

Has UN Peacekeeping Become More Deadly? Analyzing Trends in UN Fatalities

PROVIDING FOR PEACEKEEPING NO. 14

MARINA E. HENKE



Cover Photo: Peacekeepers from the AU-UN Hybrid Operation in Darfur (UNAMID) carry the coffins of their fallen colleagues, to be repatriated to Senegal, El Fasher, Darfur, October 13, 2013. UN Photo/Albert González Farran.

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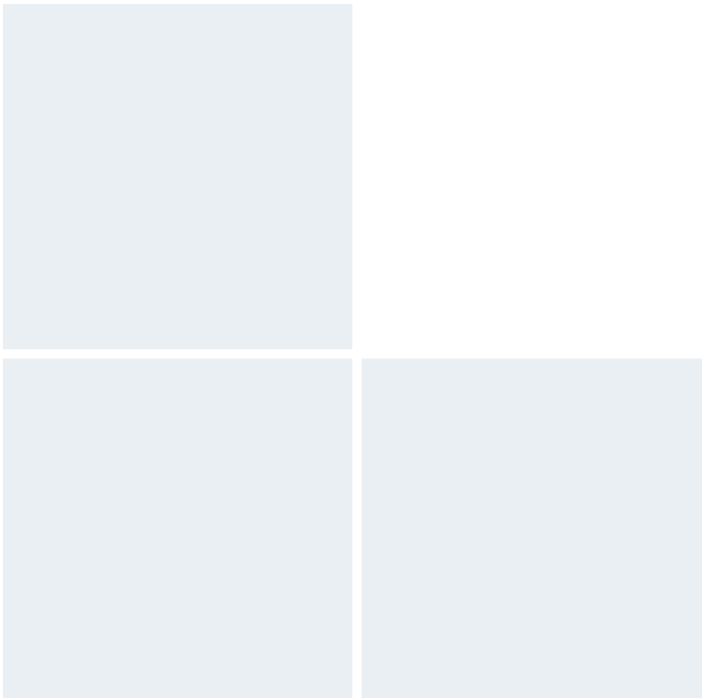
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Executive Summary

How deadly is UN peacekeeping? Have UN peacekeeping fatalities increased over the past decades? This report takes a fresh look at these questions by analyzing trends in UN peacekeeping fatalities using a new dataset compiled by the UN Department of Peacekeeping Operations (DPKO). The dataset accounts for monthly UN fatalities by cause of fatality (accident, malicious act, illness, and other causes), nationality of the deceased, and UN personnel type of the deceased for each UN operation worldwide from 1948 to June 2015. To assess UN fatality trends, the report calculates fatality ratios (i.e., UN fatality numbers relative to UN deployment levels) by national contingent, UN mission, and globally (i.e., all UN missions combined). As a result of the new data employed and these methodological innovations, this report constitutes the most detailed study of UN fatality trends thus far.

The analysis reveals that overall UN fatalities are not substantively on the rise. Indeed, total fatality ratios are sharply declining. Nevertheless, this decline does not equally apply to all types of UN fatalities. While fatality numbers and ratios due to accidents and malicious acts are decreasing, the same cannot be said for illness-related fatality numbers and ratios. Indeed, there is strong evidence that UN fatality numbers due to illness are on the rise, and UN fatality ratios due to illness are also trending upward (though the increase is not statistically significant). Increasingly, troops, police, and military observers die due to illness-related causes while serving in UN missions.

While these findings on UN fatality trends are important, they should not be used as the sole measure to assess the risks UN peacekeepers face. Given the important medical advances in recent years, many more wounded soldiers are able to survive. As a result, to adequately examine whether UN peacekeeping missions have become more

dangerous in recent years, we also need to take into account the number of injuries and/or attacks on UN peacekeepers. Unfortunately, the UN thus far does not systematically collect and make publicly available such data.

Introduction

How deadly is UN peacekeeping? Have UN peacekeeping fatalities increased over the past decades? Those who have attempted to answer these questions differ quite drastically in their assessments. An early study of UN peacekeeping fatalities focusing on the years 1948–1990 found that fatality rates remained steady during that time period.¹ More recent studies argue that UN fatality rates are declining.² Still others focus on specific causes of fatality and argue that only the number of UN fatalities caused by illness has significantly risen over the last decades, while fatalities caused by accidents and malicious acts have remained constant or are on a downward trend.³

At the same time, many UN peacekeeping practitioners believe that UN peacekeeping has become significantly more dangerous in recent years. They point to changes in the UN peacekeeping doctrine and argue that peacekeepers increasingly “take sides” and deploy to conflict theaters where there is no political agreement or peace to keep. Moreover, peacekeepers are often mandated to serve in areas where terrorist and violent extremist groups operate, which presents a new challenge to the UN. UN peacekeepers are also mandated to execute more ambitious tasks, including the protection of civilians. In its 2015 report, the High-Level Independent Panel on UN Peace Operations (HIPPO) stressed on several occasions that UN personnel operate in “increasingly dangerous environments.”⁴ Similarly, others have argued that “UN peacekeeping has undergone significant evolution, ... [resulting in] asymmetric hostile acts against UN personnel becoming a more regular feature of many missions.”⁵

1 Benjamin Seet and Gilbert M Burnham, “Fatality Trends in United Nations Peacekeeping Operations, 1948–1998,” *JAMA: The Journal of the American Medical Association* 284, no. 5 (2000).

2 Jair van der Lijn and Timo Smit, “Peacekeepers under Threat? Fatality Trends in UN Peace Operations,” Stockholm International Peace Research Institute, September 2015.

3 James I. Rogers and Caroline Kennedy, “Dying for Peace? Fatality Trends for United Nations Peacekeeping Personnel,” *International Peacekeeping* 21, no. 5 (2014).

4 United Nations, *Uniting Our Strengths for Peace—Politics, Partnership, and People: Report of the High-Level Independent Panel on United Nations Peace Operations*, June 16, 2015, p. 21, available at <http://futurepeaceops.org/project/uniting-our-strengths-for-peace-politics-partnerships-and-people-report-of-the-high-level-independent-panel-on-united-nations-peace-operations-2015/>.

5 Haidi Willmot, Scott Sheeran, and Lisa Sharland, “Safety and Security Challenges in UN Peace Operations,” International Peace Institute, July 2015.

One reason for this lack of consensus on UN fatality trends is the dearth of data and the variety of calculation methods employed. This report uses a new dataset on UN fatalities in order to fix some of these shortcomings. The data were obtained directly from the UN Department of Peacekeeping Operations (DPKO).⁶ They provide greater detail than the fatality data DPKO makes available on its website.⁷ Most importantly, the dataset accounts for *monthly* UN fatalities by cause of fatality (accident, malicious act, illness, and other causes), nationality of the deceased, and UN personnel type of the deceased (troops, police, military observers, international civilians, and local civilians) for each UN operation worldwide during the period 1948–June 2015. By merging this fine-grained data with UN deployment data, we can calculate precise *fatality ratios* (i.e., UN fatality numbers relative to UN deployment levels) for each month by national contingent, by UN mission, and globally (i.e., all UN missions combined).

Why is examining fatality ratios at these three levels not only useful but indispensable? A comparison with crime statistics, which are also analyzed at various levels (e.g., the national level, the state level, and the city or even neighborhood level) might be helpful. Crime statistics at the national level serve best to provide a general overview of the crime landscape in one country. However, when it comes to understanding the specific causes of crime, most analysts agree that state or local level statistics provide greater detail on how crime rates evolve and why. Moreover, crime perceptions held by the population are also formed at the local level. Residents of Chicago, for instance, care very little about national crime trends if they feel that in their city, or even in their neighborhood, crime has gone up.

