wei Yap, Reuben Ong & Bee Hoon Heng, *Social Isolation, Loneliness and Their Relationships with Depressive Symptoms: A Population-Based Study*, PLOS ONE (Aug. 23, 2017), https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0182145 [https://perma.cc/63Q4-YZME].

[54] *See, e.g.*, Anson K. C. Chau, Chen Zhu & Suzanne Ho-Wai So, *Loneliness and the Psychosis Continuum: A Meta-Analysis on Positive Psychotic Experiences and a Meta-Analysis on Negative Psychotic Experiences*, 31 INT'L REV. PSYCHIATRY 5 (2019); Dorothy Ann Nejedlo DeNiro, *Perceived Alienation in Individuals with Residual-Type Schizophrenia*, 16 ISSUES IN MENTAL HEALTH NURSING 185 (1995).

[55] *See, e.g.*, Sarah Butter, Jamie Murphy, Mark Shevlin & James Houston, *Social Isolation and Psychosis-Like Experiences: A UK General Population Analysis*, 9 PSYCHOSIS 291 (2017).

[56] *See, e.g.*, COMM. ON PATHOPHYSIOLOGY & PREVENTION OF ADOLESCENT & ADULT SUICIDE, INST. OF MED. OF THE NAT'L ACADS., REDUCING SUICIDE: A NATIONAL IMPERATIVE (S.K. Goldsmith, T. C. Pellmar, A. M. Kleinman & W. E. Burney eds., 2002); Raffaella Calati, Chiara Ferrari, Marie Brittner, Osmano Oasi, Emilie Olié, André F. Carvalho & Philippe Courtet, *Suicidal Thoughts and Behaviors and Social Isolation: A Narrative Review of the Literature*, 245 J. AFFECTIVE DISORDERS 653 (2019); John L. Oliffe, Genevieve Creighton, Steve Robertson, Alex Broom, Emily K. Jenkins, John S. Ogrodniczuk & Oliver Ferlatte, *Injury, Interiority, and Isolation in Men's Suicidality*, 11 AM. J. MEN'S HEALTH 888 (2017).

[57] *See, e.g.*, P. A. Garety, E. Kuipers, D. Fowler, D. Freeman & P. E. Bebbington, *A Cognitive Model of the Positive Symptoms of Psychosis*, 31 PSYCHOL. MED. 189, 190–91 (2001) (writing about the way that social marginalization contributes to beliefs about the self as "vulnerable to threat, or about others as dangerous" and the way that "social isolation contributes to the acceptance of . . . psychotic appraisal by reducing access to alternative more normalizing explanations").

[58] *See, e.g.*, R. White, P. Bebbington, J. Pearson, S. Johnson & D. Ellis, *The Social Context of Insight in Schizophrenia*, 35 SOC. PSYCHIATRY & PSYCHIATRIC EPIDEMIOLOGY 500 (2000).

hospitalization and rehospitalization.[59] Persons experiencing mental health crises also report severe loneliness which may, in turn, exacerbate their mental illness,[60] creating a downward spiral toward decompensation.

Social isolation can also lead to reduced cognitive functioning in humans.[61] Some studies have shown that the significant direct relationship between loneliness and decreased cognitive functioning is partially mediated by the presence of depressive symptoms.[62] However, a study by Elvira Lara and her colleagues found that loneliness and social isolation lead to decreased intellectual functioning on a variety of cognitive tests over time, even after controlling for depression among older participants. To prevent such a decline, the study recommended "the enhancement of social participation and the maintenance of emotionally supportive relationships."[63] Other studies demonstrate that even when loneliness does not directly produce cognitive decline, it has an effect on neural processes that, in turn, "relate[s] to worse cognitive performance on processing speed and attention, executive function, working memory, and verbal memory immediate recall."[64]

As in studies with laboratory animals, there are a number of well documented harmful physical and medical outcomes associated with social isolation and loneliness in humans, including adverse effects on neurological

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[59] *See, e.g.*, Tennyson Mgutshini, *Risk Factors for Psychiatric Re-Hospitalization: An Exploration*, 19 INT'L J. MENTAL HEALTH NURSING 257 (2010); Graham Thornicroft, *Social Deprivation and Rates of Treated Mental Disorder: Developing Statistical Models to Predict Psychiatric Service Utilisation*, 158 BRIT. J. PSYCHIATRY 475 (1991).

[60] *See, e.g.*, Jingyi Wang, Brynmor Lloyd-Evans, Louise Martson, Ruimin Ma, Farhana Mann, Francesca Solmi & Sonia Johnson, *Epidemiology of Loneliness in a Cohort of UK Mental Health Community Crisis Service Users*, 55 SOC. PSYCHIATRY & PSYCHIATRIC EPIDEMIOLOGY 811 (2019).

[61] *See, e.g.*, Paolo de Sousa, William Sellwood, Alaw Eldridge & Richard P. Bentall, *The Role of Social Isolation and Social Cognition in Thought Disorder*, 269 PSYCHIATRY RES. 56 (2018); Laura Fratiglioni, Hui-Xin Wang, Kjerstin Ericsson, Margaret Maytan & Bengt Winblad, *Influence of Social Network on Occurrence of Dementia: A Community-Based Longitudinal Study*, 355 LANCET 1315 (2000); Aparna Shankar, Mark Hamer, Anne McMunn & Andrew Steptoe, *Social Isolation and Loneliness: Relationships with Cognitive Function During 4 Years of Follow-Up in the English Longitudinal Study of Ageing*, 75 PSYCHOSOMATIC MED. 161 (2013).

[62] *See, e.g.*, Joanna McHugh Power, Jianjun Tang, Rose Ann Kenny, Brian A. Lawlor & Frank Kee, *Mediating the Relationship Between Loneliness and Cognitive Function: The Role of Depressive and Anxiety Symptoms*, 24 AGING & MENTAL HEALTH 1071, 1076 (2019) (noting that among older adults there is likely a reciprocal effect between loneliness and decreased cognitive functioning).

[63] Elvira Lara, Francisco Félix Caballero, Laura Alejandra Rico-Uribe, Beatriz Olaya, Josep Maria Haro, José Luis Ayuso-Mateos & Marta Miret, *Are Loneliness and Social Isolation Associated with Cognitive Decline?*, 34 INT'L J. GERIATRIC PSYCHIATRY 1613, 1614, 1620 (2019).

[64] Terea Montoliu, Vanesa Hidalgo & Alicia Salvador, *The Relationship Between Loneliness and Cognition in Healthy Older Men and Women: The Role of Cortisol*, 107 PSYCHONEUROENDOCRINOLOGY 270, 277 (2019).

and endocrinological processes. As one group of researchers summarized, "These findings indicate that loneliness may compromise the structural and functional integrity of multiple brain regions."[65] For example, Nathan Spreng and his colleagues have shown that loneliness is inversely related to a sense of "life meaning" (i.e., a subjective sense of purpose), and that both are in turn related to measures of neural connectivity.[66] In addition, social isolation adversely impacts the functioning of the human immune system,[67] undermines health outcomes in general,[68] and is associated with higher rates of mortality. That is, the experience of social isolation literally lowers the age at which people die.[69] In fact, researchers have concluded that the health

[65] Laetitia Mwilambwe-Tshilobo, Tian Ge, Minqi Chong, Michael A. Ferguson, Bratislav Misic, Anthony L. Burrow, Richard M. Leahy & R. Nathan Spreng, *Loneliness and Meaning in Life Are Reflected in the Intrinsic Network Architecture of the Brain*, 14 SOC. COGNITIVE & AFFECTIVE NEUROSCIENCE 423, 424 (2019); *see also* Jacob Y. Stein, Yafit Levin, Yael Lahav, Orit Uziel, Heba Abumock & Zahava Solomon, *Perceived Social Support, Loneliness, and Later Life Telomere Length Following Wartime Captivity*, 37 HEALTH PSYCH. 1067 (2018).

[66] Mwilambwe-Tshilobo et al., *supra* note 65.

[67] *See, e.g.*, Naomi I. Eisenberger, Mona Moieni, Tristen K. Inagaki, Keely A. Muscatell & Michael R. Irwin, *In Sickness and in Health: The Co-Regulation of Inflammation and Social Behavior*, 42 NEUROPSYCHOPHARMACOLOGY REVIEWS. 242 (2017); Sarah D. Pressman, Sheldon Cohen, Gregory E. Miller, Anita Barkin, Bruce S. Rabin & John J. Treanor, *Loneliness, Social Network Size, and Immune Response to Influenza Vaccination in College Freshmen*, 24 HEALTH PSYCH. 297 (2005); Bert N. Uchino, Ryan Trettevik, Robert G. Kent de Grey, Sierra Cronan, Jasara Hogan & Brian R. W. Baucom, *Social Support, Social Integration, and Inflammatory Cytokines: A Meta-Analysis*, 37 HEALTH PSYCH. 462 (2018).

[68] *See, e.g.*, Johannes Beller & Adina Wagner, *Loneliness, Social Isolation, Their Synergistic Interaction, and Mortality*, 37 HEALTH PSYCH. 808 (2018); Caitlin E. Coyle & Elizabeth Dugan, *Social Isolation, Loneliness and Health Among Older Adults*, 24 J. AGING & HEALTH 1346 (2012); Damiano Fiorillo & Fabio Sabatini, *Quality and Quantity: The Role of Social Interactions in Self-Reported Individual Health*, 73 SOC. SCI. & MED. 1644 (2011); Liesl M. Heinrich & Eleonora Gullone, *The Clinical Significance of Loneliness: A Literature Review*, 26 CLINICAL PSYCH. REV. 695 (2006).

