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Force Structure and Local Peacekeeping Effectiveness: Micro-Level Evidence on UN Troop Composition

CHRISTOPH DWORSCHAK 🆔
University of York, UK

AND

DENIZ CIL 🆔
University of Maryland, College Park, USA

In recent years, researchers have shifted their focus to studying the effects of peacekeeping in a geographically disaggregated manner. One of the factors that is yet to be fully examined is the variation among peacekeeping troops at the local level and its impact on peacekeeping effectiveness. Specifically, peacekeeping troops greatly vary across two dimensions: unit types, e.g., infantry, engineering, aviation, etc., and their country of origin. We argue that mixing different unit types increases peacekeepers' specialization in skills and equipment, thereby improving their effectiveness. However, this effect is moderated by the diversity of troop contributing countries (TCCs), which exacerbates coordination problems among troops. We explore our mechanisms using evidence from interviews with former and active peacekeepers and test the empirical implications using new subnational data on UN peacekeeping bases. Our results show that diverse unit types from culturally similar TCCs are better at deterring battle-related violence, yet the same conditional effect is not present for deterring one-sided violence. These findings are of major relevance to the ongoing academic debate on peacekeeping composition, as well as to practitioners in international organizations.

En los últimos años, los investigadores se han centrado en el estudio de los efectos de la pacificación de manera dividida desde el punto de vista geográfico. Uno de los factores que aún no se ha estudiado a fondo es la variación entre las tropas de pacificación a nivel local y su impacto en la eficacia de pacificación. De forma específica, las tropas de pacificación varían enormemente en dos dimensiones: los tipos de unidad (por ejemplo, infantería, ingeniería, aviación, etc.) y su país de origen. Sostenemos que la mezcla de diferentes tipos de unidades provoca que aumente la especialización del personal de mantenimiento de la paz en cuanto a habilidades y equipamiento, lo que permite mejorar su eficacia. Sin embargo, este efecto es moderado por la diversidad de países que contribuyen con tropas (troop contributing countries, TCC), que exacerba los problemas de coordinación entre las tropas. Exploramos nuestros mecanismos utilizando datos procedentes de entrevistas con miembros antiguos y activos del personal de pacificación, y comprobamos las implicaciones empíricas utilizando nuevos datos subnacionales sobre las bases de pacificación de la ONU. Nuestros resultados indican que los diversos tipos de unidades de los TCC culturalmente similares son mejores para disuadir la violencia relacionada con la batalla, pero el mismo efecto condicional no está presente para disuadir la violencia unilateral. Estos hallazgos son de gran relevancia para el debate académico en curso sobre la composición para la pacificación, así como para los profesionales de las organizaciones internacionales.

Ces dernières années, les chercheurs sont passés à une étude des effets du maintien de la paix d'une manière géographiquement désagrégée. L'un des facteurs qui n'a pas encore été pleinement examiné est la variation entre les troupes de maintien de la paix au niveau local et son impact sur l'efficacité du maintien de la paix. Plus précisément, les troupes de maintien de la paix varient grandement dans deux dimensions : les types d'unités, p. ex. infanterie, ingénierie, aviation, etc. et leur pays d'origine. Nous soutenons que le mélange de différents types d'unités augmente la spécialisation des soldats de la paix en termes de compétences et d'équipement, améliorant ainsi leur efficacité. Cependant, cet effet est modéré par la diversité des pays contributeurs de troupes qui exacerbe les problèmes de coordination entre les troupes. Nous avons étudié nos mécanismes en nous appuyant sur des entretiens avec d'anciens soldats de la paix et des soldats de la paix en service actif et nous avons analysé les implications empiriques en nous basant sur de nouvelles données infranationales sur les bases de maintien de la paix de l'ONU. Nos résultats montrent que la diversification des types d'unités provenant de pays contributeurs de troupes culturellement similaires est plus efficace pour dissuader la violence liée au combat, mais que le même effet conditionnel n'apparaît pas lorsqu'il s'agit de dissuader la violence unilatérale. Ces conclusions sont d'une pertinence majeure sur le débat intellectuel actuel sur la composition des troupes de maintien de la paix ainsi que pour les intervenants des organisations internationales.

Introduction

> You are asking the Indians, the Nepalese, the Bengalis, the Egyptians, to go out and take these extreme risks. [...] They are not going to go unless there is some basic level of infrastructure, unless there is some basic level of helicopter protection, [...]. So infantry goes out, but then infantry also has all these other elements [supporting them].
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> Interview, UN operations officer

United Nations (UN) peacekeeping missions have become more multidimensional, undertaking new and complex tasks in active conflicts. In these hostile environments, peacekeepers' primary goal of protecting civilians requires direct engagement with armed actors: neutralizing threats, deterring hostilities between combatants, and demobilizing and disarming armed groups. To successfully carry out these tasks, peacekeepers need to have unprecedented diversity in skills and equipment. For example, when tensions escalated in South Sudan in December 2013, UNMISS found itself unprepared: One of our interviewees, a high-ranking UN officer who was based in Juba during that time, recalled that when the opposition forces started to lay siege to the city, "[...] the [UN] troops in South Sudan did not have the military muscles, [...] did not have the command and control, and did not have the sufficient strength, ability, and robustness to engage in the hostilities between the belligerent parties at [that] level," adding "going in between belligerent parties at least at that level [...] will require an entirely different set of tools." Very few bases, however, had diverse units that would improve the ability of infantry contingents to prevent violence between the two forces. As a result, the mission resorted to allowing civilians to take refuge on its bases while the violence outside continued to escalate and spread throughout the country.[1] Meanwhile, MONUC was able to repel several attempts by the rebels to take over Goma in the eastern Democratic Republic of Congo (DRC) in 2006 and 2008 by drawing on a more diverse set of skills and equipment, including helicopter units. These helicopters helped UN infantry units by determining the location of rebels, directly engaging them, and providing protection to the ground troops (Dorn 2014).

In fact, peacekeeping bases vary greatly in their troop composition: Some only have infantry troops, while others host engineering contingents, signals corps, special forces, aviation, reconnaissance, medical, logistics, and other functionally distinct units. Albeit being a key aspect determining local peacekeeping capacity, the role of such unit diversity has not been systematically examined. In addition to being composed of diverse units, UN peacekeeping missions became more multinational. Existing peacekeeping literature mainly focuses on this cultural diversity among troop contributing countries (TCCs) (Bove, Ruffa, and Ruggeri 2020; Bove and Ruggeri 2016). However, these studies do not integrate information on functional unit diversity and their analyses are limited to the aggregate mission level. At the local level, diversity is more heterogeneous. Some bases host troops from only a single TCC, while others host troops from as many as nine different countries. In sum, peacekeeping literature is yet to examine the dynamics of *local* troop composition. In this paper, we seek to fill these gaps. Specifically, we ask, "how do these two dimen-

sions of UN troop composition, *unit diversity* and *TCC diversity*, impact local peacekeeping effectiveness in preventing hostilities?"

We argue that the presence of diverse units improves peacekeepers' ability to prevent violence by increasing their capacity and enabling a division of labor in the area of operation. Different units increase local peacekeeping capacity because each performs different tasks based on their specialization. For example, aviation units conduct aerial surveillance, engineers improve roads and other infrastructure, helping peacekeepers to reach more locals, while signals units establish communications between contingents. This enables peacekeepers to take swift action, hold and monitor larger buffer zones, engage with combatants decisively, and persuade actors more effectively. The presence of diverse units also allows each unit to focus on their specialized tasks instead of taking on multiple roles. When transportation units are present, infantry units can focus on their main tasks of patrolling, manning observation posts, and maintaining checkpoints instead of providing convoy security. However, even in bases with different units, an effective division of labor can be difficult to achieve. In some bases, a single TCC provides all units (e.g., Brazilian infantry, engineers, and aviation), while in others, each unit is deployed by a different TCC (e.g., a Pakistani infantry, Brazilian engineers, and Salvadoran aviation). We argue that coordination among units within an area of operation is easier when they come from the same TCC or from TCCs with similar backgrounds. Combining troops from multiple TCCs in a base, especially if they have very diverse languages, cultures, and military backgrounds, induces coordination problems due to communication barriers, incompatible training and equipment, and multiple hierarchies. We expect that the beneficial effect of unit diversity is moderated by coordination impediments imposed by peacekeepers' TCC diversity. In other words, having functionally diverse units improves peacekeepers' effectiveness, but only if they are able to coordinate their actions.

We explore our mechanisms using evidence from semi-structured interviews with former and current peacekeepers, and test our theory using the Geo-PKO dataset (Cil et al. 2020), which records subnational troop deployments for all UN missions since 1994. Employing Covariate Balancing Generlized Propensity Scores (CBGPS; Fong, Hazlett, and Imai 2018) matching across different model specifications, we test whether unit diversity improves peacekeeping effectiveness in reducing battle-related and one-sided violence (OSV) across twenty-two UN missions deployed in active conflicts around the world. We find that unit diversity, i.e., the number of functionally distinct units, improves local peacekeeping effectiveness in reducing the likelihood of battle-related deaths. This effect, however, is moderated by TCC diversity: When the units are from different TCCs, and especially when these are culturally distant from each other, effectiveness does not improve. We do not find the same conditional effect for one-sided violence.

This paper makes several contributions to existing civil war and peacekeeping literature. First, it develops a new theory of the influence of troop composition on conflict processes. Our theory focuses on peacekeeping effectiveness from the perspective of military cooperation and coordination among different units and goes beyond the assumption that all peacekeeping troops are functionally equal. Unlike previous studies that examine broad types of peacekeepers, such as troop, police, or observer units (Hultman, Kathman, and Shannon 2013, 2014), this paper is the first to

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[1] United Nations Security Council, "Report of the Secretary-General on South Sudan", S/2014/158 (March 6, 2014).

Figure 1. TCC and unit diversity across MONUC bases, as of November 2003.

disaggregate peacekeeping troops by unit type and systematically evaluate its effect.

Second, it fills a crucial gap in the current literature by showing that troop composition consists of two distinct yet interrelated dimensions of diversity. We highlight that, especially in multinational operations such as UN peacekeeping missions, unit diversity comes with a cost: a high diversity in TCCs. In the past, this two-fold heterogeneity in troops' specialization and cultural background was combined and examined at the mission level (Bove, Ruffa, and Ruggeri 2020). However, unit and TCC diversity do not always go together. In some cases, troops of diverse unit types come from the same country, while in others, troops with different backgrounds, cultures, and languages contribute to the same unit type in a base. Therefore, disentangling these two dimensions and focusing on the interaction between them is needed to arbitrate between different mechanisms through which diversity may impact effectiveness. By disaggregating troop composition along these dimensions, we offer a more complete picture of the role of peacekeeping troop composition. Thus, our theory and results offer important policy implications for subnational deployment patterns and how to maximize peacekeeper's potential.

Third, it contributes to the emerging research on the subnational analysis of peacekeeping effectiveness. With the exception of a few studies (Cil 2019; Costalli 2014; Di Salvatore 2020; Fjelde, Hultman, and Nilsson 2019; Ruggeri, Dorussen, and Gizelis 2018), scholarship on peacekeeping effectiveness at the subnational level is still limited, even though there is great variation in troops' geographic concentration, composition, and capabilities. This is especially relevant when studying the effect of troop composition: Even in missions that are composed of numerous TCCs, at the local level there are still many bases with only a single TCC deployed. We are the first to examine different dimensions of troop composition at the local level.