UN fatality statistics face similar challenges. Global UN fatality ratios are helpful to gain a general overview of the risks of UN peacekeeping;

they allow us to take the global temperature of the risk landscape. Lower levels of analysis, in turn, are more useful in understanding the exact causes of UN peacekeeper fatalities and in appreciating the risk perceptions of UN contingents and missions.

Calculating these fatality ratios at these three levels is a novelty mostly because adequate *monthly* UN fatality and deployment data were previously not available. Why are monthly data necessary to calculate these three types of ratios? Deployment numbers per mission, per contingent, and globally can vary quite dramatically within one calendar year. One UN mission can start with 500 troops in January and end with 5,000 in December (the same is true for global deployment levels and national contingents).⁸ These deployment fluctuations affect UN fatality ratios. Using the previous example, if five troops were to die in this mission in January, the fatality ratio would be 5/500, while if five troops were to die in December, the ratio would be 5/5,000. It is essential to work with monthly fatality and deployment data to capture these nuances. This report is the first to do so. All previous reports have relied on yearly averages when assessing these ratios. As a result, the analysis of UN fatality trends presented in this report constitutes the most detailed study of this phenomenon thus far.

This report focuses on UN peacekeeping operations, excluding most special political missions, as deployment numbers for these are not available.⁹

The key findings of the report are as follows. If we look at fatalities among UN troops, police, and military observers without controlling for UN deployment numbers, overall UN fatalities are trending slightly upward. This trend is particularly noticeable for illness-related fatalities, which follow a sharp upward trajectory that is strongly statistically significant. The trend does not apply to fatalities caused by accidents and malicious acts.¹⁰ If we

6 UN fatality data are not collected in a systematic manner across all UN missions. As a result, the data shown in this report might not be completely accurate. Nevertheless, it is to my knowledge the best data the UN can currently provide.

7 See www.un.org/en/peacekeeping/resources/statistics/fatalities.shtml.

8 Jacob D. Kathman, "United Nations Peacekeeping Personnel Commitments, 1990–2011," *Conflict Management and Peace Science* 30, no. 5 (2013). In the case of the UN Assistance Mission to Somalia (UNOSOM), the fluctuation of troops was as high as 28,000 in one calendar year.

9 The following UN missions are included in this analysis: BINUB, MINUCI, MINUGUA, MINURCA, MINURCAT, MINURSO, MINUSCA, MINUSMA, MINUSTAH, MIPONUH, MONUA, MONUC, MONUSCO, ONUB, ONUC, ONUMOG, ONUSAL, UNAMET, UNAMIC, UNAMID, UNAMIR, UNAMSIL, UNAVEM, UNCRO, UNDOF, UNEF, UNFICYP, UNFOR, UNIFIL, UNIIHMOG, UNIKOM, UNISFA, UNMEE, UNMIBH, UNMIH, UNMIK, UNMIL, UNMIS, UNMISSET, UNMISS, UNMIT, UNMOGIP, UNMOP, UNMOT, UNOA, UNOCI, UNOMIG, UNOMIL, UNOMSIL, UNOMUR, UNOSOM, UNOTIL, UNPF, UNPREDEP, UNPROFOR, UNPSG, UNSMIH, UNTAC, UNTAES, UNTAET, UNTMIH, UNTAG, UNTSO.

10 Accident related fatalities follow no discernable trend, while fatalities related to malicious acts are slightly on the decline – a trend which is, however, only statistically significant for the 1990–2011 period.

control for UN deployment numbers and calculate fatality ratios (i.e., UN fatalities relative to UN peacekeepers deployed), these findings change. Overall UN fatality ratios are trending sharply downward, whether calculated at the national contingent, UN mission, or global level. The only exception to this trend is fatality ratios due to illness: at the national contingent and global level, these illness-related fatality ratios are increasing, though the increase is not statistically significant.

What are the consequences of these findings? Most importantly, they challenge some of the assumptions scholars have made with regard to the key dangers that UN peacekeepers face. The current debate focuses on more demanding peacekeeping mandates and more violent peacekeeping environments as key reasons for why UN fatalities occur. Nevertheless, this report suggests that fatalities resulting from malicious acts and accidents are not on the rise. Instead, illness-related UN fatalities are steadily increasing, and this increase is strongly statistically significant. Illness-related fatality ratios are also increasing, though this increase is not statistically significant.

Furthermore, the report highlights that fatality trends need to be analyzed using a variety of calculation methods. While UN fatality numbers provide useful historical information on fatalities, UN fatality ratios are arguably the more precise tool to examine the evolution of UN fatality trends. Moreover, to calculate precise fatality ratios we need to rely on monthly fatality and deployment data given the often dramatically shifting levels of UN deployment. In addition, to fully grasp the causes and risk perceptions of UN fatalities, UN fatality ratios need to be analyzed at different levels (i.e., at the national contingent, mission, and global levels).

Studying UN fatality trends in all their nuances is important. UN fatalities are often used to assess the risks UN peacekeepers assume. As a result, they

affect the attractiveness of deployment to different UN peacekeeping missions and thus UN force generation more generally. Many countries, in particular wealthy Western countries, are hesitant to contribute forces to UN operations because of their perceived dangers—although recent deployments of European and Canadian forces to the UN mission in Mali (MINUSMA) run against this trend.¹¹ A more thorough analysis of peacekeeping risks and a disentanglement of UN peacekeeping risk perceptions and realities might help to recruit more UN peacekeepers.

Moreover, a thorough risk assessment of UN peacekeeping operations could have an impact on future discussions on UN peacekeeping reimbursement rates. Developing countries, many of them contributing large numbers of troops to UN peacekeeping operations, have argued forcefully that because peacekeeping has become an increasingly risky endeavor, UN peacekeeping reimbursement rates must increase.¹² Their demands were partly met by the UN General Assembly's Fifth Committee in July 2014 when it approved an increase of UN reimbursement rates from \$1,028 to \$1,410 per soldier per month by 2018.¹³ Nevertheless, discussions on this topic could reemerge in 2018 (or earlier), particularly on "risk-premium" payments (i.e., special payments if troops get deployed to riskier places).

Finally, a thorough assessment of UN peacekeeping risks might contribute to overall UN peacekeeping effectiveness. The UN must be able, and be seen to be able, to protect its peacekeepers and to respond when they are threatened or attacked.¹⁴ Otherwise, its role in the conflict theater is greatly diminished.¹⁵ This study—in particular the new dataset it introduces—allows us not only to assess overall UN fatality trends but also to discern where these risks lie. The resulting information could contribute to reducing UN fatalities and thus strengthen the overall effectiveness of UN

11 See Providing for Peacekeeping, "Country Profiles," available at www.providingforpeacekeeping.org/profiles/.

12 See, for example, UN General Assembly, "Overdue Increase in Reimbursement Rate for Troop-Contributing Countries Critical to Delivery of Mandates, Say Fifth Committee Delegates," May 9, 2014, available at www.un.org/press/en/2014/gaab4108.doc.htm.

13 Michelle Nichols, "U.N. States Overcome Impasse to Pass Peacekeeping Budget," Reuters, July 3, 2014, available at www.reuters.com/article/2014/07/03/us-un-peacekeepers-budget-idUSKBN0F82FG20140703.

