

ARTICLES

VIRTUAL REALITY: PROSPECTIVE CATALYST FOR RESTORATIVE JUSTICE

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ABSTRACT

*A 2018 U.S. Department of Justice report assessing data from thirty states found that eighty-three percent of those individuals released from state prisons in 2005 were rearrested within nine years.** When a revolving door ushers five of six individuals back into custody and decimates communities, more effective approaches to criminal justice demand attention. In countries around the world, restorative justice has been emerging as a promising candidate. It generally involves an interactive process in which stakeholders identify and grapple with harms caused by the crime. But many environments lack the resources to invoke its benefits. While restorative justice takes various forms, the crux of each variant involves perspective taking—seeing the harm and its consequences through the eyes of those who experienced it. Cognitive science research suggests that the emerging technology of virtual reality affords an innovative and often especially compelling approach to perspective taking. Embodying an avatar through virtual reality unlocks the opportunity to experience the world as another. Avatars could make virtual perspective-taking encounters a valuable introduction for subsequent in-person encounters or offer a perspective-taking opportunity when in-person encounters are not practical or prudent. This Article explores how virtual reality could become a catalyst for restorative justice.*

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** MARIEL ALPER, MATTHEW R. DUROSE, & JOSHUA MARKMAN, 2018 UPDATE ON PRISONER RECIDIVISM: A 9-YEAR FOLLOW-UP PERIOD (2005–2014), U.S. DEPT. JUSTICE, OFFICE OF JUSTICE PROGRAMS, BUREAU OF JUSTICE STATISTICS, NCJ 250975 (2018), <https://www.bjs.gov/content/pub/pdf/18upr9yfup0514.pdf> (last visited Feb. 6, 2021) (study based on random sampling process).

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INTRODUCTION

He stood before us, in a line of six men. He was the first to speak. He explained that, at age fifteen, he had committed a murder.¹ For this crime, he had been sentenced to forty years to life in prison. He was, in the local vernacular, a “lifer.” Here in San Quentin State Prison, these six men shared with us² brief glimpses into their journeys from violence in their communities to the confined world within the armed wall posts of this fortress.

The speaker came of age in the “tough on crime” and “three strikes” era, a time when the California Penal Code focused on punishment rather than rehabilitation, retribution rather than re-entry.³ But as he told his story, the most salient feature

1. Although each of the men introduced himself, to protect their privacy, I have not included their names.

2. San Quentin allows members of the public to visit the prison. The group visiting the prison that day consisted primarily of students from two educational institutions. Lt. Sam Robinson, the San Quentin Public Information Officer, organized and led the tour.

3. See, e.g., Sara Sun Beale, *Still Tough on Crime? Prospects for Restorative Justice in the United States*, 2003 UTAH L. REV. 413, 413–14 (comparing U.S. movement toward punitive policies with movement toward restorative justice in New Zealand and Australia); HADAR AVIRAM, *YESTERDAY’S MONSTERS: THE MANSON FAMILY CASES AND THE ILLUSION OF PAROLE* 136 (2020) (“In 2005, the California Department of Corrections (CDC) changed its name. In what activists saw as a victory, the department added the letter R to its name, for *Rehabilitation*.”).

was not anger. Instead, it was the emergence of empathy for the survivors⁴ of his crime, for the loss and pain he had caused others. In this context, he spoke of his involvement with restorative justice programming in San Quentin. It is important to note that parties responsible for harm have also frequently been survivors of prior criminal conduct or abuse themselves.⁵ As the five-hour visit to the prison progressed, empathy became a refrain. In narratives we heard that day from men confined behind the walls at San Quentin, restorative justice encounters seemed to have touched the speakers in ways that made empathy accessible.⁶

A 2018 U.S. Department of Justice study on recidivism reports that eighty-three percent of the formerly incarcerated persons from the thirty states surveyed were rearrested in the nine-year period following their release.⁷ When a revolving door ushers five of six individuals back into custody and undermines the fabric of communities,⁸ more effective approaches to criminal justice demand attention.⁹ In countries around the world, restorative justice has been emerging as a promising candidate.¹⁰ It commonly involves an interactive process where stakeholders—often including a survivor

4. “Victim” and “offender” are terms commonly used in the restorative justice canon. *See, e.g.*, Jeff Latimer, Craig Dowden & Danielle Muise, *The Effectiveness of Restorative Justice Practices: A Meta-Analysis*, 85 PRISON J. 127, 128 (2005). However, this Article refers to “responsible party” in lieu of “offender,” when the reference is not part of the name of a program or quotation and “survivor” in lieu of “victim” under the same constraints. Restorative justice approaches often require, as a threshold matter, that the responsible party be willing to acknowledge accountability for having caused harm to the survivor. *Id.* at 128 (noting among other expectations that “the offender needs to accept responsibility for the harm and be willing to openly and honestly discuss the criminal behaviour”).

5. *See, e.g.*, DANIELLE SERED, UNTIL WE RECKON: VIOLENCE, MASS INCARCERATION, AND A ROAD TO REPAIR 4 (2019) (“Nearly everyone who commits violence has also survived it, and few have gotten formal support to heal.”). As survivors of prior crimes or abuse, responsible party engagement in real-time restorative justice with survivors or surrogate survivors or in virtual contexts might risk exacerbating a responsible party’s Post Traumatic Stress Disorder. Whether this is monitored and addressed in a live-survivor encounter may depend on the circumstances of that encounter. A virtual encounter should include monitoring for that risk. *See infra* notes 260 & 300 and accompanying text.

6. For a description of how restorative justice can impact responsible parties, see, e.g., SUNNY SCHWARTZ & DAVID BOODELL, DREAMS FROM THE MONSTER FACTORY 148–53 (2009). In a TED talk highlighting the value of restorative justice and the importance of empathy, and ways their impact might be explained from a neuroscientific perspective, Dr. Daniel Reisel notes that “[s]uch programs won’t work for everyone, but for many, it could be a way to break the frozen sea within.” DAN REISEL, NEUROSCIENCE OF RESTORATIVE JUSTICE TED TALK, https://www.ted.com/talks/dan_reisel_the_neuroscience_of_restorative_justice/transcript?language=en#t-397503 (last visited Feb. 6, 2021).

7. MARIEL ALPER, MATTHEW R. DUROSE & JOSHUA MARKMAN, U.S. DEP’T OF JUST., OFF. OF JUST. PROGRAMS, BUREAU OF JUST. STAT., 2018 UPDATE ON PRISONER RECIDIVISM: A 9–YEAR FOLLOW-UP PERIOD (2005–2014), at 1 (2018) [hereinafter 2018 UPDATE], <https://www.bjs.gov/content/pub/pdf/18upr9yfup0514.pdf> (last visited Feb. 6, 2021) (describing study based on random sampling process).

8. For a discussion of the impact on communities, in particular, communities of color, see *infra* notes 100–112 and accompanying text.

9. In her 2019 book, Fania Davis, Executive Director and Co-founder of Restorative Justice for Oakland Youth, offers examples of “restorative justice conferencing programs [that] exemplify [a] vision of a restorative justice that repairs individual and social harms and interrupts overincarceration of youth of color.” FANIA E. DAVIS, THE LITTLE BOOK OF RACE AND RESTORATIVE JUSTICE: BLACK LIVES, HEALING, AND US SOCIAL TRANSFORMATION 71 (2019).

10. *See infra* note 12 and accompanying text; *infra* Part I.

and responsible party—identify, grapple with, and frequently try to remedy harms caused by a responsible party's conduct.¹¹ Among other benefits, empirically-based meta-analyses suggest that restorative justice approaches can reduce recidivism.¹² Because, however, substantial trauma may accompany and persist in the wake of criminal acts,¹³ and invoking empathy can be a complex and demanding process,¹⁴

11. Carrie Menkel-Meadow, *Restorative Justice: What Is It and Does It Work?*, 3 ANN. REV. L. & SOC. SCI. 161, 162 (2007) (“Restorative justice is the name given to a variety of different practices, including apologies, restitution, and acknowledgments of harm and injury, as well as to other efforts to provide healing and reintegration of responsible parties into their communities, with or without additional punishment.”). Scholars note that restorative justice practices today owe their existence to Indigenous approaches in several countries, including those in certain countries in Africa, in North America, and New Zealand. SERED, *supra* note 5, at 133. As Ms. Sered notes, there are “complex questions about cultural appropriation that are beyond the scope” of her book. *Id.* These important questions also exceed the purview of this article.

12. See, e.g., Latimer et al., *supra* note 4, at 137; Heather Strang, Lawrence W. Sherman, Evan Mayo-Wilson, Daniel J. Woods & Barak Ariel, *Restorative Justice Conferencing (RJC) Using Face-to-Face Meetings of Offenders and Victims: Effects on Offender Recidivism and Victim Satisfaction. A Systematic Review*, 12 CAMPBELL SYSTEMATIC REVIEWS 1, 4 (2013); DAVID B. WILSON, AJIMA OLAGHERE & CATHERINE S. KIMBRELL, U.S. DEP'T OF JUST., OFF. OF JUST. PROGRAMS, OFF. OF JUV. JUST. & DELINQ. PREVENTION, EFFECTIVENESS OF RESTORATIVE JUSTICE PRINCIPLES IN JUVENILE JUSTICE: A META-ANALYSIS 36 (2017), <https://www.ncjrs.gov/pdffiles1/ojdp/grants/250872.pdf>; John Braithwaite, *Evidence for Restorative Justice*, VT. BAR J. 18 (2014) (“The latest important addition to th[e] literature is a meta-analysis for the Campbell Collaboration on the impact of restorative justice on crime by Heather Strang et al. Its conclusions are fundamentally similar to the previous meta-analyses of over thirty tests of the effectiveness of restorative justice by both Latimer, Dowden and Muise and Bonta et al., each conducted for the Canadian Department of Justice. All three meta-analyses found a statistically significant effect across combined studies in lower reoffending for restorative justice cases (compared to controls).” (footnotes omitted)). But not all meta-analyses have found reductions in recidivism. See Nuala Livingstone, Geraldine MacDonald & Nicola Carr, *Restorative Justice Conferencing for Reducing Recidivism in Young Offenders (Aged 7 to 21)*, COCHRANE DATABASE SYSTEMATIC REVIEWS 19 (2013) (“Overall, this review did not find reliable evidence that the use of restorative justice conferencing is more effective for young offenders than the use of normal court processing. Across all the meta-analyses conducted on the recidivism outcomes, no significant main effects were identified.”).

13. See, e.g., GEORGINA CÁRDENAS LÓPEZ, ANABEL DE LA ROSA, LORENA FLORES & XIMENA DURÁN BACA, NAT'L AUTONOMOUS UNIV. OF MEX., SCH. OF PSYCHOL., A CONTROLLED TRIAL FOR PTSD IN MEXICAN VICTIMS OF CRIMINAL VIOLENCE 42 (2013). Study authors noted that “[e]xposure to violence is associated with mental health problems such as depression and substance abuse. However, one of most important psychological repercussions associated with victims and witnesses is PTSD [post-traumatic stress disorder].” *Id.* at 41.

14. Whether the most successful approaches invoke empathy or self-other overlap is subject to debate. See *infra* notes 154–55 and accompanying text. Moreover, research suggests that some physiological and mental health conditions might make efforts to invoke empathy or self-other overlap more challenging, whether in real-world restorative justice sessions with live survivors or in virtual reality settings. See, e.g., Jean Decety, Chenyi Chen, Carla Harenski & Kent A. Kiehl, *An fMRI Study of Affective Perspective Taking in Individuals With Psychopathy: Imaging Another in Pain Does Not Evoke Empathy*, 7 FRONTIERS HUM. NEUROSCIENCE 1, 1 (2013). Decety et al., opine that “[e]mpathy is a deeply fundamental component of healthy co-existence whose absence is the hallmark of serious social-cognitive dysfunctions. Among the various psychopathologies marked by such deficits, psychopaths are characterized by a general lack of empathy and attenuated responding to emotional stimuli.” *Id.* at 1 (citations omitted). For additional discussion of the Decety et al., study, see *infra* note 154. In the context of restorative justice, neuroscientist Dr. Daniel Reisel opines that “our interventions should focus on enlarging and expanding their [the responsible party's] moral circle of concern.” Daniel Reisel, *Towards a Neuroscience of Morality*, in THE PSYCHOLOGY OF RESTORATIVE JUSTICE: MANAGING THE POWER WITHIN 49, 56 (Theo Gavrielides ed., 2015) [hereinafter Reisel, *Towards a Neuroscience of Morality*]. In his TED talk on neuroscience and the value of restorative justice, Dr. Reisel references a “study from Stanford University [that] showed that people who have played a virtual reality game in which they took on the role of a

restorative justice takes time, resources, and commitment.¹⁵ San Quentin, with its 3,000 volunteers from the community,¹⁶ is unusual in the scope of the services it offers to incarcerated individuals. Although there are notable exceptions,¹⁷ prisons around the country, which are often situated in more remote or rural areas, commonly do not enjoy the resources available at San Quentin.¹⁸

Moreover, restorative justice anticipates communication and confrontation for which parties may be at very different stages of readiness.¹⁹ Although crime survivors (or their families) might at some point want to engage in a direct encounter with the responsible party (and the responsible party with a survivor or their family), such an encounter may be premature or not appropriate for one or more parties.²⁰ It may also exact an emotional cost, including re-igniting or exacerbating

good and helpful superhero actually became more caring and helpful towards others afterwards.” REISEL, *supra* note 6. He continues: “Now I’m not suggesting we endow criminals with superpowers, but I am suggesting that we need to find ways to get [individuals who experience psychopathy] to change their brains and their behavior, for their benefit and for the benefit of the rest of us.” *Id.* Dr. Reisel hypothesizes that neuroplasticity, neurogenesis, and/or epigenetics might be involved “in the brain changes that underlie the transformation seen in offenders who take part in restorative processes.” Reisel, *Towards a Neuroscience of Morality, supra*, at 57.

15. In an interview, Tyler Musgrave describes working as a restorative justice facilitator and creating a virtual reality “docu series that will storytell restorative justice practices happening within Oakland, CA.” Miriam Avery, *From Brunch to Breakthroughs: Mozilla Supports VR Creators @ Sundance Through Sponsoring Inclusive Spaces*, MOZILLA: LIFE@MOZILLA (Feb. 27, 2019), <https://blog.mozilla.org/careers/sundance-brunch-to-breakthroughs/>.

Musgrave explains that “restorative justice is a process. . . . We just don’t bring people who have done harm or who have been harmed into a circle right away. It takes actually a lot of preparation. . . . I was doing the facilitation within the Oakland area for an organization called Community Works . . . , and in our process it took about two or three months to prepare the young person to be able to apologize[.]” Mateusz Pawluczuk, [*VR Transcripts*]: *Voices of VR Kent Bye With Tyler Musgrave – Bringing Restorative Justice Practice in VR*, MEDIUM, <https://medium.com/@przecinek/vr-transcripts-voices-of-vr-kent-bye-with-tyler-musgrave-bringing-restorative-justice-3c2759c2c998> (last visited Mar. 8, 2021).

16. Richard Gonzales, *Inside San Quentin, Inmates go to College*, NAT’L PUB. RADIO (June 20, 2011, 12:01 AM), <https://www.npr.org/2011/06/20/137176620/inside-san-quentin-inmates-go-to-college> (“San Quentin’s model is centered around some 3,000 community volunteers who conduct about 70 inmate programs.”).

17. See, e.g., Kay Pranis, *Restorative Justice in Minnesota and the USA: Development and Current Practice*, in ANNUAL REPORT FOR 2003 AND RESOURCE MATERIAL SERIES NO. 63, UNITED NATIONS ASIA AND FAR EAST INSTITUTE (UNAFEI) FOR THE PREVENTION OF CRIME AND THE TREATMENT OF OFFENDERS’ 123RD INTERNATIONAL SENIOR SEMINAR VISITING EXPERTS’ PAPERS 111, 111–13 (2004), https://www.unafei.or.jp/publications/pdf/RS_No63/No63_00All.pdf (describing the Minnesota Department of Corrections and its restorative justice program).

18. AVIRAM, *supra* note 3, at 150 (“And more programs are available in San Quentin, where scores of gooders from the Bay Area volunteer, than in more remote prisons in rural areas.”).

19. See, e.g., MARK S. UMBREIT & JEAN GREENWOOD, U.S. DEP’T OF JUST., OFF. OF JUST. PROGRAMS, OFF. FOR VICTIMS OF CRIME, CTR. FOR RESTORATIVE JUST. & PEACEMAKING, GUIDELINES FOR VICTIM-SENSITIVE VICTIM-OFFENDER MEDIATION: RESTORATIVE JUSTICE THROUGH DIALOGUE 8–9 (2000).

20. See, e.g., Jennifer Gerarda Brown, *The Use of Mediation to Resolve Criminal Cases: A Procedural Critique*, 43 EMORY L.J. 1247, 1249–50 (1994) (opining that “VOM [victim-offender mediation] disserves the interests of victims by stressing forgiveness and reconciliation before victims have the vindication of a public finding that the offender is guilty. In addition, VOM suppresses victims’ outrage and loss by assuming that these negative feelings can be expressed and resolved in the course of a few hours spent meeting with the offender”); Kathleen Daly, *The Limits of Restorative Justice*, in HANDBOOK OF RESTORATIVE JUSTICE: A GLOBAL PERSPECTIVE 134, 141 (Dennis Sullivan & Larry Tift eds., 2006) (“After a conference ended, the high distress

trauma, which parties are not ready or willing to pay.²¹ A 2018 review notes that, if provided an opportunity to engage in face-to-face mediation, “[v]arious studies have found that about 40–60% of crime victims choose to participate in restorative justice programs[.]”²² This suggests that 40–60% might not.²³

While restorative justice takes various forms, the crux of each variant involves perspective taking: seeing the harm and its consequences through the eyes of those who experienced it.²⁴ By now, a substantial body of research documents beneficial effects of perspective taking designed to induce empathy or self-other overlap (which involves the actor seeing or assigning qualities or attributes that they possess to another).²⁵ But the emerging technology of virtual reality offers an innovative and often especially compelling approach to perspective taking.²⁶ With an appropriately designed immersive virtual experience, for you to perceive the virtual realm as real, as well as for you to effectively embody your avatar, often requires only moments.²⁷

Imagining is different than experiencing.²⁸ In virtual reality, computer-generated processes do the work of imagining for you.²⁹ Then, instead of imagining the

victims were far more likely to remain angry and fearful of offenders, and to be negative toward them, than the low distress victims.”)

