

Use of Virtual Reality in Peacekeeping Operations

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Executive Summary

Peacekeeping operations (PKOs) can prevent post-conflict violence by assisting countries with stabilization, policing, and capacity building, but face challenges in training, personnel protection, and local community trust. Virtual reality (VR) technology may mitigate some challenges presented to PKOs if integrated with conventional peacekeeping practices by streamlining training, improving mental health treatment, and potentially improving community relations. However, VR has significant limitations, especially in terms of feasibility, and it cannot address the underlying drivers of violence.

Introduction

Peacekeeping missions serve a vital role in preventing renewed violence in post-conflict countries but they face many challenges achieving this goal. Virtual reality can help peacekeepers overcome some of these challenges. It can facilitate military and police training and provide mental health services to persons recovering from trauma. However, virtual reality has significant limitations, especially in terms of building public support for peacekeepers. It also cannot address the underlying drivers of violence. In this brief, we discuss the arenas in which virtual reality is currently best suited to facilitate peacekeeping. We also discuss the areas where it is likely to be beneficial and provide recommendations for best practices regarding the use of virtual reality in peacekeeping.

Peacekeeping

Peacekeeping operations (PKOs) provide assistance to countries to “navigate the difficult path from conflict to peace.”¹ PKOs provide various forms of assistance. At a minimum, PKOs provide security assistance to countries. They interpose military and police forces between opposition groups to deter violence between them. They also often train local forces to provide their own security.

PKOs can also provide assistance in peacebuilding. Peacebuilding, unlike traditional peacekeeping, aims to address the underlying reasons for violence. To build peace, PKOs can advise countries on building democratic institutions and in strengthening the rules of law.^{2,3,4} PKOs can also help stabilize countries by directly and indirectly contributing to countries’ economic development.⁵

1 United Nations Peacekeeping, “What Is Peacekeeping,” 2024, <https://peacekeeping.un.org>.

2 Paul D. Williams, “International Peacekeeping: The Challenges of State-Building And Regionalization,” *International Affairs* 81, no. 1 (2005): 169.

3 Virginia Page Fortna, “Does Peacekeeping Keep Peace? International Intervention and the Duration of Peace After Civil War,” *International Studies Quarterly* 48, no. 2 (2004): 269–92.

4 “UNMIBH: United Nations Mission in Bosnia Herzegovina - Background,” 2024.

5 Kathleen M. Jennings and Morten Bøås, “Transactions and Interactions: Everyday Life in the Peacekeeping Economy,” *Journal of Intervention and Statebuilding*, 2015.

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The United Nations is responsible for more peacekeeping operations than any other organization. Since its first mission in the Middle East in 1948, the UN has initiated 71 operations.⁶ It has 12 ongoing missions today. The North Atlantic Treaty Organization (NATO), the African Union, and the Organization of American States have also conducted peacekeeping operations in member states.

The UN is not only more active in peacekeeping, but it also conceives of its role in peacekeeping more broadly than many of these organizations. It often takes on responsibilities that address the underlying reasons for violence, facilitating reconciliation processes and helping to strengthen countries' political and legal institutions.

Technological innovations, such as virtual reality, may facilitate traditional peacekeeping as well as peacebuilding.

Virtual Reality

Virtual Reality (VR) refers to the use of computer simulation to enable a person to interact with an artificial three-dimensional environment.⁷ In recent years, VR has changed interpersonal and group communication in many fields, including health, engineering, education, and art.⁸ VR engages its users through the visual output devices, known as head-mounted devices (HMDs). The devices simulate sensory experiences and allow users to interact in a generated virtual environment.⁹

VR offers several potential benefits to peacekeeping, broadly defined, including opportunities for training, treatment of PTSD and other mental health issues, as well as community building.

Military and Police Training

The fundamental way in which peacekeeping operations prevent small-scale violence from occurring is by deploying military and police forces to countries.



Harrison, Wallace K. (Wallace Kirkman), 1895- 1949. United Nations buildings. Assembly, main auditorium. Interior views., Historic buildings., Office buildings., Public buildings., Auditoriums.. https://library-artstor-org.revproxy.brown.edu/asset/CARNEGIE_1260003.