14 Willmot, Sheeran, and Sharland, "Safety and Security Challenges in UN Peace Operations," p. 5.

15 Virginia P. Fortna, *Does Peacekeeping Work?: Shaping Belligerents' Choices after Civil War* (Princeton, NJ: Princeton University Press, 2008), p. 86; Barbara F. Walter, *Committing to Peace: The Successful Settlement of Civil Wars* (Princeton, NJ: Princeton University Press, 2002); David Last, "Organizing for Effective Peacebuilding," *International Peacekeeping* 7, no. 1 (2000), pp. 81-82; Peter Viggo Jakobsen, "The Emerging Consensus on Grey Area Peace Operations Doctrine: Will It Last and Enhance Operational Effectiveness?," *International Peacekeeping* 7, no. 3, p. 44.

peacekeeping operations.

Nevertheless, it is equally important to note that fatality trends should not be used as the sole measure to assess UN peacekeeping risks. Given the important medical advances in recent years, many wounded soldiers are able to survive. As a result, to accurately assess risks, injuries and/or attacks on UN peacekeepers also need to be taken into account.¹⁶

Trends in UN Fatalities

TRENDS IN FATALITY NUMBERS

A first step in assessing fatalities of UN peacekeepers is to analyze trends in the overall number of fatalities (without controlling for deployment numbers). Figures 1.1–1.4 illustrate overall UN peacekeeping fatalities and fatalities due to malicious acts, accidents, and illness from 1948 to 2015.¹⁷ The data includes fatalities of troops, police, and military observers serving in UN missions.¹⁸ “Malicious acts” are defined as fatalities that occur as a result of “war; invasion; hostilities; acts of foreign enemies, whether war be declared or not; civil war; revolution; rebellion; insurrection; military or usurped power; riots or civil commotion; sabotage; explosion of war weapons; or terrorist activities.”¹⁹ “Accidents” include stray bullets, friendly fire, and road accidents, as well as all UN peacekeepers who died in the earthquake in Haiti in 2010.²⁰

The figures show that the overall number of fatalities is trending upward. However, this trend is only strongly statistically significant for illness-related fatalities. Fatalities due to malicious acts and accidents are following a downward trend, although this trend is not statistically significant.²¹

Looking at how the different causes of fatality are distributed over time reaffirms that illness-related

fatalities are trending upward (see Figure 1.5). In the early years of UN peacekeeping (roughly until the 1990s), accidents were the most common cause of fatality. However, since the 1990s, fatalities from malicious acts and, in particular, illness have increased substantially. In recent years, illness has become the most frequent cause of UN fatalities.

Unsurprisingly, looking at the distribution of fatalities among different types of UN personnel reveals that troops have suffered the greatest number of fatalities (see Figure 1.6). However, the number of police and military observer fatalities has grown substantially, partly because police forces have come to represent an increasingly large component of uniformed UN personnel.

Many aspects of UN peacekeeping have changed since the end of the Cold War: the number of UN operations has increased dramatically in parallel to numerous changes in UN peacekeeping doctrine. To assess how UN peacekeeping fatality trends have evolved since 1990, Figures 2.1–2.4 illustrate overall UN peacekeeping fatalities and fatalities due to malicious acts, accidents, and illness from 1990 to 2011.²² The data again include fatalities of troops, police, and military observers serving in UN missions.²³

The results largely mirror those from the study above (1948–2015), though with some important exceptions. The overall number of fatalities is again trending upward, but this time, the trend is not statistically significant. UN fatality numbers due to illness are again sharply on the rise, and the trend is strongly statistically significant. Fatalities due to accidents are also on the rise, but the trend is not statistically significant. Finally, and in contrast to the analysis above, UN fatality numbers due to malicious acts are slightly on the decline, and the trend is statistically significant (see Figures 2.1–2.4).²⁴

16 See Tanisha M. Fazal, “Dead Wrong?: Battle Deaths, Military Medicine, and Exaggerated Reports of War’s Demise,” *International Security* 39, no. 1 (2014).

17 The exact cutoff date is June 2015. Each bar in these graphs represents the overall fatality count in a given year. The trend lines are fitted values.

18 It does not include UN fatalities by UN international or local staff.

19 UN Development Programme, *Malicious Acts Insurance Policy*, February 4, 2003, UN Doc. UNDP/ADM/2003/14, p. 4, quoted in Rogers and Kennedy, “Dying for Peace? Fatality Trends for United Nations Peacekeeping Personnel,” p. 660.

20 Rogers and Kennedy, “Dying for Peace? Fatality Trends for United Nations Peacekeeping Personnel,” p. 663.

21 The coefficients and p-values for these trend lines are as follows: coefficient of 0.04 and p-value of 0.445 for the overall number of fatalities; coefficient of -0.00 and p-value of 0.976 for fatalities due to accidents; coefficient of 0.87 and p-value of 0.000 for fatalities due to illness; and coefficient of -0.15 and p-value of 0.162 for fatalities due to malicious acts. P-values of less than 0.05 are generally considered statistically significant.

22 The exact cutoff date is June 2015. Each bar in these graphs represents the overall fatality count in a given year. The trend lines are fitted values.

23 It does not include UN fatalities by UN international or local staff.

24 The coefficients and p-values for these trend lines are as follows: coefficient of 0.12 and p-value of 0.287 for the overall number of fatalities; coefficient of 0.04 and p-value of 0.482 for fatalities due to accidents; coefficient of 0.17 and p-value of 0.000 for fatalities due to illness; and coefficient of -0.10 and p-value of 0.043 for fatalities due to malicious acts. P-values of less than 0.05 are generally considered statistically significant.