[69] *See* Marko Elovainio, Christian Hakulinen, Laura Pulkki-Råback, Marianna Virtanen, Kim Josefsson, Markus Jokela, Jussi Vahtera & Mika Kivimäki, *Contribution of Risk Factors to Excess Mortality in Isolated and Lonely Individuals: An Analysis of Data from the UK Biobank Cohort Study*, 2 LANCET PUB. HEALTH e260 (2017); Brett Friedler, Joshua Crapser & Louise McCullough, *One Is the Deadliest Number: The Detrimental Effects of Social Isolation on Cerebrovascular Diseases and Cognition*, 129 ACTA NEUROPATHOLOGY 493 (2015); Louise C. Hawkley & John T. Cacioppo, *Loneliness Matters: A Theoretical and Empirical Review of Consequences and Mechanisms*, 40 ANNALS BEHAV. MED. 218, 219 (2010); Julianne Holt-Lunstad, Timothy B. Smith & J. Bradley Layton, *Loneliness and Social Isolation as Risk Factors for Mortality: A Meta-Analytic Review*, 10 PERSPS. PSYCH. SCI. 227 (2015); Matthew Pantell, David Rehkopf, Douglas Jutte, Leonard Syme, John Balmes & Nancy Adler, *Social Isolation: A Predictor of Mortality Comparable to Traditional Clinical Risk Factors*, 103 AM. J. PUB. HEALTH 2056 (2013); Jussi Tanskanen & Timo Anttila, *A Prospective Study of Social Isolation, Loneliness, and Mortality in Finland*, 106 AM. J. PUB. HEALTH 2042 (2016); Andrea Fleisch Marcus, Alex H. Illescas, Bernadette C. Hohl & Adana A. M. Llanos, *Relationships Between Social Isolation, Neighborhood Poverty, and Cancer Mortality in a Population-Based Study of US Adults*,

risk of social isolation on mortality rates is comparable to that caused by cigarette smoking.[70]

In part because of its dramatic life-shortening effects, as one recent review of the literature put it, "The problem of loneliness and social isolation is of growing global concern."[71] Indeed, the well-documented negative psychological and physical effects of social isolation and loneliness have led to international recognition that they represent a worldwide public health crisis.[72] Acknowledging this fact, an international commission assembled by former French President Nicholas Sarkozy and led by Nobel Prize winners Joseph Stiglitz and Amartya Sen and economist Jean-Paul Fitoussi identified social connectedness as one of the key indicators of a nation's social progress, quality of life, and well-being.[73] More recently, the social isolation of older adults was the focus of two Canadian National Seniors Council reports, which discussed the nature of the psychological and medical risks of social isolation and what can be done to address them.[74] In 2017, the former Surgeon General of the United States, Vivek Murthy, warned business leaders about what he described as a "loneliness epidemic" and its harmful health consequences.[75] In a more recent book, Murthy elaborated on the

PLOS ONE (Mar. 8, 2017), https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0173370 [https://perma.cc/89KS-DGE3].

[70] *See* Julianne Holt-Lunstad, Timothy B. Smith, Mark Baker, Tyler Harris & David Stephenson, *Social Relationships and Mortality Risk: A Meta-Analytic Review*, PLOS MED. (July 27, 2010), https://journals.plos.org/plosmedicine/article?id=10.1371/journal.pmed.1000316 [https://perma.cc/J8DP-JN99].

[71] Cathrine Mihalopoulos, Long Khanh-Dao Le, Mary Lou Chatterton, Jessica Bucholc, Julianne Holt-Lunstad, Michelle H. Lim & Lidia Engel, *The Economic Costs of Loneliness: A Review of Cost-of-Illness and Economic Evaluation Studies*, 55 SOC. PSYCHIATRY & PSYCHIATRIC EPIDEMIOLOGY 823, 834 (2019). Although the authors concluded that it was difficult to precisely estimate the economic costs of loneliness and social isolation, they noted that most studies "reported excess healthcare costs associated with loneliness/isolation," and that the projected costs "are likely to be under-estimated." *Id.*

[72] *See, e.g.*, N. Leigh-Hunt, *An Overview of Systematic Reviews on the Public Health Consequences of Social Isolation and Loneliness*, 152 PUB. HEALTH 157 (2017).

[73] JOSEPH E. STIGLITZ, AMARTYA SEN & JEAN-PAUL FITOUSSI, REPORT BY THE COMMISSION ON THE MEASUREMENT OF ECONOMIC PERFORMANCE AND SOCIAL PROGRESS (2009), https://www.cpc.unc.edu/projects/rlms-hse/publications/1921 [https://perma.cc/KD95-F2GA].

[74] THE NAT'L SENIORS COUNCIL, GOV'T OF CAN., REPORT ON THE SOCIAL ISOLATION OF SENIORS 2013-2014 (2014), https://www.canada.ca/en/national-seniors-council/programs/publications-reports/2014/scoping-social-isolation.html [https://perma.cc/2NY8-8FYH]; THE NAT'L SENIORS COUNCIL, GOV'T OF CAN., WHO'S AT RISK AND WHAT CAN BE DONE ABOUT IT? A REVIEW OF THE LITERATURE ON THE SOCIAL ISOLATION OF DIFFERENT GROUPS OF SENIORS (2017), https://www.canada.ca/en/national-seniors-council/programs/publications-reports/2017/review-social-isolation-seniors.html [https://perma.cc/E4DZ-SSJB].

[75] *See* Vivek Murthy, *Work and the Loneliness Epidemic: Reducing Isolation at Work Is Good for Business*, HARV. BUS. REV. (2017), https://hbr.org/cover-story/2017/09/work-and-the-loneliness-epidemic [https://perma.cc/QWQ6-HZCK]; Dan Schawbel, *Vivek Murthy: How to Solve the Work*

negative effects of social isolation, made recommendations about how to best combat them, and promoted what he called "the healing power of human connection."[76] In 2018, the British Prime Minister, Theresa May, appointed a "Minister for Loneliness" for her nation,[77] as news magazines conceded that it represented a "serious public health problem."[78] Finally, in 2020, in a study designed to contribute to "a larger global effort to combat the adverse health impacts of social isolation,"[79] a National Academy of Sciences Committee concluded that the negative consequences of social isolation "may be comparable to or greater than other well-established risk factors such as smoking, obesity, and physical inactivity,"[80] and another group of prominent researchers termed the experience of loneliness a "modern behavioral epidemic" and cautioned that it represented a "lethal behavioral toxin" that accounted for more annual deaths than cancer or strokes.[81]

Paralleling the research that has been conducted on the adverse psychological and medical effects of social isolation and loneliness, there is a closely related and well-developed body of literature on what has been termed "social exclusion"—what happens when people are involuntarily and purposely separated from others, as they are in prison solitary confinement units. These studies, too, show that this kind of social separation produces a host of serious negative consequences. For example, Mark Leary and his colleagues have shown that increasing degrees of social exclusion can successively lower self-esteem, which in turn relates to greater levels of depression, anxiety, and a host of other psychological problems. In fact, they have suggested that self-esteem itself may be largely a reflection of a

Loneliness Epidemic, FORBES (Oct. 7, 2017, 9:54 AM), https://www.forbes.com/sites/danschawbel/2017/10/07/vivek-murthy-how-to-solve-the-work-loneliness-epidemic-at-work/#22653b417172 [https://perma.cc/DNC3-5B4K].

[76] VIVEK H. MURTHY, TOGETHER: THE HEALING POWER OF HUMAN CONNECTION IN A SOMETIMES LONELY WORLD (2020).

[77] *See* Ceylan Yeginsu, *U.K. Appoints a Minister for Loneliness*, N.Y. TIMES (Jan. 17, 2018), https://www.nytimes.com/2018/01/17/world/europe/uk-britain-loneliness.html [https://perma.cc/QX94-ZY7A].

[78] *Loneliness Is a Serious Public-Health Problem*, ECONOMIST (Sept. 1, 2018), https://www.economist.com/international/2018/09/01/loneliness-is-a-serious-public-health-problem [https://perma.cc/YQ3X-P2SJ].

[79] COMM. ON THE HEALTH & MED. DIMENSIONS OF SOC. ISOLATION & LONELINESS IN OLDER ADULTS, THE NAT'L ACADS. OF SCIS., ENG'G & MED., SOCIAL ISOLATION AND LONELINESS IN OLDER ADULTS: OPPORTUNITIES FOR THE HEALTH CARE SYSTEM, at xii (2020).

[80] *Id.* at 2–12.

[81] Dilip V. Jeste, Ellen E. Lee & Stephanie Cacioppo, *Battling the Modern Behavioral Epidemic of Loneliness: Suggestions for Research and Interventions*, 77 JAMA PSYCHIATRY 553 (2020).

person's level or state of social connectedness.[82] Researchers have also documented the fact that excluding persons from contact with others 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."[83] Indeed, the subjective experience of social exclusion can result in what have been called "cognitive deconstructive states," which include emotional numbing, reduced empathy, cognitive inflexibility, lethargy, and an absence of meaningful thought.[84]

Social exclusion also has been shown to heighten people's feelings of physical vulnerability and increase the expectation that they will experience physical harm in the future.[85] It may also precipitate aggressive behavior—"action-oriented coping"—in response.[86] Two authors summarized these overall effects this way:

> Social exclusion is detrimental and can lead to depression, alienation, and sometimes even to violent behaviour. Laboratory studies show that even a brief episode of exclusion lowers mood, causes social pain, which is analogous to physical pain, and elicits various behavioural responses, such as aggressive behaviour or affiliation-seeking behavior.[87]

In fact, the editor of the *Oxford Handbook of Social Exclusion* concluded the volume by summarizing the "serious threat" that social exclusion represents to psychological health and well-being, including "increase[d] salivary cortisol levels . . . and blood flow to brain regions

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[82] *See, e.g.*, Mark R. Leary, Alison L. Haupt, Kristine S. Straussen & Jason T. Chokel, *Calibrating the Sociometer: The Relationship Between Interpersonal Appraisals and State Self-Esteem*, 74 J. PERSONALITY & SOC. PSYCHOL. 1290, 1297–98 (1998); Mark R. Leary, Lisa S. Schreindorfer & Alison L. Haupt, *The Role of Low Self-Esteem in Emotional and Behavioral Problems: Why Is Low Self-Esteem Dysfunctional?*, 14 J. SOC. & CLINICAL PSYCHOL. 297, 307 (1995).

[83] Brock Bastian & Nick Haslam, *Excluded from Humanity: The Dehumanizing Effects of Social Ostracism*, 46 J. EXPERIMENTAL SOC. PSYCHOL. 107, 107 (2010) (internal citations omitted).

[84] *See* Jean M. Twenge, Kathleen R. Catanese & Roy F. Baumeister, *Social Exclusion and the Deconstructed State: Time Perception, Meaninglessness, Lethargy, Lack of Emotion, and Self-Awareness*, 85 J. PERSONALITY & SOC. PSYCHOL. 409, 411, 415, 421 (2003).

[85] *See, e.g.*, Kristy K. Dean, Grace Wentworth & Nikole LeCompte, *Social Exclusion and Perceived Vulnerability to Physical Harm*, 18 SELF & IDENTITY 87 (2019).

[86] Katharina Reiter-Scheidl, Ilona Papousek, Helmut K. Lackner, Manuela Paechter, Elisabeth M. Weiss & Nilüfer Aydin, *Aggressive Behavior After Social Exclusion Is Linked with the Spontaneous Initiation of More Action-Oriented Coping Immediately Following the Exclusion Episode*, 195 PHYSIOLOGY & BEHAV. 142, 142, 148 (2018).