Mission Composition in Peacekeeping Operations

Recent peacekeeping literature focuses on mission composition, showing that troop diversity matters for effectiveness at the mission level. For example, missions composed of a diverse set of TCCs and troops from high-quality militaries are better at reducing one-sided violence (Bove and Ruggeri 2016; Haass and Ansorg 2018). In addition, if the mission is composed of troops who have closer cultural ties to the civilian population, they are better able to reduce violence (Bove and Ruggeri 2019). Lastly, examining the role of mission composition across several dimensions, including mission leadership, peacekeepers' country of origin, and their cultural distance to other TCCs and the host country population, Bove, Ruffa, and Ruggeri (2020) offer a comprehensive assessment of mission composition.

While this research offers valuable insights into how peacekeeping missions operate, it also has important limitations. One of the main drawbacks is the cross-mission analysis of troop composition. This limits the conclusions that can be drawn about the peacekeepers' effectiveness because both peacekeeping deployments and conflict processes vary greatly at the local level (Cil et al. 2020; Costalli 2014; Di Salvatore 2020; Fjelde, Hultman, and Nilsson 2019; Ruggeri, Dorussen, and Gizelis 2018). Findings at the aggregate mission level could overestimate or underestimate the actual effect of peacekeeping on the ground. With the exception of Cil (2019), focusing on the effects of different groups of TCCs in reducing violence, there are no other quantitative studies that examine troop composition at the subnational level across multiple missions. Figure 1 illustrates the variation in troop composition in the UN mission in the DRC (MONUC). These maps also show significant differences between TCC diversity and diversity in functions, which we call unit diversity, across locations.

Neglecting this subnational variation is a significant gap in the current literature for several reasons. First, at the mission level, TCC diversity is correlated with a decrease in violence levels (Bove, Ruffa, and Ruggeri 2020; Bove and Ruggeri 2016). This finding may be attributed to two different mechanisms: (1) increased specialization, i.e., troops from different countries with different skill sets and technologies complementing each other; and (2) increased diplomatic leverage through a diverse set of external monitoring actors, putting pressure on warring parties, and signaling high levels of commitment (Bove, Ruffa, and Ruggeri 2020; Haass and Ansorg 2018). At the aggregate level, however, it is not possible to ascertain the degree to which these

mechanisms are at play. Furthermore, the relationship between diversity and peacekeeping effectiveness is less clear at the local level. Specifically, deploying troops from different countries can induce coordination problems, which may be more observable at the local level. In fact, in-depth studies of interactions among TCCs highlight these problems (Bove, Ruffa, and Ruggeri 2020; Ruffa 2014, 2017). For example, examining the qualitative evidence on the ground, Bove, Ruffa, and Ruggeri (2020) find that having troops from different countries can be both advantageous and disadvantageous for peacekeeping effectiveness. Therefore, how troop diversity influences effectiveness at the local level remains to be examined.

Second, existing work on troop composition overlooked a critical factor that contributes to local variation in force structure: unit diversity. The training and equipment available on the ground are determined by the kinds of units deployed in a peacekeeping base, and the tasks each unit is specialized to perform. Consequently, the effect of unit diversity should be investigated to fully understand how troop composition impacts peacekeeping effectiveness. For example, whether a peacekeeping base only holds infantry troops or also includes engineers and special forces, makes a substantial difference in its local readiness. The implications of this variation are impossible to observe at the aggregate mission level.

To our knowledge, this paper is the first to systematically disentangle the beneficial effects of diverse functional units from the potential coordination problems induced by operational and cultural diversity. To this end, we examine the effect of troop composition along two dimensions: unit diversity and TCC diversity. We argue that the presence of troops from different units, such as infantry, engineering, or aviation, significantly improves peacekeeping performance. Yet this effect is moderated by the extent to which these troops are able to cooperate and coordinate, which can be inhibited if troops come from a diverse set of TCCs. While these two dimensions of composition are interrelated, they are fundamentally distinct concepts. By differentiating between them, theoretically and empirically, we offer a more comprehensive account of the role of troop composition and significantly contribute to the existing scholarship on peacekeeping effectiveness. In doing so, we also provide a potential explanation for diverging conclusions from qualitative and quantitative work, as the latter mostly focuses on cultural instead of functional differences.

Local Force Structure and Peacekeeping Effectiveness

UN peacekeepers are increasingly deployed in active conflicts with robust and multidimensional mandates that include the use of force. Once a mission is authorized, the Department of Peace Operations (DPO) starts the force generation process to assemble the military component of the mission. Member states then contribute contingents of varying sizes and capabilities, and each national contingent is assigned to an area of operation (DPKO 2003). Smaller contingents, e.g., an infantry company from one TCC, may be under the "command" of a larger infantry battalion within an area of operation. Similarly, a large infantry battalion may be accompanied by several enabling units, i.e., engineers, medical, and logistics, all of which may be from the same TCC as the large contingent or from different TCCs. As one of the peacekeepers we interviewed summarized: "Every contingent in the base has a specific task. Bangladesh has an aviation system that helps us with our tasks, like medical evacuation. The Argentinians [maintain] the hospital. The

Indians were the infantry. We also had a Brazilian navy. The other Brazilians were the infantry, except our engineering company."

Once deployed, peacekeepers reduce violence at the local level by increasing its cost, reducing uncertainty, and creating incentives for peace. Peacekeepers increase the cost of violence against civilians by signaling their ability to defend civilians (Bove and Ruggeri 2016; Fjelde, Hultman, and Nilsson 2019) and by international shaming and prosecution through reporting of perpetrators (Fjelde, Hultman, and Nilsson 2019). To this end, they actively monitor and patrol their deployment locations (Fjelde, Hultman, and Nilsson 2019; Hultman, Kathman, and Shannon 2013). Peacekeepers prevent violence between armed actors by mitigating commitment problems and increasing the cost of continued fighting (Fortna 2008; Hultman, Kathman, and Shannon 2014). They establish checkpoints, separate and disarm combatants, monitor frontlines, and engage in targeted interventions (Fortna 2008; Hultman, Kathman, and Shannon 2013, 2014). Peacekeepers reduce uncertainty by facilitating information flow about the activities and capabilities of warring parties (Bove, Ruffa, and Ruggeri 2020; Bove and Ruggeri 2016). They collect and process intelligence through patrolling areas of deployment and interactions with civilians (Bove, Ruffa, and Ruggeri 2020). Finally, peacekeepers create incentives for peace by changing preferences of local actors through persuasion and inducement (Howard 2019). They use material and non-material means such as quick-impact projects, rebuilding critical infrastructure and institutions, mediation, and outreach (Howard 2019).

To perform this variety of tasks, peacekeepers need to draw on a wide range of skills and capabilities.[2] This requires maintaining multiple units with different specializations, skill sets, and equipment in one place. A base that only holds infantry troops would be hard pressed to accommodate such a variety. All of these tasks, however, require high levels of coordination among units (Biddle 2006; Cil 2019). Especially, UN peacekeeping missions face a unique challenge when it comes to coordination and cooperation among troops. Often, troops from different TCCs are deployed to the same area of operation. Unlike national armies or other multinational operations composed of troops from a few allied nations, UN peacekeepers have very diverse backgrounds, languages, and cultures, which may pose a challenge to efficient coordination among them.

As a result, we argue that the local troop composition in UN missions should be treated as a two-fold concept, encompassing both *unit diversity* and *TCC diversity*. Unit diversity improves effectiveness at the local level by improving local capacity and enabling division of labor among functionally diverse troops. Specifically, it improves peacekeepers' ability to increase the cost of violence, reduce uncertainty, and create incentives for peace, by boosting local military capabilities to defend and patrol larger areas, collect and process information, improve local infrastructure, and reach out to locals. However, there can be no division of labor without cooperation and coordination. We argue that TCC diversity moderates the beneficial effect of unit diversity by inducing coordination problems among troops due to incompatibility in language, culture, and training background. In the

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[2] This follows findings in military studies that show how effectively addressing asymmetric threats requires specialized training and equipment (Dworschak 2020; Kalyvas 2006; Lyall and Wilson 2009; Pilster, Böhmelt, and Tago 2016). While peacekeeping is different from counterinsurgency operations at the strategic level, they are increasingly involved in similar conflict environments at the tactical level (Friis 2010).

following section, we explain how unit and TCC diversity impact daily peacekeeping operations and overall effectiveness in reducing violence.

Cooperation and Coordination Among Peacekeeping Troops

We argue that the first dimension of troop composition, **unit diversity**, improves peacekeeping effectiveness through two mechanisms. First, the presence of functionally diverse units improves capabilities on the ground. Usually infantry units are the "baseline", conducting patrols, establishing observer posts, and checkpoints. Examples of other unit types include reconnaissance units, which collect local intelligence to inform operations; engineering units, which maintain the base, build/repair roads, bridges, and wells; demining units, which clear areas of mines and IEDs; helicopter units, which provide air support; signals units, which establish communication with headquarters and among units; and various support units, such as transportation, medical, and logistics.

When there are multiple units in one location, each brings different strengths to the table. Helicopter units can increase peacekeepers' ability to do air patrol to determine the movements of armed actors and provide close air support for ground troops in case of a confrontation (Dorn 2014). Infantry units can reach conflict areas faster and halt violence more decisively with the help of helicopter units, thus increasing cost of engaging in violence for armed actors in the first place. Reconnaissance units can improve peacekeepers' understanding of the local conflict environment and potential threats, allowing unit commanders to better position their forces and plan patrols accordingly, while engineering units can repair roads and bridges, improving foot and motorized patrol. This increases peacekeepers' surveillance and information-gathering capabilities. For example, one interviewee explained how peacekeeping bases have a pre-determined radius, called the "golden circle", in which patrols are allowed. The width of this circle is a function of the time that it takes to get back to the base in case of an emergency. The interviewee explained that aviation units greatly increase this circle and boost patrolling radii. Another interviewee pointed out that "engineers [are] very important in Africa, considering there are no roads and no machinery from the [host] country to make roads better or to clean them." In addition, units such as engineering and medical not only support daily infantry operations, but also improve peacekeepers' ability to use persuasion and inducement. Medical units provide health care to locals, while engineers rebuild schools, clinics, and other local institutions and improve roads and bridges, allowing locals to travel to markets. Civil-military cooperation (CIMIC) units help coordinate humanitarian aid delivery and other outreach activities, while transportation units provide convoy security. One interviewee explained how medical units "[...] reach[ed] out across the belligerent parties, either by offering medical assistance at the permanent base [...] or at temporary medical support sites in a [nearby] village."