Figure 1.1 Overall number of fatalities

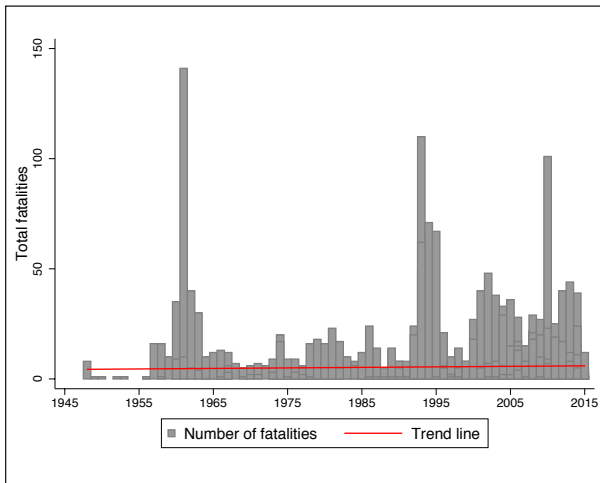


Figure 1.2 Number of fatalities due to accidents

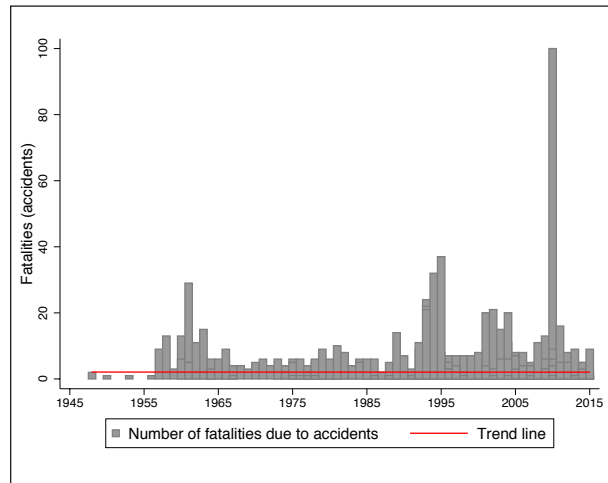


Figure 1.3 Number of fatalities due to illness

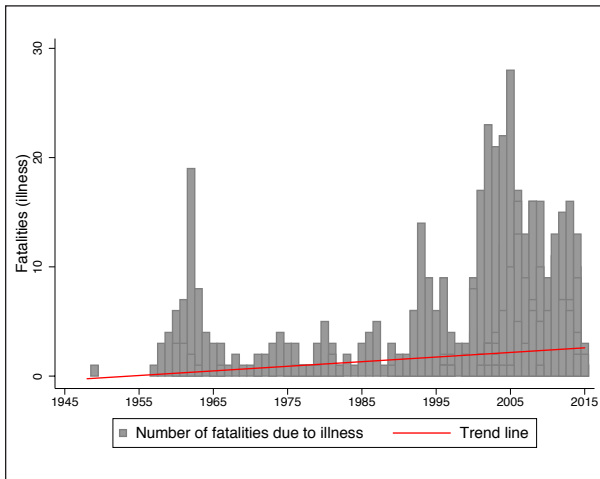


Figure 1.4 Number of fatalities due to malicious acts

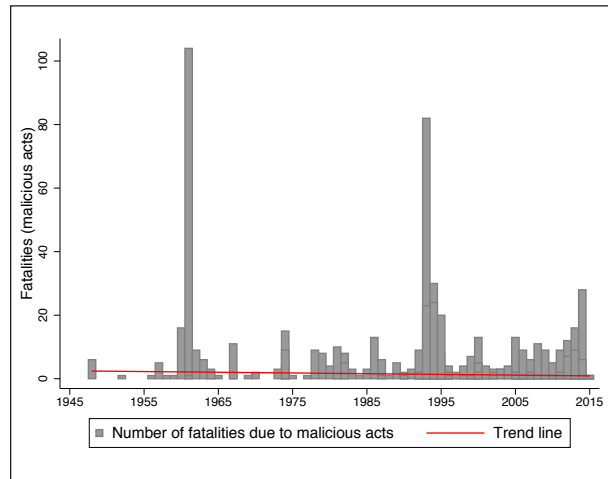


Figure 1.5 Distribution of causes of fatality

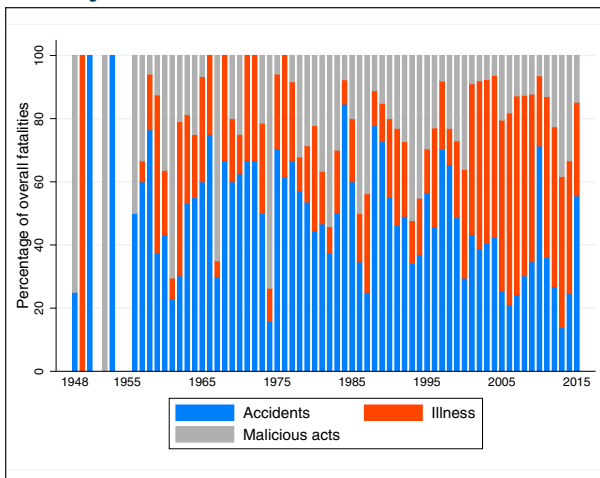
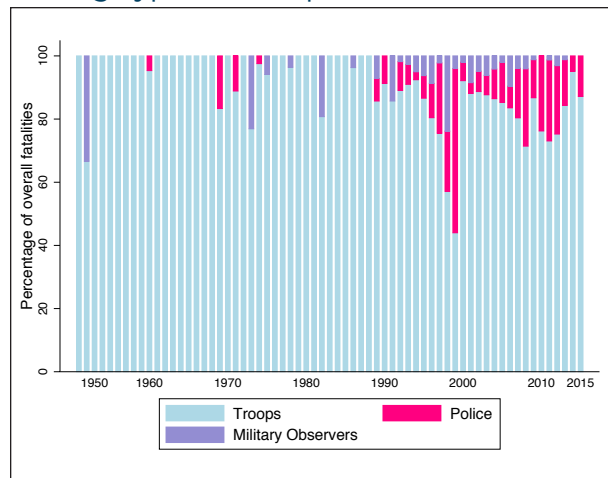


Figure 1.6 Distribution of fatalities among types of UN personnel



TRENDS IN FATALITY RATIOS

Most scholars of UN peacekeeping agree that in order to assess UN fatality trends, the number of deployed personnel needs to be taken into account; the more UN personnel in the field, the larger the number of potential targets.²⁵ Between 1990 and 2015, the number of uniformed personnel has increased tenfold, from approximately 10,000 to more than 100,000. Therefore, a next step in assessing fatality trends of UN peacekeepers is to calculate *fatality ratios* (i.e., UN fatality numbers relative to the number of UN personnel deployed).

These ratios can be calculated at three different levels: (1) the national contingent (i.e., how many peacekeepers died per national contingent serving in a particular UN mission); (2) the mission (i.e., how many peacekeepers died per UN mission); and (3) globally (i.e., how many peacekeepers died out of the overall number of peacekeepers deployed in all UN missions combined).

Each of these ratios can provide different insights into the evolution of UN fatality ratios over time.²⁶ Global UN fatality ratios provide a general overview of UN peacekeeping risk and how UN

Figure 2.1 Overall number of fatalities (1990-2011)

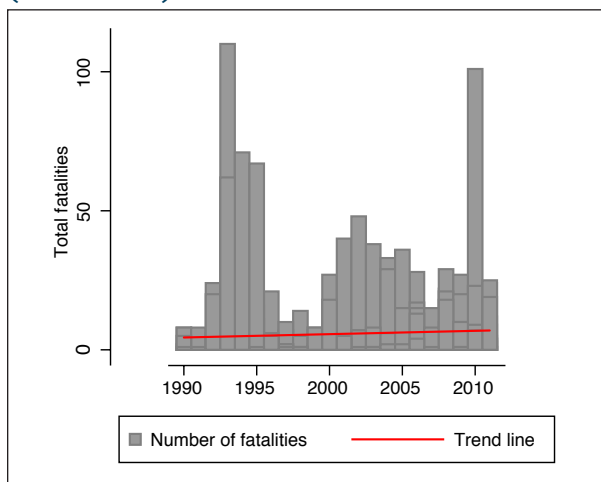


Figure 2.2 Number of fatalities due to accidents (1990-2011)

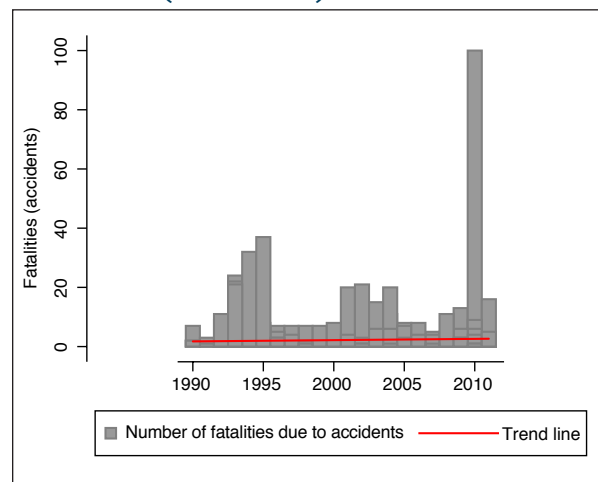


Figure 2.3 Number of fatalities due to illness (1990-2011)