[87] Aleksi H. Syrjämäki & Jari K. Hietanen, *The Effects of Social Exclusion on Processing of Social Information—A Cognitive Psychology Perspective*, 58 BRIT. J. SOC. PSYCHOL. 730, 730 (2018) (citations omitted) (footnotes omitted); *see also* C. Nathan DeWall, Timothy Deckman, Richard S. Pond, Jr. & Ian Bonser, *Belongingness as a Core Personality Trait: How Social Exclusion Influences Social Functioning and Personality Expression*, 79 J. PERSONALITY 1281, 1281–82 (2011).

associated with physical pain," "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."[88]

An additional, painful component of solitary confinement is the fact that prisoners in such units are denied opportunities to give and receive caring human touch. Many of them go for weeks, months, or even years without touching another person with affection. This kind of deprivation also has been studied extensively in contexts outside prison. Psychologists have long known that "[t]ouch is central to human social life. It is the most developed sensory modality at birth, and it contributes to cognitive, brain, and socioemotional development throughout infancy and childhood."[89] Recent research now indicates that "touch is a primary platform for the development of secure attachments and cooperative relationships."[90] We know that, among other things, it is "intimately involved in patterns of caregiving."[91] Indeed, caring physical touch functions as a "powerful means by which individuals reduce the suffering of others."[92] It also "promotes cooperation and reciprocal altruism."[93]

The need for caring human touch is so fundamental that early deprivation is an established risk factor for neurodevelopmental disorders, depression, suicidality, and other self-destructive behavior.[94] Later deprivation is associated with violent behavior in adolescents.[95] The uniquely prosocial emotion of "[c]ompassion is universally signaled through touch," so that persons who live in a world without touch are denied the experience

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[88] DeWall, *supra* note 36, at 302; Johan C. Karremans, Dirk J. Heslenfeld, Lotte F. van Dillen & Paul A. M. Van Lange, *Secure Attachment Partners Attenuate Neural Responses to Social Exclusion: An fMRI Investigation*, 81 INT'L J. PSYCHOPHYSIOLOGY 44, 44, 49 (2011).

[89] Matthew J. Hertenstein, Dacher Keltner, Betsy App, Brittany A. Bulleit & Ariane R. Jaskolka, *Touch Communicates Distinct Emotions*, 6 EMOTION 528, 528 (2006). *See generally* THE HANDBOOK OF TOUCH: NEUROSCIENCE, BEHAVIORAL, AND HEALTH PERSPECTIVES 373–499 (Matthew J. Hertenstein & Sandra J. Weiss eds., 2011) (discussing, in Section V, the relevance of touch for development and health).

[90] Jennifer L. Goetz, Dacher Keltner & Emiliana Simon-Thomas, *Compassion: An Evolutionary Analysis and Empirical Review*, 136 PSYCHOL. BULL. 351, 360 (2010).

[91] *Id.*

[92] *Id.*

[93] *Id.*

[94] *See, e.g.*, Carissa J. Cascio, *Somatosensory Processes in Neurodevelopmental Disorders*, 2 J. NEURODEVELOPMENTAL DISORDERS 62, 62–63 (2010) (neurodevelopmental disorders); Tiffany Field, *Touch Deprivation and Aggression Against Self Among Adolescents*, *in* DEVELOPMENTAL PSYCHOBIOLOGY OF AGGRESSION 117, 117 (David M. Stoff & Elizabeth J. Susman eds., 2005) (depression, suicidality, and other self-destructive behavior).

[95] *See* Tiffany Field, *Violence and Touch Deprivation in Adolescents*, 37 ADOLESCENCE 735, 735, 744–45 (2002).

of receiving or expressing compassion in this way.[96] Conversely, a number of experts argue that caring human touch is so integral to our well-being that it is actually therapeutic. Thus, it has been recommended to treat a host of psychological maladies including depression, suicidality, and learning disabilities.[97] Researchers have found that caring human touch mediates a sense of security and place, a sense of shared companionship, a sense of being nurtured, feelings of worth and competence, access to reliable alliance and assistance, and guidance and support in stressful situations.[98] The deprivation of caring human touch in solitary confinement deprives prisoners of these things.

In sum, there is a carefully developed and empirically well-documented scientific framework that catalogues the broad range of very serious adverse effects brought about by social isolation, loneliness, social exclusion, and the deprivation of caring touch. These effects have been found in numerous studies that confirm the destructive and even life-threatening consequences for animals as well as humans. It is important not only to situate the harmfulness of solitary confinement in this larger scientific framework but also to recognize that, for reasons discussed below, the adverse effects of isolation in a *correctional* setting are likely to be far greater.

II. SOLITARY CONFINEMENT AS "TOXIC" SOCIAL ISOLATION

The literature reviewed in the preceding Part summarized findings from studies conducted in a wide range of free-world settings. It is important to acknowledge that, the animal research notwithstanding, the adverse effects of social isolation, loneliness, social exclusion, and the deprivation of caring human touch that I reviewed above were assessed in environments that are much more benign than those that prevail in jail and prison solitary confinement units. By virtually any measure, solitary confinement in correctional settings is likely to be significantly *more* stressful, hurtful, harmful, and dangerous than in the larger society, where the range of deleterious effects I reviewed in the previous Part have been elaborately documented.

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[96] *See, e.g.*, Jennifer E. Stellar & Dacher Keltner, *Compassion*, *in* HANDBOOK OF POSITIVE EMOTIONS 329, 337 (Michele M. Tugade, Michelle N. Shiota & Leslie D. Kirby eds., 2014).

[97] *See, e.g.*, Susan Dobson, Shripati Upadhyaya, Ian Conyers & Raghu Raghavan, *Touch in the Care of People with Profound and Complex Needs*, 6 J. LEARNING DISABILITIES 351, 360 (2002); Field, *supra* note 94, at 134.

[98] *See, e.g.*, Robert S. Weiss, *The Attachment Bond in Childhood and Adulthood*, *in* ATTACHMENT ACROSS THE LIFE CYCLE 72–75 (Colin Murray Parkes, Joan Stevenson-Hinde & Peter Marris eds., 1995).

Of course, there are arguably "better" and "worse" solitary confinement units, and prisoners are likely to suffer more and deteriorate more rapidly in those that are the harshest and most deprived. Thus, psychologist Carl Clements and his colleagues were surely correct to observe that relevant "[c]ontext factors includ[ing] privacy, access to daylight, length of cell confinement per day, noise and overcrowding levels, and staff functioning"[99] have some bearing on the isolated prisoner's well-being. Yet, even their discussion seemed to ignore what researchers now understand to be the most destructive aspect of solitary confinement—the deprivation of meaningful human social contact. As the larger literature I reviewed on social isolation and loneliness underscores, although the immediate discomforting aspects of the experience can be ameliorated, it is isolation itself that is dangerous.

Obviously, lonely, isolated persons in the free world are likely to have far more privacy, access to nature, freedom of movement, and so on than prisoners housed in solitary confinement. Yet they are still at great psychological and physical risk by virtue of their social isolation. The onerous aspects of prison and jail isolation only intensify the painfulness of this powerful stressor and worsen its impact. For one, prison and jail solitary confinement is a form of coercively enforced and nearly complete isolation. As I have noted before, "There is no other place on earth where persons are so completely and involuntarily isolated from one another."[100] Except in special cases, prisoners rarely go willingly into solitary confinement. Indeed, in many instances they must be forcibly removed from their cells ("cell extracted") and taken to solitary confinement by special tactical units of correctional officers who are suited up in body armor, armed with special weapons (e.g., batons, pepper spray, tasers), and who operate in tandem to physically control, subdue, and dominate prisoners.[101] The elaborate procedures correctional officers are routinely instructed to employ means that the encounters themselves are inherently confrontational and prone to

[99] Clements et al., *supra* note 30, at 926.

[100] Haney, *Solitary Confinement, Loneliness, and Psychological Harm*, *supra* note 24, at 132.

[101] In California, Department of Corrections procedures explicitly instructed standard five-man cell extraction teams to proceed in this fashion: the first member of the team enters the cell carrying a large shield, used to push the prisoner back into a corner of the cell; the second member follows closely, wielding a special cell extraction baton, to strike the inmate on the upper part of his body to induce him to raise his arms in self-protection; thus unsteadied, the inmate is pulled off balance by another member of the team whose job is to place leg irons around his ankles; once downed, a fourth member of the team places him in handcuffs; the fifth member stands ready to fire a taser gun or rifle that shoots wooden or rubber bullets at prisoners who continue to resist. Craig Haney, *"Infamous Punishment": The Psychological Consequences of Isolation*, 8 NAT'L PRISON PROJECT J. 3, 21 n.6 (1993).

escalation. It is not uncommon for them to turn increasingly physically violent and, in that sense, they are traumatic for everyone involved.[102]

To take just one firsthand account, here is the description of Mika'il DeVeaux, a sociology lecturer who spent twenty-five years incarcerated in the New York State prison system. He observed frequent cell extractions (termed "being dragged out") occurring inside solitary confinement units in the 1980s, ones that were traumatizing to witness as well as to experience directly:

> [B]eing "dragged out" meant that a person was dragged out of a cell feet first, with their head trailing behind on the floor, and often being beaten while being moved. I can still remember the screams, the wailing, the cursing, and the anger. These events were alarming because all who witnessed them unfold could feel the humiliation and shame. We in the cells were utterly powerless and could face a similar fate. There was nothing I could do, nothing anyone could do, except hope to get out of there alive. The possibility of being beaten was all too real. Whom could I tell? Who would listen? Who would care?[103]

Moreover, solitary confinement is virtually always accompanied by a host of additional deprivations that extend beyond the sheer lack of meaningful social contact. Those additional deprivations commonly include the lack of positive or pleasurable environmental stimulation in settings that prisoners are unable to significantly modify. That is, the physical environment in most solitary confinement units is characterized by its closed-in nature (in the cells, of course, but also in the cellblocks themselves) and unchanging drabness. As I have described them previously: "Inside their cells, units, and 'yards,'" prisoners in solitary confinement units "are surrounded by nothing but concrete, steel, cinderblock, and metal fencing—often gray or faded pastel, drab and sometimes peeling paint, dingy, worn floors. There is no time when they escape from these barren 'industrial' environments."[104] Indeed, many of these units are explicitly, often inventively, designed to limit or eliminate the prisoners' contact with nature—restricting or foreclosing exposure to natural light, grass, and even glimpses of the horizon or sky. There are even some units where prisoners cannot easily tell whether it is day or night.

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[102] *See* Erica Goode, *When Cell Door Opens, Tough Tactics and Risk*, N.Y. TIMES, July 29, 2014, at A1, A12; Erica Goode, *New Trial Sought in Death of Man Pulled from Cell*, N.Y. TIMES, Aug. 23, 2014, at A16.

[103] Mika'il DeVeaux, *The Trauma of the Incarceration Experience*, 48 HARV. C.R.-C.L. L. REV. 257, 273 (2013).

[104] Craig Haney, *A Culture of Harm: Taming the Dynamics of Cruelty in Supermax Prisons*, 35 CRIM. JUST. & BEHAV. 956, 968 (2008).