21. See, e.g., Brown, *supra* note 20, at 1249–50, 1266–67, 1273–76.

22. Toran Hansen & Mark Umbreit, *State of Knowledge: Four Decades of Victim-Offender Mediation Research and Practice: The Evidence*, 36 CONFLICT RESOL. Q. 99, 102 (2018) (citations omitted), <https://doi.org/10.1002/crq.21234>. Hansen and Umbreit also note that “victim participation rates of up to 90% have been reported in certain locations” *Id.* (citations omitted). The research reflected in the statistics here may also be limited to cases that do not involve “severe violence.” *Id.* at 99–100.

23. For research focusing on how the percentage of participants might be increased, see, for example, *infra* notes 214–16 and accompanying text.

24. See, e.g., Daly, *supra* note 20, at 138–39.

25. See, e.g., Harry Farmer & Lara Maister, *Putting Ourselves in Another’s Skin: Using the Plasticity of Self-Perception to Enhance Empathy and Decrease Prejudice*, 30 SOC. JUST. RES. 323, 337 (2017). As discussed *infra* at notes 163–69 and accompanying text, not all perspective taking produces positive results, and there remains controversy over measures used to evaluate those results.

26. See, e.g., JEREMY BAIENSON, EXPERIENCE ON DEMAND: WHAT VIRTUAL REALITY IS, HOW IT WORKS, AND WHAT IT CAN DO 6 (2018); Tabitha C. Peck, Sofia Seinfeld, Salvatore M. Aglioti & Mel Slater, *Putting Yourself in the Skin of a Black Avatar Reduces Implicit Racial Bias*, 22 CONSCIOUSNESS & COGNITION 779, 779 (2013); Sun Joo (Grace) Ahn, Amanda Minh Tran Le & Jeremy Bailenson, *The Effect of Embodied Experiences on Self-Other Merging, Attitude, and Helping Behavior*, 16 MEDIA PSYCHOL. 7 (2013); Victoria Groom, Jeremy N. Bailenson & Clifford Nass, *The Influence of Racial Embodiment on Racial Bias in Immersive Virtual Environments*, 4 SOC. INFLUENCE 1, 14 (2009), <https://vhil.stanford.edu/mm/2009/groom-racial-embodiment.pdf> [<https://perma.cc/W8BD-ZMCZ>]; Kate E. Bloch, *Harnessing Virtual Reality to Prevent Prosecutorial Misconduct*, 32 GEO. J. LEGAL ETHICS 1, 7 (2019) [hereinafter Bloch, *Harnessing Virtual Reality*].

27. James K. Scarborough & Jeremy N. Bailenson, *Avatar Psychology*, in THE OXFORD HANDBOOK OF VIRTUALITY 129, 130 (Mark Grimshaw ed., 2014) (“Graphical forms of online representation have become known as avatars. Avatars can range from very simple images . . . to complex animated 3D forms frequently *anthropomorphized*, that is, made to appear roughly human.”); Bloch, *Harnessing Virtual Reality*, *supra* note 26, at 7 nn. 22–23 and accompanying text.

28. Jean-Louis van Gelder, Reinout E. de Vries, Andrew Demetriou, Iris van Sintemaartensdijk & Tara Donker, *The Virtual Reality Scenario Method: Moving from Imagination to Immersion in Criminal Decision-making Research*, 56 J. RES. CRIME & DELINQ. 451, 454 (2019) (“Written scenarios require a relatively high degree of cognitive effort, consisting of reading the text, processing the information provided, imagining the situation, and subsequently taking perspective[.]”) (citation omitted).

29. See, e.g., BAIENSON, *supra* note 26, at 1–6.

world through another's eyes, you perceive yourself as looking through those other eyes.³⁰ Not only can it increase effectiveness,³¹ but it can also make perspective-taking encounters possible when in-person encounters are not practical or prudent. Based on this research, perspective taking using virtual reality might be applied to advance restorative justice. Such a virtual encounter does not require participation by a crime survivor and hence does not impose an emotional toll on the survivor, and it could reach environments that were previously inaccessible to restorative justice work.

Imagine that, instead of listening as a third person to a survivor recounting their experience, the responsible party could, through an avatar, "become" the survivor or a member of the survivor's family for a few moments and experience some, albeit not all,³² of the consequences of the responsible party's acts.³³ For example, the responsible party could experience, as an avatar, being a survivor who is evicted from their home because the money stolen in the robbery was no longer available to pay rent. Or, the responsible party could become the survivor's caregiver struggling to help the survivor with basic life functions that the crime rendered the survivor unable to perform. Today's technology can make such virtual encounters possible. The most effective repertoire of empathy-focused immersive encounters remains subject to further empirical inquiry. These encounters should be designed to respect the dignity of participants and the relevant ethical guidelines,³⁴ as well as to advance restorative, not retributive, ends. Responsible party immersion does not assume that the virtual reality experience will reproduce the criminal episode itself.³⁵

Avatars could also address risks inherent in live engagement by crime survivors, by, for example, avoiding the triggering of survivor or responsible party Post Traumatic Stress Disorder ("PTSD"). Moreover, because restorative justice programs may invest significant time in working with and preparing

30. See, e.g., *id.* at 6 ("You will be able to inhabit an avatar body with a different race or gender, or see the world from the perspective of an eagle or a shark."). For a discussion of the "Proteus" effect, "which suggests that an individual's behavior conforms to his or her digital self-representation[.]" see Scarborough & Bailenson, *supra* note 27, at 135.

31. See, e.g., *infra* notes 190–93.

32. Ethical considerations are critical to the design of the immersive experience. For a discussion of such considerations, please see *infra* notes 247–68 and accompanying text.

33. Researchers recently conducted a study involving virtual reality, where actors who had been convicted of domestic violence became targets of verbal domestic violence in an immersive environment. See Sofia Seinfeld, Jorge Arroyo-Palacios, Guillermo Iruretagoyena, Ruud Hortensius, Luis E. Zapata, David Borland, Beatrice de Gelder, Mel Slater & Maria V. Sanchez-Vives, *Offenders Become the Victim in Virtual Reality: Impact of Changing Perspective in Domestic Violence*, 8 *SCI. REPS.* 1 (2018). In this study, discussed *infra* at notes 218–22 and accompanying text, the researchers sought to determine if the responsible parties could improve their ability to distinguish happy facial expressions and body language from fearful ones. *Id.*

34. See *infra* Section III.A.2 for a discussion of ethical guidelines.

35. See *infra* Part III for a detailed discussion of considerations for designing immersive experiences for responsible parties.

a responsible party to engage in a mediation with a survivor,³⁶ a virtual reality experience could serve as an introduction to, or preview of, subsequent in-person encounters. Research suggests that technological proficiency in the virtual realm is just beginning to coincide with interest in immersive virtual reality for responsible parties in restorative justice programs in the United States.³⁷ This Article analyzes how virtual reality might amplify the benefits of restorative justice and provide opportunities where they were absent before.

Part I of this Article offers a working definition of restorative justice³⁸ and an overview of salient benefits and limitations to the approach.³⁹ Part II investigates perspective taking and empirical work on virtual reality in invoking empathy and

36. For example, UC Hastings Law Professor Sheila Purcell, former director of the California San Mateo Superior Court's Multi-option ADR Project, explains that "[f]rom approximately 2002–2012 [the Juvenile Delinquency Victim Offender program] received and implemented, in conjunction with the Juvenile Probation Dept., a series of federal Juvenile Accountability block grants to provide an 8 week class on Victim Impact Awareness. The series was intended to prepare the juveniles to participate effectively in Victim Offender Mediation regarding their own cases. Victims of crime were some of the presenters who helped to build empathy in the juveniles, thereby preparing them to participate in the mediation of their own cases in a more meaningful way." E-mail from Sheila Purcell, Professor, UC Hastings, to Kate Bloch (July 6, 2020, 11:48 AM PDT) (on file with author).

37. See, e.g., *Teardrop Tattoos, Prison Life and Smart Justice*, U. COLO. ANSCHUTZ MED. CAMPUS NAT'L MENTAL HEALTH INNOVATION CTR.: NMHC BLOG (Oct. 1, 2018) [hereinafter *Teardrop Tattoos*], <https://www.cuanschutz.edu/centers/national-mental-health-innovation/news-media/nmhc-blog/nmhc-blog/teardrop-tattoos-prison-life-and-smart-justice> (describing an initial visit by personnel from the University of Colorado's National Mental Health Innovation Center to assess possibilities for virtual reality in a correctional facility in Alaska, including the possibility of application in a restorative justice context). There also appears to be work developed in France in the virtual reality and restorative justice domain involving survivors and responsible parties. See, e.g., *infra* notes 234–239 and accompanying text; Erwan Dieu, Irene Rodgers & Olivier Sorel, Benefits of Virtual Reality in Restorative Justice Practices, Workshop Presentation at Maryland's 7th Restorative Justice Conference, University of Maryland (2018) (PowerPoint presentation from Irene Rodgers on file with author); Sven Zebel, Jiska Jonas van Dijk & Olivier Sorel, *New (Digital) Approaches to Understand and Optimize Victim-Offender Mediation*, in EUROPEAN FORUM FOR RESTORATIVE JUSTICE 10TH INTERNATIONAL CONFERENCE 83, 83 (June, 2018), <https://www.euforumrj.org/sites/default/files/2019-11/final-booklet-merged-online1.pdf> ("The purpose of this presentation is first to make an inventory of innovative RJ practices implemented in France in recent years and second to present the innovative modalities of accompaniments, with a particular emphasis on the virtual reality protocol, allowing a first virtual restorative mediation, premise of the physical restorative mediation."); *Justice Restaurative: Une Nouvelle Méthode Pour Panser Toutes les Plaies, Les Outils de Justice Restaurative*, 3038 ACTUALITÉS SOCIALES HEBDOMADAIRES 20 (Dec. 15, 2017), <https://pratiques-restauratives.com/wp-content/uploads/2017/12/SPR-Article-ASH-2017.pdf>. For an overview of virtual reality applications in a variety of related criminal justice contexts, see *infra* notes 196–244 and accompanying text.

38. The definition of restorative justice is subject to debate. Latimer et al., *supra* note 4, at 131. Consequently, this Article offers only a working definition.

39. I have previously written about restorative justice and about virtual reality separately in other contexts. See Kate E. Bloch, *Reconceptualizing Restorative Justice*, 7 HASTINGS RACE & POVERTY L.J. 201 (2010) [hereinafter Bloch, *Reconceptualizing Restorative Justice*]; Bloch, *Harnessing Virtual Reality*, *supra* note 26, at 6–7, 36–56. This Article builds on those prior works in order to explore the application of virtual reality to restorative justice, an intersection about which I have not previously published. The first two Parts of this Article, which provide background and overviews of restorative justice and virtual reality perspective taking more generally, update and draw liberally from those two articles. This Article's contribution lies at the intersection of these two bodies of research—in how virtual reality might expand the scope of the positive impact of restorative justice. See *infra* Part III.

self-other overlap. Part III explores how virtual reality could scaffold and expand existing restorative justice implementation and discusses pertinent potential drawbacks to the use of virtual reality in this context.

I. RESTORATIVE JUSTICE

The experiences that speakers in San Quentin shared represent a snapshot of larger themes in restorative justice. Although restorative justice has long been practiced in many cultures,⁴⁰ in recent decades, it has become a widespread, internationally-recognized and studied movement.⁴¹ It serves as the framework for mediation in vandalism and petty theft cases, and in cases involving violent crimes, like murder and rape.⁴² It has even propelled reconciliation in circumstances of mass atrocities, like genocide.⁴³

A. Restorative Justice Defined

Restorative justice is an ancient concept, embraced and practiced for centuries by Indigenous peoples across the globe.⁴⁴ Executive Director Fania Davis, co-founder of Restorative Justice for Oakland Youth, notes that “[i]n keeping with the . . . principles of African and other indigenous justice systems, restorative justice invites a paradigm shift in the way we think about and do justice. . . . Justice is a healing ground, not a battleground.”⁴⁵ Professor Howard Zehr explains that, “[r]estorative justice views crime, first of all, as harm done to people and communities A harm focus . . . implies a central concern for victims’ needs and roles . . . [and] also implies an emphasis on offender accountability and responsibility.”⁴⁶ By accountability, Zehr clarifies that he does not mean punishment, but rather a process that “encourages offenders to understand the consequences of their actions

40. See, e.g., Jon’a F. Meyer, *History Repeats Itself: Restorative Justice in Native American Communities*, 14 J. CONTEMP. CRIM. JUST. 42, 43–45 (1998) (describing restorative justice practices in Native American and other Indigenous communities); COLORIZING RESTORATIVE JUSTICE: VOICING OUR REALITIES 3 (Edward C. Valandra Waṅbli Wap̓háha Hokšila ed., 2020) (“Restorative justice and restorative practices are rooted in Indigenous ways worldwide.”); Beale, *supra* note 3, at 418–19.

41. Howard Zehr, *Restorative Justice: The Concept, Movement Sweeping Criminal Justice Field Focuses on Harm and Responsibility*, 59 CORR. TODAY 68, 68 (1997); UMBREIT & GREENWOOD, *supra* note 19, at 5; Hansen & Umbreit, *supra* note 22, at 101. Complex questions about whether (and potentially how) to employ restorative justice in face-to-face contexts involving intimate violence are the subject of scholarly inquiry, but largely beyond the scope of this Article. For a discussion of the use of restorative justice principles specifically in domestic violence, see Lawrence W. Sherman, *Domestic Violence and Restorative Justice: Answering Key Questions*, 8 VA. J. SOC. POL’Y & L. 263, 264–65 (2000).

42. See, e.g., Pranis, *supra* note 17, at 114.

43. Scholars note, for example, that the Truth and Reconciliation Commission in South Africa embodied fundamental tenets of restorative justice. Jennifer J. Llewellyn & Robert Howse, *Institutions for Restorative Justice: The South African Truth and Reconciliation Commission*, 49 U. TORONTO L.J. 355, 357 (1999); see Menkel-Meadow, *supra* note 11, at 163.

44. See, e.g., Menkel-Meadow, *supra* note 11; Meyer, *supra* note 40, at 43.

45. DAVIS, *supra* note 9, at 29.

46. Zehr, *supra* note 41, at 68.

[and] to empathize with victims.”⁴⁷ Restorative justice thus embraces a more context- and stakeholder-dependent view of criminal conduct and the appropriate response to such conduct than does the traditional criminal justice system.⁴⁸

In contemporary practice, restorative justice manifests in a number of forms.⁴⁹ At least two approaches to restorative justice are prevalent in the U.S. criminal justice system.⁵⁰ The first, referred to here as the classic approach,⁵¹ generally replaces all or a portion of the criminal justice adjudicatory and sentencing processes.⁵² It might take the form of a mediated gathering of stakeholders in which the participants first recount what happened and how it affected their lives and then jointly determine the appropriate resolution or outcome.⁵³ This outcome, often in the form of an agreement among those affected by the harm, governs the matter, assuming that the terms of the agreement are fulfilled.⁵⁴ Failure to abide by the agreement could return the matter to the traditional adjudicatory procedure or might produce modifications to the agreement.⁵⁵

The second approach, referred to here as hybrid restorative justice, functions in environments apart from, and commonly in the aftermath of, official court actions on the criminal charges.⁵⁶ It does not replace adjudicative or sentencing processes. One example is San Quentin’s Insight Prison Project, which offers an opportunity for facilitated dialogue with the specific survivor harmed by a responsible party.⁵⁷ The Project describes its “purpose [as] provid[ing] those who have been victimized with an opportunity to have a structured, face-to-face meeting with their offender in a secure, safe environment in order to facilitate a healing process for all parties involved.”⁵⁸

Another example is San Francisco County Jail’s Resolve to Stop the Violence Project (“RSVP”), where responsible parties engage with surrogate survivors, people who are survivors of crime but not the specific crimes committed by the particular responsible parties.⁵⁹ This hybrid approach enables responsible parties who caused

47. *Id.*

48. Bloch, *Reconceptualizing Restorative Justice*, *supra* note 39, at 202.

49. *See, e.g.*, Pranis, *supra* note 17, at 113–18 (describing a variety of restorative justice practices).

50. Bloch, *Reconceptualizing Restorative Justice*, *supra* note 39.

51. *Id.* at 202.

52. *Id.*

53. Hansen & Umbreit, *supra* note 22, at 100–102.

54. *See, e.g.*, Lawrence W. Sherman, Heather Strang, Evan Mayo-Wilson, Daniel J. Woods & Barak Ariel, *Are Restorative Justice Conferences Effective in Reducing Repeat Offending? Findings from a Campbell Systematic Review*, 31 J. QUANTITATIVE CRIMINOLOGY 1, 3 (2015).

55. *See, e.g.*, UMBREIT & GREENWOOD, *supra* note 19, at 1 (“Offenders’ failure to complete the restitution agreement results in further court-imposed consequences.”).

56. Bloch, *Reconceptualizing Restorative Justice*, *supra* note 39, at 202.

57. *Victim/Offender Dialogues*, INSIGHT PRISON PROJECT, <http://www.insightprisonproject.org/victimoffender-dialogues.html> (last visited Feb. 6, 2021).