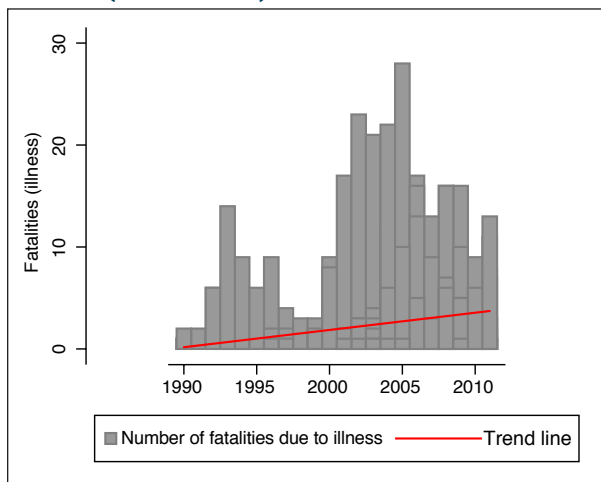
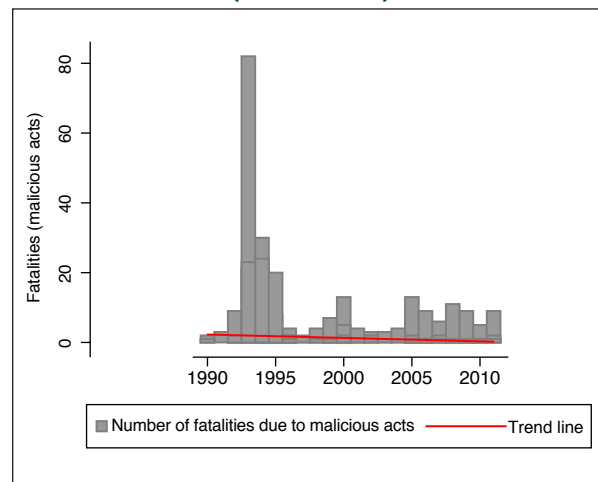


Figure 2.4 Number of fatalities due to malicious acts (1990-2011)



25 Van der Lijn and Smit, "Peacekeepers under Threat? Fatality Trends in UN Peace Operations," p. 3.

26 Each ratio is calculated by merging monthly UN fatality data with monthly UN personnel data. Because UN deployment data is only available from 1990–2011 and is limited to troops, police, and military observers, the analyses are limited to this time period and do not include fatalities of non-uniformed local and international staff serving in UN peacekeeping missions. Kathman, "United Nations Peacekeeping Personnel Commitments, 1990–2011."

Figure 3.1 Overall contingency-level fatality ratios

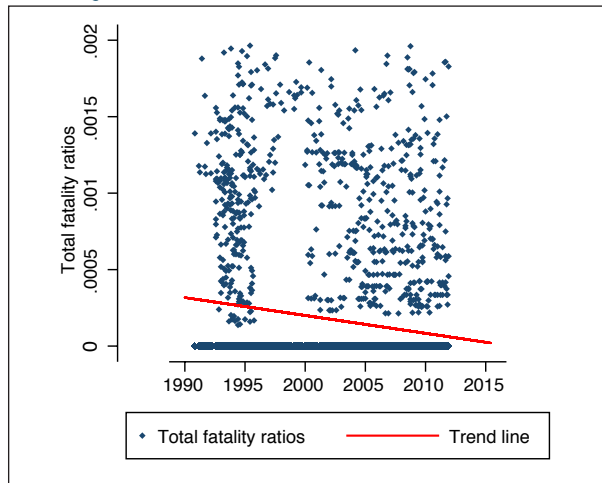


Figure 3.2 Contingency-level fatality ratios (accidents)

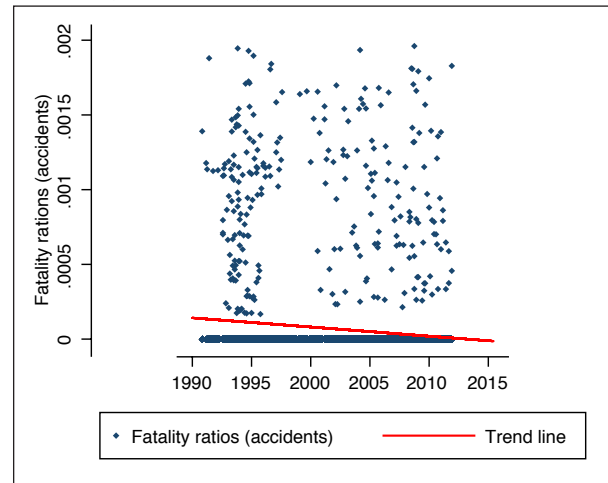


Figure 3.3 Contingency-level fatality ratios (illness)

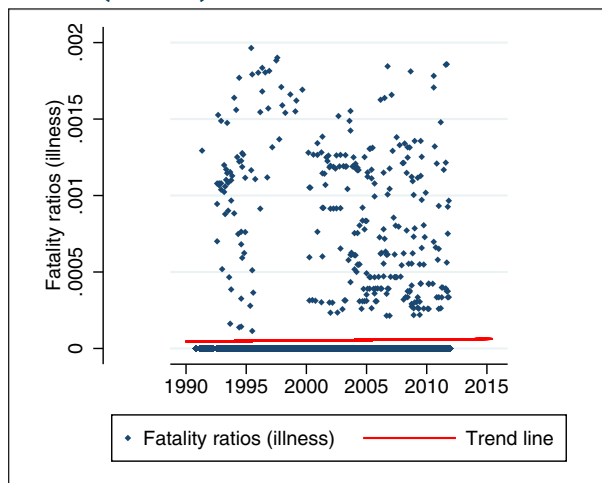
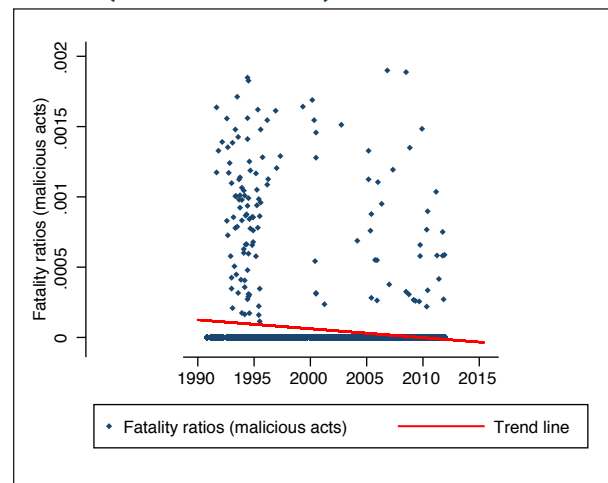


Figure 3.4 Contingency-level fatality ratios (malicious acts)



fatality ratios evolve across all UN missions. The mission level is more useful in understanding the exact causes of UN peacekeeper fatalities in specific conflict theaters. Finally, the contingent level allows us to assess how individual contingents perform. Both the mission and contingent levels also reveal information on risk perceptions in specific UN missions and individual UN contingents.