The only variations in sensory stimulation are typically auditory, but these too often come in the form of aversive, loud noises that, in addition to the banging of heavy metal doors, include pounding on walls and shouting or screaming at all hours of the day and night from other prisoners who may be mentally ill and/or suffering from the effects of isolation.[105]

In addition, solitary confinement virtually always entails severe restrictions on the amount and kind of personal property prisoners can possess. In many such units, they have limited access to electronic appliances (such as radios and televisions) or may be prohibited from having any, and are more severely restricted than other prisoners in terms of the commissary products they may purchase from the prison store and even in the already limited amount of reading material they can keep in their cells. Prisoners in solitary confinement also typically have limited or no access to meaningful activity or programming, either inside or outside their cells. Other than the few prisoners who are selected as "tier tenders"—to clean units and perhaps deliver mail to other prisoners—they are prohibited from working, receiving vocational training, taking in-person educational classes of any kind, or participating in hobby craft. Most solitary confinement units impose strict limits on access to telephones so that, in addition to limited numbers of noncontact visits, they are significantly cut off from the outside world.

Stuart Grassian has noted that the medical profession has long known that, even in hospital settings where patients go to receive caring treatment, greatly restricted access to social and environmental stimulation can have a "profoundly deleterious effect,"[106] including adversely impacting "patients in intensive care units, spinal patients immobilized by the need for prolonged

[105] I have personally toured and inspected a number of solitary confinement units in which the noise was so loud that it was difficult to converse with persons standing nearby. On the other hand, some solitary confinement units do, in fact, approximate the near total sensory deprivation paradigm in operation in early experiments conducted on the subject—darkened cells, little or no sound, and so on. But they are relatively rare nowadays. More commonly in contemporary prisons, solitary confinement units subject 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, positive, stimulating aspects of the environment are lacking. Thus, prisoners in solitary confinement are exposed to a reduced and monotonous kind of sensory input—an extremely limited and repetitive perceptual and experiential sameness in the physical environment around them. In some other instances, 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 have little or no control over the exposure. 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.

[106] Stuart Grassian, *Neuropsychiatric Effects of Solitary Confinement*, *in* THE TRAUMA OF PSYCHOLOGICAL TORTURE 113, 114 (Almerindo E. Ojeda ed., 2008).

traction, and patients with impairment of their sensory apparatus (such as eye-patched or hearing impaired patients)."[107] Of course, prisoners are not placed in solitary confinement to receive treatment or be administered to in caring ways. Unlike social isolation in most free-world contexts, solitary confinement in jails and prisons is also "pejoratively imposed," in the sense that significant stigma and gratuitous humiliation are commonly associated with it. From the perspective of the staff at least, and in some instances the prisoners as well, a prisoner in solitary confinement is in an even more degraded status than a mainline prisoner. Prisoners who are placed in solitary confinement are sometimes referred to as the "worst of the worst," but they are virtually always treated as the "lowest of the low."[108] I have suggested elsewhere that prisoners in solitary confinement are enveloped in a "culture of harm" that includes not only the isolating architecture and procedures that characterize the environment, but also the "atmosphere of thinly veiled hostility and disdain [that] prevails."[109] Interactions with staff are "fraught with resentment and recrimination"[110] and an "ecology of cruelty" subjects

[107] *Id.* (citing Florence S. Downs, *Bed Rest and Sensory Disturbances*, 74 AM. J. NURSING 434 (1974); Rosemary Ellis, *Unusual Sensory and Thought Disturbances After Cardiac Surgery*, 72 AM. J. NURSING 2021 (1972); C. Wesley Jackson, Jr., *Clinical Sensory Deprivation: A Review of Hospitalized Eye-Surgery Patients*, *in* SENSORY DEPRIVATION: FIFTEEN YEARS OF RESEARCH (John P. Zubek ed., 1969); Donald S. Kornfeld, Sheldon Zimberg & James R. Malm, *Psychiatric Complications of Open-Heart Surgery*, 273 NEW ENG. J. MED. 287 (1965); Herbert R. Lazarus & Jerome H. Hagens, *Prevention of Psychosis Following Open-Heart Surgery*, 124 AM. J. PSYCHIATRY 1190 (1968); Eugene Ziskind, *Isolation Stress in Medical and Mental Illness*, 168 J. AM. MED. ASS'N 1427 (1958); Eugene Ziskind, Harold Jones, William Filante & Jack Goldberg, *Observations on Mental Symptoms in Eye Patched Patients: Hypnagogic Symptoms in Sensory Deprivation*, 116 AM. J. PSYCHIATRY 89 (1960)). Grassian also reported on early studies of the ways in which extreme social isolation and the deprivation of positive environmental stimulation could take a severe toll on persons in other contexts where they were voluntarily pursuing otherwise positive goals and activities, such as "extremely isolating military settings and explorations in land and space." *Id.* (citing A. M. Hastin Bennett, *Sensory Deprivation in Aviation*, *in* SENSORY DEPRIVATION 161 (Philip Solomon, Philip E. Kubzansky, P. Herbert Leiderman, Jack H. Mendelson, Richard Trumbull & Donald Wexler eds., 1961); Jeanette J. Cochrane & S.J.J. Freeman, *Working in Arctic and Sub-Arctic Conditions: Mental Health Issues*, 34 CANADIAN J. PSYCHIATRY 884 (1989); Sanford J. Freedman & Milton Greenblatt, *Studies in Human Isolation II: Hallucinations and Other Cognitive Findings*, 11 U.S. ARMED FORCES MED. J. 1479 (1960); E.K. Eric Gunderson, *Emotional Symptoms in Extremely Isolated Groups*, 9 ARCHIVES GEN. PSYCHIATRY 362 (1963); E.K. Eric Gunderson & Paul D. Nelson, *Adaptation of Small Groups to Extreme Environments*, 34 AEROSPACE MED. 1111 (1963)).

[108] Among the many "pains of imprisonment" to which prisoners in general are subjected, and that have the capacity to adversely affect them upon release, is the extent to which they are dehumanized, degraded, and disrespected. *See, e.g.*, James M. Binnall, *Respecting Beasts: The Dehumanizing Quality of the Modern Prison and an Unusual Model for Penal Reform*, 17 J.L. & POL'Y 161, 185–86 (2008). These aspects of prison life are greatly intensified in solitary confinement units.

[109] Haney, *supra* note 104, at 960.

[110] *Id.*

prisoners in solitary confinement to the implements of forceful subjugation, including "handcuffs, belly chains, leg irons, spit shields, strip cells, four-point restraints, canisters of pepper spray, batons, and rifles," often wielded by flak-jacketed, helmeted officers.[111]

Unlike socially isolated persons in free society, prisoners in solitary confinement are profoundly "alone" but, paradoxically, are afforded limited or no access to privacy. Among other things, they are subjected to unannounced, prolonged, and invasive visual inspections in a way that other prisoners are not. Since literally everything prisoners in solitary confinement "do" occurs within the small space of their cell (or, during brief periods of time when they have access to it, the "yard," where they are also carefully monitored), their surveillance far exceeds that of even mainline prisoners. The latter have at least some freedom of movement to enter limited prison spaces where they are not so closely observed. In extreme cases, prisoners in solitary confinement may have cameras trained on them literally all the time (and frequently do if they are placed in suicide or aptly named "watch" cells, where around-the-clock video monitoring is commonplace). In addition, the limited contact that prisoners in solitary confinement have with medical and mental health staff often takes place "cell front," so even otherwise highly sensitive conversations about physical or psychological vulnerabilities and personal concerns are susceptible to being "overheard" by custody staff and other prisoners. This helps explain why many prisoners in solitary confinement forego these contacts altogether. In any event, the constant surveillance and lack of privacy are additional toxic aspects of solitary confinement.[112]

The multiple dimensions of institutional control and surveillance and harsh contingencies that prevail inside jail and prison solitary confinement units not only produce natural human reactions and adaptations to the experience of social isolation and loneliness but also can set other dysfunctional and problematic dynamics in motion. These dynamics, in turn, may lead to even more painful and extended stays in solitary confinement. For example, several studies have found that the experience of loneliness leads naturally to hypervigilance about perceived social threats which, in

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[111] *Id.* at 970.

[112] Access to privacy is "important because it is posited to provide experiences that support normal psychological functioning, stable interpersonal relationships, and personal development." Stephen T. Margulis, *Privacy as a Social Issue and Behavioral Concept*, 59 J. SOC. ISSUES 243, 246 (2003); *see also* Darren Ellis, Ian Tucker & David Harper, *The Affective Atmospheres of Surveillance*, 23 THEORY & PSYCH. 716 (2017); Darhl M. Pedersen, *Psychological Functions of Privacy*, 17 J. ENVTL. PSYCH. 147 (1997).

turn, can produce overreactions to potentially threatening external stimuli.[113] This helps to explain why prisoners in solitary confinement are susceptible to a form of "institutional paranoia" in which they come to distrust literally everyone with whom they interact. This distrust may include not only prison personnel, but also extend to other prisoners whom they begin to suspect of harboring ill will or conspiring against them. Although entirely understandable under the circumstances in which it occurs—prisoners in solitary confinement have often said to me, only partly in jest, that "it isn't paranoia if people really *are* out to get you"—the adaptation of distrusting everyone and distancing oneself from them makes the social pain of solitary confinement more difficult for them to alleviate. Relatedly, researchers have found that loneliness reduces the amount of pleasure persons derive from rewarding social stimuli.[114] This means that even the extraordinarily rare forms of positive social stimulation that might occur in solitary confinement may have only limited beneficial or ameliorating effects because the effects of extreme isolation have numbed the prisoners' capacity to enjoy or benefit from it.

Thus, there are many reasons why the adverse psychological and physical effects of social isolation and exclusion and the deprivation of caring touch that occur in the course of solitary confinement in correctional settings are likely to be *far worse* than in society at large, where those effects have proven to be severe and even life-threatening.

III. THE EFFECTS OF SOLITARY CONFINEMENT ARE COMPOUNDED BY THE EFFECTS OF IMPRISONMENT PER SE

Although there is a well-settled scientific consensus over the harmfulness of solitary confinement, there are occasional outlier claims made that appear to unduly minimize the seriousness of the damage it does to prisoners. Typically voiced by persons who seem unaware of the much larger compelling body of scientific knowledge about the adverse effects of social isolation in society at large,[115] this seeming defense of the continued

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[113] *See, e.g.*, Munirah Bangee, Rebecca A. Harris, Nikola Bridges, Ken J. Rotenberg & Pamela Qualter, *Loneliness and Attention to Social Threat in Young Adults: Findings from an Eye Tracker Study*, 63 PERSONALITY & INDIVIDUAL DIFFERENCES 16, 22 (2014); Stephanie Cacioppo, Munirah Bangee, Stephen Balogh, Carlos Cardenas-Iniguez, Pamela Qualter & John T. Cacioppo, *Loneliness and Implicit Attention to Social Threat: A High-Performance Electrical Neuroimaging Study*, 7 COGNITIVE NEUROSCIENCE 138, 155–56 (2016).