These forces perform many functions: they create buffer zones that physically separate former combatants; advise and assist in programs that demobilize, disarm, and reintegrate former combatants into society; they deter crime through their physical presence; and they mediate disputes before they spiral into violence.¹⁰

Their success requires large numbers of personnel, sizeable budgets, and specially trained forces with

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knowledge of the local environments in which they operate.¹¹

Presently, virtual reality can facilitate the training of military and police forces in peacekeeping in several ways. VR can:

- lower costs and efficiency of training.¹²
- enhance the training of certain skills through its realism (e.g., situational awareness and decision-making in high-stress environments).
- improve cohesion and coordination across

⁶ “Our History,” United Nations Peacekeeping. Accessed April 12, 2024. <https://peacekeeping.un.org/en/our-history>.

⁷ Henry E. Lowood, “Virtual Reality,” in *Encyclopaedia Britannica* (Encyclopaedia Britannica, February 1, 2024), <https://www.britannica.com/technology/virtual-reality>...

⁸ Jonathan Steuer, *In Communication in the Age of Virtual Reality* (Routledge, 2013).

⁹ C. Anthes et al., “State of the Art of Virtual Reality Technology,” in 2016 IEEE Aerospace Conference, 2016, 1–19.

¹⁰ Virginia Page Fortna, “Interstate Peacekeeping: Causal Mechanisms and Empirical Effects,” *World Politics* 56, no. 4 (2004): 481–519; Michael W. Doyle and Nicholas Sambanis, *Making War and Building Peace: United Nations Peace Operations* (Princeton: Princeton University Press, 2006); Princeton, NJ: Princeton University Press; Michael J. Gilligan and Ernest J. Sergenti, “Do UN Interventions Cause Peace? Using Matching to Improve Causal Inference,” *Quarterly Journal of Political Science* 3 no. 2 (2008): 89–122.

¹¹ Todd Sandler, “International Peacekeeping Operations: Burden Sharing and Effectiveness,” *Journal of Conflict Resolution* 61 no. 9: 1875–1897; Jessica Di Salvatore and Andrea Ruggeri, “Effectiveness of Peacekeeping Operations.” In Oxford Research Encyclopedia of Politics, 26 September 2017; Paul F. Diehl, “Peacekeeping Operations and the Quest for Peace,” *Political Science Quarterly* 103 no. 4 (1988): 485–507, 494.

¹² Bowen R. Loftin et al., “Training in Peacekeeping Operations Using Virtual Environments” (Virginia Modeling, Analysis, and Simulation Center, April 2004) 1

Russia-Ukraine War PTSD Treatment

Amid the ongoing Russian War in Ukraine, Israeli field hospital staff visited an internal Ukrainian refugee camp and met with local children and their parents. Staff brought VR equipment and immersed child refugees in scenes designed to distract them from their recent experiences in conflict. Staff administering treatment observed immediate improvements in the children's willingness to engage with others, showcasing the potential positive impact of VR as a complement to field medicine in conflict. Although this case shows anecdotal positive impacts, it also highlights the challenges of integrating VR for trauma rehabilitation in the field. Staff acknowledged that VR use required stable communications infrastructure, which may not be available in many conflict zones.

Source: "Israel's Field Hospital in Ukraine Using VR to Treat Refugees," *CTech*, April 10, 2022, <https://www.calcalistech.com/ctechnews/article/skbbgulnc>.

multinational forces by enabling joint training pre-deployment.¹³

Virtual reality has its limitations, however. VR cannot simulate aspects of peacekeeping missions that involves interpersonal relations well, such as intelligence gathering. The scenarios that are simulated are only as good as the human input used to develop them. Thus, VR requires deep knowledge of the local communities, norms, cultures, and so forth.



Paul Lowe. 1992. UN peacekeeping soldier in Sarajevo during the siege of the city. Around 250,000 people died in the civil war between Bosnian Muslims, Croats and Serbs in the years 1992-1995, part of the break-up of the former Yugoslavia. https://library-artstor-org.revproxy.brown.edu/asset/APANO-SIG_10313581678.

Virtual reality can also be exploited by peace spoilers for training.¹⁴ The Islamic State in Iraq and Syria (ISIS) has adopted modified versions of virtual reality for training and recruitment.

VR poses other potential dangers. It is not known yet whether VR could accustom peacekeepers to disturbing levels of violence that make them more willing to use force. The careful monitoring of peacekeepers by mental health care professionals pre-deployment can hedge against this possibility.