58. *Id.*

59. *Resolve to Stop the Violence Project (RSVP)*, COMMUNITY WORKS WEST: JUST. DEMANDS HUMANITY [hereinafter *RSVP*], <http://communityworkswest.org/program/rsvp/> (last visited Feb. 6, 2021). The RSVP website explains the Project’s relationship with restorative justice principles: “Participants hear directly from

harm to learn about the consequences to the surrogate survivors, even though the survivors were not directly impacted by the responsible parties' specific crimes.⁶⁰

Both the classic and hybrid approaches commonly share at least three essential characteristics. The first is harm identification, the naming of, and acknowledging, the type and scope of harm caused.⁶¹ The second is accountability, where the responsible party takes personal responsibility for the role that individual played in the events and consequences.⁶² The third, which often makes the first two possible, is perspective taking and the nurturing of empathy or self-other overlap by the responsible party, as well as sometimes by other participants.⁶³ To these, classic restorative justice, and sometimes hybrid restorative justice, add a fourth important characteristic: reparation of the harm caused, to the extent desired, practical, and possible.⁶⁴

B. An Overview of Benefits and Limitations

The growing embrace of restorative justice responds at least in part to perceptions of inadequacy or failure of traditional processes and sanctions imposed by the state. These include high recidivism rates,⁶⁵ undermining of the fabric of communities,⁶⁶ and survivor disempowerment.⁶⁷ This Section first evaluates whether restorative justice responds effectively to these three drawbacks and, consequently, offers benefits that more traditional approaches to criminal justice lack. Next, it

outside presenters who have been harmed by violence in their lives. Facilitated discussions follow to explore the survivor's disclosure and draw similarities from the participants' own experiences of harm they have caused to others . . . Circles of support and accountab[ilit]y provide participants a safe space to consider and process the harm they've caused themselves, their families and others. Restorative justice principles are used to develop a plan to address and repair harm." *Id.*; see also SCHWARTZ & BOODELL, *supra* note 6, at 145–47 (describing the approach of the Resolve to Stop the Violence Project (RSVP) based in San Francisco's jail, which was launched by Sunny Schwartz); Pranis, *supra* note 17, at 118.

60. See, e.g., RSVP, *supra* note 59; Pranis, *supra* note 17, at 118. Kay Pranis, a renowned restorative justice trainer, provides examples of how restorative justice can manifest in and impact the real world in contexts involving survivors and the parties specifically responsible for the crime against those survivors as well as in a surrogate survivor context: 1) "A young woman who stopped dancing for years after a traumatic rape rises from her chair and dances gracefully around the room after a face to face meeting with the perpetrator."; 2) "Under the guidance of a community circle and local probation, a dozen adolescents do home repairs worth \$12,000 on a house they vandalized. The victim stops by to observe their work and they share the excitement of their accomplishments with him."; 3) "A woman in her 70's, whose daughter was raped and murdered over twenty years ago, travels hundreds of miles to speak to groups of inmates in adult and juvenile prisons and offers hope that they can change." Pranis, *supra* note 17, at 114.

61. See Zehr, *supra* note 41, at 68.

62. *Id.* at 68. Definitions of accountability vary. For a detailed perspective on accountability, see SERED, *supra* note 5, at 96–128.

63. Zehr, *supra* note 41, at 68.

64. *Id.* at 68, 70. Danielle Sered, founder of Common Justice, a restorative justice program in Brooklyn, New York, opines that societal "responses to violence . . . should be survivor-centered, accountability-based, safety-driven, and racially equitable." SERED, *supra* note 5, at 14.

65. See 2018 UPDATE, *supra* note 7, at 1.

66. See, e.g., SERED, *supra* note 5, at 8–9.

67. See, e.g., Zehr, *supra* note 41, at 68–69.

explores concerns that critics raise about the limitations of restorative justice as a process, including potentially heightened risks of arbitrariness and bias, as well as the potential toll on survivors.⁶⁸

1. Benefits:

a. Potential Reductions in Recidivism⁶⁹

High recidivism rates, like the eight-three-percent figure from the 2018 U.S. Department of Justice study,⁷⁰ represent one inadequacy of a traditional approach to criminal justice. Although evaluations of recidivism rates vary,⁷¹ and analysis of a more recent cohort suggests some reductions in recidivism,⁷² high rates propel recidivism concerns forward in the search for alternative approaches to incarceration.⁷³

68. See *infra* notes 129–47 and accompanying text.

69. The recidivism analysis here updates and draws significantly from the recidivism analysis in my 2010 article on restorative justice, *Reconceptualizing Restorative Justice*, *supra* note 39, at 207–08, 215–16.

70. 2018 UPDATE, *supra* note 7, at 1.

71. Compare 2018 UPDATE, *supra* note 7 (finding that the recidivism rate, measured over the period from 2005–2014, was 83% for the cohort of individuals in the study released from state prison in thirty states in 2005), with Adam Gelb & Tracy Velázquez, *The Changing State of Recidivism: Fewer People Going Back to Prison*, PEW CHARITABLE TRUSTS (Aug. 1, 2018), <https://www.pewtrusts.org/en/research-and-analysis/articles/2018/08/01/the-changing-state-of-recidivism-fewer-people-going-back-to-prison> & https://www.pewtrusts.org/-/media/assets/2018/08/the_changing_state_of_recidivism_methodology.pdf (last visited Feb. 6, 2021) (finding a recidivism rate of 48%, measured over the period from 2005 through 2010 for the cohort of individuals in the study released from state prison in twenty-three states in 2005, and a lower rate of 37% for the cohort of individuals in the study released in 2012, as measured through the end of 2015). The Gelb & Velázquez study offers several explanations for the discrepancy between its numbers and those of the 2018 UPDATE, including the 2018 UPDATE’s focus on rearrests.

72. Gelb & Velázquez, *supra* note 71.

73. See Sherman, *supra* note 41, at 265 (“One major alternative to incarceration may be loosely described as ‘restorative justice.’”). Some scholars argue that restorative justice is not properly poised to address mass incarceration. See, e.g., William R. Wood, *Why Restorative Justice Will Not Reduce Incarceration*, 55 BRIT. J. CRIMINOLOGY 883, 884 (2015). Wood advances four primary critiques: 1) a “dearth of restorative justice programs aimed at serious offenders[.]” *Id.* at 890; 2) “relative lack of programs that may serve as an alternative to imprisonment[.]” *Id.*; 3) that restorative justice “has not given significant attention to drivers of prison growth” (like the “massive criminalization and incarceration of non-violent drug offenders”), *Id.* at 890–91; 4) that restorative justice “is a micro practice while incarceration growth is largely related to macro determinants.” *Id.* at 892. For example, Wood opines that “decreases in recidivism do not readily translate into decreases in incarceration. The principal reason is that most restorative interventions are used with youth offenders or for offenses where incarceration is not likely.” *Id.* at 886 (citations omitted). From a historical perspective, Wood’s critique about the types of crime on which restorative justice practices in the United States often have focused has merit. But, as illustrated, for example, by the RSVP program, discussed *supra*, notes 59–60 and accompanying text, and *infra*, notes 90–97 and accompanying text, restorative justice methodologies are now being used where serious, violent crimes are at issue. As his second critique, Wood argues that restorative justice “is not used as an alternative to incarceration[.]” *Id.* at 888. But I am not sure it has to have been used as a substitute in order to anticipate that it could reduce incarceration prospectively if, as part of a restorative justice process, incarcerated responsible parties developed empathy/self-other overlap with survivors of their crimes or crimes similar to those they have committed and committed fewer future crimes. It is easier to treat others cruelly or without compassion if we see them as others, unlike ourselves. Wood does conclude by noting that in order for restorative justice to have more than “negligible impacts in the future,” *id.* at 894, restorative justice “practices

Whether restorative justice can address recidivism has been the subject of significant research and debate.⁷⁴ Because restorative justice takes a variety of forms, and studies themselves may focus on different restorative justice programs, this research is ongoing and may not furnish a definitive conclusion.⁷⁵ Nonetheless, several meta-analyses indicate notable decreases in recidivism.⁷⁶ For example, a commonly-cited 2005 meta-analysis evaluated twenty-two studies on the effectiveness of restorative justice⁷⁷ and, with respect to recidivism, concluded that, overall, “offenders in the [restorative justice] treatment groups were significantly more successful during the follow-up periods. . . .”⁷⁸ Another meta-analysis published in 2017 on the effectiveness of restorative justice in the context of juvenile cases reported that “[o]verall, the results evaluating restorative justice programs and practices showed a moderate reduction in future delinquent behavior relative to more traditional juvenile court processing.”⁷⁹ But the authors noted that “these results were smaller for the more credible random assignment studies, raising concerns about the robustness of this overall result . . . [and they recommended a]dditional high quality research of these programs . . .”⁸⁰ In a third meta-analysis from 2013, in the context specifically of restorative justice conferences (“RJC’s”), which involve in-person meetings that include responsible parties and survivors, researchers identified ten randomized controlled studies “on three continents . . . with a total of 1,879 offenders and 734 interviewed victims”⁸¹ that met the researchers’ criteria. In their evaluation of the studies’ results, they reported that “on average, RJC’s cause a modest but highly cost-effective reduction in repeat offending, with substantial benefits for victims. A cost-effectiveness estimate for

[would need to be] more systematically implemented into cases of serious offending and developed more broadly as a sentencing alternative for offenders who otherwise may face incarceration.” *Id.*

74. See, e.g., *infra* notes 76–97.

75. See, e.g., Michael S. King, *Restorative Justice, Therapeutic Justice and the Rise of the Emotionally Intelligent Justice*, 32 MELB. U. L. REV. 1096, 1107 (2008).

76. See, e.g., Latimer et al., *supra* note 4, at 137, 139; WILSON ET AL., *supra* note 12.

77. These twenty-two studies actually included thirty-five separate restorative justice programs. Latimer et al., *supra* note 4, at 135.

78. Latimer et al., *supra* note 4, at 137. The data indicate that one or more studies reported a negative correlation or increase in recidivism while others a decrease. *Id.* at 137. John Braithwaite, *Restorative Justice and Responsive Regulation: The Question of Evidence*, RegNet Research Papers, Sch. of Reg. & Global Governance, Working Paper No. 51 (2016), <https://dx.doi.org/10.2139/ssrn.2839086> (Braithwaite argues that “there is encouraging enough evidence, even in the face of heterogeneity problems, that restorative justice . . . ‘work[s]’ cost-effectively in preventing a variety of injustice problems that include crime However, the really important evaluation questions around restorative justice . . . are not at the level of meta-strategy, but at the level of the particular strategies that are chosen.”).

79. WILSON ET AL., *supra* note 12, at 2.

80. *Id.* at 2–3.

81. Strang et al., *supra* note 12, at 4; Sherman et al., *supra* note 54, at 19 (“Restorative justice conferences delivered in the manner tested by the ten eligible tests in this experiment appear likely to reduce the future frequency of detected and prosecutable crimes among the kinds of offenders who are willing to consent to [restorative justice conferences], when victims are also willing to give consent to the process.”).

the seven United Kingdom (UK) experiments found a ratio of 8 times more benefit in costs of crimes prevented than the cost of delivering RJs.”⁸²

Despite the overall encouraging news that these meta-analyses represent, scholars contend that self-selection bias may impact the results.⁸³ Because participation in restorative justice programs does commonly anticipate obtaining the consent of those who participate (both responsible parties and survivors),⁸⁴ critics raise an important concern. Lower recidivism could be a function of a responsible party’s pre-existing willingness to participate and interest in reform, rather than the restorative justice process itself, thereby producing an artificially large delta in terms of the reduction in recidivism.⁸⁵ In addition, restorative justice programs have historically often focused on minors and crimes that do not involve serious violence.⁸⁶ Here, one can argue, for example, that growth and maturity, rather than restorative justice itself, may drive the recidivism reductions.⁸⁷ But some programs do not depend upon self-selected volunteers.⁸⁸ Nor do all programs focus on minors and less serious criminal offenses.⁸⁹ The San Francisco Jail’s Resolve to Stop the Violence Project (“RSVP”), for example, enrolls about half its participants through non-volunteer random selection.⁹⁰ Sunny Schwartz, founder of RSVP, describes the program as including some of “the most violent prisoners in the San Francisco County jail system.”⁹¹

82. Strang et al., *supra* note 12, at 2.

83. Latimer et al., *supra* note 4, at 138–39.

84. Latimer et al., *supra* note 4, at 139; Pranis, *supra* note 17, at 115.

85. Latimer et al., *supra* note 4, at 138.

86. *See, e.g.*, Sherman, *supra* note 41, at 265; Jeff Bouffard, Maisha Cooper, & Kathleen Bergseth, *The Effectiveness of Various Restorative Justice Interventions on Recidivism Outcomes Among Juvenile Offenders*, 15 YOUTH VIOLENCE AND JUVENILE JUSTICE 465, 465 (2016); Kathleen J. Bergseth & Jeffrey A. Bouffard, *Examining the Effectiveness of a Restorative Justice Program for Various Types of Juvenile Offenders*, 59 INT’L J. OFFENDER THERAPY & COMP. CRIMINOLOGY 1054, 1071 (2012) (reporting that “current study’s results suggest that RJ programming may be effective for a variety of youth.”).

87. For a discussion of brain development, see Sara B. Johnson, Robert W. Blum & Jay N. Giedd, *Adolescent Maturity and the Brain: The Promise and Pitfalls of Neuroscience Research in Adolescent Health Policy*, 45 J. ADOLESCENT HEALTH 216, 216 (2009) (noting that “[l]ongitudinal neuroimaging studies demonstrate that the adolescent brain continues to mature well into the 20s” and discussing potential benefits and risks of applying neuroscience research to policies regarding adolescents).

88. For example, in a study published in 2019, researchers aimed to evaluate whether self-selection bias played a role in the success of restorative justice. In this study, the researchers had a control group in which the responsible party consented to mediation, but the survivor declined or there was no identifiable survivor (survivor-less crime). Jiska Jonas-van Dijk, Sven Zebel, Jacques Claessen & Hans Nelen, *Victim-Offender Mediation and Reduced Reoffending: Gauging the Self-Selection Bias*, 66 CRIME & DELINQ. 949, 965 (2019). They reported that their “findings corroborate other studies in that [their study] showed that offenders participating in mediation have a lower risk to reoffend compared to offenders unwilling to participate in mediation[.]” *Id.* at 965. But the group that had the lowest reoffense rate was not the group that participated in traditional mediation, but rather a group that engaged in “semi-mediation.” *Id.* Semi-mediation involved a conversation with the prosecutor with a mediator present, but not with the survivor. *Id.* The researchers suggest, therefore, that “[f]urther systematic research is needed to examine how mediation unfolds and how and when this has an impact on offenders.” *Id.* at 966.

89. *See, e.g.*, Sherman et al., *supra* note 54, at 3.

90. SCHWARTZ & BOODELL, *supra* note 6, at 120.

91. *Id.* at 145.

A pair of Harvard researchers conducted two studies specifically of RSVP and recidivism.⁹² In the first, the researchers measured violent incidents within the jail, using the RSVP dorm, which houses the RSVP participants, and a control dorm.⁹³ The researchers reported:

During the year before RSVP began, there were 24 violent incidents serious enough to have constituted felonies had they occurred in the community (roughly three per month) in the 62-bed dorm. During the first month RSVP was in effect there was one such incident; and for the following 12 months, there were none. During that same year, the control dorm that still followed traditional jail practices had 28 violent incidents.⁹⁴

In the second study, the researchers evaluated recidivism among former RSVP participants once they were out of jail and based in the community.⁹⁵ The study concluded that “[i]nmates who had participated in RSVP for at least 8 weeks had a rate of arrests for violent crimes per day in the community during their first year after release from jail that [was] 46.3% lower than those of the 101 members of the control group (p 0.05).”⁹⁶ As the incarcerated person’s involvement with the RSVP program extended, rearrest rates for violent crimes decreased further, with researchers reporting that “[f]or those in RSVP for 12 weeks or more, the violent crime rearrest rate was 53.1% lower (p 0.05); and those in [the RSVP program] for at least 16 weeks had a violent arrest rate 82.6% lower (p 0.05).”⁹⁷

Although further investigation is warranted, the empirical evidence suggests that restorative justice can have a positive influence on reducing recidivism across a range of types of criminal conduct. In a world in which almost all individuals who are imprisoned eventually return to society,⁹⁸ restorative justice aims to

92. Bandy Lee & James Gilligan, *The Resolve to Stop the Violence Project: Transforming an In-House Culture of Violence Through a Jail-Based Programme*, 27 J. PUB. HEALTH 149 (2005); SCHWARTZ & BOODELL, *supra* note 6, at 174–76.

93. Lee & Gilligan, *supra* note 92, at 149.

94. *Id.* (“Since the institution of RSVP, a history of violence was intended as a criterion for assignment into the programme dorm, although a small number without a history of violence still came to be included.”).

95. SCHWARTZ & BOODELL, *supra* note 6, at 174.

96. *Id.* (quoting James Gilligan & Bandy Lee, *The Resolve to Stop the Violence Project: Reducing Violence Through a Jail-Based Initiative*, 27 J. PUB. HEALTH 143 (2005)).

97. *Id.*; RSVP, *supra* note 59. RSVP is “[g]rounded in the practices of restorative justice” and includes three components. *Id.* One is “manalive,” which “is a peer-based program with a gender-based analysis of violence.” *Id.* A second is “[s]urvivor impact[,]” which involves surrogate survivors sharing their experiences with responsible parties and approaches to assist the responsible parties to “come into greater empathetic awareness of themselves and others.” *Id.* The third involves “[c]ircles of support . . . to provide a safe space to consider and process the harm. . . .” *Id.* Consequently, its reduced recidivism likely reflects multiple components of the program.

98. TIMOTHY HUGHES & DORIS JAMES WILSON, REENTRY TRENDS IN THE U.S.: INMATES RETURNING TO THE COMMUNITY AFTER SERVING TIME IN PRISON, OFF. OF JUST. PROGRAMS, BUREAU OF JUST. STATS., <https://www.bjs.gov/content/reentry/reentry.cfm> (last visited Feb. 6, 2021).

restore the community fabric that was damaged in the commission of the crime—and often appears to reduce recidivism.⁹⁹

b. Working to Repair Communities

Approaches to criminal justice that focus on imprisonment as a primary form of social control have decimated communities, in particular communities of color.¹⁰⁰ A 2016 report on correctional population statistics indicated that the overall population of incarcerated persons in the United States, including African Americans, has declined slightly in recent years,¹⁰¹ and a 2017 Marshall Project analysis also suggests that “for the last 15 years, racial disparities in the American prison system have actually been on the decline. . . .”¹⁰² Nonetheless, substantial and disturbing racial disparities remain.¹⁰³ Disparities that disadvantage and punish persons of color have been identified as so pervasive and at so many junctures in our criminal justice system that Professor Michelle Alexander has labeled “mass incarceration . . . a stunningly comprehensive and well-disguised system of racialized social control that functions in a manner strikingly similar to Jim Crow.”¹⁰⁴ Statistics underscore the racially disparate impact of the criminal justice system on persons of color. For example, a 2017 report from scholars with the Stanford Center on Poverty and Inequality explains that “[t]he burden of . . . intensive incarceration continues to fall disproportionately on black men: At the end of 2015, a full 9.1 percent of young black men (ages 20–34) were incarcerated, a rate that is 5.7 times that of young white men (1.6%).”¹⁰⁵

Incarceration not only pulls community members into custody, its consequences permeate life after release.¹⁰⁶ Professor Alexander notes, from ineligibility for basic services supported by federal funds, often including public housing, food assistance, health care, and educational loans, to discrimination or bans in employment,

99. *But cf.* Wood, *supra* note 73, at 884 (arguing that restorative justice is not positioned to effectively address mass incarceration).