[114] *See, e.g.*, John T. Cacioppo & Louise C. Hawkley, *Perceived Social Isolation and Cognition*, 13 TRENDS IN COGNITIVE SCI. 447, 449 (2009).

[115] Commentators such as Paul Gendreau and Ryan Labrecque who incorrectly describe solitary confinement as primarily "an environment with severe restrictions placed on auditory, visual and

use of solitary confinement takes several forms. In addition to the claim that I addressed in Part I (to the effect that "there is just not enough data to know"), some commentators have asserted that, although solitary confinement is potentially harmful, it inflicts only *de minimis* damage that, in any event, is likely to dissipate over time (i.e., upon release back to a mainline prison population or into free society). For example, meta-analysts Robert Morgan and his colleagues made a point of rejecting what they characterized as "fiery opinions" lodged by a number of knowledgeable experts against the practice of solitary confinement, accusing the scholars who voiced them of "lack[ing] a social perspective." The "social perspective" Morgan and his colleagues appeared to have in mind was their own claim that the effects of solitary confinement are no greater than the "adverse effects resulting from general incarceration."[116] They repeated the same assertion a page later in their article: "[T]he magnitude of the adverse effects of [solitary confinement] placement tend to be *small to moderate*, and no greater than the magnitude of effects for incarceration, generally speaking."[117]

Two other coauthors of the Morgan meta-analysis go even further, stating "there are no estimates of the precise magnitude of the effects of prison life, although we expect it is likely close to zero."[118] This same kind of minimization appears in sworn testimony given by some of the same authors, testifying as expert witnesses in defense of the use of solitary confinement in various jurisdictions, including in a case where prisoners were held continuously for at least ten years or more (some for more than

kinesthetic stimulation" but make little or no mention of the social deprivation that is its essence have badly missed the point. Paul Gendreau & Ryan M. Labrecque, *The Effects of Administrative Segregation: A Lesson in Knowledge Cumulation*, *in* THE OXFORD HANDBOOK OF PRISONS AND IMPRISONMENT 340, 340 (John Wooldredge & Paula Smith eds., 2018). Solitary confinement is harmful primarily because it deprives prisoners of meaningful social contact; the deprivation of positive environmental stimulation exacerbates those effects, but it is not the primary source of the harm. Thus, despite noble calls to "search for convergent validity from diverse empirical and theoretical literatures," they have completely ignored the most relevant literature of all—that which documents the extremely deleterious effects of social deprivation. *Id.* at 342.

[116] Robert D. Morgan, Paul Gendreau, Paula Smith, Andrew L. Gray, Ryan M. Labrecque, Nina MacLean, Stephanie A. Van Horn, Angelea D. Bolanos & Ashley B. Batastini, *Quantitative Syntheses of the Effects of Administrative Segregation on Inmates' Well-Being*, 22 PSYCHOL., PUB. POL'Y, & L. 439, 455 (2016).

[117] *Id.* at 456 (emphasis added).

[118] Gendreau & Labrecque, *supra* note 115, at 343. They argued further that, if there are any effects of prison life ("close to zero"), it is "criminogenic outcomes" rather than psychological disability that is "the most adverse outcome of incarceration." *Id.* at 344. In fact, current research indicates that the adverse effects are a great deal more than "zero" and extend well beyond criminogenic outcomes.

twenty years).[119] The point of these and similar statements appears to be to implicitly minimize the suffering and harm "from segregation" by suggesting that the amount is "no more than" or "comparable to" the suffering and harm that prison life in general inflicts, which the defenders of solitary confinement allege are "mild to moderate." By characterizing the negative effects of prison in general as *de minimis* (indeed, "close to zero"), and the harmfulness of solitary confinement as "no more than that," they seem to imply that there is relatively little reason for concern.[120]

In fact, however, if we were to assume that the suffering and harm inflicted by solitary confinement are actually "comparable to" or "no more than" the suffering and harm brought about by incarceration generally, then there would still be *grave* cause for concern. That is because what are commonly described as the "pains of imprisonment" are now well understood to have a powerful psychological and even physical impact. The negative effects are well documented and often truly severe.[121] As I will

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[119] Robert Morgan, the first author of the aforementioned meta-analysis, has made this exact point in several cases in which he has offered such testimony. For example: "Thus, it is my opinion that the mental health concerns experienced by inmates in the SHU are not time dependent (i.e., 2 years, 5 years, 10 years, 20 years) such that inmates serving 10 or more years in the PBSP SHU are no better or worse off, from a clinical mental health perspective, than if they served less than 10 years of SHU confinement." Expert Report by Dr. Robert Morgan at 12, Ashker v. Brown, No. C 09-05796 CW (N.D. Cal. Mar. 13, 2015).

[120] Defenders of solitary confinement also sometimes point to the fact that a sizable minority of prisoners in some prison systems seem to "prefer" solitary confinement to mainline prison housing because the prisoners sometimes request placement in so-called "protective custody," "safekeeping," or "sensitive needs" housing units that may operate as de facto solitary confinement units. The problem with this assertion is that it overlooks the terrible Hobson's choice with which such prisoners are confronted, namely, whether or not to attempt to preserve their physical well-being at the expense of their mental health. Because physical threats in prison are often dire, tangible, and imminent, it is not surprising that some prisoners assume (or gamble) that they may be able to psychologically withstand the rigors of solitary confinement while protecting themselves from violent victimization. Some miscalculate and suffer significant psychological pain or worse. *See, e.g.*, Stanley L. Brodsky & Forrest R. Scogin, *Inmates in Protective Custody: First Data on Emotional Effects*, 1 FORENSIC REP. 267, 269–70 (1988). Kimberley Brownlee has argued in this context that the notion of "voluntary self-isolation" should be regarded with great skepticism because, as she noted, "'voluntariness' depends on the range and value of the choices available." Brownlee, *supra* note 8, at 206. Moreover, "[i]f a person's principal forms of social interaction are hostile, degrading, or cruel, then she may voluntarily withdrawal from that social environment but, given the context, her decision will not differ much from a non-voluntary withdrawal." *Id.* The prisoners' "preferences" in these cases are more a reflection of the terrible mainline prison conditions and forms of treatment from which they are fleeing than the benign nature of the solitary confinement units they have been compelled to enter.

[121] Much of this evidence is summarized in several book-length treatments of the topic. *See, e.g.*, CRAIG HANEY, REFORMING PUNISHMENT: PSYCHOLOGICAL LIMITS TO THE PAINS OF IMPRISONMENT (2006) [hereinafter HANEY, REFORMING PUNISHMENT]; COMM. ON CAUSES & CONSEQUENCES OF HIGH RATES OF INCARCERATION, NAT'L RES. COUNCIL OF THE NAT'L ACADS., THE GROWTH OF INCARCERATION IN THE UNITED STATES: EXPLORING CAUSES AND CONSEQUENCES (Jeremy Travis,

discuss in more detail below, although some of the effects of general incarceration do not fully manifest themselves until after prisoners are released from prison, the adverse consequences of imprisonment are substantial and can be life altering. They are hardly "small to moderate" or "close to zero."

For example, Alison Liebling and her colleagues reported that the measured levels of distress in eleven of the twelve prisons they studied were "extraordinarily high" and above the threshold that ordinarily triggers an inquiry into whether a patient is suffering from a treatable emotional or psychological illness.[122] Reviews of the literature on the prevalence of post-traumatic stress disorder (PTSD) and interrelated trauma-based symptoms that include depression, emotional numbing, anxiety, isolation, and hypervigilance among prisoners suggest that this disorder may occur as much as ten times more often than in the general population.[123] The severity of environmental stress to which prisoners are exposed significantly affects the levels of anxiety and depression that they experience during confinement.[124] In addition, Jason Schnittker and his colleagues have shown

Bruce Western & Steve Redburn eds., 2014); THE EFFECTS OF IMPRISONMENT (Alison Liebling & Shadd Maruna eds., 2005). In addition, there are numerous empirical studies and published reviews of the available literature. *See, e.g.*, Craig Haney, *Prison Effects in the Era of Mass Incarceration*, 20 PRISON J. 1 (2012) [hereinafter Haney, *Prison Effects*]; Diana Johns, *Confronting the Disabling Effects of Imprisonment: Toward Prehabilitation*, 45 SOC. JUST. 27 (2018).

[122] Alison Liebling, Linda Durie, Annick Stiles & Sarah Tait, *Revisiting Prison Suicide: The Role of Fairness and Distress*, *in* THE EFFECTS OF IMPRISONMENT, *supra* note 121, at 216.

[123] Although the orders of magnitude vary as a function of the different prevalence estimates for both the general and incarcerated populations, no researchers doubt that "inmate rates of PTSD are substantially higher than rates in the general population." Laura E. Gibson, John C. Holt, Karen M. Fondacaro, Tricia S. Tang, Thomas A. Powell & Erin L. Turbitt, *An Examination of Antecedent Traumas and Psychiatric Comorbidity Among Male Inmates with PTSD*, 12 J. TRAUMATIC STRESS 473, 474 (1999); *see also* Ashley Goff, Emmeline Rose, Suzanna Rose & David Purves, *Does PTSD Occur in Sentenced Prison Populations? A Systematic Literature Review*, 17 CRIM. BEHAV. & MENTAL HEALTH 152 (2007); Carolyn J. Heckman, Karen L. Cropsey & Tawana Olds-Davis, *Posttraumatic Stress Disorder Treatment in Correctional Settings: A Brief Review of the Empirical Literature and Suggestions for Future Research*, 44 PSYCHOTHERAPY: THEORY, RES., PRAC., TRAINING 46 (2007); Nancy Wolff, Jessica Huening, Jing Shi & B. Christopher Frueh, *Trauma Exposure and Posttraumatic Stress Disorder Among Incarcerated Men*, 91 J. URB. HEALTH 707 (2014). A recent international meta-analysis of the prevalence of PTSD among prisoners estimated it to be five times greater among imprisoned men and eight times greater among imprisoned women than in the general population. Gergo Baranyi, Megan Cassidy, Seena Fazel, Stefan Priebe & Adrian P. Mundt, *Prevalence of Posttraumatic Stress Disorder in Prisoners*, 40 EPIDEMIOLOGIC REV. 134, 142 (2018).