The results of these different analyses are as follows: At the level of the national contingent, we witness a decline in fatality ratios, with the exception of illness-related fatalities.²⁷ However, while the decline in overall fatality ratios and in the ratio of fatalities due to accidents and malicious acts is strongly statistically significant, the upward trend in the ratio of fatalities due to illness is not statistically significant (see Figures 3.1–3.4).²⁸

27 The contingent-level fatality ratio is the monthly number of fatalities in a national contingent in a given mission divided by the monthly number of personnel that contingent has deployed in that mission. For example, in June 1994, Canada lost 2 out of its 2,088 uniformed personnel serving in the UN mission in the former Yugoslavia (UNPROFOR), resulting in a fatality ratio of 0.000958 for Canada's UNPROFOR contingent for June 1994. This analysis covers UN fatality ratios by national contingents during the period 1990–2011. Each dot in the graphs represents the fatality ratio of one national contingent in a single UN mission in a single month. All trend lines are again fitted values. For illustrative purposes, all graphs are truncated at a fatality ratio of 0.01 per contingent in each mission per month.

28 The coefficients and p-values for these trend lines are as follows: coefficient of $-9.73e-07$ and 0.0002 for the overall number of fatalities; coefficient of $-5.10e-07$ and a p-value of 0.001 for fatalities due to accidents; coefficient of $5.48e-08$ and a p-value of 0.786 for fatalities due to illness; and a coefficient of $-5.26e-07$ and a p-value of 0.001 for fatalities due to malicious acts. Most national contingents do not suffer any fatalities in a given mission in a given month, which explains the large number of "zeros" in Figure 3.1.

Studying UN fatality ratios at the mission level further confirms the downward direction of UN fatality trends (see Figures 4.1–4.4).²⁹ This time there are no exceptions—even illness-related fatalities at the mission level have declined since 1990—and all the declines are statistically significant.³⁰

Figure 4.1 Overall mission-level fatality ratios

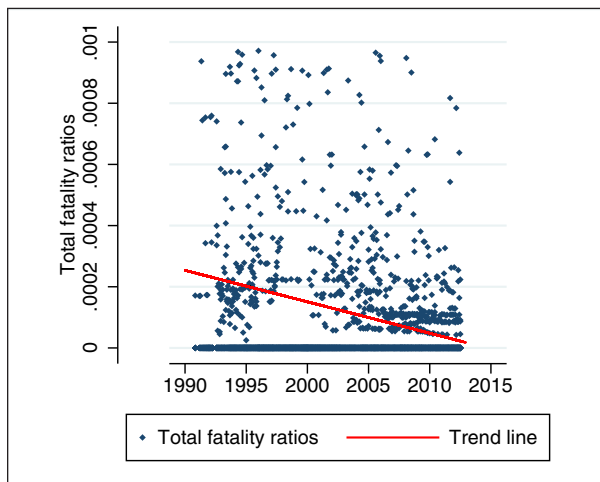


Figure 4.2 Mission-level fatality ratios (accidents)

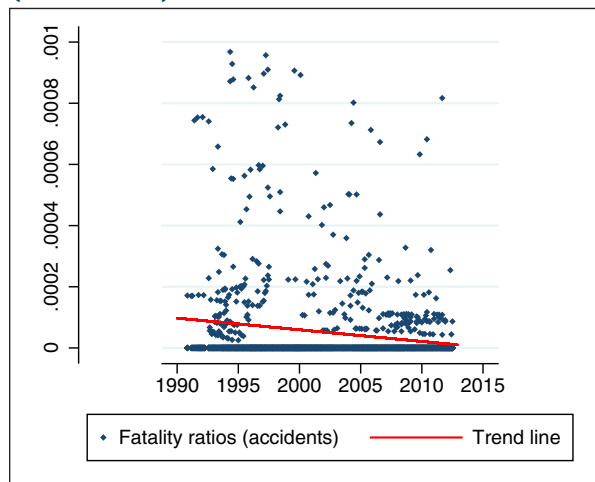


Figure 4.3 Mission-level fatality ratios (illness)

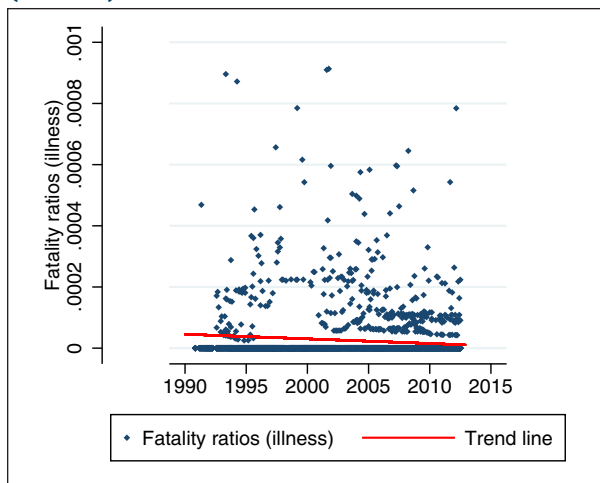
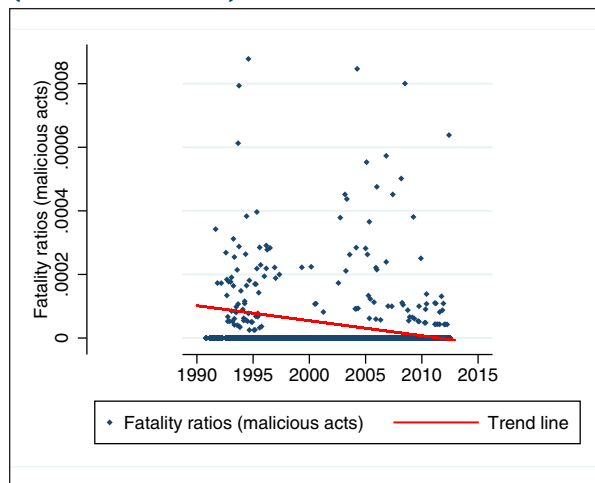


Figure 4.4 Mission-level fatality ratios (malicious acts)



29 The mission-level fatality ratio is the monthly number of fatalities in each UN mission divided by the monthly number of UN personnel serving in that mission. For example, in June 1994, 17,316 UN personnel served in the UN mission in the former Yugoslavia (UNPROFOR), and 9 died in that month. This results in a fatality ratio of 0.0005198 for UNPROFOR for June 1994. Each dot in the graphs represents the ratio for a single UN mission in a single month. For illustrative purposes, all graphs are truncated at a fatality ratio of 0.01.

30 The coefficients and p-values for these trend lines are as follows: coefficient of $-8.56e-07$ and p-value of 0.002 for the overall number of fatalities; coefficient of $-3.17e-07$ and p-value of 0.047 for fatalities due to accidents; coefficient of $-1.26e-07$ and p-value of 0.053 for fatalities due to illness; and coefficient of $-3.94e-07$ and p-value of 0.056 for fatalities due to malicious acts.

31 The global fatality ratio is the monthly aggregate of all UN fatalities across all UN missions divided by the monthly number of UN peacekeepers deployed to all UN missions. For example, in June 1994, 29,303 UN personnel served in all UN missions combined, and 20 of them died, resulting in a fatality ratio of 0.00068 for June 1994. Each dot in the figures represents the global ratio for one month. For illustrative purposes, all graphs are truncated at a fatality ratio of 0.01.