PTSD

Peacekeeping personnel are at significant risk of developing post-traumatic stress disorder (PTSD).¹⁵

VR therapy ... cannot replace traditional psychological or psychiatric care (e.g., medication or intensive therapy).

PTSD is difficult to treat, especially in conflict zones due to a lack of infrastructure.¹⁶

Virtual reality can aid in the treatment of PTSD by:

- teaching skills for coping with stress.¹⁷
- providing mental health services in remote areas.¹⁸
- desensitizing peacekeepers to triggering

¹³ A. Walter Dorn and Peter F. Dawson, "Simulating Peace Operations: New Digital Possibilities for Training and Public Education," *Simulation & Gaming* 52, no. 2 (April 1, 2021): 228.

¹⁴ Matan Hasler and Beatrice Rubin, "Through Other's Eyes: How VR Can Transform Diplomacy," *הארץ*, September 28, 2018, <https://www.eng.arenajournal.org/il/single-post/2018/09/28/through-the-other-s-eyes-how-vr-can-transform-diplomacy>.

¹⁵ Brett Litz et al., "Posttraumatic Stress Disorder Associated with Peacekeeping Duty in Somalia for U.S. Military Personnel," *The American Journal of Psychiatry* 154 (March 1997): 178–84.

¹⁶ "Israel's Field Hospital in Ukraine Using VR to Treat Refugees." 2022. *CTech*. April 10, 2022. <https://www.calcalistech.com/ctechnews/article/skbbgulnc>.

¹⁷ Stéphane Bouchard et al., "Virtual Reality and the Training of Military Personnel to Cope with Acute Stressors," in *Advanced Computational Intelligence Paradigms in Healthcare 6. Virtual Reality in Psychotherapy, Rehabilitation, and Assessment*, ed. Sheryl Brahmam and Lakhmi C. Jain, Studies in Computational Intelligence (Berlin, Heidelberg: Springer, 2011), 109–28.

¹⁸ Bouchard et al., "Virtual Reality and the Training of Military Personnel."

United Nations Organization Stabilization Mission in the Democratic Republic of the Congo (MONUSCO)

The United Nations Organization Stabilization Mission in the Democratic Republic of the Congo (MONUSCO) released a 360° VR-compatible video chronicling the daily activities of peacekeepers in the DRC. It follows three peacekeeper perspectives and aims to familiarize viewers with the “personal side of the women and men who have traveled far from their homes to contribute to stability.” It also presents the experiences of Congolese civilians through their interactions with peacekeepers, providing a “virtual experience of solidarity in action.” It illustrates how VR integration can benefit peacekeeping’s public image by providing a viewing experience unmatched by conventional media. By collapsing the distance between the international public, peacekeepers, and Congolese civilians, it ultimately aims to boost public perceptions of peacekeeping operations. However, its impact on public peacekeeping awareness has not been evaluated.

Source: *Under the Blue Helmet: Life as a UN Peacekeeper in the Democratic Republic of the Congo (VR)*, 2018, <https://www.youtube.com/watch?v=d-2uMYB-SL68>.

- events in a safe environment.¹⁹
- providing treatment tailored to individual needs and experiences.²⁰

However, VR therapy has significant limitations. Presently, it *cannot*:

- replace traditional psychological or psychiatric care (e.g., medication or intensive therapy).²¹
- treat the broader public due to its high costs and technical requirements.

VR therapy may also impart additional trauma on people due to its vividness and, thus, must be utilized by skilled medical professionals.²²

Community Building

Peacekeeping is more effective when communities welcome the presence of peacekeepers and engage in continued dialogue with opposing sides. These processes depend on peacekeepers having the trust of the communities in which they reside and locals having understanding and empathy for each other.²³ However, past offenses, socio-economic inequalities, cultur-

al differences, and linguistic barriers can make this difficult.

Virtual reality can help build understanding, trust, and empathy among groups by simulating experiences that:

- enable seeing a situation through another’s point of view.^{24,25,26}

Virtual reality can also increase receptiveness to real-world mediation processes by:

- demonstrating successful cases of peacebuilding.²⁷
- modeling successful narratives in mediation processes.²⁸

Interest in VR itself may also increase participation in community building exercises.