[124] *See, e.g.*, Colin Cooper & Sinéad Berwick, *Factors Affecting Psychological Well-Being of Three Groups of Suicide-Prone Prisoners*, 20 CURRENT PSYCHOL. 169 (2001). It is important to be reminded exactly what such stress consists of. For example, noting that "[n]o one leaves unscarred," Mika'il DeVeaux has provided a powerful firsthand account of the traumatic nature of the prison life he experienced, one whose aftereffects he still struggled to overcome long after his release: "I found the

that many of these psychiatric symptoms (especially anxiety- and depression-related disorders) persist long after release and represent significant obstacles to successful reentry.[125]

Moreover, the experience of imprisonment is so stressful that it adversely affects prisoners' physical health. Having been in prison can increase rates of morbidity, especially the likelihood of contracting infectious and stress-related illnesses.[126] It also affects mortality rates.[127] In fact, Evelyn Patterson's study of persons released from prison in New York State concluded that each year spent in prison reduced a person's life span by two years.[128] As I noted, many of the adverse effects on physical and mental health are long-lasting, persisting well beyond a person's time in prison.[129]

Thus, the assertion that incarceration in general produces only "small to moderate" negative effects is flatly incorrect. In this context, however, it

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prison experience traumatic because of the assaults and murders I witnessed while incarcerated, because of the constant threat of violence, because of the number of suicides that took place, and because I felt utterly helpless about the degree to which I could protect myself." DeVeaux, *supra* note 103, at 257, 264–65.

[125] Jason Schnittker, *The Psychological Dimensions and the Social Consequences of Incarceration*, 651 ANNALS AM. ACAD. POL. & SOC. SCI. 122, 135–36 (2014); Kristin Turney, Christopher Wildeman & Jason Schnittker, *As Fathers and Felons: Explaining the Effects of Current and Recent Incarceration on Major Depression*, 53 J. HEALTH & SOC. BEHAV. 465, 466 (2012); *see also* Shelley Johnson Listwan, Mark Colvin, Dena Hanley & Daniel Flannery, *Victimization, Social Support, and Psychological Well-Being: A Study of Recently Released Prisoners*, 37 CRIM. JUST. & BEHAV. 1140 (2010).

[126] *See, e.g.*, Michael Massoglia & Brianna Remster, *Linkages Between Incarceration and Health*, 134 PUB. HEALTH REPS. 8S, 10S (2019) (Supplement I); Michael Massoglia, *Incarceration as Exposure: The Prison, Infectious Disease, and Other Stress-Related Illnesses*, 49 J. HEALTH & SOC. BEHAV. 56, 57 (2008).

[127] *See, e.g.*, Ingrid A. Binswanger, Marc F. Stern, Richard A. Deyo, Patrick J. Heagerty, Allen Cheadle, Joann G. Elmore & Thomas D. Koepsell, *Release from Prison—A High Risk of Death for Former Inmates*, 356 NEW ENG. J. MED. 157, 159–61 (2007).

[128] Evelyn J. Patterson, *The Dose-Response of Time Served in Prison on Mortality: New York State, 1989–2003*, 103 AM. J. PUB. HEALTH 523, 523 (2013) [hereinafter Patterson, *The Dose-Response of Time Served in Prison on Mortality*].

[129] *See, e.g.*, Paul C. Archibald, *Criminal Justice Contact, Stressors, and Depressive Symptoms Among Black Adults in the United States*, 43 AM. J. CRIM. JUST. 486, 488 (2018); Shervin Assari, Reuben Jonathan Miller, Robert Joseph Taylor, Dawne Mouzon, Verna Keith & Linda M. Chatters, *Discrimination Fully Mediates the Effects of Incarceration History on Depressive Symptoms and Psychological Distress Among African American Men*, 5 J. RACIAL & ETHNIC HEALTH DISPARITIES 243, 246 (2018); Robynn Cox, *Mass Incarceration, Racial Disparities in Health, and Successful Aging*, 42 J. AM. SOC'Y ON AGING 48, 51 (2018); Adrian Grounds & Ruth Jamieson, *No Sense of an Ending: Researching the Experience of Imprisonment and Release Among Republican Ex-Prisoners*, 7 THEORETICAL CRIMINOLOGY 347, 351, 354–56 (2003); Yujin Kim, *The Effect of Incarceration on Midlife Health: A Life-Course Approach*, 34 POPULATION RES. POL'Y REV. 827, 829 (2015); Turney et al., *supra* note 125, at 466; Tomoko Udo, *Chronic Medical Conditions in U.S. Adults with Incarceration History*, 38 HEALTH PSYCHOL. 217, 217–18 (2019).

is important to keep in mind that whether or not the adverse effects of solitary confinement are nearly equal to or perhaps much greater than the effects of incarceration generally, they are experienced in addition to the baseline effects of imprisonment. In this way, the harmfulness of solitary confinement represents an *increment* of suffering and harm that is always incurred above and beyond the deleterious effects of imprisonment per se, which are already experienced by prisoners who are, by definition, already incarcerated at the time they are placed in solitary confinement.

This fact was underscored by a study I conducted several years ago at Pelican Bay State Prison, comparing the number and intensity of symptoms of psychological stress, trauma, and isolation-related psychopathology between a sample of long-term isolated prisoners and a sample of long-term general population prisoners.[130] I used a structured interview and systematic assessment format to identify the symptoms they were experiencing and selected the sample participants randomly to ensure their representativeness (except that I explicitly excluded persons suffering from diagnosed mental health problems at the time the study was conducted).[131] Because of the harshness of the mainline maximum security prison from which the general population prisoners were drawn—which a number of them described as "the worst" they had ever been in—the comparison between the groups represented an especially stringent test of the effects of long-term solitary confinement.[132] An additional factor that added to the stringency of this

[130] The isolated prisoners had spent ten years or more in continuous solitary confinement at the Pelican Bay Security Housing Unit, and they were compared to the general population prisoners (then housed at the Pelican Bay maximum-security mainline prison) who had spent ten years or more in continuous imprisonment. 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. The details of this study are described in Haney, *Restricting Solitary Confinement*, *supra* note 8, at 291–92, and Haney, *Solitary Confinement, Loneliness, and Psychological Harm*, *supra* note 24, at 134–38.

[131] Largely as a result of a federal court decision, no prisoner on the California Department of Corrections and Rehabilitation's mental health caseload was permitted to be housed in the solitary confinement facility at Pelican Bay. Madrid v. Gomez, 889 F. Supp. 1146 (N.D. Cal. 1995). To ensure comparability of the samples in this respect, no long-term general population prisoner currently on the mental health caseload was included in the study.

[132] The conditions of confinement in the maximum-security prison from which the general population prisoners were selected were severe. They were virtually all double-celled inside standard general population cells, were "cell fed" (i.e., they ate all of their meals in their cells rather than in a common dining hall), had very limited "out-of-cell time," could obtain access to only a restricted number of "jobs" (e.g., working in the kitchen, barber shop, or serving as a tier tender), and could enroll in only a single educational class. In addition, because the general population facility was located in the same geographically remote location as the solitary confinement facility, general population prisoners, like their solitary confinement counterparts, also tended to have relatively few visitors. However, unlike the solitary confinement prisoners, those in general population were allowed to congregate through "dayroom" time, outdoor group exercise, and to have contact visits. *See* Haney, *Restricting Solitary*

comparison was the fact that many general population prisoners had themselves spent long periods (for some, years) confined in one or another solitary confinement unit before their current nonsolitary housing assignment. For some of them, this included previously having spent time in the Pelican Bay solitary confinement unit under study.[133]

Given the severity of the overall conditions to which both groups of prisoners were subjected, it was not surprising to learn they all acknowledged some degree of suffering and distress. Yet there was absolutely no comparison in the levels reported by the general population versus isolated prisoners. On nearly every single specific dimension measured, the prisoners currently in solitary confinement were in significantly more pain, were more traumatized and stressed, and manifested far more isolation-related pathological reactions. Thus, they not only reported experiencing significantly more stress and trauma-related symptoms[134] and significantly more isolation-related indices of pathology,[135] but the orders of magnitude were quite large. The isolated prisoners reported nearly twice as many symptoms overall as compared to those in the general population.

In addition to determining the presence or absence of a symptom, I also asked prisoners to estimate the frequency with which they had been bothered by these symptoms over approximately the last three-month period (as a way of gauging intensity or the degree to which they suffered from the particular symptom or underlying problem).[136] With the exception of headaches, which were reported at reasonably high levels of intensity for both groups, the only symptoms on which there were no significant differences between the solitary confinement and general population prisoners pertained almost exclusively to symptoms that were reported very infrequently by both groups (e.g., fainting, suicidality). In fact, the mean intensities of the reported

Confinement, *supra* note 8, at 291–92; Haney, *Solitary Confinement, Loneliness, and Psychological Harm*, *supra* note 24, at 134–38.

[133] Many of the general population prisoners who had been in solitary confinement in the past acknowledged the lasting aftereffects of isolation. Some attributed at least some of the problems and symptoms that they were currently experiencing to the time that they had spent in solitary confinement and acknowledged struggling to overcome these effects (including impaired social relations and persistent feelings of loneliness) once released from isolation. *See* Haney, *Restricting Solitary Confinement*, *supra* note 8, at 291–92; Haney, *Solitary Confinement, Loneliness, and Psychological Harm*, *supra* note 24, at 134–38.

[134] These symptoms included experiencing anxiety, lethargy, troubled sleep, heart palpitations, and a sense of impending breakdown. *See* Haney, *Restricting Solitary Confinement*, *supra* note 8, at 291–93.

[135] These symptoms included depression, uncontrolled ruminations, impaired thought processes, and social withdrawal. *Id.*

[136] Prisoners who reported suffering from a symptom were asked whether they experienced it rarely, sometimes, often, or constantly. *Id.*

symptoms were not only significantly different between the groups, but also nearly or more than double for the prisoners in solitary confinement as compared to those prisoners housed in general population.

It is also important to note that the painful, traumatic, and harmful experience of imprisonment is endured by many persons who have suffered a disproportionate number of adverse experiences *before* incarceration. They are thus especially vulnerable to the "retraumatization" of prison.[137] As Cherie Armour summarized: "[P]re-existing traumatic experiences are common in both male and female prisoners which are further exacerbated by traumas experienced within prison."[138] The same can be said of prisoners confined in solitary confinement, who are traumatized yet again by the added stress and deprivation imposed by social isolation.[139]

IV. THE LEGACY OF SOLITARY CONFINEMENT: THE PERSISTENCE OF ISOLATION EFFECTS

Another way to minimize the harmfulness of solitary confinement is to assume that, however unpleasant the experience may be, its effects will dissipate over time once a prisoner is moved to a different and better setting, either into a mainline prison or through release back to free society. Thus, apologists for the practice argue "the effects of [solitary] confinement are

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[137] For a discussion of the role of preprison risk factors and traumas in the etiology of criminal behavior that can lead to imprisonment, see Craig Haney, CRIMINALITY IN CONTEXT: THE PSYCHOLOGICAL FOUNDATIONS OF CRIMINAL JUSTICE REFORM (2020).