Figure 5.1 Overall global fatality ratios

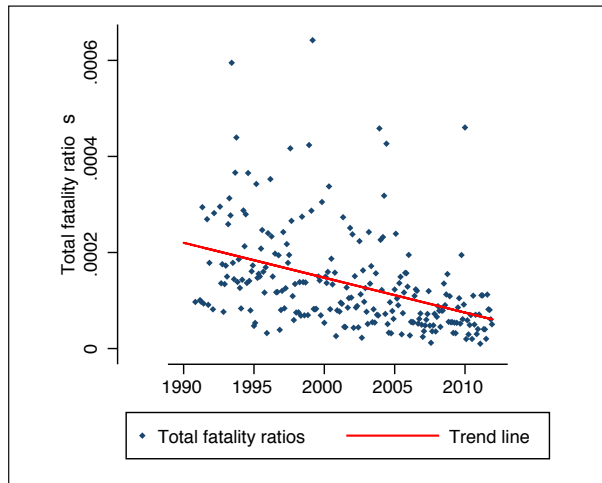


Figure 5.2 Global fatality ratios (accidents)

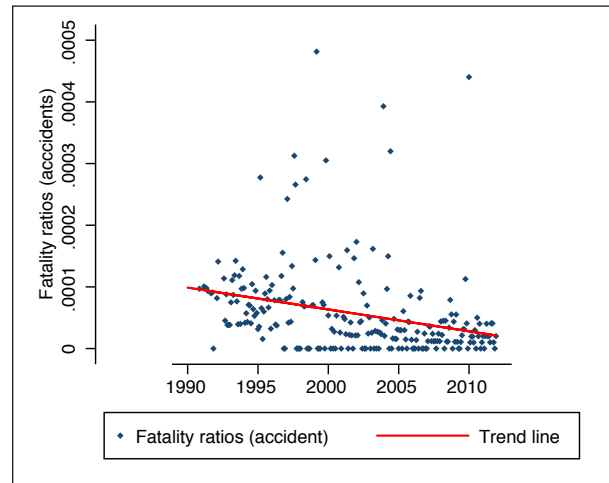


Figure 5.3 Global fatality ratios (illness)

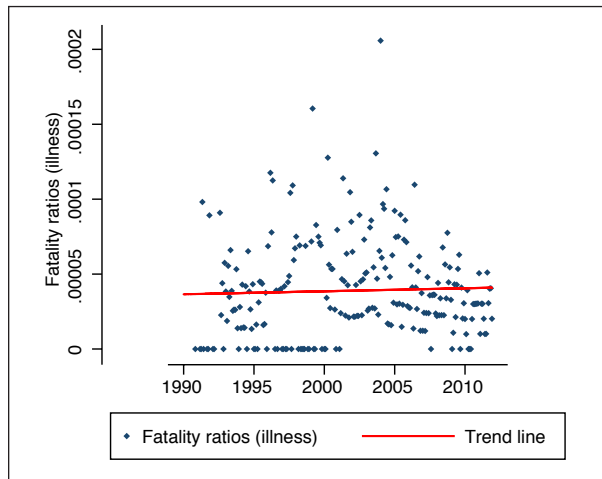
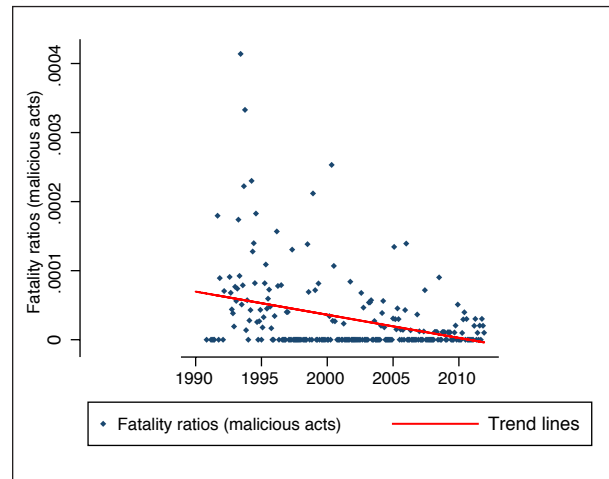


Figure 5.4 Global fatality ratios (malicious acts)



the same time, the ratio of UN fatalities caused by illness is following a slight upward trend, although this trend is again not statistically significant.³²

Conclusions

Debate continues over whether UN peacekeeping has become more dangerous. While existing quantitative studies maintain that UN fatalities have either remained stable or decreased in recent years, many peacekeeping practitioners believe that

the risks of UN peacekeeping have increased. Jair van der Lijn and Timo Smit argue that there are several possible explanations for this discrepancy. First, decision makers and the general public might be consumed by day-to-day business and thus lack a long-term memory or interest in viewing current UN fatality trends with a historical perspective. Second, in today's "Twitter era" casualties and incidents have become more visible. And third, UN fatalities might be used as a rhetorical device for lobbying efforts to increase troop reimbursement

32 The coefficients and p-values for these trend lines are as follows: coefficient of $-6.06e-07$ and a p-value of 0.000 for the overall number of fatalities; coefficient of $-2.95e-07$ and p-value of 0.000 for fatalities due to accidents; coefficient of $1.68e-08$ and a p-value of 0.578 for fatalities due to illness; and a coefficient of $-2.79e-07$ and a p-value of 0.000 for fatalities due to malicious acts.

rates, to increase peacekeeping funding, or to illustrate UN “ineffectiveness.”³³

This report complements these explanations by exploring aspects of peacekeeping fatalities that have been thus far overlooked. Most importantly, using a new dataset of monthly UN fatality counts, it calculates monthly UN fatality ratios at the national contingent, UN mission, and global level. This is a novelty. All previous studies have used annual data or annual averages to track UN fatality levels over time. As a result, this report constitutes the most rigorous and extensive quantitative study on this topic thus far.

The report finds that overall UN fatalities are not substantively on the rise. When controlling for deployment levels, total fatality ratios for the period 1990–2011 are declining, and the trend is statistically significant. What is especially remarkable is that this downward trend holds for all three levels: the national contingent, UN mission, and global levels. The only difference is the degree of decline, which is the starkest at the global level. When examining UN fatality numbers (and thus not controlling for deployment levels), UN fatalities are marginally increasing, but the trend is only statistically significant for the time period 1948–2015.

With regard to fatality causes, the data reveal that fatality numbers and ratios due to accidents and malicious acts follow a downward trajectory:³⁴ UN peacekeepers are increasingly less likely to die because of hostile action or accidents.

Nevertheless, the same cannot be said for illness-related fatality numbers and ratios. Indeed, UN fatality numbers due to illness are following an upward trajectory, which is strongly statistically significant. Fatality ratios due to illness are also increasing, but the trend is not statistically significant.

The findings of this report thus go against current analyses that UN peacekeepers face increasing risk due to changing peacekeeping mandates and more dangerous peacekeeping environments. Both of these changes would imply increases in UN fatalities due to malicious acts or accidents. Instead, it appears that illness-related fatalities constitute the most worrisome development. More research is necessary to understand why illness-related UN fatalities have increased in recent years and how to reverse this trend. Overall, however, the analysis suggests that health issues need to become a greater priority for UN peacekeeping missions.

Nevertheless, it would be wrong to assess UN peacekeeping risk by solely looking at UN fatality trends. To accurately measure such risk, data on injuries and/or attacks on UN peacekeepers also need to be analyzed. Due to significant medical advances over the past decades, more wounded personnel are able to survive. The UN should thus systematically collect data on peacekeeping injuries and attacks and make it publicly available so that more research can be done on this topic.

33 Van der Lijn and Smit, “Peacekeepers under Threat? Fatality Trends in UN Peace Operations,” pp. 7–8.

34 The only exception is accident related fatality numbers during 1948–2015 which are increasing but the increase is not statistically significant.