Second, unit diversity enables a division of labor among peacekeepers. With specialized troops covering important support tasks, infantry troops can work more efficiently, patrol larger areas at a higher frequency, and thereby more effectively deter escalation of violence. The presence of infantry troops, in turn, can provide the necessary force protection for supporting units: Where an infantry unit takes care of establishing operational security, engineers and maintenance units are free to focus on repairing vehicles and infrastructure, or fortifying positions. Through this division of labor, each unit's strength can be fully utilized and

the overall effectiveness of peacekeepers in a given base can be improved. For example, when engineers repair a road, they must have other peacekeepers guarding them. While each unit is required to be "self-sufficient", i.e., engineers must be able to protect themselves, this means assigning a trained engineer to stand guard, which constitutes an inefficient use of human capital. When these different units work together, they can accomplish tasks much more effectively and operate more smoothly. One interviewee explained that a lot of troops were bound to provide convoy security when there was no dedicated transport unit. The interviewee continued, "which is not really helpful [...] if your infantry capacity is already limited. Senegal provided a convoy security [...] which actually opened up capacity within the infantry companies to actually do what they needed to be doing. [...] If you have dedicated capacity to provide convoy security, your regular infantry troops can be used to do regular infantry tasks."

However, even diverse skill sets and equipment do not help when peacekeepers are not able to pool these resources and work together effectively. When coordination and cooperation problems occur, the benefit of having functionally diverse units on the ground may be diminished. Especially in a hostile environment in which peacekeepers need to rely on each other for protection, seamless communication and a basic level of trust are key factors for cooperation. One of our interviewees, a combat engineer, recounted an incident when his engineering unit was repairing a road and an infantry unit from another TCC was tasked with securing the area of operation. A dispute emerged between the two companies over divergent perceptions of their rules of engagement and on how to best secure the perimeter. In the end, the interviewee decided that he could not trust the infantry and that his engineers were better off without them. The interviewee then added that "[...] we had to put some extra engineer guys from our platoon to work as infantry guys, because we could not rely on the [TCC]'s battalion." This illustrates how cooperation difficulties between different units can result in inefficient labor allocation and directly impact peacekeeping effectiveness.

This example indicates the importance of the second dimension of troop composition: **TCC diversity**. While unit diversity improves local capabilities and allows for a division of labor among peacekeepers, it also requires troops to be able to coordinate their actions. If the peacekeepers are not able to coordinate and cooperate effectively, then the added benefit of having diverse units is not realized, and in turn, their capability at the local level is not improved. We argue that there are three obstacles to effective coordination among troops that come from different countries: (1) differences in operational procedures, (2) language barriers, and (3) cultural friction.

These differences make cooperation difficult in everyday operations and become even more salient when peacekeepers are in life-threatening situations. They reduce peacekeepers' ability to operate as a cohesive force, lead to disagreements on how to carry out daily tasks, hinder coordination, and prevent future attempts to cooperate within a base. One interviewee explained that sometimes there was tension on how to approach certain tasks, stating, "everybody has the same goals, but we have different ways of reaching the goal." As a result, peacekeepers are not able to display a credible deterrent posture or act fast to defend civilians and separate combatants, which lowers their ability to increase cost of violence. These differences also severely impede information sharing among units and coordination during patrols, lowering peacekeepers' ability to reduce uncertainty

and to carry out effective surveillance. Lastly, operational and cultural differences diminish peacekeepers' ability to relay a unified message and use incentives in a coordinated manner, which is critical for effective persuasion and inducement (Howard 2019). Below, we discuss channels through which TCC diversity impacts peacekeeping effectiveness.

TCCs join a mission with different backgrounds that vary based on national doctrine, operational style, and combat experience. Each TCC has its own military culture, i.e., the core set of beliefs and norms that guide the actions of its members at operational and tactical level (Ruffa 2017). In fact, troops from different TCCs can carry out the same mandate in different ways (Elron, Shamir, and Ben-Ari 1999; Ruffa 2014; Soeters and Tresch 2010). Some countries prefer to patrol with light weapons and engage with locals more frequently, while others prioritize protection of the base (Ruffa 2014). TCCs also vary in their risk aversion. Peacekeepers from Western TCCs can be more reluctant to confront armed actors and engage in out-of-base operations (Friesendorf 2018; Van Der Meulen and Soeters 2005). Especially, democratic states seek to minimize casualties among their forces by keeping soldiers at a distance and relying on equipment- and capital-intensive strategies (Caverley 2009; Lyall and Wilson 2009). Such operational differences in authorization and willingness to engage in certain tasks lead to an imbalance in the amount of risk some peacekeepers face and increase friction between troops. One interviewee explained that sometimes troops from different TCCs would seek to avoid certain tasks, continuing that "they might say 'it's not in my mandate' or [...] they would say 'we're not here in a conflict zone, we're here to keep the peace' and would be reluctant. For commanders at every level that is a challenge, having different troops from different countries." Unlike national militaries with a single hierarchical structure, contingents in peacekeeping operations need to navigate multiple hierarchies. While they are technically under the command of the international mission, in practice, they are still bound by the rules of their home institutions (Ben-Ari and Elron 2001). In other words, "a commander from one country may request, but not order, a unit from another country" (Howard 2019, 130).

Coordination and cooperation among troops from different units is crucial for carrying out complex operations, which require flexibility in decision making, prior experience, and training in working with other units on the ground (Biddle 2006). When units from multiple countries, with differing experience and operating styles, work together, coordination becomes difficult. Some units may be from countries where detailed planning is preferred, while others may be from military backgrounds where a certain level of uncertainty and flexibility in carrying out commands is acceptable (Elron, Shamir, and Ben-Ari 1999). Evidence from other multinational operations, such as the International Security Assistance Force (ISAF), shows that agreement among contingents about the appropriate protocols is the first step to successfully cooperate during operations (Auerswald and Saideman 2014). In addition to lowering capacity to increase cost of violence, operational differences can hinder peacekeepers' ability to collect and share information among units, a fundamental cooperation problem that several of our interviewees at different ranks and units also emphasized. One interviewee explained that without proper communication and coordination, "quite often the Dutch went somewhere and two days afterward the Germans went into the same villages and asked the same questions to the same people." These differences can also hamper efforts to incentivize peace. As Howard (2019) shows, persuasion

and inducement require a cohesive message and concerted action to successfully change the behavior of local actors. Yet, TCCs usually disagree on fundamentals of peacekeeping, such as whether force should be used proactively or defensively, or how different financial incentives should be used (Howard 2019). These operational differences directly impact whether peacekeepers can effectively work together and prevent violence.

Finally, among the different channels through which TCC diversity can impede coordination among troops, linguistic and religious differences play an important role. Linguistic differences lead to communication problems, imposing obvious obstacles to daily operations. Peacekeepers may need a translator, which is likely to increase the time to complete tasks and reduce overall effectiveness of the operation. Even worse, a translator may not always be available, making it nearly impossible to coordinate. Units from different TCCs also need compatible radios to be able to coordinate, which is not always ensured. One interviewee stated that "[...] how you communicate with each other on the battlefield, that is really problematic. First of all, a lot of the TCCs don't have effective equipment when they communicate with each other, then there is no compatibility within those communications systems, and then there are language issues in many cases."

Differences in peacekeepers' cultural backgrounds, e.g., the practice of different religions, can further complicate cooperation. Troops that share similar religious values, on the other hand, may find common ground more easily. For example, Turkish peacekeepers reported that they find it easier to work with troops from Islamic countries (Soeters et al. 2004). Beyond making daily operations less effective, religious differences may even cause tension among peacekeepers. For example, tensions between Burundian and Chadian peacekeepers, who are majority Christian and Muslim respectively, escalated when both contingents were deployed near Bangui in 2013 in the UN-mandated International Support Mission in the Central African Republic (MISCA). The conflict parties were divided along religious identity, and the Chadian peacekeepers frequently came under criticism for cooperating with the Muslim ex-Seleka rebels (Bourgois 2013).

This discussion leads us to our hypotheses H_1 and H_2 on the effect of unit diversity on peacekeeping effectiveness, conditional on the absence of coordination impediments induced by TCC diversity.

H$_1$: *Unit diversity reduces the likelihood of battle-related violence if peacekeepers experience low coordination problems.*

H$_2$: *Unit diversity reduces the likelihood of one-sided violence if peacekeepers experience low coordination problems.*

Research Design and Empirical Evidence

Variables and Data

We use geo-coded data on peacekeeping bases and armed violence for all country-years that are above UCDP's total twenty-five battle-related death threshold (Gleditsch et al. 2022), resulting in a sample of twenty countries from 1994 to 2012. Our unit of analysis is at the grid-month level with a spatial resolution of 0.5 × 0.5 decimal degrees (Tollefsen, Strand, and Buhaug 2012). Since we are interested in comparing the effectiveness of different troop compositions, we only include grid-months in which peacekeepers were present. In other words, our analysis compares the

Figure 2. Mapping our sample of PKO grid cells, 1994–2012.
Note: Red: PKO grid cell that did experience battle-related or one-sided violence at some point in time, as coded by UCDP GED. Blue: PKO grid cell that did not experience violence.

likelihood of violence to occur between deployment locations with varying levels of unit and TCC diversity and leaves out grids where there is no UN presence (i.e., where no treatment can occur). Figure 2 provides a spatial overview of our sample. We use logistic regressions since our dependent variable (DV) is binary, and report all results with heteroskedastic-robust standard errors clustered at grid level.[3]

DEPENDENT VARIABLE

We use the Uppsala Conflict Data Program (UCDP) Georeferenced Event Dataset (GED) to measure our two DVs,

the occurrence of at least one death in a given grid-month as a result of battle-related (H_1) or one-sided violence (H_2) in the context of a conflict between a state and non-state actor (Sundberg and Melander 2013). Using a binary measure that captures the occurrence of deadly violence, instead of a count variable measuring the number of casualties, reduces measurement error resulting from bias in casualty reporting, facilitates model convergence, and is in line with our theoretical framework and previous research on peacekeeping at the subnational level (Fjelde, Hultman, and Nilsson 2019).[4] A total of 268 observations (5% of our sample) are coded 1 for having experienced battle-related violence, and 233

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[3] These are the most conservative standard errors. Clustering at the more aggregate mission level or not clustering at all, both lead to less conservative estimates.

[4] Our results remain robust to employing a binary threshold of at least five deaths (Fjelde, Hultman, and Nilsson 2019) and to estimating a Firth Logit for rare event data (online appendix Tables A2 and A3).
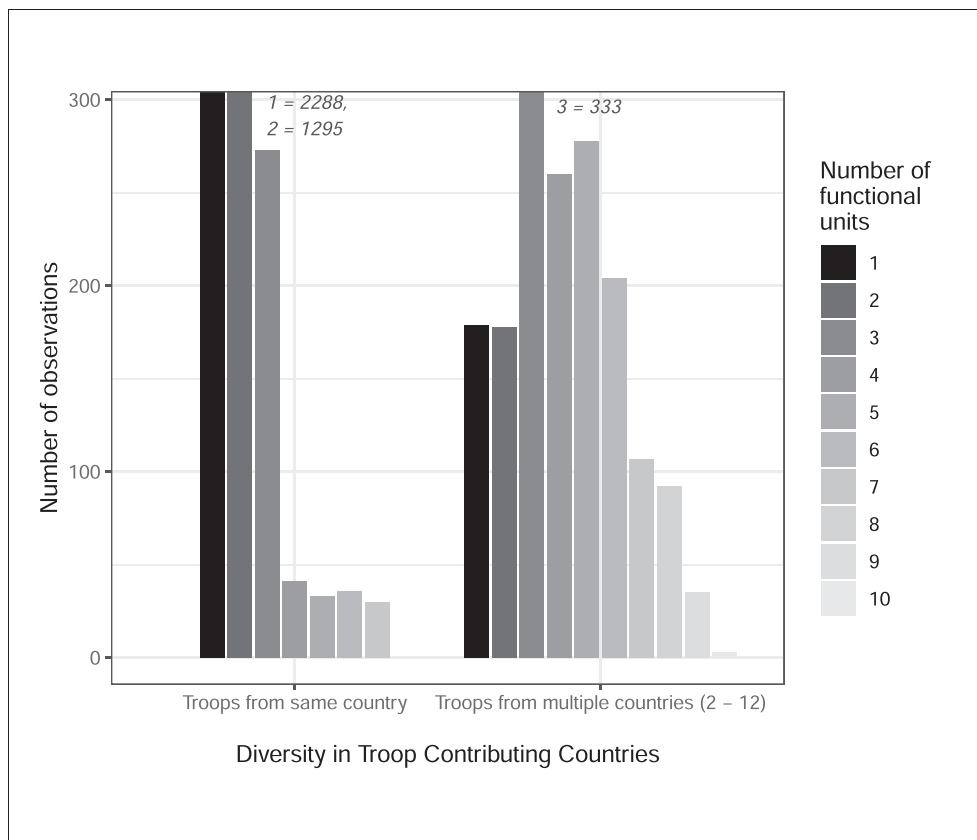
Figure 3. Unit diversity and TCC diversity.
Note: Each observation is a PKO grid-month. For visual clarity, the highest bars are clipped off. Their respective numbers of observations are shown at the top of the graph.

observations (4%) of our sample are coded 1 for having experienced one-sided violence.