100. *See, e.g.*, SERED, *supra* note 5, at 8–9. *But see* Todd R. Clear, Dina R. Rose, & Judith A. Ryder, *Incarceration and the Community: The Problem of Removing and Returning Offenders*, 47 *CRIME & DELINQ.* 335, 340–43 (2001) (describing “a complicated picture of the effects of incarceration on the neighborhood” with both deleterious and positive effects on the community).

101. *See* DANIELLE KAEBLE & LAREN GLAZE, U.S. DEP’T OF JUSTICE, OFFICE OF JUST. PROGRAMS, BUREAU OF JUST. STATS., NCJ 250374, *CORRECTIONAL POPULATIONS IN THE UNITED STATES*, (2016), <https://www.bjs.gov/content/pub/pdf/cpus15.pdf>.

102. Eli Hager, *A Mass Incarceration Mystery: Why are Black Imprisonment Rates Going Down? Four Theories*, MARSHALL PROJECT (Dec. 15, 2017, 7:00 AM), <https://www.themarshallproject.org/2017/12/15/a-mass-incarceration-mystery>.

103. *Id.*

104. MICHELLE ALEXANDER, *THE NEW JIM CROW: MASS INCARCERATION IN THE AGE OF COLORBLINDNESS* 4 (2010).

105. Becky Pettit & Bryan Sykes, *Incarceration: State of the Union 2017*, *PATHWAYS MAGAZINE* 24, 26 https://inequality.stanford.edu/sites/default/files/Pathways_SOTU_2017.pdf (last visited Feb. 6, 2021) (providing the authors’ estimates of the 2015 statistics from several data sources).

106. *See, e.g.*, DAVIS, *supra* note 9, at 66–68.

voting, and jury service, “many ex-offenders lose their children, their dignity, and eventually their freedom—landing back in jail after failing to play by rules that seem hopelessly stacked against them.”¹⁰⁷ She opines that shared community shame produces silence and “makes community healing and collective political action next to impossible.”¹⁰⁸

This consuming disruption and disparate impact motivate the search for alternatives, with restorative justice now more compelling among the options at the forefront.¹⁰⁹ For example, Executive Director Fania Davis explains that “[t]he express goal of Restorative Community Conferencing, a program of Oakland-based Community Works West (CWW), is to reduce disproportionate incarceration rates of African American and Latinx young people.”¹¹⁰ Ms. Davis indicates that this program receives “the case before the prosecutor files charges, and youth who comply with their plan completely bypass the justice system, leaving no record of system involvement.”¹¹¹ Ms. Davis notes that this program “diverts about one hundred youths per year from incarceration.”¹¹²

Classic restorative justice can offer survivors the opportunity to ask “why,” to hear apologies, and to focus on restoration.¹¹³ In addition to individual accountability, it can engage societal and collective accountability, with empathy expressed not only for the survivor, but also for the responsible party.¹¹⁴ It can enable stakeholders to engage in repairing the torn fabric of communities and in reclaiming parties who have caused harm.¹¹⁵ Perspective taking in hybrid restorative justice may help responsible parties understand the harm they have caused and work to evoke empathy or self-other overlap.¹¹⁶

c. Engaging and Empowering Survivors

A third perceived inadequacy to which restorative justice responds involves the survivor disempowerment that commonly characterizes state intervention and assumption of prosecution.¹¹⁷ Often, despite legislation according survivors various rights, survivors and their families have limited real say in the

107. ALEXANDER, *supra* note 104, at 140.

108. *Id.* at 164.

109. For critiques of restorative justice, see *infra* notes 130–45 and accompanying text.

110. DAVIS, *supra* note 9, at 71.

111. *Id.*

112. *Id.*

113. Hansen & Umbreit, *supra* note 22, at 103.

114. E-mail from Kay Pranis to Kate Bloch (May 9, 2020 11:21 AM PST) (on file with the author). See *infra* note 290 and accompanying text for a discussion of the importance of societal accountability toward and empathy for responsible parties.

115. See, e.g., SERED, *supra* note 5, at 24–28.

116. See, e.g., Zehr, *supra* note 41, at 70; Daly, *supra* note 20, at 138.

117. See, e.g., Zehr, *supra* note 41, at 68–69.

unfolding of, and decision making in, the criminal justice process.¹¹⁸ Here too, restorative justice—in particular in its classic form, as an interactive facilitated dialogue with the survivor and responsible party as the main speakers—can enable the survivor to play a meaningful role in the determination of process and outcome.

Restorative justice approaches also heed the voice of survivors generally about the value of less punitive approaches to responding to crime.¹¹⁹ For example, a 2016 Alliance for Safety and Justice survey reported that “by a margin of 3 to 1, victims prefer holding people accountable through options beyond prison, such as rehabilitation, mental health treatment, drug treatment, community supervision, or community service.”¹²⁰

Beyond anticipated reductions in recidivism, and potentially increased public safety, as well as working toward repair in communities and empowering survivors, restorative justice can also enhance communication and address emotional wounds.¹²¹ One 2003 article “summarized data on twelve psychological outcomes from an international collection of seven studies comparing restorative justice programs and court procedures.”¹²² The article noted that “[f]or victims, restorative justice outperformed court on every outcome except for consideration of opinion. For offenders, restorative justice outperformed court on every outcome except for satisfaction with outcome. In no case did court perform better than restorative justice.”¹²³ Psychological measures here included, inter alia, perceived fairness, opportunity to tell their story, adequate accountability of the responsible party, and perceptions of the other participant’s behavior.¹²⁴

A study, published in 2014, specifically addressed post-traumatic stress symptoms (“PTSS”) in survivors of robbery and burglary.¹²⁵ It noted that “[u]ndiagnosed PTSS in crime victims is a widespread but low-visibility public health problem.”¹²⁶ In this study, researchers reported that, during the assessment period,

118. Both federal and state survivors’ crime legislation accords survivors various rights, including survivor impact statements in many cases. *See, e.g.*, Crime Victims’ Rights Act, 18 U.S.C. § 3771(a)(4). But in the rush of day-to-day processing of criminal cases, and because the ultimate decision about recommended resolutions generally resides with prosecutors, particularly in terms of the charges, survivors often have limited influence over the process and the results.

119. *See, e.g.*, *Crime Survivors Speak: The First-Ever National Survey of Victims’ Views on Safety and Justice*, ALLIANCE FOR SAFETY AND JUSTICE 5 (2016), <https://allianceforsafetyandjustice.org/wp-content/uploads/documents/Crime%20Survivors%20Speak%20Report.pdf>.

120. *Id.*

121. *See* Barton Poulson, *A Third Voice: A Review of Empirical Research on the Psychological Outcomes of Restorative Justice*, 2003 UTAH L. REV. 167, 184–99 (2003).

122. *Id.* at 198.

123. *Id.*

124. *Id.* at 177.

125. Caroline M. Angel, Lawrence W. Sherman, Heather Strang, Barak Ariel, Sarah Bennett, Nova Inkpen, Anne Keane & Therese S. Richmond, *Short-Term Effects of Restorative Justice Conferences on Post-Traumatic Stress Symptoms Among Robbery and Burglary Victims: A Randomized Controlled Trial*, 10 J. EXPERIMENTAL CRIMINOLOGY 291 (2014).

126. *Id.* at 302 (citation omitted).

“a police-led restorative justice conferencing program reduce[d] the traumatic effects of crime for burglary and robbery victims.”¹²⁷ In particular, the study explained that “[p]ost-treatment outcomes indicate a 49% reduction in the number of victims with clinical levels of post-traumatic stress symptoms (and possible PTSD) in the [face-to-face restorative justice conference] group compared with the control group.”¹²⁸ By restoring voices to participants who often play somewhat stylized roles in more formal criminal justice proceedings, metrics that measure such engagement, like those above, often highlight the significant value of restorative justice approaches.

2. Concerns About Restorative Justice

Three critiques of classic restorative justice, however, regularly surface in evaluations of this approach: risk of arbitrariness, exacerbation of power differentials and bias, and the burden on survivors.¹²⁹ First, critics argue that restorative justice in its classic form is a recipe for inconsistent and potentially arbitrary consequences.¹³⁰ Professor Richard Delgado underscores how mediation “gives great power to the victim, and mediators and judges reinforce that power, placing defendants in an almost powerless position.”¹³¹ As a result, because the outcome of each restorative justice conference or mediation relies on the specific participants, responsible parties who engaged in similar acts or caused similar levels of harm may incur significantly disparate consequences.¹³² Whether a specific survivor entertains an empathetic or punitive approach may dictate the scope and severity of resulting agreements, with little or no regard for similarity of harms and fairness across cases.¹³³

Second, informality can magnify power disparities.¹³⁴ Professor Delgado opines that “[r]ather than breaking down the barriers and preconceptions that parties bring to the table, mediation is apt to compound preexisting power and status differentials even more systematically and seriously than formal, in-court resolution.”¹³⁵ He and several co-authors identify particular risks for “vulnerable disputants.”¹³⁶

127. *Id.*

128. *Id.* at 301.

129. The discussion of these critiques draws and expands upon the analysis in my previous work, *Reconceptualizing Restorative Justice*, *supra* note 39, at 209–11.

130. Richard Delgado, *Goodbye to Hammurabi: Analyzing the Atavistic Appeal of Restorative Justice*, 52 STAN. L. REV. 751, 759–60 (2000).

131. *Id.* at 760.

132. *Id.* at 759–60; KIMMETT EDGAR & TIM NEWELL, RESTORATIVE JUSTICE IN PRISONS: A GUIDE TO MAKING IT HAPPEN 13–14 (2006).

133. See, e.g., Daly, *supra* note 20, at 134 (noting “it may not be possible to have equity or proportionality across [restorative justice] outcomes, when outcomes are supposed to be fashioned from the particular sensibilities of those in a [restorative justice] encounter”).

134. See Delgado, *supra* note 130, at 768.

135. *Id.* at 767–68.

136. Richard Delgado, Chris Dunn, Pamela Brown, Helena Lee & David Hubbert, *Fairness and Formality: Minimizing the Risk of Prejudice in Alternative Dispute Resolution*, 1985 WIS. L. REV. 1359, 1400 (1985). The

They explain that their “review of social science writings on prejudice reveals that the rules and structures of formal justice tend to suppress bias, whereas informality tends to increase it.”¹³⁷ Formal justice, for instance, operates under constraints about the admissibility of information. Restorative justice approaches are not necessarily bound by such constraints.¹³⁸ For example, no prohibition prevents hearsay and character evidence from being a focus of discussion.¹³⁹ Even though accepting responsibility for the conduct at issue often stands as a prerequisite to participation in restorative justice, the lack of formal protections during the exposition of events, as well as during the decision making about impact and consequences, raises concern about unchecked bias. Cognitive science has made significant strides in making biases visible, in particular the implicit biases to which human beings are subject.¹⁴⁰ The scope and persistence of racial and economic injustice have become ever clearer and more urgent as societal concerns generally and in criminal law in particular.¹⁴¹ As a result, this warrants focused attention and remediation.¹⁴² In addition to questions of bias with respect to informality, concerns about bias and approaches to reduce it more generally are becoming core themes in restorative justice scholarship and practice.¹⁴³

authors also make a range of recommendations for reducing bias in alternative dispute resolution proceedings, including, inter alia, limits on the “scope of the proceedings . . . [and] providing some form of higher review.” See *id.* at 1403.

137. *Id.* at 1400.

138. See, e.g., Brown, *supra* note 20, at 1250 (arguing that “VOM disserves offenders in three ways: by using selection criteria that are not clearly related to the goals of the program; by eliminating procedural protections such as the right to counsel or rules of evidence; and by using the leverage of pending criminal process to gain advantages for the victim, a private party.”).

139. *Id.*

140. See, e.g., David Faigman, Jerry Kang, Mark Bennett, Devon Carbado, Pam Casey, Nilanjana Dasgupta, Rachel Godsil, Anthony Greenwald, Justin Levinson & Jennifer Mnookin, *Implicit Bias in the Courtroom*, 59 UCLA L. REV. 1124, 1128–29 (2012). For a discussion of the concerns about implicit bias in the context of alternative dispute resolution, specifically in mediation, see Carol Izumi, *Implicit Bias and the Illusion of Mediator Neutrality*, 34 WASH. U. J.L. & POL’Y 71, 99–110 (2010).

141. See, e.g., Letter from Justices of the Supreme Court, State of Washington (June 4, 2020), <https://www.courts.wa.gov/content/publicUpload/Supreme%20Court%20News/Judiciary%20Legal%20Community%20SIGNED%20060420.pdf> (“The devaluation and degradation of black lives is not a recent event. It is a persistent and systemic injustice that predates this nation’s founding. But recent events have brought to the forefront of our collective consciousness a painful fact that is, for too many of our citizens, common knowledge: the injustices faced by black Americans are not relics of the past. We continue to see racialized policing and the overrepresentation of black Americans in every stage of our criminal and juvenile justice systems. Our institutions remain affected by the vestiges of slavery: Jim Crow laws that were never dismantled and racist court decisions that were never disavowed.”).

142. David R. Karp & Olivia Frank, *Anxiously Awaiting the Future of Restorative Justice in the United States*, 11 VICTIMS & OFFENDERS 1, 11–13, 15 (2016) (describing state of restorative justice legislation and approaches in U.S. and noting continuing challenges to implementation, including, inter alia, funding and concerns about implicit racial bias).

143. See, e.g., DAVIS, *supra* note 9. For critiques of bias in restorative justice, see COLORIZING RESTORATIVE JUSTICE: VOICING OUR REALITIES, *supra* note 40; Mikhail Lyubansky & Elaine Shpunin, *Challenging Power Dynamics*, in THE PSYCHOLOGY OF RESTORATIVE JUSTICE: MANAGING THE POWER WITHIN 183–87 (Theo Gavrielides ed., 2015) (discussing concerns about bias and power dynamics).

With respect to the first two critiques above, the virtual reality approach proposed in this Article operates in the context of hybrid restorative justice, subsequent to or outside of the formal adjudication and sentencing process. In effect, the proposed approach offers a portal for perspective taking, but not an evaluative mechanism for appropriate consequences to repair the harm. While the approach may not pose the same risks that classic restorative justice does of inconsistent or arbitrary consequences, or of magnifying power disparities, for the responsible party in the resolution of their underlying criminal case, the proposed approach would be designed and administered by human beings within existing organizational structures. Consequently, attention to potential bias should be a function of live and virtual interactions at each stage in the proposed approach.

Turning to the third critique, the burden on survivors, crime can cause serious and lasting physical and psychological injury.¹⁴⁴ Engaging with that experience risks re-igniting trauma associated with the original victimization.¹⁴⁵ An avatar could provide perspective-taking benefits to the responsible party without survivors incurring those costs.

In surveys, however, survivors often express interest in an opportunity to meet with the responsible party who caused their harm.¹⁴⁶ For survivors who find the direct encounter beneficial or even critical to their ability to move forward, to the extent that the proposed approach might substitute for that encounter, survivors who desire such an encounter will not receive that important opportunity.¹⁴⁷ However, an initial virtual reality experience would not necessarily prevent a subsequent encounter in a restorative justice environment, were such an encounter to become available and appropriate for the participants.

Although the overview above illustrates (and the above is not intended as an exhaustive list) that restorative justice as a response to criminal conduct has limitations and potential drawbacks, in light of its demonstrated and potential promise of success, many jurisdictions have moved or are moving toward adopting restorative justice approaches.¹⁴⁸ This expanding embrace of restorative justice principles underscores the value of exploring innovative approaches to its effective implementation.

144. See, e.g., CÁRDENAS LÓPEZ ET AL., *supra* note 13, at 41 (2013).

145. See, e.g., Dean G. Kilpatrick & Ron Acierno, *Mental Health Needs of Crime Victims: Epidemiology and Outcomes*, 16 J. TRAUMATIC STRESS 119, 125–26 (2003) (noting that “[v]ictims of violence experience a variety of emotional problems. PTSD is common among these . . . Reexperiencing may take the form of recurrent recollections of the event, nightmares, flashbacks, or reactivity upon exposure to traumatic cues.”).

146. UMBREIT & GREENWOOD, *supra* note 19, at 4.

147. SERED, *supra* note 5, at 24–30.

148. Karp & Frank, *supra* note 142, at 11–13; Alana Saulnier & Diane Sivasubramaniam, *Restorative Justice: Underlying Mechanisms and Future Directions*, 18 NEW CRIM. L. REV. 510, 510–11 (2015).

II. RESTORATIVE JUSTICE & PERSPECTIVE TAKING

Because, at its heart, successful restorative justice involves a process of understanding the world through the eyes of another, “[r]estorativeness requires a degree of empathetic concern and perspective-taking[.]”¹⁴⁹ It anticipates understanding the perspectives of those who were harmed and, sometimes, of those who caused that harm.¹⁵⁰ This Part focuses on the underlying cognitive process of perspective taking and how the criminal justice system could apply recent research in cognitive science to augment the power and scope of restorative justice.

A. Research on Visualization-Based Perspective Taking

Mental simulation or visualization-based perspective taking is a well-studied phenomenon.¹⁵¹ Scholars have suggested that “[t]he ‘muscle’ of empathy can be worked through perspective-taking exercises[.]”¹⁵² In the cognitive science literature, visualization-based perspective taking involves “the process of imagining oneself in the position of another individual.”¹⁵³ Such perspective taking may involve imagining how another feels or perceives the world, or it may more directly involve imagining yourself as the other.¹⁵⁴ Although the specific vehicles through which “perspective taking encourages prosocial behavior and empathy”¹⁵⁵ have not yet been settled, an increasing number of studies have

149. Daly, *supra* note 20, at 138.

150. More encompassing restorative justice approaches often take account of the experience of family and community members affected by the harm caused. See Pranis, *supra* note 17, at 115, for a description of this type of approach, among others.