For VR to be effective, however, participants must trust the technology itself and be willing to engage with it in good faith.²⁹ VR has further limitations. It is:

- costly to deploy on a mass scale.³⁰
- technically demanding (e.g., electricity).
- dependent on the quality of the experiences sim-

19 Maryrose Gerardi et al., “Virtual reality exposure therapy using a virtual Iraq: Case report,” *Journal of Traumatic Stress* 21, no. 2 (2008): 209–13.

20 M. Roy et al., “Initial Results from the ViRTiCo Trial: Virtual Reality Therapy and Imaging in Combat Veterans,” *Annual Review of CyberTherapy and Telemedicine* 6 (2008): 47–52.

21 Deborah C. Beidel et al., “Trauma Management Therapy with Virtual-Reality Augmented Exposure Therapy for Combat-Related PTSD: A Randomized Controlled Trial,” *Journal of Anxiety Disorders, Virtual reality applications for the anxiety disorders*, 61 (January 1, 2019): 64–74.

22 Hasler and Rubin, “Through Other’s Eyes.”

23 Diehl, “Peacekeeping Operations and the Quest for Peace,” 498; Nicholas Sambanis, “The United Nations Operation in Cyprus: A New Look at the Peacekeeping–Peacemaking Relationship,” *International Peacekeeping* 6, no. 1 (1999): 79–108, 101–102.

24 Alexandra Ivanovitch, “Virtual Reality: The Frontier of Peacemaking” (Center for Empathy in International Affairs, October 2017), <https://www.centerforempathy.org/virtual-reality-the-frontier-of-peacemaking/>.

25 Julie A. Gregory, “Virtual Reality and the Future of Peacemaking,” *DiploFoundation Policy Papers and Briefs* 14 (June 2020)..

26 Ruud Hortensius et al., “The Relation between Bystanders’ Behavioral Reactivity to Distress and Later Helping Behavior during a Violent Conflict in Virtual Reality,” *PLOS ONE* 13, no. 4 (April 19, 2018).

27 “Report of ‘The Potential of Virtual Reality for Peace Mediation’ Roundtable - Diplo,” November 24, 2020, <https://www.diplomacy.edu/blog/report-potential-virtual-reality-peace-mediation-roundtable/>.

28 Ibid.

29 “Report of ‘The Potential of Virtual Reality for Peace Mediation’ Roundtable - Diplo;” Gregory, “Virtual Reality and the Future of Peacemaking,” 4.

30 Béatrice S. Hasler et al., “Virtual Reality-Based Conflict Resolution: The Impact of Immersive 360° Video on Changing View Points and Moral Judgment in the Context of Violent Intergroup Conflict,” *New Media & Society* 23, no. 8 (August 1, 2021): 2269. See this study for an instance of VR being tested for applicability in increasing Israeli civilians’ empathy toward Palestinian refugees. The study concludes that VR did not lead to more empathy from the Israelis towards Palestinians, but rather increased Israeli civilians’ hostile feelings towards Israeli military border guards.

Digital Peacebuilding

ulated.

- potentially short-term in its effect
- not necessarily more useful than 2-dimensional videos.³¹
- unable to address underlying inequities that drive conflict.

Moreover, VR can be used to undermine community building through the spreading of propaganda or misinformation.

Recommendations

VR integration into peacekeeper training can increase training efficiency and impact. However, peacekeeping operations should not rely exclusively on VR to protect against unintended negative effects to peacekeepers and communities.

VR integration's potential positive impacts on conflict reconciliation and trust-building remain largely untested, and its overall benefits have not been systematically determined. However, when deployed in other contexts, VR has been shown to collapse social boundaries. VR cannot substitute in-person engagement, but it may help overcome barriers in community-building in post-conflict environments.

VR integration should be done with scalability and flexibility in mind. Other digital technologies should also be used and integrated alongside VR into a holistic peacekeeping approach.

Peacekeeping personnel who use VR simulation tools must be able to adapt VR on a case-by-case basis, and should not deploy VR in contexts where the anticipated benefits outweigh the potential risks.



Jeroen Oerlemans. 2006. The command centre of ISAF (International Security Assistance Force). ISAF is a peacekeeping mission affiliated to the United Nations (UN) and NATO. https://library-artstor-org.revproxy.brown.edu/asset/APANOSIG_10313575049

³¹ Ibid.