INDEPENDENT VARIABLES

Following our theory, there are two types of troop composition that interact with each other: unit diversity, implying units' specialization on distinct tasks and a division of labor; and TCC diversity, implying diverse military backgrounds, cultures, and languages. We capture this information using the Geocoded Peacekeeping Operations (Geo-PKO) data that records information on the presence of different units (infantry, engineers, signals corps, etc.) and different troop contributing countries (TCCs) in each peacekeeping base (Cil et al. 2020).

For the first dimension of troop composition, *unit diversity*, we use the number of unique unit types in any given grid-month. Possible unit types include infantry, engineering, rotary (helicopter support) and fixed wing aviation, signal, reconnaissance, riverine, force protection, special forces, medical, maintenance, demining, and transportation units, police (civilian, formed, and military), and military observers (Cil et al. 2020). For example, if an area has an infantry unit and two engineering units, it means that the troops in this area are specialized in infantry and engineering, and unit diversity is coded as 2. A total of 44% of observations in our sample contain one unique unit type, 26% have two unit types, 11% with three, 5% with four, 6% with five unique units, and the remaining 9% with six to ten (maximum) distinct unit types. We choose a simple count of distinct unit types for two reasons. First, its simplicity makes it a transparent measure and facilitates interpretation of the results. Second, the measure has high face validity: Our the-

oretical discussion suggests that the more specialized skill and equipment are available in a particular area, i.e., the more enabling units of different types are present, the more peacekeeping effectiveness will improve at the local level. Thus, our theory emphasizes the *presence* of unique enabling units, each with different specialized functions.

Furthermore, we do not weigh units by their size because there is no data on the number of troops per unit type,[5] and more importantly, for our purposes it is theoretically undesirable. Units vary greatly in the number of troops they require to accomplish their specialized task. For example, an infantry unit can be composed of 650 infantry soldiers (equivalent of one battalion), while a medical unit can be composed of thirty-five troops (equivalent of one platoon). Thus, a "perfect mixture" of troops (equally sized units of engineers, signals, medical, etc.) is not meaningful. Certain unit types can be fully operational with only fifteen troops (e.g., signals), while others usually require at least forty troops (e.g., engineers). A simple count of unique unit types does not require us to make arbitrary assumptions about an "optimal ratio" of unit sizes. It only requires the intuitive assumption that a deployed enabling unit is of "sufficient" size (which will be different for each unit type) to be operational. We do, however, include the total number of peacekeeping troops in a given grid and in neighboring grids to account for spatial dependence.

For the second dimension of troop composition, *TCC diversity*, we use a binary indicator of whether peacekeepers in a given location are all from the same TCC, or whether

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[5] This would enable the construction of a conventional diversity index, e.g., a version of the Herfindahl–Hirschman Index, and highlight a worthwhile opportunity for future data collection efforts.
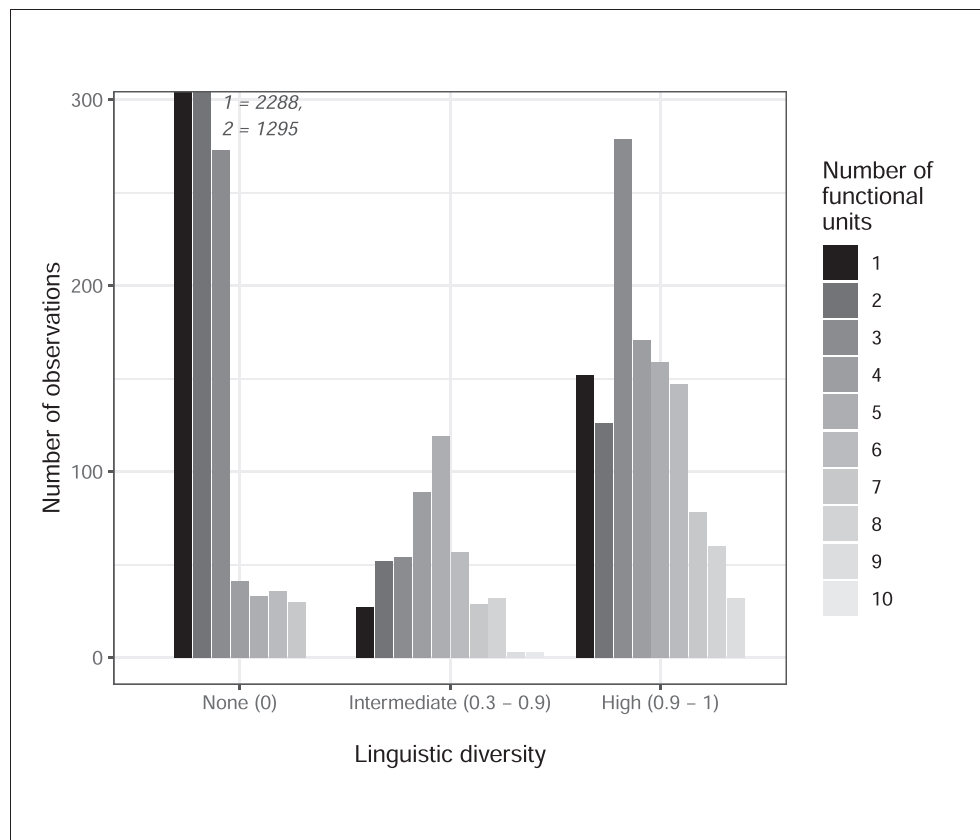
Figure 4. Unit diversity and linguistic diversity.
Note: Each observation is a PKO grid-month. For visual clarity, the highest bars are clipped off. Their respective numbers of observations are shown at the top of the graph.

they are from different TCCs. This captures whether peace-keepers have to cooperate across different backgrounds or whether all of them come from the same country. In 70% of our sample, troops are provided by one TCC. The remaining 30% of observations include more than one TCC (up to twelve different countries). Figure 3 shows how the two dimensions of troop diversity are distributed. This measure of TCC diversity allows us to capture potential coordination problems due to operational, cultural, and linguistic differences at the local level in their most simple and transparent form. It facilitates the interpretation of results and incorporates different sources of coordination problems, as our theory suggests that these different sources of coordination problems are not mutually exclusive.

In addition, we unpack TCC diversity and examine two sources of coordination problems more directly. We operationalize *linguistic diversity* and *religious diversity* as the average linguistic and religious distances between troops, drawing on data by Spolaore and Wacziarg (2016). These distance measures rely on tree-based methods, capturing how phonetically and historically "close" or "distant" languages and religions are. For example, French and Italian troops are closer in their average language and average religion than French and Chinese troops. These two measures are in line with previous work on cultural compatibility (Bove and Ruggeri 2019).[6] To measure average linguistic and religious dis-

tances between all TCCs operating in the same grid-month, we take the mean distances for each TCC pair and average across the TCC-specific means. In other words, we capture the grand mean of all linguistic/religious distances between TCCs in a given grid and month. The distances range between 0 (no distance) and 1 (maximal distance). A total of 71% of our sample is coded as having no linguistic or religious distance. The remaining 29% is coded as having varying degrees of distances, ranging up to 1. Figures 4 and 5 show the distribution of these variables across unit diversity.[7]

Threats to inference

Troop composition may be dependent on factors that also systematically influence our outcomes of interest. Previous studies show that subnational peacekeeping deployments vary depending on the local conflict environment. Specifically, Ruggeri, Dorussen, and Gizelis (2018) find that peacekeepers are deployed in areas of active conflict. They also find that ease of access is another strong predictor of subnational deployment patterns. If the local conflict processes affect deployment composition, then our analysis may produce biased results. For example, the UN may deploy more diverse units in areas with more intense fighting. Alternatively, the UN may deploy more units from different TCCs

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[6] We improve the linguistic distance measure by accounting for colonial ties. For example, previous studies that use the original measure consider British and Ugandan troops as linguistically very distant, although Ugandans speak both Swahili and English. We set the linguistic distances of countries with colonial ties to zero to address the potential bias arising from this issue. All results are reported

using this improved measure. Using the original measure yields similar results that are available upon request.

[7] The figures show that not all TCC, cultural, and linguistic strata have as many as nine or ten functional units. To ensure that our results are not driven by these leverage points, we rerun our analyses without these observations. The findings, as shown in the online appendix (Table A2), remain unchanged.
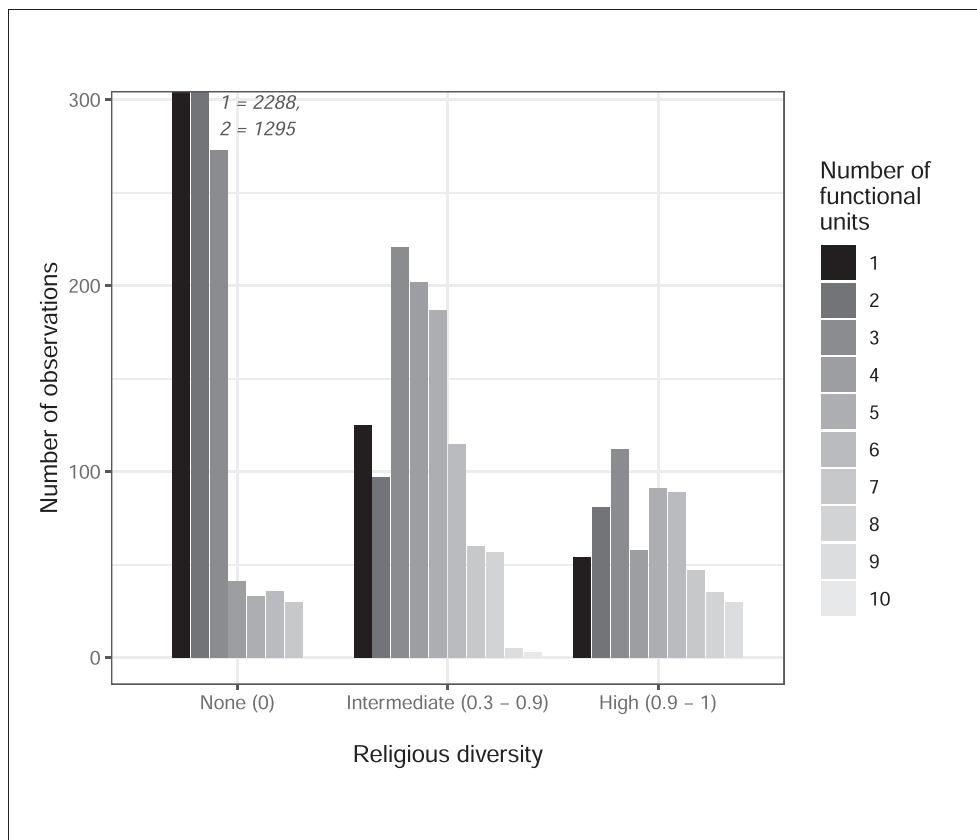
Figure 5. Unit diversity and religious diversity.
Note: Each observation is a PKO grid-month. For visual clarity, the highest bars are clipped off. Their respective numbers of observations are shown at the top of the graph.

in and around the capital, where the headquarters are usually located and the infrastructure is better. Fewer units may be deployed to rural locations close to borders. It may be difficult to reach these areas, or there may be fewer TCCs who are equipped to handle complex operations undertaken in border regions.