151. See, e.g., Farmer & Maister, *supra* note 25, at 337; Andrew Todd, Galen V. Bodenhausen, Jennifer A. Richeson & Adam D. Galinsky, *Perspective Taking Combats Automatic Expressions of Racial Bias*, 100 J. PERSONALITY & SOC. PSYCHOL. 1027, 1037–38 (2011).

152. Austin van Loon, Jeremy Bailenson, Jamil Zaki, Joshua Bostick & Robb Willer, *Virtual Reality Perspective-taking Increases Cognitive Empathy for Specific Others*, 13 PLoS ONE 2 (2018).

153. Farmer & Maister, *supra* note 25, at 337.

154. C. Daniel Batson, *Two Forms of Perspective Taking: Imagining How Another Feels and Imagining How You Would Feel*, in HANDBOOK OF IMAGINATION AND MENTAL SIMULATION 267 (K.D. Markman, W.M. Klein & J.A. Suhr eds., 2009) (“First, you can imagine how another person sees his or her situation and feels as a result (an *imagine-other perspective*). Second, you can imagine how you would see the situation were you in the other person’s position and how you would feel as a result (an *imagine-self perspective*).”) Batson opines that it is the first type of perspective taking “that has been claimed to evoke other-oriented empathic concern.” *Id.* (citations omitted). The challenge of invoking an imagine-other perspective may be particularly salient for individuals who experience extreme difficulty with empathy. Decety et al., *supra* note 14, at 1. A cognitive neuroscience fMRI-based study published in 2013 evaluated activation patterns in the brains of incarcerated individuals who received high versus medium or low scores on a test for psychopathy. *Id.* at 3. The researchers reported “that while individuals with psychopathy exhibited a strong response in pain-affective brain regions when taking an imagine-self perspective, they failed to recruit the neural circuits that . . . were activated in controls during an imagine-other perspective[.]” *Id.* at 9. The researchers suggest that this “may contribute to a lack of empathic concern.” *Id.* at 9. The challenge here might imply that the immersive virtual reality avatar opportunities described in Section II.B and Part III would offer particular value.

155. Soo Youn Oh, Jeremy Bailenson, Erika Weisz & Jamil Zaki, *Virtually Old: Embodied Perspective Taking and the Reduction of Ageism Under Threat*, 60 COMPUTERS HUM. BEHAV. 398, 399 (2016); Farmer &

measured increments in self-other overlap or empathy through the use of perspective taking.¹⁵⁶

Much of the research on self-other overlap and empathy focuses on decreasing prejudice through perspective taking.¹⁵⁷ For example, a study published in 2011 investigated the influence of perspective taking “as a strategy for counteracting automatic expressions of racial bias.”¹⁵⁸ The study involved a series of five experiments in which the researchers “introduced participants to a Black male (either via video or a photograph) and instructed them to adopt his perspective as they watched him in a video or as they wrote a brief essay about a day in his life.”¹⁵⁹ The researchers reported that “[r]esults obtained across five experiments . . . consistently document the merits of perspective taking for generating more favorable automatic interracial evaluations . . . and inter-personal behaviors.”¹⁶⁰ Scholars in the field opine that perspective taking “not only leads to a reduction in prejudice against others, but it appears to achieve this by creating a new association between the self and that other.”¹⁶¹

Not all perspective-taking experiments, however, result in increases in empathy or reduced prejudice.¹⁶² For instance, depending on the design, experiments may

Maister, *supra* note 25, at 342 (“The neural basis of embodiment’s power to change social attitudes is also currently unknown[.]”).

156. See, e.g., Farmer & Maister, *supra* note 25, at 337–38. Farmer & Maister opine that it is self-other overlap, rather than empathy, which drives the attitudinal/behavioral change. *Id.* at 337. *But see* van Loon et al., *supra* note 152, at 13.

157. See, e.g., Todd et al., *supra* note 151, at 1028. See, however, for example, Chloë FitzGerald, Angela Martin, Delphine Berner & Samia Hurst, *Interventions Designed to Reduce Implicit Prejudices and Implicit Stereotypes in Real World Contexts: A Systematic Review*, 7 BMC PSYCHOL. 1, 5 (2019), for a critique of the impact of perspective-taking interventions for bias reduction.

158. Todd et al., *supra* note 151, at 1027.

159. *Id.* at 1029.

160. *Id.* at 1038.

161. Farmer & Maister, *supra* note 25, at 337.

162. See, e.g., *id.* at 337–38 (describing and critiquing a study that did not lead to prejudice reduction as using a “relatively basic” approach and contrasting it with more immersive approaches, which often, although not uniformly, find reductions in bias); Fernanda Herrera, Jeremy Bailenson, Erika Weisz, Elise Ogle & Jamil Zaki, *Building Long-Term Empathy: A Large-Scale Comparison of Traditional and Virtual Reality Perspective-Taking*, 13 PLoS ONE 1, 3 (2018) (noting perspective taking research that, in certain contexts, led to increases in stereotyping); Domna Banakou, Alejandro Beacco, Solène Neyret, Marta Blasco-Oliver, Sofia Seinfeld & Mel Slater, *Virtual Body Ownership and its Consequences for Implicit Racial Bias are Dependent on Social Context*, 7 R. SOC. OPEN SCI. 1 (2020). This study, published in 2020, explored the implications of embodiment in social situations with varying affective valences. Based on their results, the researchers suggest “the change in implicit racial bias among White people embodied in a Black virtual body may also be influenced by the social situation depicted in the scenario. In particular, an affectively negative situation increases implicit bias compared with a neutral or positive situation, where previous findings have indicated a decrease in bias for neutral and positive.” *Id.* at 13; Sarah Lopez, Yi Yang, Kevin Beltran, Soo Jung Kim, Jennifer Cruz Hernandez, Chelsy Simran, Bingkun Yang & Beste F Yuksel, *Investigating Implicit Gender Bias and Embodiment of White Males in Virtual Reality with Full Body Visuomotor Synchrony*, CHI CONFERENCE ON HUMAN FACTORS IN COMPUTING SYSTEMS PROCEEDINGS, ASSOC. FOR COMPUTING MACHINERY (2019). The researchers report that the IAT scores of male participants embodied in a female avatar “had significantly higher implicit gender bias than those embodied in male avatars . . . and that participants embodied in female avatars actually had a mean increase in postIAT scores compared to a decrease in those embodied in male avatars[.]” *Id.* The effect of various approaches to measuring and influencing implicit and explicit bias and behavioral change is the subject of continuing research and

trigger stereotype activation or other cognitive processes that undermine common goals of perspective taking.¹⁶³ Moreover, because perspective taking can be understood as involving the assignment of positive qualities of the self-concept of the perspective taker to the target, researchers suggest that the likelihood of prejudice reduction may be undermined if the perspective taker has low self-esteem.¹⁶⁴ These concerns are important considerations for perspective taking, particularly in restorative justice, where responsible parties are expected to take responsibility for criminal conduct.¹⁶⁵ For some responsible parties, taking responsibility might demonstrate courage and enhance self-esteem, but for others, acknowledging responsibility for criminal conduct could also negatively impact self-esteem.

In addition to risks like stereotype activation and inadequate self-esteem, perspective taking can be highly context dependent.¹⁶⁶ While it can inspire altruism and cooperative behavior,¹⁶⁷ research suggests that “perspective taking works as a relational amplifier.”¹⁶⁸ Thus, in a competitive situation, researchers explain that “perspective taking draws attention to conflicting interests and to how a competitor’s actions may threaten one’s own self-interest.”¹⁶⁹ Consequently, if researchers seek the power of perspective taking as a positive influence, they need to be attentive to risks like those enumerated above and, where possible, create immersive contexts that mitigate them.

controversy. *See, e.g.*, FitzGerald et al., *supra* note 157, at 1 (looking at 30 articles between 2005 and 2015 and opining that their “review reveals that many interventions are ineffective.” *Id.* at 9. The authors argue that “[s]ome techniques, such as engaging with others’ perspective, appear unfruitful, at least in short term implicit bias reduction,” *id.* at 1, although they place virtual reality interventions, like those described in Section II.B below, in one of the “categories that merit further research” *id.* at 9, the category of “identifying the self with the outgroup[.]” *Id.* at 6.); Patrick S. Forscher, Calvin K. Lai, Jordan R. Axt, Charles R. Ebersole, Michelle Herman, Patricia G. Devine & Brian A. Nosek, *A Meta-Analysis of Procedures to Change Implicit Measures*, 117 J. PERSONALITY & SOC. PSYCHOL. 522, 540–41 (2019) (“We found that implicit measures can be changed across many areas of study, populations, implicit tasks, and research designs. The type of approach used to change implicit measures mattered greatly. Some procedures were effective at changing implicit measures, whereas others were not. Procedures to change implicit measures produced smaller changes in explicit measures and behavior, and we found no evidence that changes in implicit measures mediate changes in explicit measures and behavior.”).

163. *See, e.g.*, Groom et al., *supra* note 26, at 14 (finding an increase in bias and speculating that the result may have been influenced by stereotype activation).

164. *See* Adam D. Galinsky & Gillian Ku, *The Effects of Perspective-Taking on Prejudice: The Moderating Role of Self-Evaluation*, 30 PERSONALITY & SOC. PSYCHOL. BULL. 594, 601 (2004).

165. UMBREIT & GREENWOOD, *supra* note 19, at 8.

166. *See, e.g.*, Banakou et al., *supra* note 162, at 13.

167. Jason R. Pierce, Gavin J. Kilduff, Adam D. Galinsky & Niro Sivanathan, *From Glue to Gasoline: How Competition Turns Perspective Takers Unethical*, 24 PSYCHOL. SCI. 1986, 1987 (2013) (“Specifically, perspective taking has been linked to greater empathy and altruism, increased willingness to volunteer time and money to help individuals facing hardship, diminished accessibility and expression of stereotypes, reduced egocentrism, and more objective judgments of fairness.” (citations omitted)).

168. *Id.*

169. *Id.* In other studies, researchers reported that perspective taking can “diminish egocentric assessments of fairness.” Nicholas Epley, Eugene M. Caruso & Max H. Bazerman, *When Perspective Taking Increases Taking: Reactive Egoism in Social Interaction*, 91 J. PERSONALITY & SOC. PSYCHOL. 872, 886 (2006). But they report that, in a competitive context, it could also trigger reactive egoism. *Id.*

Overall, with caveats related to various risks, research on perspective taking generally supports the inference that increasing responsible parties' self-other overlap or empathy with survivors of crime holds the promise of nurturing successful restorative justice.

B. Immersive Perspective Taking in Virtual Reality

Visualization-based perspective taking—imagining how another feels or yourself as the other—requires no advanced technology. But it does depend on at least three resources. First, to imagine the situation from another's perspective, one must have information about the experience of the other. In the restorative justice context, that information generally derives from the experience of a crime survivor. Obtaining that information, for example in a real-time encounter with the survivor, can be traumatic and costly. Second, the imagining process anticipates a willingness to adopt another perspective. Imagining oneself as a crime survivor can be emotionally uncomfortable. Third, such imagining is intrinsically difficult, demanding cognitive effort, known as cognitive load.¹⁷⁰

Immersive virtual reality, however, as a computer-generated experience that can substitute for and become the participant's perceived reality during the immersion, can help respond to each of these challenges. A crime survivor could provide information to program designers without the responsible party present in whatever time frame and capacity works for the survivor. Moreover, for a virtual reality experience, much information could be gleaned from the police and probation reports on an incident, thus saving the survivor from reliving the crime in the presence of the responsible party who caused that harm. With respect to willingness and the cognitive load of imagining, rather than requiring the mental gymnastics to imagine, the virtual reality technology can produce the sensation of experiencing the world as would another, including as a crime survivor or family member.¹⁷¹ The avatar experience in which the responsible party could become a survivor can be more direct and cognitively less demanding than imagining.¹⁷² In these ways, virtual reality could reduce the emotional demands on the survivor and the cognitive load of the participant and perhaps enhance the responsible party's willingness to participate.¹⁷³

170. See Béatrice S. Hasler, Bernhard Spanlang & Mel Slater, *Virtual Race Transformation Reverses Racial In-Group Bias*, 12 PLoS ONE 1, 3 (2017) (“Despite its popularity and demonstrated success in changing attitudes and discriminatory behavior, perspective-taking has its limitations. It requires a capability for mental imagery, cognitive effort and motivation from the individual in order to be effective.” (citations omitted)).

171. See, e.g., Seinfeld et al., *supra* note 33, at 1.

172. Virtual reality might in fact make the experience more real and more uncomfortable than the limits of the imagined experience. See *infra* notes 260–61, 287, 300 and accompanying text on implications of that potentially enhanced discomfort.

173. See Anthony Steed, Ye Pan, Fiona Zisch & William Steptoe, *The Impact of a Self-Avatar on Cognitive Load in Immersive Virtual Reality*, in 2016 IEEE Virtual Reality Conference 67, 73 (2016) (“Thus our results indicate that a tracked self-avatar with sensorimotor contingencies appears to reduce cognitive load on certain tasks.”).

The formal academic study of immersive perspective taking in virtual reality spans about two decades.¹⁷⁴ It evolved as computer technology reached the stage where a virtual world that produces a genuine sense of presence could be effectively created and studied.¹⁷⁵ Here, presence involves that level of immersion in which “your motor and perceptual systems interact with the virtual world in a manner similar to how they do in the physical world.”¹⁷⁶ In this way, presence includes place illusion.¹⁷⁷ Complementing place illusion is the concept of plausibility illusion, which “is the illusion that what is apparently happening is really happening (even though you know for sure that it is not).”¹⁷⁸ Both contribute to the sense that you are physically and emotionally engaged in a world that feels believable and real. Commonly, studies embody the participant in an avatar with certain characteristics who performs various tasks designed to shed light on or affect beliefs and behavior.¹⁷⁹ Illustrative examples include studies on embodiment in an avatar of a race or age different than that of the participant.¹⁸⁰ In lieu of visual perspective taking, as in the study described above where participants saw a photograph or video about someone and were asked to use their imaginations to “adopt his perspective[.]”¹⁸¹ in an immersive environment, the participant “becomes” the person.

Immersive environments often rely on a virtual mirror to achieve this sense of embodiment and presence.¹⁸² Once one has adjusted the headset and hand controllers and entered the virtual world, the participant looks into what appears to be a mirror. In that mirror, they see the person whom they have become in the virtual world. Applied in the context of studies on racial embodiment, for instance, an individual who identifies as a light-skinned individual outside of virtual reality might be placed in a dark-skinned body (or vice versa).¹⁸³ In the research context,

174. Philippe Bertrand, Jérôme Guegan, Léonore Robieux, Cade Andrew McCall & Franck Zenasni, *Learning Empathy Through Virtual Reality: Multiple Strategies for Training Empathy-Related Abilities Using Body Ownership Illusions in Embodied Virtual Reality*, 5 FRONTIERS ROBOTICS & AI 1, 10 (2018) (“Since the 2000s VR has been used to study perspective taking.” (citations omitted)).

175. Beatrice de Gelder, Jari Kätsyri & Aline W. de Borst, *Virtual Reality and the New Psychophysics*, 109 BRIT. J. PSYCHOL. 421, 422 (2018) (arguing that “VR can be useful . . . by virtue of its relative non-realism and poverty of its perceptual elements” by offering “increased clarity” and that “VR exerts its measurable influence more by eliciting an acceptance of the virtual world (i.e., ‘suspension of disbelief’) rather than by eliciting a true belief of the realism of the VR environment.”). See BAILENSEN, *supra* note 26, at 19, for analyses of various advantages and disadvantages of virtual reality more generally.

176. BAILENSEN, *supra* note 26, at 19.

177. Mel Slater, *Place Illusion and Plausibility Can Lead to Realistic Behaviour in Immersive Virtual Environments*, 364 PHIL. TRANSACTIONS ROYAL SOC. B: BIOLOGICAL SCI. 3549, 3551 (2009).

178. *Id.* at 3553.

179. Farmer & Maister, *supra* note 25, at 340–44.

180. See, e.g., Peck et al., *supra* note 26, at 779–80 (2013) (study finding greater reduction in racial bias with immersive embodied condition than with traditional mental simulation perspective taking); Oh et al., *supra* note 155, at 399 (exploring effects upon intergenerational attitudes through perspective-taking mediums, including embodiment in an avatar of a different age).

181. Todd et al., *supra* note 151, at 1029.

182. See, e.g., Hasler et al., *supra* note 170, at 13.

183. See *id.* at 2, 4.

the individual then engages with the virtual world from inside the dark-skinned body. When they look at their face and hands, they have dark skin. When they turn their head, the head of the avatar turns. When they walk, their dark-skinned avatar body walks the same way in the same cadence. Because the avatar responds largely as would the participant's real body, a phenomenon known as the "rubber hand illusion,"¹⁸⁴ a type of psychological extension of body ownership, can convince the participant to conceive of the dark-skinned body as their own. If the virtual reality environment responds to input quickly and effectively enough, the participant and the avatar are in sync. For the duration of the embodiment, the participant can become the avatar.¹⁸⁵

A number of immersive studies have now been conducted involving embodiment in lighter- or darker-skinned avatars.¹⁸⁶ They commonly, although not uniformly, find a decrease in implicit racial bias as measured either by the Implicit Association Test ("IAT")¹⁸⁷ or changes in mimicry of behavior,¹⁸⁸ the tendency to copy the mannerisms and body language of others. Similarly, in a large-scale, longitudinal study on the impact of embodiment on participants in the context of becoming homeless, researchers reported that embodiment in an avatar who became homeless generally produced more positive attitudinal and behavioral support for people experiencing homelessness.¹⁸⁹

Virtual reality immersion studies also often compare the change in attitude or behavior between the immersive experience and a more traditional perspective-taking experience reliant on imagination.¹⁹⁰ They frequently, although not exclusively, report more significant effects with the immersion experience than with more traditional perspective-taking approaches.¹⁹¹ For example, researchers sought to ascertain whether an immersive environment would enhance participants' positive attitudes and helping behavior toward individuals who are colorblind.¹⁹² They

184. Matthew Botvinick & Jonathan Cohen, *Rubber Hands 'Feel' Touch That Eyes See*, 391 NATURE 756, 756 (1998).

185. See, e.g., Hasler et al., *supra* note 170, at 3.

186. See, e.g., Peck et al., *supra* note 26, at 780; Hasler et al., *supra* note 170, at 1; Domna Banakou, Parasuram D. Hanumanthu & Mel Slater, *Virtual Embodiment of White People in a Black Virtual Body Leads to a Sustained Reduction in their Implicit Racial Bias*, 10 FRONTIERS HUM. NEUROSCIENCE 1, 1 (2016).