[138] Cherie Armour, *Mental Health in Prison: A Trauma Perspective on Importation and Deprivation*, 5 INT'L J. CRIMINOLOGY & SOC. THEORY 886, 891 (2012); *see also* Andy Hochstetler, Daniel S. Murphy & Ronald L. Simons, *Damaged Goods: Exploring Predictors of Distress in Prison Inmates*, 50 CRIME & DELINQ. 436 (2004) (finding that there were significant interrelationships between preprison and prison trauma that had lasting postprison effects); Alison Liebling, *Vulnerability and Prison Suicide*, 35 BRIT. J. CRIMINOLOGY 173 (1995); Benjamin Meade & Benjamin Steiner, *The Effects of Exposure to Violence on Inmate Maladjustment*, 40 CRIM. JUST. & BEHAV. 1228, 1230 (2013) (finding that exposure to various forms of violence before incarceration adversely affects adjustment to prison); Merry Morash, Seokjin Jeong, Miriam Northcutt Bohmert & Daniel R. Bush, *Men's Vulnerability to Prisoner-on-Prisoner Violence: A State Correctional System Case Study*, 92 PRISON J. 290, 299–304 (2012) (finding that the strongest predictor of whether a male prisoner was sexually victimized in prison was having had a history of childhood sexual abuse).

[139] Not surprisingly, the stressfulness of prison life in general and solitary confinement in particular impacts persons with preexisting vulnerabilities even more acutely and can lead to heightened levels of suicidality. *See, e.g.*, Ronald L. Bonner, *Stressful Segregation Housing and Psychosocial Vulnerability in Prison Suicide Ideators*, 36 SUICIDE & LIFE-THREATENING BEHAV. 250, 252 (2006); Eric Lanes, *The Association of Administrative Segregation and Other Risk Factors with the Self-Injury-Free Time of Male Prisoners*, 48 J. OFFENDER REHABILITATION 529, 533 (2009); Raymond F. Patterson & Kerry Hughes, *Review of Completed Suicides in the California Department of Corrections and Rehabilitation, 1999 to 2004*, 59 PSYCHIATRIC SERVS. 676, 677–78 (2008).

negative but do not produce 'lasting emotional damage.'"[140] Unfortunately, this misapprehends the nature of prison effects generally and the effects of solitary confinement more specifically. Some of the worst effects of incarceration derive from the forced accommodations prisoners must make to the atypical and dehumanizing nature of prison life. Sometimes termed "prisonization," the necessary adaptations to the pains of imprisonment require prisoners to undergo a series of psychological changes that are often difficult to relinquish upon release, when these habits and ways of being are no longer needed or even functional. They represent the psychic aftereffects of incarceration that may significantly interfere with successful reintegration into the world outside prison.[141] This is especially true when formerly incarcerated persons enter free society without proper preparation or ongoing transitional services designed to help them traverse the psychological, social, and economic barriers they are likely to confront.

In fact, as implied by my discussion of the impact of imprisonment per se in Part III, there is now extensive research documenting the long-lasting consequences of incarceration, ones that can undermine a formerly incarcerated person's quality of life. They contribute to the difficulties many face in attempting to avoid a return to prison, as well as in ensuring their physical and mental health and enabling them to become contributing members of society. Some of the lasting effects of time spent in prison impact formerly incarcerated persons directly on a personal and psychological level.[142] Other adverse effects impair the nature and stability of the relationships that formerly incarcerated persons are able to initiate and maintain.[143] Still others relate directly to the negative health consequences

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[140] Gendreau & Labrecque, *supra* note 115, at 350 (taking issue with the contrary observation of psychiatrist Terry Kupers).

[141] *See, e.g.*, STEPHEN J. BAHR, RETURNING HOME: REINTEGRATION AFTER PRISON OR JAIL (2015); Craig Haney, *The Psychological Impact of Incarceration: Implications for Postprison Adjustment* [hereinafter Haney, *The Psychological Impact of Incarceration*], *in* PRISONERS ONCE REMOVED: THE IMPACT OF INCARCERATION AND REENTRY ON CHILDREN, FAMILIES, AND COMMUNITIES 33 (Jeremy Travis & Michelle Waul eds., 2003); Christy A. Visher & Jeremy Travis, *Transitions from Prison to Community: Understanding Individual Pathways*, 29 ANN. REV. SOC. 89 (2003).

[142] *See, e.g.*, HANEY, REFORMING PUNISHMENT, *supra* note 121; Haney, *Prison Effects*, *supra* note 121; Haney, *The Psychological Impact of Incarceration*, *supra* note 141; Michael Massoglia & William Alex Pridemore, *Incarceration and Health*, 41 ANN. REV. SOC. 291, 293 (2015); Schnittker, *supra* note 125; Turney et al., *supra* note 125, at 466.

[143] *See, e.g.*, Holly Foster & John Hagan, *Supportive Ties in the Lives of Incarcerated Women: Gender, Race/Ethnicity, and Children's Human Rights*, 17 J. GENDER RACE & JUST. 257, 258 (2014); Michael Massoglia & Cody Warner, *The Consequences of Incarceration: Challenges for Scientifically Informed and Policy-Relevant Research*, 10 CRIMINOLOGY & PUB. POL'Y 851, 853 (2011); Kristin Turney, *Hopelessly Devoted? Relationship Quality During and After Incarceration*, 77 J. MARRIAGE &

that compromise their physical well-being.[144] They combine with the social stigma and diminished employment opportunities and other "collateral consequences"[145] of having been imprisoned to create substantial barriers to reintegration and long-term well-being. For example, Sebastian Daza and his colleagues provided a stark summary of the results of their long-term, nationwide study of this issue, stating that they "estimate that incarceration's adult mortality excess translates into a loss of between four and five years of life expectancy at age 40" and that at least some of the "gap in mortality between the United States and peer countries" seems to be attributable to this nation's "differential imprisonment experiences."[146]

Bruce Western and his colleagues have chronicled the numerous structural challenges that formerly incarcerated persons face upon their release from prison. Under the best of circumstances, this stressful transition involves the "anxiety of adjusting to social interaction in a free society under conditions of severe material deprivation."[147] Except in the most carefully implemented reentry programs, however, many who are released from prison are left to navigate these challenges on their own with minimal governmental or outside assistance. Alessandro De Giorgi's compelling narrative of the plight of many formerly incarcerated persons describes them as not only forced to grapple with the stigma of incarceration, but also "scrambling to disentangle themselves from the treacherous grips of chronic poverty, sudden homelessness, untreated physical and mental suffering, and the lack of meaningful social services."[148] There is reason to believe that time spent

FAM. 480, 480–81 (2015); Christopher Wildeman, *Parental Imprisonment, the Prison Boom, and the Concentration of Childhood Disadvantage*, 46 DEMOGRAPHY 265, 266 (2009).

[144] *See, e.g.*, Valerio Baćak & Christopher Wildeman, *An Empirical Assessment of the "Healthy Prisoner Hypothesis,"* 138 SOC. SCI. & MED. 187 (2015); Binswanger et al., *supra* note 127, at 159–61; Massoglia, *supra* note 126, at 57; Evelyn J. Patterson, *Incarcerating Death: Mortality in U.S. State Correctional Facilities, 1985–1998*, 47 DEMOGRAPHY 587, 601 (2010); Patterson, *The Dose-Response of Time Served in Prison on Mortality*, *supra* note 128, at 523; David L. Rosen, Victor J. Schoenbach & David A. Wohl, *All-Cause and Cause-Specific Mortality Among Men Released from State Prison, 1980–2005*, 98 AM. J. PUB. HEALTH 2278, 2278 (2008); Jason Schnittker & Andrea John, *Enduring Stigma: The Long-Term Effects of Incarceration on Health*, 48 J. HEALTH & SOC. BEHAV. 115, 115–16 (2007).

[145] *See, e.g.*, INVISIBLE PUNISHMENT: THE COLLATERAL CONSEQUENCES OF MASS INCARCERATION (Marc Mauer & Meda Chesney-Lind eds., 2002); Gabriel J. Chin, *The New Civil Death: Rethinking Punishment in the Era of Mass Incarceration*, 160 U. PA. L. REV. 1789 (2012).

[146] Sebastian Daza, Alberto Palloni & Jerrett Jones, *The Consequences of Incarceration for Mortality in the United States*, 57 DEMOGRAPHY 577, 591–92 (2020).

[147] Bruce Western, Anthony A. Braga, Jaclyn Davis & Catherine Sirois, *Stress and Hardship After Prison*, 120 AM. J. SOC. 1512, 1514 (2015).

[148] Alessandro De Giorgi, *Back to Nothing: Prisoner Reentry and Neoliberal Neglect*, 44 SOC. JUST. 83, 88 (2017).

in solitary confinement increases the difficulty of successfully overcoming these barriers.

Although data are mixed on whether time spent in solitary confinement specifically increases postprison criminal behavior (beyond the criminogenic effects of incarceration per se), it surely does not decrease it.[149] Here, too, a more meaningful measure of the extent of long-lasting damage incurred by solitary confinement is the quality of life that prisoners who endured it are able to manage once released.[150] There is evidence that they encounter more serious obstacles to successful reintegration back into free society, and that there are few if any specific programs available that acknowledge their solitary-confinement-related traumas and assist them in overcoming the psychological aftereffects.[151] Solitary confinement survivors suffer postprison adjustment problems at higher rates than the already high rates

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[149] *See, e.g.*, H. Daniel Butler, Benjamin Steiner, Matthew D. Makarios & Lawrence F. Travis III, *Assessing the Effects of Exposure to Supermax Confinement on Offender Postrelease Behaviors*, 97 PRISON J. 275, 277–80 (2017); David Lovell, L. Clark Johnson & Kevin C. Cain, *Recidivism of Supermax Prisoners in Washington State*, 53 CRIME & DELINQ. 633, 643–49 (2007); Daniel P. Mears & William D. Bales, *Supermax Incarceration and Recidivism*, 47 CRIMINOLOGY 1131, 1151 (2009); Laurence L. Motiuk & Kelley Blanchette, *Characteristics of Administratively Segregated Offenders in Federal Corrections*, 41 CANADIAN J. CRIMINOLOGY 131, 139–40 (2001); Youngki Woo, Laurie Drapela, Michael Campagna, Mary K. Stohr, Zachary K. Hamilton, Xiaohan Mei & Elizabeth Thompson Tollefsbol, *Disciplinary Segregation's Effects on Inmate Behavior: Institutional and Community Outcomes*, CRIM. JUST. POL'Y REV. 1, 11–14 (2019). The most recent study on this issue concluded that, in comparison to a matched sample of formerly incarcerated persons who had not been housed in solitary confinement during their prison term, solitary confinement survivors suffered "*higher post-release recidivism, proportionately more new commitments for all crime types, and shorter time to rearrest*." Kristen M. Zgoba, Jesenia M. Pizarro & Laura M. Salerno, *Assessing the Impact of Restrictive Housing on Inmate Post-Release Criminal Behavior*, 45 AM. J. CRIM. JUST. 102, 118 (2020) (emphasis in original).