To empirically address this issue and better estimate the effect of unit diversity on battle-related and one-sided violence, we account for various confounding variables in our regressions. These include conflict history and intensity, ease of access, and other grid-cell characteristics that are likely to impact both troop composition and the levels of violence. We also use weights from Covariate Balancing Generalized Propensity Score (CBGPS) matching to reduce the correlation between the confounders and our main treatment *unit diversity* while relaxing functional form assumptions across strata (Fong, Hazlett, and Imai 2018; Imai and Ratkovic 2014). Figure 6 shows the covariate balance before and after applying the weights.[8] The CBGPS matching approach is designed to overcome the well-known dimensional limitations of traditional propensity score matching and is suitable for continuous treatment variables.

The "treatment" is our measure of unit diversity in the previous month (t-1) in a given grid. Lagging unit diversity decreases concerns of reverse causality, i.e., that violence levels predict how many different units are deployed to a grid, in the absence of trends and time-dependent unobserved

confounders.[9] Furthermore, there is reason to believe that preemptive deployment is nearly impossible given the resource constraints and dynamic nature of conflicts. During our interview with a Military Chief of Staff, we inquired about the use of intelligence to determine *future* hot spots and send troops somewhere in anticipation of fighting. The interviewee clarified that "[The mission's circumstances] did not leave any options to deploy troops into other areas than only those where hostilities took place at the time," and that this is probably not limited to this particular mission. Moreover, such rapid troop allocations would be limited to infantry contingents. Given our coding of *unique* unit types, this would not confound our analysis, since having a single versus multiple infantries in one location does not change our measure of unit diversity.

To further address concerns of reversed causality, we include variables capturing previous conflict trends, i.e., whether or not deaths from battle-related or one-sided violence, respectively, occurred in the previous three months (t-3–t-5) in a given grid. We also include conflict history in neighboring grids to account for spatial dependence in our outcome variables. These variables are recorded using the UCDP GED. In addition, "forward bases" in more remote and hostile areas tend to be more temporary than centrally located, long-established bases. Further, learning within peacekeeping bases may influence both deployment patterns and peacekeepers' ability to confront violence.

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[8] The online appendix Table A2 shows similar results without weights and clustered standard errors.

[9] All time-varying variables in the matching equation are measured at t-2, preceding the treatment, measured at t-1, to limit post-treatment bias under the aforementioned assumptions (Dworschak 2021).
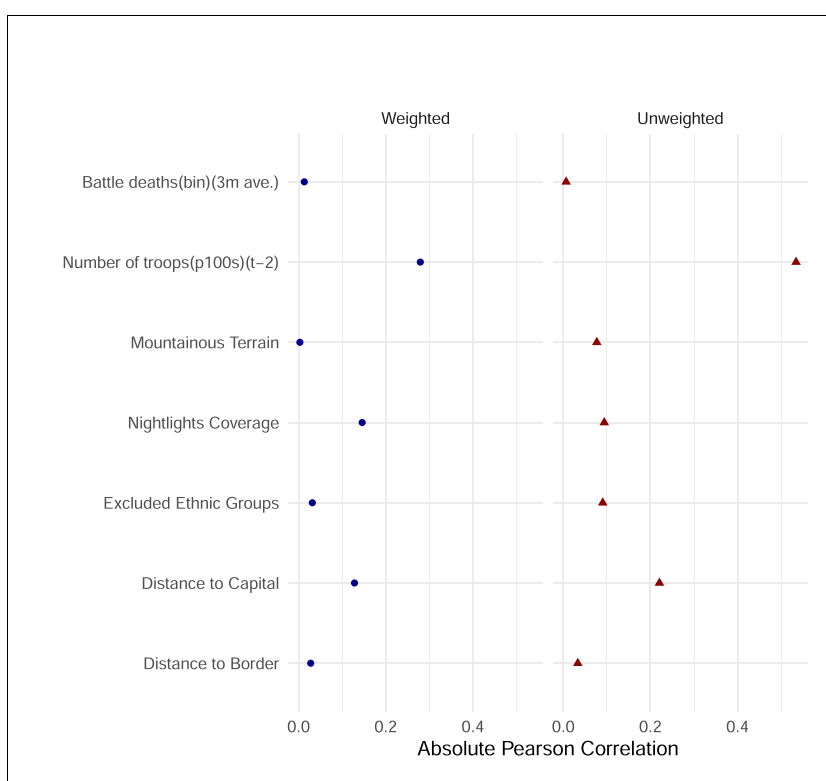
Figure 6. Covariate balance before and after applying CBGPS weights.

Thus, we include cubic polynomials of time since the beginning of peacekeeping presence in the grid as covariates.[10]

We also match on the total number of troops in a grid (scaled per 100, cf. Fjelde, Hultman, and Nilsson 2019). Unit and TCC diversity are likely to be higher in locations with a large troop presence. Similarly, large numbers of troops reduce the baseline probability of conflict activity.[11] We also include the spatial lag of troops to account for potential spill-over effects, i.e., the total number of peacekeeping troops in the neighboring cells scaled per 100. To account for the "ease of access", we match on distance to the capital and distance to the border of the nearest land-contiguous neighboring country. To account for other factors that may impact the underlying propensity of conflict and troop composition, we match on nightlight coverage, terrain, and the number of excluded ethnic groups in the grid.[12] We use PRIO GRID to record all grid-level variables. Lastly, we use country-fixed effects to capture any unobserved time-invariant country- and mission-specific heterogeneity.[13]

All of these steps may still not fully account for the endogenous dynamics influencing the assignment mechanism of unit diversity. Therefore, we conduct a bounding exercise to analyze the sensitivity of our results to omitted variable bias (Cinelli and Hazlett 2020).[14] To make this a "hard case", we use both the conflict history of the given grid and neighboring grids as joint benchmark variables. In other words, we explore whether the presence of a hypothetical unobserved confounder that explains as much variation in our treatment and outcome as both local and neighboring conflict history taken together would threaten our inference. The results stay robust to this stress test. This is the case even when the strength of the relationship between the hypothetical confounder and the treatment is doubled. These results are discussed in the online appendix.

Results

Table 1 shows our results, where the DVs are the occurrence of deaths from battle-related or one-sided violence. For each DV, there are three models listing results for a different moderating variable that captures potential coordination problems. As discussed in the previous section, results are reported with CBGPS matching weights, country-fixed effects, and cubic polynomials of the time since a peacekeeping presence was established in the grid. All control variables were included in the matching equation, therefore, their coefficients cannot be interpreted.

Focusing on the main results, the effects of unit and TCC diversity among Models 1-3 and 4-6 are homogeneous in size and direction. This supports our expectation that our three proxies for coordination problems capture a similar concept and have substantial theoretical overlap. The coefficients' substantial sizes and significance levels, however, cannot be judged from the table due to the models' non-linearity

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[10] In a separate test, we also include a binary measure of whether an area has a mission, sector, or TCC headquarter. The results, shown in the online appendix Table A3, remain robust.

[11] As the causal direction between the number of troops and the number of units is not definite, a model without this variable is included in the online appendix Table A3. The main results are not sensitive to this exclusion.

[12] We further explore the role of local conditions in the online appendix Table A3, by checking the sensitivity of our results to excluding these covariates and including additional variables measuring the presence of headquarters, neighboring unit diversity, the presence of nearby helicopter support, and peacekeepers' average religious/linguistic distance to the local population. The results remain robust across these models.

[13] To assess model dependence and to avoid potential overfitting, we include a model without fixed effects and time cubic polynomials in the online appendix. The results remain robust.

[14] We conduct this stress test for our analysis of battle-related violence since the results for one-sided violence are insignificant.

Table 1. Logistic regressions: troops' unit diversity and coordination

	Occurrence of battle-related violence			Occurrence of one-sided violence		
	(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*
Troops' unit diversity (t-1)	−0.870** (0.277)	−0.711** (0.243)	−0.708** (0.223)	0.171 (0.164)	0.130 (0.178)	0.159 (0.164)
Troops' TCC diversity (t-1)	−1.582* (0.681)			0.514 (0.501)		
Troops' linguistic diversity (t-1)		−1.552* (0.787)			0.708 (0.512)	
Troops' religious diversity (t-1)			−1.918* (0.814)			0.788 (0.538)
Battle deaths (bin) (3m ave.)	1.255*** (0.239)	1.285*** (0.238)	1.282*** (0.237)			
Neighb. battle deaths (bin) (t-2)	1.546*** (0.262)	1.544*** (0.263)	1.561*** (0.264)			
OSV deaths (bin) (3m ave.)				1.463*** (0.250)	1.462*** (0.251)	1.466*** (0.249)
Neighb. OSV deaths (bin) (t-2)				0.930** (0.286)	0.934*** (0.283)	0.933*** (0.282)
Number of troops (p100s) (t-2)	0.062*** (0.015)	0.065*** (0.015)	0.071*** (0.015)	0.038* (0.017)	0.034* (0.017)	0.035* (0.017)
Neighb. troops (p100s) (t-2)	−0.019* (0.008)	−0.019* (0.008)	−0.019* (0.008)	0.010 (0.006)	0.010 (0.006)	0.010 (0.006)
Mountainous terrain	0.827 (0.639)	0.829 (0.639)	0.757 (0.651)	1.138* (0.464)	1.167* (0.477)	1.156* (0.466)
Nightlights coverage	−2.722 (4.889)	−3.381 (4.904)	−2.799 (4.980)	4.215 (5.134)	4.364 (5.239)	4.190 (5.189)
Excluded ethnic groups	−0.441* (0.206)	−0.422* (0.202)	−0.390 (0.201)	0.064 (0.187)	0.047 (0.186)	0.055 (0.185)
Distance to capital	−0.353 (0.223)	−0.361 (0.226)	−0.347 (0.229)	−0.226 (0.202)	−0.232 (0.202)	−0.232 (0.201)
Distance to border	−0.039 (0.111)	−0.056 (0.111)	−0.048 (0.111)	−0.269* (0.124)	−0.274* (0.123)	−0.273* (0.123)
Troops' unit div. * TCC div.	0.981** (0.302)			−0.219 (0.194)		
Troops' unit div. * ling. div.		0.883** (0.295)			−0.211 (0.229)	
Troops' unit div. * relig. div.			0.973*** (0.285)			−0.269 (0.231)
Constant	−0.330 (1.657)	−0.369 (1.668)	−0.533 (1.689)	−3.139 (1.850)	−3.108 (1.848)	−3.107 (1.844)
Observations	5,665	5,665	5,665	5,665	5,665	5,665
CBGPS weights	✓	✓	✓	✓	✓	✓
Country FE	✓	✓	✓	✓	✓	✓
Time-cubic polynomials	✓	✓	✓	✓	✓	✓

Notes: Heteroskedastic-robust standard errors (clustered at grid level) in parentheses.
*$p < 0.05$; **$p < 0.01$; ***$p < 0.001$.