187. Implicit bias and the IAT as a measure of implicit bias have been the subject of much scholarly debate. See, e.g., Izumi, *supra* note 140, at 85–86 nn. 65–66 and accompanying text.

188. See, e.g., Peck et al., *supra* note 26, at 782, 784–85; Hasler et al., *supra* note 170, at 1; Banakou et al., *supra* note 186, at 3. But see *supra* note 162 for examples of studies that did not find a decrease in implicit bias.

189. Herrera et al., *supra* note 162, at 18–21.

190. See, e.g., Ahn et al., *supra* note 26, at 7, 20, 27, 30–31.

191. *Id.* at 31. In a study published in 2019, researchers tested whether an imagination exercise with a written scenario about a bar fight or a 360° virtual reality experience of that fight provided a more effective foundation for studying decision making by responsible parties. van Gelder et al., *supra* note 28, at 469. The experimenters report that "presence and realism were higher in the VR condition compared to the written vignette condition[.]" *Id.*

192. Ahn et al., *supra* note 26, at 31.

report that immersed participants “demonstrated twice as much helping behavior” as those who experienced a more traditional perspective-taking approach.¹⁹³

In the real world, clinicians have begun using immersive environments in domains like medical practice.¹⁹⁴ For example, in physical rehabilitation contexts for stroke patients and in mental health contexts, embodiment now plays a role in some treatment.¹⁹⁵

In recent years, virtual reality or its potential has also entered the realm of criminal justice work, surfacing in several contexts.¹⁹⁶ These include a variety of potential uses in criminal (and civil) trials.¹⁹⁷ Scholars have proposed its use, inter alia, in “recreating crime and accident scenes, preparing witnesses, and experts, and conducting police lineups[.]”¹⁹⁸ as well as for the study of corporate crime and in trials where all participants are represented as virtual actors.¹⁹⁹

More directly relevant to the proposed approach, researchers have been exploring the use of virtual reality for rehabilitative purposes in the criminal justice system.²⁰⁰ For example, researchers have focused on training law enforcement and

193. *Id.* The researchers developed a series of three related experiments in this study. In the third, the result of which is described in the text above, their focus was on the comparative impact of immersion versus imagining on actual conduct. *Id.*

194. *See, e.g.*, Farmer & Maister, *supra* note 25, at 341. Not all studies report additional efficacy with the use of virtual reality. *See, e.g.*, Katharina Meyerbröcker, Nexhmedin Morina, Gerard A. Kerkhof & Paul M.G. Emmelkamp, *Virtual Reality Exposure Therapy Does Not Provide Any Additional Value in Agoraphobic Patients: A Randomized Controlled Trial*, 82 *PSYCHOTHERAPY & PSYCHOSOMATICS* 170, 175 (2013) (study comparing cognitive behavioral therapy with virtual reality environment therapy (“VRET”) and suggesting that, although both were preferable to no treatment, “any additional value of VRET above traditional exposure in vivo for implementation in routine clinical practice has still to be demonstrated”).

195. *See, e.g.*, Farmer & Maister, *supra* note 25, at 341.

196. *See, e.g.*, Liza J.M. Cornet & Jean-Louis van Gelder, *Virtual Reality: A Use Case for Criminal Justice Practice*, 26 *PSYCHOL. CRIME & L.* 631, 631–32 (2020), <https://www.tandfonline.com/doi/full/10.1080/1068316X.2019.1708357> (offering a literature review of virtual reality applications to criminal justice primarily in four contexts: risk assessment, responsible party rehabilitation, responsible party reintegration, and assistance for survivors of crime; the article does not discuss restorative justice); *About*, PROJECT EMPATHY, <https://www.projectempathyvr.com/the-series> (last visited Feb. 6, 2021) (describing their virtual reality film experiences including ones involving solitary confinement and childhood when one’s mother is in prison); Bobbie Ticknor, *Using Virtual Reality to Treat Offenders: An Examination*, 13 *INT’L J. CRIM. JUSTICE SCI.* 316, 316 (2018).

197. *See, e.g.*, Carrie Leonetti & Jeremy Bailenson, *High-Tech View: The Use of Immersive Virtual Environments in Jury Trials*, 93 *MARQ. L. REV.* 1073, 1073–74 (2010); Jeremy N. Bailenson, Jim Blascovich, Andrew C. Beall & Beth Noveck, *Courtroom Applications of Virtual Environments, Immersive Virtual Environments, and Collaborative Virtual Environments*, 28 *LAW & POL’Y.* 249, 249–50 (2006) [hereinafter Bailenson et al., *Courtroom Applications*]. *See* Bloch, *Harnessing Virtual Reality*, *supra* note 26, at 37–38 n.195, for a more detailed description of some of these proposed uses.

198. Bailenson et al., *Courtroom Applications*, *supra* note 197, at 249–50.

199. *See* Jay P. Kennedy & Bobbie Ticknor, *Studying Corporate Crime: Making the Case for Virtual Reality*, 7 *INT’L J. CRIM. JUST. SCI.* 416, 417 (2012); ADAM BENFORADO, *UNFAIR: THE NEW SCIENCE OF CRIMINAL INJUSTICE* 266–70 (2015).

200. *See, e.g.*, Cornet & van Gelder, *supra* note 196, at 637–39. The authors opine that “the ability to put someone in ‘the shoes of someone else’ with the help of [virtual reality] offers unique possibilities for correctional intervention, especially for improving empathic skills.” *Id.* at 639; BOBBIE TICKNOR, *VIRTUAL REALITY AND THE CRIMINAL JUSTICE SYSTEM: EXPLORING THE POSSIBILITIES FOR CORRECTIONAL*

improving their ability to work with “offenders in a variety of situations.”²⁰¹ Virtual reality scenarios also furnish an environment for forensic mental health work.²⁰² With specific emphasis on rehabilitation for individuals against whom charges have been sustained, one scholar conducted a pilot experiment designed to assess whether virtual reality tools might enhance cognitive behavioral therapy for juvenile responsible parties in a residential treatment program.²⁰³ In this feasibility study, the researcher reported, inter alia, that the minors found “that learning new skills and role playing in a virtual environment were much more engaging than their previous” group treatment had been.²⁰⁴

Some virtual reality experience designers have also approached the creation of virtual reality from a perspective more directly relevant to survivors and to restorative justice. *The Machine to be Another* has, for example, offered an opportunity for audience participants to immerse as “victims of police brutality.”²⁰⁵ In *Healing Justice VR*, Dr. Shakti Butler has created a virtual experience in which “audience members converse with an incarcerated person, in a role-play scenario where they are preparing for an eventual meeting with the victim of a crime.”²⁰⁶

In addition, virtual reality research has entered the realm of therapeutic treatment for crime survivors.²⁰⁷ These studies interrogate the value of virtual reality in addressing psychological harm and conditions with which crime survivors and

REHABILITATION 46–81 (2018); Bobbie Ticknor & Sherrie Tillinghast, *Virtual Reality and the Criminal Justice System: New Possibilities for Research, Training, and Rehabilitation*, 4 J. VIRTUAL WORLDS RES. 4, 15–28 (2011). Virtual reality is also being investigated in other rehabilitation-related contexts. For example, virtual reality applications may help juveniles who had been sentenced to life in prison, but will now be released due to changes in legal precedent, learn to navigate the world outside of prison. Nicole Lewis, *A View of Tomorrow: With Virtual Reality, Juvenile Practice for a World They May Experience*, MARSHALL PROJECT (July 17, 2018, 10:00 PM), <https://www.themarshallproject.org/2018/07/17/a-view-of-tomorrow> (“Right now we have 32 lessons,” [said Melissa Smith, Colorado Department of Corrections programs coordinator] . . . ‘From how to cook a hotdog in the microwave to how to do laundry. How to self-scan at the checkout. How to walk on a busy street. How to use an ATM card.’”).

201. Ticknor & Tillinghast, *supra* note 200, at 14.

202. See, e.g., Hanneke Kip, Saskia M. Kelders, Kirby Weerink, Ankie Kuiper, Ines Brüninghoff, Yvonne H. A. Bouman, Dirk Dijkslag & Lisette J.E.W.C. van Gemert-Pijnen, *Identifying the Added Value of Virtual Reality for Treatment in Forensic Mental Health: A Scenario-Based Qualitative Approach*, 10 FRONTIERS IN PSYCHOL. 1, 2–3 (2019) (investigating potential uses, advantages, and critiques of virtual reality in forensic mental health treatment); Laura Dellazizzo, Stéphane Potvin, Sami Bahig & Alexandre Dumais, *Comprehensive Review on Virtual Reality for the Treatment of Violence: Implications for Youth with Schizophrenia*, 5 NATURE PARTNER J. SCHIZOPHRENIA 1, 2 (2019); Ankie Kuiper, *Value in Virtual Reality: The Values for Virtual Reality for Forensic Mental Healthcare* 5–6 (Aug. 29, 2018) (M.S. thesis, University of Twente) (exploring stakeholder values—which would be important to stakeholders—in creating VR applications in the forensic health context).

203. Bobbie Ticknor, *Pilot 1.0: Creating a Virtual Environment for the Treatment of Offenders*, CORR. TODAY, May–June 2017, at 46–8.

204. Bobbie Ticknor, *Virtual Reality and Correctional Rehabilitation: A Game Changer*, 46 CRIM. JUST. & BEHAV. 1319, 1329 (2019).

205. Bertrand et al., *supra* note 174, at 12.

206. *Healing Justice Through VR: Can we Heal Trauma Through Dialogue?*, LIGHT SAIL VR, https://www.lightsailvr.com/worldtrust_healingjustice.php (last visited Feb. 12, 2021).

207. See, e.g., Ticknor, *supra* note 204, at 1326–27 (discussing a variety of virtual reality simulation studies used with survivors of crimes).

witnesses often suffer.²⁰⁸ For instance, in a small-scale study in Mexico, virtual reality enabled therapists to engage crime survivors and witnesses in simulated situations involving potentially traumatic scenarios to assist in reducing survivors' and witnesses' PTSD or Acute Stress Disorder symptoms.²⁰⁹ In this proof-of-concept study, researchers reported that all nine "participants who received [virtual reality therapy] showed a clinically significant (>30 percent) improvement in their PTSD symptoms after 12 weeks of treatment."²¹⁰ In a subsequent controlled study, in which researchers randomly assigned forty participants to either a virtual reality exposure therapy condition or an imaginal exposure therapy condition, researchers reported that "[d]ata generated by this controlled trial support the outcome obtained from the [earlier] PTSD case study, suggesting that [virtual reality] used to apply prolonged exposure (PE) technique was effective in reducing symptoms of re-experiencing, avoidance and hyper arousal."²¹¹ More generally, in a meta-analysis of fourteen clinical trials of virtual reality exposure therapy ("VRET") for specific phobias, researchers explored "the extent in which VRET gains can be transferred to real-life."²¹² They reported that their "results suggest that VRET can effectively enable behavior change in real-life situations."²¹³ This research offers important insights into using virtual reality as an option for trauma mitigation of crime survivors.

Researchers have also been investigating whether virtual reality might affect or encourage survivors to participate specifically in restorative justice.²¹⁴ In related

208. See, e.g., *id.*

209. Georgina Cárdenas López, Anabel de la Rosa, Raúl Durón Figueroa & Ximena Durán Baca, *Virtual Reality Exposure for Trauma and Stress-related Disorders for City Violence Crime Victims*, 9 INT'L J. CHILD HEALTH HUM. DEV. 315, 317 (2016).

210. *Id.* at 320–21 (noting limitations, including that "the sample size was too small, not [a] blinded assessment, did not have a control group that allowed for a wide variety of possible treatments, and did not include long-term follow up"). See CÁRDENAS LÓPEZ ET AL., *supra* note 13, at 42, for the results of a follow-up study. The researchers in the follow-up study reported that "[i]n the pretreatment evaluation, the total sample showed a diagnosis of PTSD acute (55%) and chronic (45%). After treatment 100% of participants in both treatment groups did not meet the diagnostic criteria for PTSD." *Id.* at 44. See also Claudie Loranger & Stéphane Bouchard, *Validating a Virtual Environment for Sexual Assault Victims*, 30 J. TRAUMATIC STRESS, 157, 158 (2017) (study "to assess whether a VE [virtual environment] would be a valid tool when utilized with women who developed PTSD following a sexual assault"), for additional studies on crime survivors and virtual reality therapy.

211. CÁRDENAS LÓPEZ ET AL., *supra* note 13, at 41–42, 44 (citation omitted).

212. Nexhmedin Morina, Hiske Ijntema, Katharine Meyerbröker & Paul M.G. Emmelkamp, *Can Virtual Reality Exposure Therapy Gains Be Generalized to Real-Life? A Meta-Analysis of Studies Applying Behavioral Assessments*, 74 BEHAV. RES. & THERAPY 18, 19 (2015).

213. *Id.* at 23.

214. See Johanna Veltmann, *Practicing VOM in VR – Predictors of the Intention to Use VR* 6–7 (June 25, 2019) (B.S. thesis, University of Twente); Julia Pauline Bernhard, *Investigating People's Intention to Use Virtual Reality in the Context of Victim-Offender Mediation Using the UTAUT Model 1* (June 25, 2019) (B.S. thesis, University of Twente); Jeroen R. Koetsier, *Investigating Presence in (VR) Scenario Research: Does Presence in a Scenario Influence Willingness to Participate in Victim Offender Mediation as a Function of Crime Severity?* 3 (Aug. 28, 2019) (M.A. thesis, University of Twente); Myrthe Sophie Anne von den Benken, *Virtually Encounter Your Offender: Exploring Potential Users' Attitudes Towards VR When Traditional Victim-Offender Mediation is Unfeasible* 3 (June 28, 2019) (B.S. thesis, University of Twente); Robin Wilms, *The Influence of Curiosity on*

work, a master's degree candidate in the Netherlands studied whether individuals were more likely to feel present if they read a scenario as a robbery survivor or experienced being a robbery survivor in a 360 video-based scenario.²¹⁵ Consistent with much other literature as discussed above in the immersive context, the researcher reported that participants rated their spatial presence and involvement as higher in the virtual reality scenario than in the written scenario.²¹⁶

Beyond the research described above, in a study published in 2018, researchers employed an immersive virtual environment in which male domestic violence responsible parties experienced “verbal abuse and intimidation”²¹⁷ as a female target avatar.²¹⁸ The researchers reported that twenty participants in the group identified as “Offenders [were] . . . men convicted by the Spanish legal system for an aggression against a woman and sentenced to attend a domestic violence intervention program.”²¹⁹ Specifically, the study explored the ability of participants to accurately identify fearful, happy, or angry facial expressions and body language.²²⁰ The researchers explained that the immersive experience in the female avatar “resulted in an improvement of the ability of Offenders to recognize fear in female faces, and reduced their response bias towards wrongly attributing happy emotional states to fearful facial expressions . . .”²²¹

More broadly, the researchers suggest that virtual reality, with a responsible party experiencing the world as a survivor avatar, “has the potential to improve current rehabilitation programs for offenders . . . [and] could . . . [reduce] future re-offenses[.]”²²²

A study published in 2020 looked more directly at brain activity during virtual embodiment in a domestic violence context.²²³ Using functional magnetic resonance imaging (“fMRI”), the researchers investigated the impact of virtual

Victims' Willingness to Participate in Victim-Offender-Mediation (June 18, 2018) (B.S. thesis, University of Twente).

215. Koetsier, *supra* note 214, at 3 (study suggests “that presence can be increased in scenario-research by using VR technology”).

216. *Id.* at 40. According to the researcher, participants did not, however, rate the video-based scenario as having greater realism. The researcher speculated that a lack of “access to high-end VR technology” and participants’ expectations may have contributed to this latter result. *Id.*

217. Seinfeld et al., *supra* note 33, at 4.

218. Seinfeld et al., *supra* note 33, at 1.

219. *Id.* at 8 (italics removed). Nineteen men also participated in a non-responsible party control group. *Id.* at 2.

220. *Id.* at 2, 5.

221. *Id.* at 4.

222. *Id.* at 6. In addition to the work in Spain, apparently, the Dutch probation system has also focused on virtual reality in the context of domestic violence. A website explains that “[t]he project ‘Don’t forget me’ shows offenders what impact their actions have on their victims, in this case their children.” Russell Webster, *Virtual Reality in Probation: ‘Don’t Forget Me,’* RUSSELL WEBSTER (Dec. 2, 2017), <http://www.russellwebster.com/davr/>.

223. Aline W. de Borst, Maria V. Sanchez-Vives, Mel Slater & Beatrice de Gelder, *First Person Virtual Embodiment Modulates the Cortical Network that Encodes the Bodily Self and its Surrounding Space during the Experience of Domestic Violence*, 7 *ENEURO* 1,1 (2020).

perspective taking when the participant experienced the virtual world from a first-person or a third-person perspective.²²⁴ In each, “a male avatar entered [the scene] and started addressing the female avatar in a demeaning and aggressive manner.”²²⁵ The male avatar also “[threw] the phone . . . and approache[d] the female [avatar] closely while continuing to verbally abuse her.”²²⁶ In the first-person perspective, the participant embodied the female avatar.²²⁷ In the third-person perspective, the participant saw the female avatar in the scene, but did not embody that avatar.²²⁸ The researchers explained the results of the study as illustrating that “first person perspective embodiment . . . increases identification with the virtual victim during the experience of domestic abuse.”²²⁹ As suggested by the approaches described above, virtual reality first-person embodiment offers rich terrain for exploring rehabilitation and treatment.