[150] Most research on the effects of solitary confinement on subsequent in-prison behavior (i.e., in the mainline housing units to which prisoners are returned to serve the remainder of their prison sentences) has focused narrowly on disciplinary infractions. *See e.g.*, Justine A. Medrano, Turgut Ozkan & Robert Morris, *Solitary Confinement Exposure and Capital Inmate Misconduct*, 42 AM. J. CRIM. JUST. 863, 864 (2017); Robert G. Morris, *Exploring the Effect of Exposure to Short-Term Solitary Confinement Among Violent Prison Inmates*, 32 J. QUANTITATIVE CRIMINOLOGY 1, 2 (2016). More broadly, however, a group of Stanford researchers found that behavioral patterns and psychological reactions developed in the course of adapting to solitary confinement were persistent and problematic when formerly long-term isolated prisoners attempted to transition back to mainline prison housing. *See* HUMAN RIGHTS IN TRAUMA MENTAL HEALTH LAB, STANFORD UNIV., MENTAL HEALTH CONSEQUENCES FOLLOWING RELEASE FROM LONG-TERM SOLITARY CONFINEMENT IN CALIFORNIA 10 (2017), https://ccrjustice.org/sites/default/files/attach/2018/04/CCR_StanfordLab-SHUReport.pdf [https://perma.cc/5WGK-UBBN]. Psychiatrist Terry Kupers, who has written extensively about the mental health risks of solitary confinement, has termed the lingering effects of the experience "SHU postrelease syndrome." *See* TERRY ALLEN KUPERS, SOLITARY: THE INSIDE STORY OF SUPERMAX ISOLATION AND HOW WE CAN ABOLISH IT 151–67 (2017).

[151] *See, e.g.*, Daniel Pforte, *Evaluating and Intervening in the Trauma of Solitary Confinement: A Social Work Perspective*, 48 CLINICAL SOC. WORK J. 77, 85 (2020).

experienced by formerly incarcerated persons in general, including being more likely to manifest symptoms of PTSD.[152] In addition, as Lauren Brinkley-Rubinstein and her colleagues reported, formerly incarcerated persons who had spent time in solitary confinement were significantly more likely than other former prisoners to die during their first year of community reentry, especially from suicide, homicide, and opioid abuse.[153]

Western and his colleagues have emphasized the critical role played by "social integration"—not just finding a stable residence and obtaining gainful employment, but also "establishing community belonging"—in facilitating postprison adjustment.[154] They also acknowledged the critical importance of family ties "in normalizing the lives of those coming out of prison."[155] Yet these are precisely the things that time spent in solitary confinement can directly impede. The barriers that are routinely placed on access to telephones and visitation for prisoners in solitary confinement (special procedures and limited times), and the typically impersonal, noncontact nature of the visits (that must often take place "through glass and over phones") interfere with ongoing communication and contact; they serve as significant obstacles to the preservation of meaningful social relationships, beyond those typically encountered by prisoners in general.

In addition, prisoners in solitary confinement are often forced to adopt a range of necessary but ultimately problematic survival strategies. Although they are normal reactions adopted in response to the abnormal social deprivation of solitary confinement, they represent "social pathologies"—learning to live in the absence of others—that can impede subsequent social adjustment. As I have previously described them, these adaptations transcend the immediate and specific indices of pain and suffering that are reflected in studies of the effects of solitary confinement and involve significant changes in prisoners' relationships with others and even with

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[152] *See e.g.*, Brian O. Hagan, Emily A. Wang, Jenerius A. Aminawung, Carmen E. Albizu-Garcia, Nickolas Zaller, Sylviah Nyamu, Shira Shavit, Joseph Deluca & Aaron D. Fox, *History of Solitary Confinement Is Associated with Post-Traumatic Stress Disorder Symptoms Among Individuals Recently Released from Prison*, 95 J. URB. HEALTH 141, 146 (2018).

[153] Lauren Brinkley-Rubinstein, Josie Sivaraman, David L. Rosen, David H. Cloud, Gary Junker, Scott Proescholdbell, Meghan E. Shanahan & Shabbar I. Ranapurwala, *Association of Restrictive Housing During Incarceration with Mortality After Release*, JAMA NETWORK OPEN, Oct. 2019, https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2752350 [https://perma.cc/6NDF-NQY2]; *see also* Christopher Wildeman & Lars Andersen, *Solitary Confinement Placement and Post-Release Mortality Among Formerly Incarcerated Individuals: A Population-Based Study*, 5 LANCET PUB. HEALTH e107 (2020).

[154] Western et al., *supra* note 147, at 1515.

[155] *Id.*

themselves.[156] Prisoners in solitary confinement are forced into even greater levels of dependency on institutional structures than those in mainline prisons because there is so much less they are allowed to "do" for themselves. The forced asociality they endure can undermine their sense of self, placing them "literally at risk of losing their grasp on who they are," as well as eventually "becom[ing] increasingly unfamiliar and uncomfortable with social interaction."[157] If and when this happens, it will become increasingly difficult for them to undertake the task of social integration that Western and others have identified as crucial to the successful reintegration. Moreover, if the experience of solitary confinement places them at greater risk of remaining at the margins of social life after prison, they are ironically and painfully more likely to incur what we now know are the harmful effects of social isolation and loneliness that befall others in free society.

There is one additional issue that increases the potentially long-lasting negative effects of time spent in solitary confinement—the disproportionate number of mentally ill prisoners who are still being placed there by some prison systems.[158] The explanations for this unfortunate fact are multifaceted and difficult to completely disentangle. For one, persons with mental illness are at greater risk of committing disciplinary infractions and, in prisons that do not properly take their mental health conditions into account, they may be placed in solitary confinement as a result. In addition, some prisoners without preexisting mental health problems may develop them there, while others with underlying but undetected psychological disorders or vulnerabilities may have their conditions greatly exacerbated under the extraordinary stress of isolated confinement. Whatever the origins of their mental health symptoms and problems, these prisoners are all uniquely vulnerable to the harmful effects of solitary confinement. Their heightened vulnerability is precisely why many legal, human rights, mental health, and even correctional organizations have issued recommendations or mandates to exclude the mentally ill from such units.[159] The unfortunate fact that some

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[156] Craig Haney, *Mental Health Issues in Solitary and "Supermax" Confinement*, 49 CRIME & DELINQ. 124, 139 (2003).

[157] *Id.* at 139–40.

[158] Laura Dellazizzo, Mimosa Luigi, Charles-Édouard Giguère, Marie-Hélène Goulet & Alexandre Dumais, *Is Mental Illness Associated with Placement in Solitary Confinement in Correctional Settings? A Systematic Review and Meta-Analysis*, 29 INT'L J. MENTAL HEALTH NURSING 576, 579 (2020); Reiter, et al., *supra* note 10; Arthur T. Ryan & Jordan DeVylder, *Previously Incarcerated Individuals with Psychotic Symptoms Are More Likely to Report a History of Solitary Confinement*, 290 PSYCHIATRY RES. 113064 (2020).

[159] For example, the United Nations' so-called "Mandela Rules" on the treatment of prisoners prohibits the placement of mentally ill persons in solitary confinement. *See* UNITED NATIONS ON DRUGS

backward prison systems still place disproportionate numbers of mentally ill prisoners in solitary confinement means that there will be a number of formerly incarcerated persons who not only eventually reenter society with psychological or emotional problems that may require them to arrange and maintain access to treatment, but also that many of them will be solitary confinement survivors who must cope with its aftereffects as well.[160]

In any event, for mentally ill prisoners and all others released from solitary confinement, one of the most damaging aspects of the experience may well be its capacity to instill a sense of perpetual loneliness. If human beings are "wired to connect," then solitary confinement acts to disconnect those wires. Many people struggle to reconnect them long after returning to a social world and to the routine presence of others in their life. Some cannot successfully do so. Indeed, many prisoners in long-term solitary confinement fear that their ability to form or maintain relationships with other people will atrophy so significantly that it never regenerates. This is in many ways its cruelest and most debilitating long-term consequence, another component of the "social death" so many victims of long-term solitary confinement experience. It means that the experience of solitary confinement is not only a concentrated—indeed, "toxic"—form of social isolation that is harmful in its own right, but one that also has lasting effects, increasing the risk that its victims will be consigned to isolated and lonely lives even after they have been released from prison.

CONCLUSION

Solitary confinement represents a particularly toxic, dangerous subset of a much broader, scientifically well-documented, extremely harmful condition—the deprivation of meaningful social contact. Researchers, public health policymakers, and politicians now understand the adverse effects of social isolation, and many are devising strategies to respond to the very serious threat to personal and even societal well-being that this kind of deprivation represents. The research on this topic is compelling and has burgeoned over the last several decades. The evidence continues to mount

& CRIME, THE UNITED NATIONS STANDARD MINIMUM RULES FOR THE TREATMENT OF PRISONERS (THE NELSON MANDELA RULES) 14 (2015), https://www.unodc.org/documents/justice-and-prison-reform/Nelson_Mandela_Rules-E-ebook.pdf [https://perma.cc/62U6-Q4SJ]. Others do as well. *See Solitary Confinement (Isolation)*, NAT'L COMM'N ON CORR. HEALTH CARE (Apr. 10, 2016), http://www.ncchc.org/solitary-confinement [https://perma.cc/3QSS-R4L7]. See also the statement from the 2018 international Santa Cruz Summit, *Santa Cruz Summit*, *supra* note 8.

[160] Perhaps not surprisingly, formerly incarcerated persons who also suffer from mental illness have more difficulty in generally successfully adjusting to postprison life. *See, e.g.*, Kristin G. Cloyes, Bob Wong, Seth Latimer & Jose Abarca, *Time to Prison Return for Offenders with Serious Mental Illness Released from Prison: A Survival Analysis*, 37 CRIM. JUST. & BEHAV. 175 (2010).

that social isolation, social exclusion, loneliness, and the deprivation of caring human touch can and do inflict serious psychological and physical damage.

As this Essay makes clear, nowhere in society are these kinds of social harms inflicted as completely, cruelly, and intentionally than in solitary confinement units. Direct studies of the terrible consequences of prison isolation are but one component of the theoretically coherent and extensive empirical database on which legal and correctional decisionmakers can and should draw in devising policies to address the harmfulness of this dangerous practice. In contrast to the now well-known adverse consequences of social isolation in society at large, the deprivations inflicted in solitary confinement units are truly extreme and forcefully impose many additional kinds of deprivation, ones that worsen the painful and damaging effects of the experience. Moreover, the toxic deprivations of solitary confinement are imposed *in addition to* the already significant and harmful pains of imprisonment per se. The negative consequences of time spent in solitary confinement are hardly *de minimis* or short-lived, but rather have the capacity to incur serious and even life-threatening damage that persists long after the experience of prison isolation, or imprisonment itself, has ended.

There are now unquestionably sound scientific reasons to radically rethink the circumstances under which solitary confinement can be humanely employed if, indeed, it can or ever should be.