(Ai and Norton 2003). Therefore, to gain a better understanding of our substantive findings, we visualize the effects.

Starting with our assessment of H_1, the main results of Model (1) are visualized in Figure 7.[15] The figure shows that unit diversity strongly reduces the likelihood of battle-related deaths in a given grid-month, from around 6% down to approximately 0%, when there are no coordination problems. In other words, when all peacekeepers come from the same TCC, unit diversity improves peacekeeping effectiveness in preventing battle-related violence. Meanwhile, this effect of unit diversity is strongly and significantly moderated by TCC diversity, which induces coordination problems. These results underline two patterns. First, unit di-

versity, i.e., the presence of multiple distinct units, strongly contributes to peacekeeping effectiveness. An infantry unit does not need to divert attention to the maintenance of the base when an engineering unit is available, and can instead focus on patrolling and force protection. Second, this division of labor requires coordination among the units. Thus, the beneficial effect of unit diversity is canceled out by diversity in cultures, languages, and military backgrounds. In an emergency, aviation support can only help an infantry unit if the latter can actually call it in—that is, if language barriers are surmountable and communication equipment is compatible.

Turning to our assessment of H_2, we do not find the same expected effect of unit diversity on one-sided violence. The effects of unit diversity when there is one TCC versus multiple TCCs are similar, and are not statistically or substantively different from each other.

[15] Post-estimation plots based on Models (2) and (3) produce virtually the same results as Figure 7, as effect sizes and variable scales are similar across all moderating variables and are therefore not included.
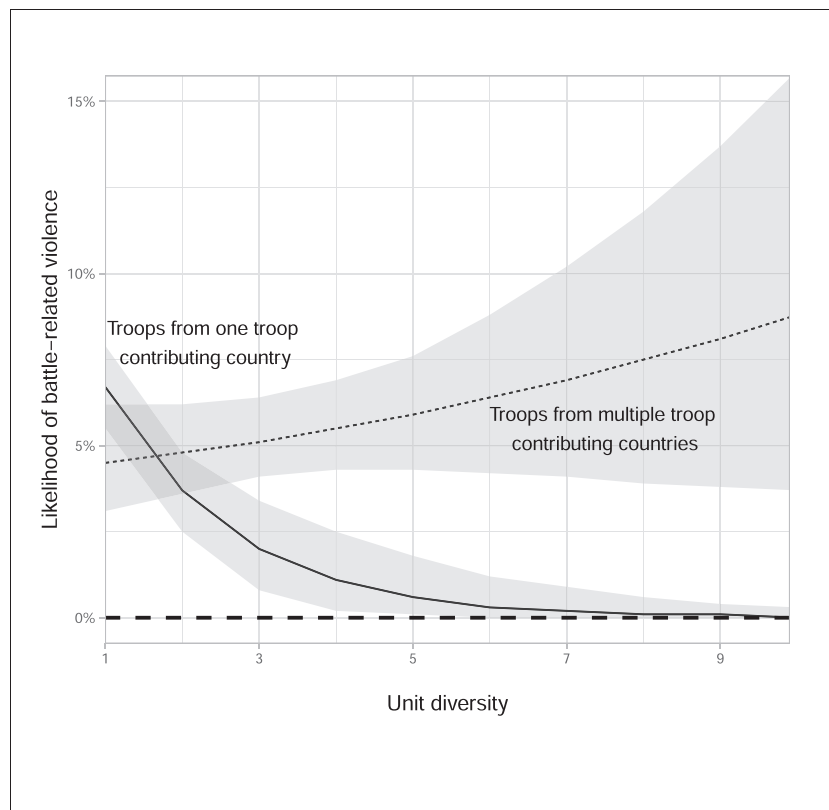
Figure 7. Predicted probability of battle-related violence and troop composition.
Note: Figure based on the main Model 1. The 95% confidence intervals are based on non-parametric bootstraps with 2000 resamples. Predicted probabilities are calculated by holding other variables at their observed values (Hanmer and Kalkan 2013). Troops' TCC diversity is set to 0 (all troops from same TCC) and 1 (troops from multiple TCCs), respectively.

In Figure 8, which displays the predicted probabilities for Model (4), the bootstrapped confidence intervals overlap throughout the whole range of unit diversity.[16]

This result mandates caution when theorizing on battle-related and one-sided violence in the context of peacekeeping operations. There could be several reasons why our mechanisms may relate more to battle-related violence than one-sided violence. Preventing battle-related violence requires seamless coordination to monitor buffer zones and a strong presence that can credibly engage with armed actors, which is enhanced by the deployment of diverse unit types (Cil 2019). Improved surveillance capacity can help solve information problems, while reconstruction and mediation efforts can incentivize and persuade armed actors to keep peace and stop fighting each other. One-sided violence, on the other hand, usually takes place outside of the battlefield and is conducted by weaker groups who prefer to avoid direct confrontations (Hultman, Kathman, and Shannon 2013; Wood 2010), and can be employed selectively (Kalyvas 2006). The presence of functionally diverse units that are specialized to enhance military operations may not be as relevant under these circumstances. Some units may even impede these efforts, such as heavy armored units that hinder information gathering from locals (Lyall and Wilson 2009; Ruffa 2017). Thus, the presence of large numbers of peacekeepers, regardless of unit diversity, may be sufficient to increase the military and especially political costs of civilian targeting, which is how

peacekeepers deter one-sided violence at the local level (Fjelde, Hultman, and Nilsson 2019). Armed actors may be deterred by the possibility of prosecution, sanctions, and loss of material or diplomatic support, which becomes more likely when peacekeepers report human rights violations (Salehyan, Siroky, and Wood 2014; Stanton 2020).

The UNMISS example in our introduction also offers a potential explanation for these divergent results. When the violence escalated between the two forces, only a few bases had diverse units that could halt violence between armed actors. As a result, the mission allowed civilians to take refuge on peacekeeping bases. Later, "protection of civilians" sites were established near peacekeeping bases. Defending these sites is militarily less demanding, compared to engaging with armed actors, and can be achieved with fewer enabling units.[17] Lastly, research shows that troops with closer ties to the host country's population can improve effectiveness to reduce one-sided violence (Bove and Ruggeri 2019; Bove, Ruffa, and Ruggeri 2020). By extension, the cultural distance between the different units and the civilians at the local level may be a more important moderating factor than coordination among units to prevent one-sided violence. As a result, while each additional unit type in the absence of coordination problems improves the effectiveness to reduce battle-related deaths, the same may not be true for reducing one-sided violence. These results, thus, highlight the need for future research on peacekeeping effectiveness to explore the difference between battle-related and one-sided violence in-depth.

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[16] Distinguishing between one-sided violence perpetrated by government versus rebel actors yields similar results, which are available upon request.

[17] See Howard (2019) for a full discussion of defense versus compellence and deterrence in the context of peacekeeping.
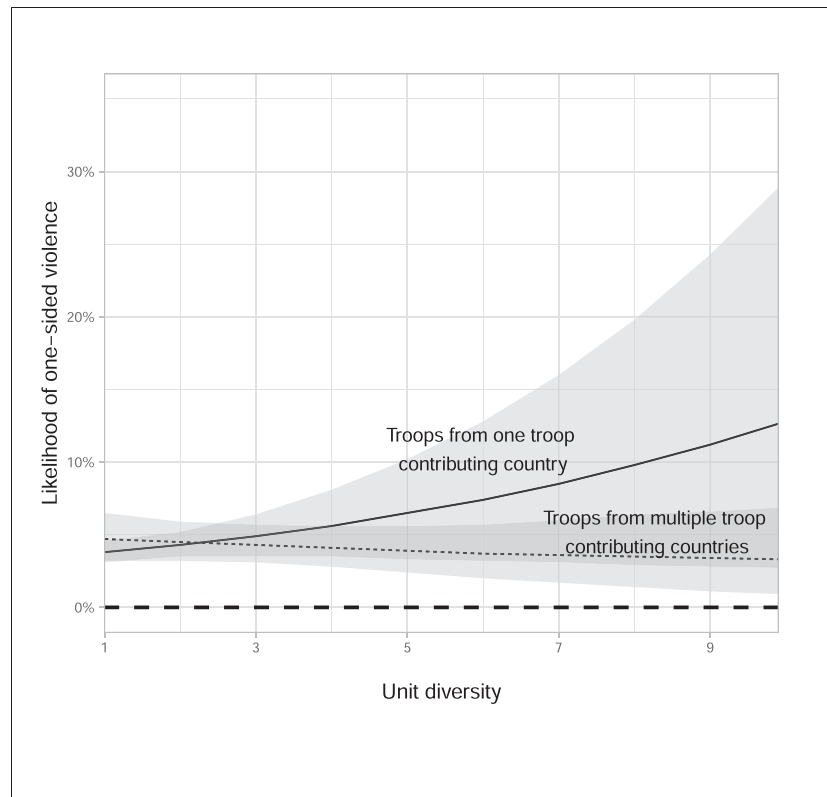
Figure 8. Predicted probability of one-sided violence and troop composition.
Note: Figure based on Table 1, Model 4. The 95% confidence intervals are based on non-parametric bootstraps with 2000 resamples. Predicted probabilities are calculated by holding other variables at their observed values (Hanmer and Kalkan 2013). Troops' TCC diversity is set to 0 (all troops from the same TCC) and 1 (troops from multiple TCCs), respectively.

Finally, our results complement previous studies on troop composition. For example, Bove, Ruffa, and Ruggeri (2020) find that cultural distance among TCCs, similar to our TCC diversity measure, improve peacekeeping effectiveness at the aggregate level. The authors argue that the presence of a diverse set of TCCs in a UN mission increases the chance that there are more troops with diverse sets of skills, local knowledge, and commitment by the international community (Bove, Ruffa, and Ruggeri 2020). Our theoretical discussion and empirical analysis allow for a direct test of one of these mechanisms by disaggregating unit and TCC diversity. Our results suggest that the presence of diverse skill sets, i.e., unit diversity, is crucial for reducing battle-related violence at the local level. TCC diversity, meanwhile, tends to hamper this effect. However, Bove, Ruffa, and Ruggeri (2020) do not examine the effect of diversity on battle-related violence, and our own results on one-sided violence do not show a significant difference. This may suggest that local knowledge may be more important than diverse skill sets for reducing one-sided violence. If local knowledge, high commitment signaled by the presence of diverse TCCs, or diplomatic pressure are the driving factors, these trends are likely to be observed at the mission level, as tested in Bove, Ruffa, and Ruggeri (2020) and Haass and Ansorg (2018), instead of the local level. As a result, our findings do not necessarily diverge. Instead, they provide important evidence in favor of one of the mechanisms through which troop composition impacts peacekeeping effectiveness.