Although rehabilitation and restorative justice are not identical concepts,²³⁰ they can share important characteristics. Rehabilitation is primarily focused on the responsible party, whereas restorative justice focuses primarily on the harm caused and potential restoration for those harmed. However, depending on the approaches to rehabilitation and restorative justice, there may be substantial overlap; both can involve working with the responsible party to enhance accountability, reduce recidivism and increase public safety, and make repairs for the harm caused. Where appropriate, restorative justice harnesses rehabilitative approaches in the restoration process. For example, in a theft case, a restorative justice circle, where community stakeholders gather to understand and address the case, might result in the responsible party agreeing to pay restitution to the survivor. The responsible party might effectuate that restitution by learning job skills and gaining employment. This restorative result would rely on rehabilitative approaches.²³¹ Similarly,

224. *Id.* at 2–3.

225. *Id.* at 3.

226. *Id.*

227. *Id.*

228. *Id.* at 3.

229. *Id.* at 1. In another study examining the impact of immersion in a domestic violence virtual scenario, researchers found that:

[A]n immersive virtual reality scene of intimate partner violence experienced from the victim’s perspective, and to a lesser degree witnessed as an observer, could be a useful tool to be included in intervention programs to rehabilitate abusers. The degree to which subjects feel part of the scene seems to contribute more to the potential of this virtual reality paradigm rather than only the perspective from which they experience it.

Cristina Gonzalez-Liencres, Luis E. Zapata, Guillermo Iruretagoyena, Sofia Seinfeld, Lorena Perez-Mendez, Jorge Arroyo-Palacios, David Borland, Mel Slater & Maria V. Sanchez-Vives, *Being the Victim of Intimate Partner Violence in Virtual Reality First- Versus Third-Person Perspective*, 11 *FRONTIERS PSYCHOL.* 1, 8 (2020).

230. Whether and the extent to which restorative justice is a function of or should be used in conjunction with a rehabilitative model has been the subject of debate and discussion. *See, e.g.*, Wood, *supra* note 73, at 885–86; Latimer et al., *supra* note 4, at 140.

231. *See, e.g.*, SERED, *supra* note 5, at 136–37 (describing a range of options for agreements in restorative justice circles, including rehabilitative choices, like “pursuing their education, completing job training and/or obtaining employment . . . becoming positive role models, addressing any harmful reliance on alcohol or other

the approach of the 2018 Spain study,²³² which might enable a responsible party who has inflicted domestic violence to better recognize when their behavior causes fear, could be part of the restorative justice agreement, particularly if the survivor fears repeated acts of domestic violence by the responsible party. The relationship between restorative justice and rehabilitation²³³ augurs well for virtual reality as a boon to both.

Complementing the empirical research above, reports of on-the-ground efforts by personnel with the French Association for Research in Applied Criminology (“ARCA”) suggest another approach to virtual reality and restorative justice.²³⁴ Their approach enables participants to create an avatar, usually one that represents themselves, and emotional maps of their lives subsequent to a criminal episode.²³⁵ The mapping experience is done separately and individually, but survivors and responsible parties can choose to allow each other to asynchronously visit the virtual world containing their emotional maps.²³⁶ With such a visit, participants might gain insight into the future goals of the other party and also the salience of past and present trauma.²³⁷ While the approach in France aims to prepare participants for a potential future in-person encounter, unlike the process proposed in this Article, the approach in France does not primarily seek to embody the responsible party in a survivor avatar or an avatar of another community stakeholder related to the criminal episode.²³⁸ Instead, it looks prospectively to how an understanding of each individual’s current life map might lead to adjustments in that map and

drugs . . . or any number of other creative commitments particular to each case and the needs of the people affected by it”).

232. Seinfeld et al., *supra* note 33.

233. See Latimer et al., *supra* note 4, at 140.

234. Interview via Zoom with Irene Rodgers, Advisor for the Association de Recherche en Criminologie Appliquée (ARCA) (Oct. 16, 2020). Advisor Rodgers described ARCA’s virtual reality tool, known as FRED. The description in the related text above and footnotes here summarizes the information provided by Ms. Rodgers. She explained that each participant creates an avatar, one that usually represents the participant rather than another person. After entering the virtual world and engaging in a series of relaxation exercises, the participant summons an avatar and then chooses spheres, which can be labeled to represent elements of their life (for example, health, relationships, family, leisure). The participant uses these spheres to form a visual map of their current life. They can adjust the size and color of each sphere, as well as the proximity of that sphere to their avatar, to represent the amount of time that element takes up in their lives, the current importance/impact of that influence, and whether it is positive, neutral, or negative. The participant can then contrast their map with a future good life map they create. (See <https://www.goodlivesmodel.com/> for information on this future cast modeling.) This visual map can then be shared with others in the virtual domain, if desired, and evaluated by the participant to determine where change might be helpful. *Id.* Ms. Rodgers also indicated that FRED has been deployed in a number of venues, including correctional facilities in France, Switzerland, Belgium, Italy, and Polynesia. Email from Irene Rodgers to author (Oct. 18, 2020, 12:53 AM) (on file with author). See also Zebel et al., *supra* note 37 and accompanying text.

235. Interview via Zoom with Irene Rodgers, Advisor for the Association de Recherche en Criminologie Appliquée (ARCA) (Oct. 16, 2020).

236. *Id.*

237. *Id.*

238. *Id.*

improve the quality of participants' lives.²³⁹

The possibility of applying virtual reality approaches specifically to restorative justice for incarcerated persons is at least under consideration in the United States. For example, a blog post on the University of Colorado's National Mental Health Innovation Center's site describes a visit by personnel from the Center "to bring therapeutic virtual reality for a test"²⁴⁰ at "the maximum-security Spring Creek Correctional Center in Seward, Alaska[.]"²⁴¹ The post describes the purpose of the visit "as a first step toward evaluating [virtual reality's] potential to enhance prison safety and reduce recidivism after convicts had served their time."²⁴² The post suggests a range of possibilities for "technology-based innovation."²⁴³ These "could include technologies . . . used as part of the 'restorative justice' process—in which convicted offenders develop empathy for their victims, the skills to manage conflict or resolve differences non-violently, and communicate with more honesty with victims or a community to make amends or be restored to 'membership' [or full status in the community]."²⁴⁴

Virtual reality's inherent perspective-taking, self-other-overlap-inducing characteristics, and its malleability to create participant avatars in a myriad of worlds that feel real, renders it a promising tool to augment the reach of restorative justice.

III. VIRTUAL REALITY AS A CATALYST FOR RESTORATIVE JUSTICE

Having advanced an argument for using virtual reality to expand the scope of restorative justice, this Part explores what implementation might involve and evaluates potential benefits and drawbacks of applying virtual reality in this context.

A. Implementation

Restorative justice goals should guide the implementation of this type of immersive experience. Similarly, ethical constraints and technological challenges also inform implementation.

239. *Id.* Other efforts to incorporate virtual reality into preparing survivors and responsible parties for restorative justice appear to be underway. See Annemieke Wolthuis, *Looking Back at the Leiden Experience*, 17 EUR. F. FOR RESTORATIVE JUST. NEWSL. 3 (2016) ("Alexandra Ivanovitch presented her personal project to use virtual realities to prepare victims and offenders before a real encounter takes place."). Although not specific to restorative justice, the Dutch Garage2020 Street Temptations project appears to be involved in efforts to engage young people, who might be at risk of or undergoing behavioral challenges, in experiencing situations from multiple perspectives using virtual reality. See GARAGE2020, <https://www.garage2020.nl/projecten/street-temptations/> (last visited Feb. 14, 2021).

240. *Teardrop Tattoos*, *supra* note 37.

241. *Id.*

242. *Id.*

243. *Id.*

244. *Id.* See Christopher M. Wright, *World Heart: Teaching Offenders Empathy in a Networked World*, BULL. AM. SOC'Y FOR INFO. SCI. 27–28 (June/July 1998), <https://asistdl.onlinelibrary.wiley.com/doi/pdf/10.1002/bult.98> (hypothesizing a variety of options, which did not, however, include restorative justice). The Wright article offers an early discussion of other potential uses of virtual reality for incarcerated individuals. *Id.*

1. Incorporating Restorative Justice Goals

Although goals vary somewhat with the different forms of restorative justice, an essential shared objective entails identifying and grappling with the harms caused by the responsible party's conduct.²⁴⁵ As a threshold, to identify and grapple with the harms, one must first understand or at least perceive the harms. These objectives thus anticipate an engagement with perspective taking.

The question becomes: of what should the immersive perspective-taking experience consist in order to assist in the perception or understanding of harms caused? Apart from programming resource constraints and the ethical considerations discussed below, the choices of the avatar whose perspective the responsible party assumes are almost limitless. The most direct iteration would enable the responsible party to become someone harmed by criminal conduct similar to that caused by the responsible party. For many crimes, the avatar could embody the survivor's perspective. This does not assume that the virtual reality immersion will involve replication of the crime. Whether or if dimensions of those events belong in a particular virtual encounter would be context- and participant-dependent, as well as subject to the ethical considerations described in the next Subsection. Because immersion limits or eliminates the demands on live survivors, over time, responsible parties could experience embodiment in more than one avatar of a stakeholder to provide perspectives on harm. For example, virtual reality could furnish an avatar experience not only as a survivor, but as a survivor's caregiver, or as a doctor deciding how to treat a survivor's injuries.

A one-size fits all approach is unlikely to be as effective as one that helps the responsible party explore the scope of, and specific harms of, the responsible party's conduct. Consequently, a menu of immersive experiences could be designed to offer an opportunity for the supervising personnel to tailor various experiences toward the specific circumstances of the responsible party's situation. For example, if the responsible party committed a robbery that was the basis of their incarceration, the responsible party's avatar might manifest the consequences imposed by the loss of funds. Maybe the survivor's car was repossessed; maybe they were evicted and have become homeless. Available permutations for illustrating the harms and consequences are numerous. The virtual reality approach may be tailored within resource constraints to resemble or approximate harms similar to the ones resulting from the responsible party's criminal conduct. This virtual reality experience does not replicate a common classic restorative justice approach, in which the actual survivor participates and the harms are those involved in the real-world situation. Because the virtual reality implementation does not mirror the precise crime and harms in the real world that the responsible party's conduct caused, the avatar experience more closely models a surrogate survivor paradigm. Research on the proposed approach should help guide the determination of how

245. Zehr, *supra* note 41, at 68.

close the immersive environment needs to be to the actual real-world harms/events to provide benefits to the responsible party.

2. Ethical Constraints

If successful, immersive virtual reality is on one hand more removed from real-world interactions than meeting with a live survivor. After all, it is really just the participant and the computer in virtual reality. This virtual world can allow engagement in experiences that might not otherwise be available or appropriate for the responsible party in the real world. On the other hand, immersive virtual reality can also be more immediate and intense than some of those real-world interactions. Listening to a survivor recount being robbed can be powerful; experiencing a robbery or its consequences in immersive virtual reality may be even more so.²⁴⁶ Consequently, beyond tailoring and available resources, ethical considerations should also play a role in the process of creating and implementing immersive virtual experiences for responsible parties.²⁴⁷ In a 2016 analysis proposing preliminary recommendations for ethical constraints in virtual environments, Professors Michael Madary and Thomas Metzinger noted that “virtual environments can be modified quickly and easily with the goal of influencing behavior[,]”²⁴⁸ creating “opportunities for new and especially powerful forms of both mental and behavioral manipulation.”²⁴⁹ As a result, further research on approaches to the immersive experience to determine the appropriateness and likely efficacy of virtual reality in restorative justice should be conducted.

Ultimately, if the approach meets ethical standards and demonstrates efficacy in research protocols, it could become part of restorative justice practice. Practice here may be understood as referring “to interventions that are designed solely to enhance the well-being of an individual . . . and that have a reasonable expectation of success.”²⁵⁰ Before reaching the status of practice with an acceptable expectation of success, further research would be informative. Such research, if conducted

246. Consider the description of Professor Jeremy Bailenson, founder of Stanford’s Virtual Human Interaction Lab, about the power of virtual reality in general: “When done right, [virtual reality] experiences . . . will feel so realistic and immersive they will have the potential, similar to experiences in the real world, to enact profound and lasting changes in us.” BAIENSON, *supra* note 26, at 6.

247. See Dawid Kruk, Dagmara Metel & Andrzej Cechnicki, *A Paradigm Description of Virtual Reality and Its Possible Applications in Psychiatry*, 28 *ADVANCES PSYCHIATRY & NEUROLOGY* 116, 129–30 (2019); Thomas D. Parsons, Andrea Gaggioli, & Giuseppe Riva, *Virtual Reality for Research in Social Neuroscience*, 7 *BRAIN SCI.* (42) 1 (2017), <https://doi.org/10.3390/brainsci7040042>; and Michael Madary & Thomas K. Metzinger, *Real Virtuality: A Code of Ethical Conduct. Recommendations for Good Scientific Practice and the Consumers of VR-Technology*, 3 *FRONTIERS ROBOTICS & AI* 1, 5 (2016), for a discussion of ethical limits on the use of virtual reality in social neuroscience.

248. Madary & Metzinger, *supra* note 247, at 5.

249. *Id.*

250. THE NATIONAL COMMISSION FOR THE PROTECTION OF HUMAN SUBJECTS OF BIOMEDICAL AND BEHAVIORAL RESEARCH, *THE BELMONT REPORT: ETHICAL PRINCIPLES AND GUIDELINES FOR THE PROTECTION OF HUMAN SUBJECTS OF RESEARCH* (1979) [hereinafter *THE BELMONT REPORT*], https://www.hhs.gov/ohrp/sites/default/files/the-belmont-report-508c_FINAL.pdf.

in the United States, would rely on the federal rules governing human subjects research and *The Belmont Report*.²⁵¹ The principles underlying those resources could supply useful guidance not only in the research, but also in the consideration of how to implement immersive experiences in restorative justice using virtual reality in the real world.

Under the first of the three tenets of *The Belmont Report*, respect for persons anticipates informed consent by prospective participants.²⁵² To the extent that consent already constitutes part of the usual protocol for restorative justice processes, this could be modified for the virtual reality context to explain the immersive process, its risks, and its benefits.²⁵³ As in the federal rules on human subjects research, special consideration should be taken if the responsible party is in custody, as the coercive nature of custodial situations may impair an ability to offer voluntary consent.²⁵⁴ For example, a decision whether to participate in prison or jail programming generally—including, *inter alia*, any drug treatment and restorative justice programs—might become a factor in subsequent opportunities for responsible parties or a consideration in parole decisions.²⁵⁵

Part of an informed consent process may also anticipate that researchers will reveal potential conflicts of interest. The domestic violence study in Spain, discussed above, provides an example.²⁵⁶ The “Competing Interests” section of the article notes that two of the nine study authors “are founders of Virtual Bodyworks Inc. which currently licenses to the Catalan Justice Department a virtual environment for domestic violence offenders used in the [context] of its rehabilitation training programme.”²⁵⁷

Under the second tenet, beneficence, the research involves an evaluation of “when it is justifiable to seek certain benefits despite the risks involved, and when the benefits should be foregone because of the risks.”²⁵⁸ Part of this evaluation involves doing no harm.²⁵⁹ Some types of experiences may be so likely to cause harm that they exceed the parameters of acceptable restorative justice generally or in the specific circumstances. For example, even though many video games

251. Protection of Human Subjects, 45 C.F.R. § 46 (2018); THE BELMONT REPORT, *supra* note 250.

252. THE BELMONT REPORT, *supra* note 250.

253. See, for example, Madary & Metzinger, *supra* note 247, at 8–10, for suggestions on information that should be included in the informed consent process for participants.

254. 45 C.F.R. § 46.302; THE BELMONT REPORT, *supra* note 250.

255. In describing the motivations of some of the participants in RSVP, Sunny Schwartz explains that she “knew many had volunteered because they thought it might knock time off their sentences, or make them look good in front of the judge or prosecutor.” SCHWARTZ & BOODELL, *supra* note 6, at 147.

256. Seinfeld et al., *supra* note 33, at 11.

257. *Id.* The section also states that “[t]he research in this manuscript was carried out according to scientific methods and was not influenced at all by the company.” *Id.*

258. THE BELMONT REPORT, *supra* note 250.

259. *Id.*; see also Madary & Metzinger, *supra* note 247, at 7 (“We recommend, at the very least, that researchers ought to follow the principle of non-maleficence: do no harm.”).

involve first-person violence, creating an immersive experience in which the avatar is the target of certain types of crime or violence might fall into this category.

More generally, the specific circumstances of the immersion should be a focus in evaluating whether to provide the immersive experience for the particular participant. Is the immersion likely to trigger trauma? Is the triggering factor that might produce trauma essential to the immersion? Since individuals who commit crime have often previously been survivors of crime or abuse,²⁶⁰ the likelihood of trauma responses may be heightened. If such a factor is important to the immersion, the responsible party may not be an appropriate candidate for the immersive experience or measures for addressing potential trauma might be incorporated into the protocols. In the 2018 domestic violence study in Spain, discussed above, the participants were exposed to verbal abuse with the specter of physical violence when the male virtual character “hit the telephone, which fell off the table in the direction of the” embodied participant.²⁶¹ That study did note that there was a procedure used for obtaining participant consent and that the study had received approval by the Ethical Committee for Clinical Research at the study location.²⁶² Because so many responsible parties have experienced trauma, it will be important that appropriate preparation, counseling, and debriefing support is available to participants both within the experimental domain and in the real-world avatar experience. If the virtual reality paradigm is effective, and negative risks are minimized, then, in addition to general societal benefit, the specific responsible party may accrue benefit from the immersion.

Under the third tenet, the principle of justice suggests that there be a fair distribution of benefits.²⁶³ Here, “the selection of research subjects needs to be scrutinized in order to determine whether some classes . . . are being systematically selected simply because of their easy availability, their compromised position, or their manipulability, rather than for reasons directly related to the problem being studied.”²⁶⁴ With respect specifically to selection, the question becomes whether the individuals involved in the immersive environment are chosen because of their specific needs and the anticipated benefits directly to those individuals, or if persons have been chosen just because they are available. To the extent that the benefit in implementation of restorative justice is designed to accrue specifically to the individuals who participate, the Belmont principle of justice could be satisfied. Here too, however, attention to the risks of invidious bias intruding upon fairness requires vigilance. Among other dimensions, care must be taken to avoid introducing such bias into the immersive experiences themselves or into the protocol for selecting among participants for access to those experiences.

260. See, e.g., SERED, *supra* note 5, at 69, 89.

261. Seinfeld et al., *supra* note 33, at 9.

262. *Id.* at 8.

263. THE BELMONT REPORT, *supra* note 250.

264. *Id.*

In their discussion of ethical considerations for virtual reality research, interestingly, Madary and Metzinger note that “[o]ne possible application of [virtual reality] would be to rehabilitate violent offenders by immersing them in a virtual environment that induces a strong sense of empathy for their victims.”²⁶⁵ They indicate that they “see no problem at all with voluntary participation in such a promising use of the technology,”²⁶⁶ but they decline to “comment on the moral acceptability”²⁶⁷ of “*mandatory* treatment using similar techniques.”²⁶⁸ Because informed consent would be a prerequisite to participation in the proposed virtual reality approach, mandatory implementation would not be an option.

Applying ethical considerations to the immersive environments both during the research phase and in practice, if such environments demonstrate adequate efficacy, should limit overreaching and ground the practice in thoughtful implementation.

3. Technological Constraints

Employing embodied immersive experiences depends upon the state and availability of technology and upon the personnel necessary to customize, maintain, and operate it. Currently, the basic hardware, like the headset, hand controllers, and computer, or an all-in-one set up necessary to effectively run and monitor a fully immersive experience, should be purchasable for between \$550 and \$3,000 for each setup.²⁶⁹ Each setup can be used seriatim by hundreds or thousands of users over a period of years. Similarly, basic virtual reality development software can be licensed online for approximately \$1,800 annually.²⁷⁰ However, development software, which is designed to allow the programmer to customize the experience, requires programming resources, i.e., a programmer and their time. Programming costs will be a function of the specific experience desired and the amount of time required to customize the software to produce that experience. This might involve several person-days, person-weeks, or person-months of programming time for each customized experience.

265. Madary & Metzinger, *supra* note 247, at 10.

266. *Id.*

267. *Id.*

268. *Id.*

269. As of February 2021, for example, all-in-one virtual reality configurations could be purchased for \$574.00. See *Oculus Quest All-in-One VR Gaming Headset*, AMAZON, <https://www.amazon.com/gp/offer-listing/B07HWNW68ZC> (last visited Feb. 7, 2021). Personal laptop computers to run virtual reality configurations were available, for example, from \$1535 to \$2953. See *Oculus Rift S*, OCULUS, <https://www.oculus.com/rift-s/oculus-ready-pcs/> (last visited Feb. 7, 2021). A personal computer would still need a headset and controllers, priced, for example, at about \$600. See *Oculus Quest All-in-One VR Gaming Headset*, AMAZON, <https://www.amazon.com/gp/offer-listing/B07HWNW68ZC> (last visited Feb. 7, 2021). Other manufacturers may also offer a variety of choices. Much less expensive 360 cameras and viewing devices are also on the market, although it is not clear if they would provide the programmable features relevant to the type of controlled and supervisable experience envisioned here.

270. See, e.g., *Unity Technologies Plans and Pricing*, UNITY STORE, <https://store.unity.com/#plans-business> (last visited Feb. 7, 2021).

Attention to technological constraints is also important because hardware and software limitations sometimes make the experience uncomfortable for users.²⁷¹ The experience needs to provide high fidelity tracking to enhance comfort and a sense of presence. Prolonged exposure (and even limited exposure for those particularly susceptible) can still cause simulator sickness, which can be characterized by, *inter alia*, headaches or motion sickness symptoms.²⁷²

The failure to meet certain conditions can spoil or interrupt the sense of presence and plausibility. Place and plausibility illusions are both key elements of effective embodiment.²⁷³ To be immersed as an avatar, you should believe that you are in the virtual space, wherever that place appears to be.²⁷⁴ Therefore, the essential details of the virtual space need to correspond to what that place is or should be. Beyond the illusion of place, the environment and interactions within it need to be plausible.²⁷⁵ As Professor Mel Slater, an authority in virtual reality research, suggests, if, in your avatar, you try to engage with other characters in the virtual space, and they do not appear to be aware you are there, that can undermine the plausibility of the environment.²⁷⁶ For instance, consistent with an example given by Professor Slater, if two characters are having a fight, and you step between them in the midst of the sword play, they should acknowledge your presence.²⁷⁷ If they do not, then the virtual world ceases to be believable.²⁷⁸ Consequently, careful programming and attention to detail can be pivotal to avoid shattering the reality component of the virtual environment.

B. Benefits and Limitations

Beyond responding to restorative justice goals and evaluating ethical and technological constraints, deciding whether to engage in a virtual reality program to enhance and extend the scope of restorative justice warrants a careful analysis of the benefits and limitations of such a program.

1. Benefits

Six primary anticipated benefits animate the application of avatar experiences to restorative justice contexts: efficacy and reduced cognitive load;²⁷⁹ geographic

271. See, e.g., BAILENSON, *supra* note 26, at 9, 253–54.

272. *Id.*

273. See Slater, *supra* note 177, at 3554.

274. *Id.* at 3551.

275. See *id.* at 3552–54.

276. *Id.* at 3555.

277. See *id.*

278. See *id.* at 3553–55.

279. See, e.g., *supra* notes 173, 190–93 and accompanying text.

flexibility;²⁸⁰ sparing survivors trauma;²⁸¹ preparatory opportunity (before a live encounter);²⁸² measured and monitored experience for responsible parties;²⁸³ and near infinite adaptability of the virtual experience.²⁸⁴ All, of course, depend on the overarching premise that extending restorative justice represents a desirable approach.

Avatars can offer powerful perspective-taking opportunities, opportunities that feel immediate and real, and, in a number of contexts, have successfully affected attitudes and behavior.²⁸⁵ Their ability to make the process less cognitively demanding for individuals may enhance the efficacy of perspective taking.²⁸⁶ In addition, they can bring perspective taking inside prison walls and to other geographic locations where it may otherwise be unavailable. Whether that unavailability is a function of the remoteness of the physical location or a dearth of survivor participation in restorative justice programs, immersive experiences can enter where live-crime survivors may be unable to tread.

Relatedly, the immersive environment will suffer no trauma from an intense or unwelcome response by a responsible party. The computer simulation can spare live survivors the emotional devastation of reliving the crime or a confrontation in which the responsible party or the survivor is not ready to engage in an effective way. Immersive environments do not preempt classic restorative justice encounters. They are envisioned as a substitute when appropriate or necessary, or they can serve as a preparatory experience before a live-survivor encounter. They can enable responsible parties to engage with some of the goals of restorative justice when other options might not be available or appropriate at that time. Because a live-survivor encounter is often a powerful experience, an initial exposure to other perspectives might help responsible parties feel more comfortable, and perhaps more inclined to engage, with crime survivors. In addition, to the extent it does not dilute the efficacy of the experience and effects, with a menu of options, responsible parties can experience a range of perspectives on the harm caused.

The immersive encounter offers an environment that can be controlled and measured.²⁸⁷ The responsible party can remove the headset to terminate the

280. See, e.g., *supra* notes 31–36, 203 and accompanying text.

281. See, e.g., *supra* notes 19–21 and accompanying text.

282. See, e.g., *supra* notes 36–37 and accompanying text.

283. See, e.g., *supra* notes 258–61, and *infra* note 287 and accompanying text.

284. See, e.g., BAILEY, *supra* note 26, at 6 (“VR will not only give us access to experiences that are difficult to obtain, but it will also allow us to see impossible things, fantastic things, things that will allow us to see the real world in new ways and allow us to stretch our minds beyond anything we can imagine.”).

285. See *supra* notes 186–89. *But see*, e.g., *supra* note 194.

286. See Steed et al., *supra* note 173 and accompanying text.

287. See, e.g., Seinfeld et al., *supra* note 33, at 2. In evaluating virtual reality in the research context, scholars suggest that “[a] key reason to use VR in the study of social behaviour is to maximize experimental control of a complex situation.” Xueni Pan & Antonia F. de C. Hamilton, *Why and How to Use Virtual Reality to Study Human Social Interaction: The Challenges of Exploring a New Research Landscape*, 109 BRIT. J. PSYCHOL. 395, 396 (2018).

experience if the responsible party is experiencing trauma. Or, the individual overseeing the simulation can halt the process. The simulation can be discontinued entirely, resumed at a later point, or modified if appropriate. Other less triggering dimensions of a simulation could be substituted for the traumatic one. Interactions with live survivors generally lack this level of responsible party control.²⁸⁸

Moreover, virtual reality generally draws participants in, making it an experience in which people often want to engage. To the extent that restorative justice represents a positive direction for individuals and communities, a virtual encounter offers a host of benefits for extending its reach.

2. Limitations and Drawbacks

Balanced against its potential benefits are the limitations of the application of immersive environments in restorative justice contexts. The analysis here explores six primary drawbacks: its focus may be too narrow; the crime survivor is not present for accountability or to hear an apology; the process may prime participants to say what is expected; a preliminary encounter could dilute the impact of a subsequent encounter; the experience may be more or less powerful than real-world engagement; and there is a potential for misuse of perspective manipulation.²⁸⁹

In restorative justice conferences and mediation, perspective taking can encompass a window into the responsible party's life and motivations, along with one into the harms inflicted by the responsible party. Since the responsible-party virtual experience does not contemplate engagement by other live individuals affected by the crime, it does not provide an opportunity for the responsible party to share their perspective and motivations with other stakeholders. As renowned restorative justice trainer Kay Pranis explains, "restorative justice is about both individual accountability and collective accountability - so community involvement is critical."²⁹⁰ The responsible-party virtual reality embodiment is unlikely to provide effective perspective on the responsibility of the community or society. It is a unidirectional opportunity for responsible parties to look through the lenses of others,

288. While one could ask for a recess or discontinue an in-person restorative justice encounter, that might negatively affect the proceedings. In any event, it is unlikely that one could moderate the intensity or substitute a less triggering experience during an in-person classic restorative justice session in the way one could in a virtual reality environment.

289. More generally, virtual reality is not always superior to other techniques. *See, e.g.*, Meyerbröker et al., *supra* note 194, at 175.

290. E-mail from Kay Pranis, Restorative Justice Trainer to Kate Bloch (May 9, 2020 11:21 AM PST) (on file with author). Pranis, who leads restorative justice circles as a practitioner, notes further that the proposed virtual reality "approach only looks at the individual accountability of the person who committed the crime which is only one part of what [she] want[s] a restorative process to achieve - and often not the most important part." *Id.* She adds that "[t]his [virtual reality] approach is focusing on developing empathy in the one who caused harm but there is not a process for them to experience empathy from others for harms to them." *Id.*

but not for others to look through the responsible party's lens.²⁹¹ In this sense, the responsible-party immersive experience is a more impoverished form of communication, but may be the available or appropriate one under the circumstances. One might expect, however, that, with social virtual reality, simultaneous participation by a responsible party, a survivor, and perhaps other societal stakeholders could permit a shared immersive restorative experience in response to the original harm.²⁹²

A second limitation also involves the absence of the survivor and other community stakeholders. Restorative justice anticipates accountability.²⁹³ Commonly, to participate in classic restorative justice, the responsible party must agree that they will acknowledge responsibility for the crime or the events that caused the harm.²⁹⁴ This does suggest that, like restorative justice more generally, the proposed virtual reality intervention may have limited utility for an individual who is not responsible for the harm caused.²⁹⁵ Acknowledgement by a responsible party of having caused harm can serve an important role for crime survivors.²⁹⁶ Because survivors are not present as part of the immersive experience, they miss the opportunity to

291. Kay Pranis underscores:

I can see [the virtual reality approach] as part of a therapeutic intervention or part of rehabilitation - both of which have an individual focus but it would not achieve the restorative outcome that I am looking for. It would not challenge existing structures of power and inequity which a good Circle process does. For me restorative justice is a social justice movement and that requires that its processes create a redistribution of power at some level. I recognize that not all practitioners would describe it the same way . . . I think the [virtual reality] technique has some potential to contribute to the work of restorative justice, but never just by itself. I would want it to always be clear that this is only a partial response - that human face to face is preferable in most circumstances. And that without community involvement it is an incomplete process. Community involvement is possible even when the victim does not want to meet face to face. I believe that the community has no choice. It must reconcile with those who cause harm - otherwise it is setting up another victim.

Id.

292. I would like to thank my colleague, Professor Jon Abel, for this suggestion.

293. Hansen & Umbreit, *supra* note 22, at 108.

294. Zehr, *supra* note 41, at 68–69.

295. *But see* Lorenn Walker, *Re-Entry Circles for the Innocent: The Psychological Benefits of Restorative Justice and Taking Responsibility in Response to Injustice*, in *THE PSYCHOLOGY OF RESTORATIVE JUSTICE: MANAGING THE POWER WITHIN* 139–50 (Theo Gavrielides ed., 2015). Restorative justice practitioner Lorenn Walker explores the value of re-entry circles for individuals who maintain their innocence and are incarcerated and wish to both prepare for their release and re-entry and engage with individuals affected by their incarceration. *Id.* For example, Lorenn Walker describes a re-entry circle for an incarcerated parent who sought to address the impact of her lengthy incarceration on her children even though the parent continued to maintain her innocence with respect to the underlying child abuse charges. *Id.* at 139–40, 147, 149–50. Facilitator Lorenn Walker opines that “[w]hile the circle process was not originally designed to deal with cases like [the one described above], where [an incarcerated person] maintain[s] innocence . . . for crimes for which they were imprisoned, [this case] show[s] that the process can provide a meaningful opportunity for people to cope with injustice.” *Id.* at 149–50.

296. *See, e.g.*, UMBREIT & GREENWOOD, *supra* note 19, at 10 (“A victim sometimes finds it validating, and often healing, to hear an offender offer words of regret or remorse that have not been elicited by the victim’s story.”).

speak and hear the responsible party acknowledge accountability and perhaps express remorse. When the immersive experience is preliminary to a meeting between the survivor and the responsible party, then the possibility of that exchange may just be delayed rather than eliminated. Moreover, an immersive experience may help a responsible party arrive at a place where the responsible party will feel able to acknowledge responsibility and apologize. But if there is no subsequent encounter, and such acknowledgment results from the immersive context, the person or people, apart perhaps from the responsible party, who most need to hear that acknowledgment will not be present. This limitation, which inheres as a structural matter in the proposed responsible-party virtual reality approach, suggests the value of a subsequent in-person restorative justice encounter, where possible.²⁹⁷

Another concern about an immersive experience, and perhaps about preparation and expectations for a restorative justice encounter more generally, is that responsible parties will learn what they are expected to say and subsequently engage as if performing from a script rather than as a result of contemporaneous reflecting and perspective taking. Professor Hadar Aviram has explored this concern, not in the context of restorative justice or virtual reality, but in the parole context, where individuals who appear before the parole board are evaluated on whether they have gained insight into their prior conduct.²⁹⁸ The risk here is twofold. Preparatory empathy-inducing encounters may engender a formulaic response that is not authentic or it may cause an authentic response to be perceived as lacking authenticity because it seems rehearsed.²⁹⁹ In contrast to the formal hearing before a parole board, the hope is that the sense of presence and participation in the immersive perspective-taking experience will prove resistant to engendering formulaic responses in any subsequent live-survivor encounter, particularly as the immersive context would not be designed as a high-stakes performative environment for the responsible party. Where the immersive experience serves as a preliminary stage to a subsequent encounter with a live survivor, the avatar experience might dilute the impact of the later exchange. It is challenging to predict whether this is likely or even whether such dilution, if it occurred, would be a positive or negative consequence. But it is possible given the often-intense nature of immersion.

Finally, two related concerns merit note. The intensity of the immersive experience could produce a potentially more emotionally realistic and painful experience than would an encounter with live stakeholders.³⁰⁰ Because the proposed virtual

297. Without a real-world encounter with the survivor (or the survivor's family) of the criminal conduct actually committed by the responsible party, important features of accountability and survivor voice are lost. See SERED, *supra* note 5, at 19–30, for a cogent analysis of such key features.

298. AVIRAM, *supra* note 3, at 9–11.

299. *See id.*

300. Concerns here include triggering or exacerbating existing PTSD.

reality perspective-taking approach does not aim to further retributive goals,³⁰¹ its impact, and potential benefits and risks, invite additional research before implementation to investigate whether it is likely to effectively further restorative ends. In addition, using powerful technology to manipulate perspective risks misuse.³⁰² These risks could be mitigated by careful design and monitoring of the immersive experience as well as careful protocols to guard against misuse.

CONCLUSION

Embodying an avatar offers the opportunity to experience the world as another. In this way, immersed perspective taking can undermine otherness and induce empathy or self-other overlap. In the end, research indicates that “at least 95% of all state prisoners will be released from prison at some point[.]”³⁰³ The question we must ask ourselves is how we can make their return one that restores rather than re-criminalizes, one that enhances public safety and re-integration, and one that repairs the rents in the societal fabric. When live-survivor encounters are not available or (yet) appropriate, properly designed and implemented virtual reality experiences could serve as thread in the societal undertaking that works toward that repair.

301. A number of restorative justice scholars have explored the relationship of punishment to restorative justice. *See, e.g.*, DAVIS, *supra* note 9, at 32 (“Restorative justice views a vengeful and punitive response to harm [as] unacceptable. . . .”); HOWARD ZEHR, *CHANGING LENS: A NEW FOCUS FOR CRIME AND JUSTICE* 186–87, 198–99, 209–10 (1990) (“Perhaps punishment cannot be eliminated entirely from a restorative approach. . . . If there is room for punishment in a restorative approach, its place would not be central. It would need to be applied under conditions which controlled and reduced the level of pain and in a context where restoration and healing are the goals.”). In contrast to the restorative justice approach, a recent article examines the possible use of virtual reality as a tool to exact punishment, including societal retribution. *See* Jose A. Moncada, *Virtual Reality as Punishment*, 8 *IND. J.L. & SOC. EQUALITY* 304, 314, 323 (2020) (“It is possible that society could accept punishing criminals in virtual environments that replicate the offender’s crimes, this achieving an ‘eye for an eye’ through VR.”).

302. *See, e.g.*, BAIENSON, *supra* note 26, at 6–7; *supra* Section III.A.2.

303. HUGHES & WILSON, *supra* note 98.