We conclude that both unit diversity and TCC diversity play an important role in shaping peacekeeping effectiveness. The results of Models (1)–(3), in combination with the aforementioned robustness checks, provide support for

hypothesis H_1: While unit diversity increases effectiveness in preventing battle-related deaths, TCC diversity hinders coordination through operational differences, language barriers, and cultural friction. In addition, we find no support for H_2: Unit diversity does not seem to increase effectiveness in deterring one-sided violence at the local level, and we find no evidence of TCC diversity moderating this relationship. While we offer a possible explanation for this result, future research on why the effect of peacekeepers' troop composition differs between battle-related and one-sided violence is necessary.

Quantitative and qualitative exploration

We conduct further exploratory analyses designed to motivate future research into troop composition. Specifically, we surmise that not all enabling units contribute to the prevention of violence in the same way. Some units directly enable daily operations, while others enhance peacekeepers' ability in more indirect ways by undertaking important long-term support tasks in the rear. We expect coordination among units that undertake daily operations to be more important than coordination with support units. This expectation finds tentative support in our exploratory analyses, which are fully discussed in the online appendix A1.

We also conducted fifteen semi-structured interviews with former and active peacekeepers to better understand how troop composition affects peacekeeping effectiveness. Table 2 provides an overview of our sample. These in-depth qualitative accounts help us probe our mechanisms and demonstrate the casual processes. Specifically, they provide additional information about the conditions under

Table 2. Interviewee sample description

Ranks	Captain (5), Lt Colonel (4), Major (2), Lt General (1), Colonel (1), Lieutenant (1), Staff sergeant (1)
Nationalities	Brazil (6), Argentina (2), Nepal (2), Ghana (1), Germany (1), Norway (1), Netherlands (1), India (1)
Missions	MINUSTAH (4), MINUSCA (3), UNMISS (3), MINUSMA (2), UNMIS (1), UNIMSET (1), UNFICYP (1), UNIFIL (1), MONUC (1)
Appointments	Engineering (5), CIMIC/liason officer (4), military observer (4), operations/staff officer (4), UN instructor (3), infantry platoon leader (2), translator (2), terrain analyst/intelligence officer (i.e., reconnaissance) (1), dep. chief of mission's CIMIC branch (1), mission section commander (1), military chief of staff (1), mission force commander (1)

which peacekeeping operations are affected by the two dimensions of troop composition. Evidence from these interviews suggests that unit diversity helps to improve operations, while TCC diversity can hamper them in the ways laid out in our theoretical discussion. While we included several key quotes in our theory section, we provide other original quotes along with details on our sampling in the online appendix A3.

Conclusion

This paper examines the effect of troop composition on peacekeeping effectiveness. We argue that troop composition occurs along two dimensions, unit diversity and TCC diversity, which interactively impact peacekeeping effectiveness. Specifically, we argue that unit diversity improves effectiveness to prevent violence by boosting local capability and allowing division of labor among peacekeeping troops. Unit diversity increases the range of equipment and skills available on the ground, as each unit has a comparative advantage. While one unit specializes in logistics, a second secures the camp, and a third, better-equipped one may patrol the wider vicinity. As a result, peacekeepers' ability to effectively fulfill their mandate increases. TCC diversity, however, strongly moderates this effect, as differences in operational styles, languages, and cultures impede close cooperation and coordination among peacekeepers.

Based on interviews with peacekeepers and using subnational peacekeeping data, we find partial support for our theory. Each additional unit type in a given grid-month reduces the likelihood of battle-related deaths if peacekeepers come from the same TCC, or experience no linguistic and religious incompatibility. This beneficial effect of additional functional units is lost, however, when units come from different TCCs or when linguistic and religious distances are large. We show that this result is robust to alternative model specifications. We do not find the same conditional effect of unit and TCC diversity in preventing one-sided violence.

Our study contributes to the academic literature in several ways. First, by disaggregating troops based on their specialization and country of origin, we offer a fine-grained understanding of local peacekeeping effectiveness. Our novel theoretical discussion and findings point to diverging effects of unit and TCC diversity, highlighting the importance of examining the interaction between these two dimensions of troop composition. We find that unit diversity improves peacekeeping effectiveness through the presence of a diverse set of skills. While previous studies assume this mechanism, none tested it directly. Our results also suggest that TCC diversity leads to coordination problems and hampers the beneficial effect of unit diversity. This suggests that part of the effect of increased mission diver-

sity, previously examined at the aggregate level, seems to work through signaling high levels of international commitment and an improved ability to pressure armed actors (Haass and Ansorg 2018; Bove, Ruffa, and Ruggeri 2020). By focusing on the interaction between unit and TCC diversity at the local level, we also offer an explanation for diverging findings between quantitative and qualitative studies of troop diversity, where the latter suggests that troop diversity can have both a positive and a negative effect.

Second, our findings contribute directly to emerging scholarship that focuses on subnational analysis of peacekeeping effectiveness. Increasingly, peacekeeping operations are mandated to neutralize armed combatants directly, i.e., MONUSCO, or find themselves pressed to address renewed or emerging conflicts between combatants, i.e., UNMISS. Peacekeeping effectiveness to reduce battlefield violence at the local level, however, has not received systematic attention. Our theory and findings fill this crucial gap. Our findings also hint at the possibility that different unit characteristics may be more salient in addressing different forms of violence, which should be explored in future research.

Finally, our results have policy implications for future peacekeeping missions. Increasingly, UN missions are involved in challenging operational environments, which led the UN to put more emphasis on capability-driven peacekeeping. This approach "moves away from a 'number-intensive' strategy to one that focuses on the skills, capacity and willingness of personnel, [and] high technology state-of-the-art equipment to deliver required results" (DPKO 2012, 138). The first Infantry Battalion Manual (UNIBAM), published in 2012, establishes the organizational structure of infantry battalions, including operational and support companies, to improve readiness and self-sufficiency. As the UN shifts its focus to rely more on the support of enabling units, the effective local deployment of these units will be at the center of policy debate.

Generating a multinational peacekeeping force based on voluntary contributions has obvious challenges. Due to economic and security motivations to join missions (Bove and Elia 2011; Gaibulloev et al. 2015), the UN attracts units with varying capabilities and readiness, which puts constraints on local deployments. Force commanders make several trade-offs when they assign units from different TCCs to a location and have to take into account the limited budget and availability of troops. The UN Secretary-General launched the Action for Peacekeeping (A4P) initiative in 2018 to address these challenges and renew the commitments of member states to improve peacekeeping operations. Our results show that having specialized units in a deployment location is highly beneficial for preventing battlefield violence. When these functionally diverse troops are from different TCCs, however, operational and cultural

incompatibilities may impede effective cooperation and co-ordination between units. While at the mission-level, TCC diversity may be desirable to signal international commitment, local deployment decisions should carefully consider coordination problems among diverse units. As the UN moves toward a capability-driven approach and implements A4P commitments to improve the performance of peacekeepers, more emphasis should be put on not only generating the necessary specialized capabilities but also on joint training to ensure that units from different TCCs can effectively perform daily operations, have compatible equipment, and are able to overcome mistrust and reluctance to work together when it is most needed.

Several avenues for future research follow from our theory and analysis. Future research should examine the effect of troop composition on preventing different types of violence, including one-sided, communal, and sexual violence perpetrated by combatants (Johansson and Hultman 2019; Kirschner and Miller 2019; Smidt 2020), given our results point to heterogeneous effects for battle-related and one-sided violence. Previous research highlights the importance of cultural distance between peacekeepers and locals for the protection of civilians (Bove, Ruffa, and Ruggeri 2020). The cultural distance between the different units and the civilians at the local level may be an important moderating factor to address these other forms of violence, as it would improve identification of threats to civilians. Future work can explore if and how other factors moderate the effect of unit diversity. In addition, our proposed mechanisms are likely to have implications for peacekeepers' own security. For example, whether unit diversity helps reduce attacks against peacekeepers or whether certain troop compositions make peacekeepers more vulnerable to attacks can be examined using data on attacks against peacekeepers (Lindberg Bromley 2018). Lastly, TCC diversity in a deployment location may also serve to deter misconduct by troops by providing more oversight. Especially, sexual exploitation and abuse should be examined more closely as more fine-grained data become available (Karim and Beardsley 2016). Peacekeeping and peace share an extraordinary relationship (Walter, Howard, and Fortna 2021), with the topic of peacekeeping composition and troop diversity raising important questions and policy-relevant caveats. Our study makes a first step toward the systematic exploration of the conditional relationship between different forms of troop diversity and provides a more complete understanding of the role of peacekeeping composition.

Supplementary Information

Supplementary information is available at the *International Studies Quarterly* data archive.

References

Ai, Chunrong, and Edward C. Norton. 2003. "Interaction Terms in Logit and Probit Models." *Economics Letters* 80 (1): 123–9. http://www.sciencedirect.com/science/article/pii/S0165176503000326

Auerswald, David P., and Stephen M. Saideman. 2014. *NATO in Afghanistan: Fighting Together, Fighting Alone.* Princeton, NJ: Princeton University Press. https://www.jstor.org/stable/j.ctt4cgbc2

Ben-Ari, Eyal, and Efrat Elron. 2001. "Blue Helmets and White Armor: Multi-Nationalism and Multi-Culturalism among UN Peacekeeping Forces." *City & Society* 13(2): 271–02.

Biddle, Stephen. 2006. *Military Power: Explaining Victory and Defeat in Modern Battle.* Princeton, NJ: Princeton University Press.

Bourgois, Xavier. 2013. "Burundi, Chad Peacekeepers Exchange Fire in Central Africa." ModernGhana News, Modern Ghana Media Communi-cation Ltd. https://www.modernghana.com/news/510207/burundi-chad-peacekeepers-exchange-fire-in-central-africa.html.

Bove, Vincenzo, and Leandro Elia. 2011. "Supplying Peace: Participation in and Troop Contribution to Peacekeeping Missions." *Journal of Peace Research* 48 (6): 699–714. http://jpr.sagepub.com/content/48/6/699.short

Bove, Vincenzo, and Andrea Ruggeri. 2016. "Kinds of Blue: Diversity in UN Peacekeeping Missions and Civilian Protection." *British Journal of Political Science* 46(3): 681–700. https://www.cambridge.org/core/journals/british-journal-of-political-science/article/kinds-of-blue-diversity-in-un-peacekeeping-missions-and-civilian-protection/54C5B7FB27C145335952A52592221DCD

——. 2019. 'Peacekeeping Effectiveness and Blue Helmets' Distance from Locals." *Journal of Conflict Resolution* 63 (7): 1630–55. http://journals.sagepub.com/eprint/VhUDww4kW2CQH4CHw98f/full

Bove, Vincenzo, Chiara Ruffa, and Andrea Ruggeri, 2020. *Composing Peace: Mission Composition in UN Peacekeeping.* Oxford: Oxford University Press.

Caverley, Jonathan D. 2009. "The Myth of Military Myopia: Democracy, Small Wars, and Vietnam." *International Security* 34 (3): 119–57. https://www.jstor.org/stable/40389235

Cil, Deniz. 2019. "Who is Keeping the Peace? Local Peacekeeping Unit Composition and Effectiveness. Paper presented at the International Studies Association Annual Convention.

Cil, Deniz, Hanne Fjelde, Lisa Hultman, and Desirée Nilsson. 2020. "Mapping Blue Helmets: Introducing the Geocoded Peacekeeping Operations (Geo-PKO) Dataset." *Journal of Peace Research* 57(2): 360–70.

Cinelli, Carlos, and Chad Hazlett. 2020. "Making Sense of Sensitivity: Extending Omitted Variable Bias." *Journal of the Royal Statistical Society* 82(1): 39–67.

Costalli, Stefano. 2014. "Does Peacekeeping Work? A Disaggregated Analysis of Deployment and Violence Reduction in the Bosnian War." *British Journal of Political Science* 44 (2): 357–80. http://www.cambridge.org/core/journals/british-journal-of-political-science/article/does-peacekeeping-work-a-disaggregated-analysis-of-deployment-and-violence-reduction-in-the-bosnian-war/43400B7674DF61079693219C1ACCD6EB

Di Salvatore, Jessica. 2020. "Obstacle to Peace? Ethnic Geography and Effectiveness of Peacekeeping." *British Journal of Political Science* 50 (3): 1089–109. /core/journals/british-journal-of-political-science/article/obstacle-to-peace-ethnic-geography-and-effectiveness-of-peacekeeping/80D52A5B586EBD8EA4F1481AC6D54184

Dorn, A. Walter. 2014. *Air Power in UN Operations: Wings for Peace.* Surrey: Ashgate Publishing Ltd. https://books.google.de/books?id=OtsRBAAAQBAJ&printsec=frontcover&source=gbs_ge_summary_r&cad=0#v=onepage&q&f=false

DPKO. 2003. *Handbook on United Nations Multidimensional Peacekeeping Operations.* New York, NY: United Nations.

DPKO. 2012. *United Nations Infantry Battalion Manual,* vol. 1. New York, NY: United Nations.

Dworschak, Christoph. 2020. "Jumping on the Bandwagon: Differentiation and Security Defection during Conflict." *Journal of Conflict Resolution* 64(7–8): 1335–57.

Dworschak, Christoph. 2021. Bias Mitigation in Empirical Peace and Conflict Studies: A Short Primer on Posttreatment Variables. Paper presented at the Conflict Research Society Annual Conference 2021.

Elron, Efrat, Boas Shamir, and Eyal Ben-Ari. 1999. "Why Don't They Fight Each Other? Cultural Diversity and Operational Unity in Multinational Forces." *Armed Forces and Society* 26(1): 73–98.

Fjelde, Hanne, Lisa Hultman, and Desirée Nilsson. 2019. "Protection through Presence: UN Peacekeeping and the Costs of Targeting Civilians." *International Organization,* 73 (1): 103–31. http://www.cambridge.org/core/journals/international-organization/article/protection-through-presence-un-peacekeeping-and-the-costs-of-targeting-civilians/050CE5EC7C4D8049FD3973241EC0F97D.

Fong, Christian, Chad Hazlett, and Kosuke Imai. 2018. "Covariate Balancing Propensity Score for a Continuous Treatment: Application to the Efficacy of Political Advertisements." *The Annals of Applied Statistics* 12 (1): 156–77. https://projecteuclid.org/euclid.aoas/1520564468.

Fortna, Virginia Page. 2008. *Does Peacekeeping Work?: Shaping Belligerents' Choices after Civil War.* Princeton, NJ: Princeton University Press.

Friesendorf, Cornelius., 2018. *How Western Soldiers Fight: Organizational Routines in Multinational Missions.* Cambridge: Cambridge University Press.

FRIIS, KARSTEN. 2010. "Peacekeeping and Counter-Insurgency—Two of a Kind?" *International Peacekeeping* 17 (1): 49–66.

GAIBULLOEV, KHUSRAV, JUSTIN GEORGE, TODD SANDLER, AND HIROFUMI SHIMIZU. 2015. "Personnel Contributions to UN and Non-UN Peacekeeping Missions a Public Goods Approach." *Journal of Peace Research* 52 (6): 727–42. http://jpr.sagepub.com/content/early/2015/06/09/0022343315579245.

GLEDITSCH, NILS PETTER, PETER WALLENSTEEN, MIKAEL ERIKSSON, MARGARETA SOLLENBERG, AND HÅVARD STRAND. 2022. "Armed Conflict 1946–2001: A New Dataset." *Journal of Peace Research* 39(5): 615–37.

HAASS, FELIX, AND NADINE ANSORG. (2018). "Better Peacekeepers, Better Protection? Troop Quality of United Nations Peace Operations and Violence against Civilians." *Journal of Peace Research* 55 (6): 742–58.

HANMER, MICHAEL J., AND KEREM OZAN KALKAN. 2013. "Behind the Curve: Clarifying the Best Approach to Calculating Predicted Probabilities and Marginal Effects from Limited Dependent Variable Models." *American Journal of Political Science* 57(1): 263–77.

HOWARD, LISE M. 2019. *Power in Peacekeeping.* Cambridge: Cambridge University Press. https://www.cambridge.org/core/product/identifier/9781108557689/type/book

HULTMAN, LISA, JACOB KATHMAN, AND MEGAN SHANNON. 2013. "United Nations Peacekeeping and Civilian Protection in Civil War." *American Journal of Political Science* 57(4): 875–91.

HULTMAN, LISA, JACOB KATHMAN, AND MEGAN SHANNON. 2014. "Beyond Keeping Peace: United Nations Effectiveness in the Midst of Fighting." *The American Political Science Review* 108(4): 737–53.

IMAI, KOSUKE, AND MARC RATKOVIC. 2014. "Covariate Balancing Propensity Score." Forthcoming. http://onlinelibrary.wiley.com.proxy-um.researchport.umd.edu/doi/10.1111/rssb.12027/abstract

JOHANSSON, KARIN, AND LISA HULTMAN. 2019. "UN Peacekeeping and Protection from Sexual Violence." *Journal of Conflict Resolution* 63(7): 1656–81.

KALYVAS, STATHIS N. 2006. *The Logic of Violence in Civil War.* Cambridge: Cambridge University Press.

KARIM, SABRINA, AND KYLE BEARDSLEY. 2016. "Explaining Sexual Exploitation and Abuse in Peacekeeping Missions: The Role of Female Peacekeepers and Gender Equality in Contributing Countries." *Journal of Peace Research* 53(1): 100–15.

KIRSCHNER, SHANNA, AND ADAM MILLER. 2019. "Does Peacekeeping Really Bring Peace? Peacekeepers and Combatant-Perpetrated Sexual Violence in Civil Wars." *Journal of Conflict Resolution* 63(9): 2043–70.

LINDBERG, BROMLEY. 2018. "Introducing the UCDP Peacemakers at Risk Dataset, Sub-Saharan Africa, 1989–2009." *Journal of Peace Research* 55(1): 122–31.

LYALL, JASON, AND ISAIAH WILSON. 2009. "Rage against the Machines: Explaining Outcomes in Counterinsurgency Wars." *International Organization* 63 (1): 67–106. http://journals.cambridge.org/production/action/cjoGetFulltext?fulltextid=3291920

PILSTER, ULRICH, TOBIAS BÖHMELT, AND ATSUSHI TAGO. 2016. "The Differentiation of Security Forces and the Onset of Genocidal Violence." *Armed Forces & Society* 42(1): 26–50.

RUFFA, CHIARA. 2014. "What Peacekeepers Think and Do: An Exploratory Study of French, Ghanaian, Italian, and South Korean Armies in the United Nations Interim Force in Lebanon." *Armed Forces & Society* 40(2): 199–25.

RUFFA, CHIARA. 2017. *Military Cultures in Peace and Stability Operations: Afghanistan and Lebanon.* Philadelphia, PA: University of Pennsylvania Press. https://www.amazon.de/Military-Cultures-Peace-Stability-Operations/dp/0812250184

RUGGERI, ANDREA, HAN DORUSSEN, AND THEODORA-ISMENE GIZELIS. 2018. "On the Frontline Every Day? Subnational Deployment of United Nations Peacekeepers." *British Journal of Political Science* 48(4): 1005–25.

SALEHYAN, IDEAN, DAVID SIROKY, AND REED M. WOOD. 2014. "External Rebel Sponsorship and Civilian Abuse: A Principal-Agent Analysis of Wartime Atrocities." *International Organization* 68(3): 633–61.

SMIDT, HANNAH M. 2020. "United Nations Peacekeeping Locally: Enabling Conflict Resolution, Reducing Communal Violence." *Journal of Conflict Resolution* 64(2–3): 344–72.

SOETERS, JOSEPH, ERHAN TANERÇAN, KADIR VAROĞLU, AND ÜNSAL SIĞRI. 2004. "Turkish-Dutch Encounters in Peace Operations." *International Peacekeeping* 11(2): 354–68.

SOETERS, JOSEPH, AND TIBOR SZVIRCSEV TRESCH. 2010. "Towards Cultural Integration in Multinational Peace Operations." *Defence Studies* 10(1–2): 272–87.

SPOLAORE, ENRICO, AND ROMAIN WACZIARG. 2016. Ancestry, Language and Culture. In *The Palgrave Handbook of Economics and Language,* edited by Victor Ginsburgh and Shlomo Weber, 174–211. London: Palgrave Macmillan. http://link.springer.com/10.1007/978-1-137-32505-1_7

STANTON, JESSICA A. 2020. "Rebel Groups, International Humanitarian Law, and Civil War Outcomes in the Post-Cold War Era." *International Organization* 74 (3): 523–59. http://www.cambridge.org/core/journals/international-organization/article/rebel-groups-international-humanitarian-law-and-civil-war-outcomes-in-the-postcold-war-era/64F4A927390E54E324CF29A9E0F740B2

SUNDBERG, RALPH, AND ERIK MELANDER. 2013. "Introducing the UCDP Georeferenced Event Dataset." *Journal of Peace Research* 50(4): 523–532.

FORØ TOLLEFSEN, ANDREAS, HÅVARD STRAND, AND HALVARD BUHAUG. 2012. "PRIO-GRID: A Unified Spatial Data Structure." *Journal of Peace Research* 49(2): 363–74.

VAN DER MEULEN, JAN, AND JOSEPH SOETERS. 2005. "Considering Casualties: Risk and Loss during Peacekeeping and Warmaking." *Armed Forces & Society* 31(4): 483–86.

WALTER, BARBARA F., LISE MORJE HOWARD, AND V. PAGE FORTNA. 2021. "The Extraordinary Relationship between Peacekeeping and Peace." *British Journal of Political Science* 51 (4): 1705–22. https://www.cambridge.org/core/journals/british-journal-of-political-science/article/abs/extraordinary-relationship-between-peacekeeping-and-peace/D2D5D262B60315387B0B23D1D4F79CC9#access-block

WOOD, REED M. 2010. "Rebel Capability and Strategic Violence against Civilians." *Journal of Peace Research,* 47 (5): 601–14. http://jpr.sagepub.com/content/47/5/601