Annex 1: The UN Peacekeeping Fatality Dataset

This dataset covers the time period 1948–2015. Data were obtained directly from the UN Department of Peacekeeping Operations (DPKO). The data contained in this dataset are significantly more detailed than the data DPKO makes available on its website. Most importantly, they provide monthly UN fatalities by cause of fatality (accident, malicious act, illness, and other causes), the type of personnel deployed (troops, police, military observers, international civilian staff, local civilian staff, and other staff), and the nationality of the deceased.

The UN missions and agencies/offices for which fatality data have been registered by DPKO are as follows:

BONUCA, IPTF, MICAH, MINUGUA, MINURCA, MINURCAT, MINURSO, MINUSCA, MINUSMA, MINUSTAH, MIPONUH, MONUA, MONUC, MONUSCO, ONUB, ONUMOZ, ONUSAL, UN SECRETARIAT, UNAMA, UNAMET, UNAMI, UNAMID, UNAMIR, UNAMSIL, UNAVEM, UNCRO, UNDOF, UNFICYP, UNGCI, UNIFIL, UNIKOM, UNIOSIL, UNIPSIL, UNISFA, UNMA, UNMAO, UNMEE, UNMIBH, UNMIH, UNMIK, UNMIL, UNMIN, UNMIS, UNMISSET, UNMISS, UNMIT, UNMOGIP, UNMOT, UNOAU, UNOCI, UNOHCI, UNOMIG, UNOSOM, UNOWA, UNPF, UNPOS, UNPREDEP, UNPROFOR, UNPSG, UNSMA, UNSMIH, UNSMIS, UNTAC, UNTAES, UNTAET, UNTAG, and UNTSO.

DESCRIPTIVE STATISTICS

The unit of analysis of the dataset is contributor-mission-month. As an example, the dataset shows that Canada lost two troops serving in the UN mission in the former Yugoslavia (UNPROFOR) in June 1994. The causes of death were malicious acts and other causes. Recording these fatality numbers for every contributor-mission-month yields 2,492 observations. The values for total UN fatalities per contributor-mission-month range from 1 to 38 with a mean value of 1.4 and a standard deviation of 1.5. For UN fatalities due to accidents per contributor-mission-month, the values range from 0 to 20 with a mean value of 0.4 and a standard deviation of 0.5. For UN fatalities due to illness per contributor-mission-month, the values range from 0 to 3 with a mean value of 0.4 and a standard deviation of 0.5. And, finally, the values for UN fatalities due to malicious acts per contributor-mission-month range from 0 to 38 with a mean value of 0.3 and a standard deviation of 1.4.

CODING PROCESSES

The coding of these values was a straightforward process in the vast majority of cases. However, users of these data should be aware of some minor qualifiers. The data I obtained from DPKO registered one fatality in 2003 for the UN Operation in Somalia (UNOSOM), although UNOSOM officially ended in 1995. As a result, I assumed that a mistake was made and deleted that observation. In addition, when comparing the fatality data with Jacob Kathman's UN deployment data, a small number of discrepancies showed up.³⁵ For a small number of fatality data, no deployment data was available. In other words, the UN fatality data reported that a particular country had suffered a fatality, but the UN deployment data indicated that this same country had no personnel deployed in the field. As a result, to ensure overall consistency of the data, I only included in the fatality ratio analysis presented in this report fatality data for which deployment data were also available.

USING THE DATASET FOR FURTHER RESEARCH

This report focuses on analyzing UN fatality trends. Nevertheless, the dataset on UN fatalities this report introduces can also be used to seek answers to many other puzzles related to UN peacekeeping. First, the

³⁵ Kathman, "United Nations Peacekeeping Personnel Commitments, 1990–2011."

dataset allows for analyzing what type of dangers UN peacekeepers face. The received wisdom in the field suggests that UN mandates affect peacekeeping fatalities. In addition, scholars have suggested that host state characteristics (e.g., host state consent and impartiality), operational environment (e.g., geography), and local conflicts (e.g., advances of non-state armed groups vs. governments forces) might matter. This dataset allows researchers to study the impact of all of these factors on UN fatalities. Moreover, the dataset allows for assessing the influence of these factors on the four subcategories of UN fatalities: (1) accidents, (2) malicious acts, (3) illness, and (4) other causes.

Second, this dataset enables researchers to examine which type of personnel and which national contingents are particularly susceptible to what type of dangers. Different types of personnel and different national contingents might react differently to specific situations and risks in the conflict theater due to the equipment they use, the training they have undergone, or the area of the theater in which they operate. This dataset allows us to estimate how these factors affect UN fatality rates.

Third, this dataset also allows us to analyze when (i.e., in which deployment month) UN peacekeeping casualties most often occur. For example, one can imagine a study that examines whether specific periods (i.e., early or late in the UN deployment) increase peacekeeping fatality rates. Are peacekeepers more likely to die when they are still new to the conflict environment or as the result of deployment fatigue? Also, how do political developments in the host state (or even global developments) correlate with UN fatalities? Do changes in UN mandate increase fatality rates? Fourth, this dataset enables researchers to assess the political impact of UN fatalities. Do peacekeeping fatalities lead to changes in UN mandates? Do they lead to increases or decreases in the number of troops, police, or observers deployed? Do they shorten or lengthen the overall peacekeeping mission?

Finally, this dataset can help us understand how UN fatalities interact with other broader conflict processes. Do UN fatalities impact the course of local conflicts? Do they accelerate or slow down developments toward peace?

Annex 2: Fatalities by Contributing Country and UN Missions

FATALITIES BY CONTRIBUTING COUNTRY

Figure 6.1 Total fatalities by contributing country

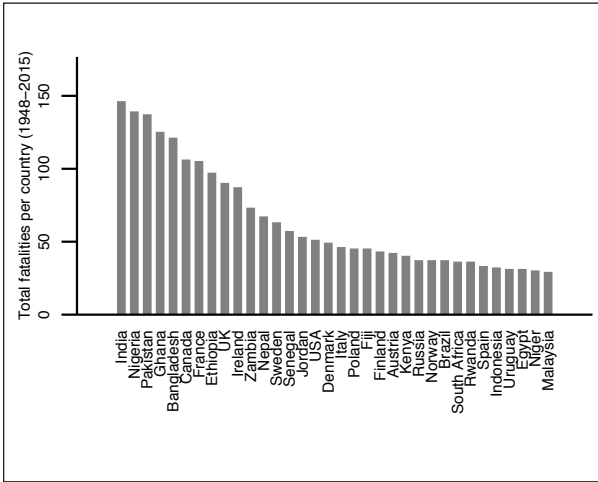


Figure 6.2 Fatalities by contributing country (accidents)

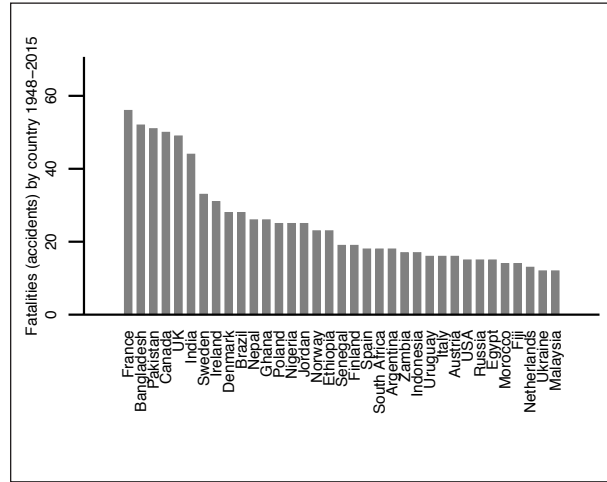


Figure 6.3 Fatalities by contributing country (illness)

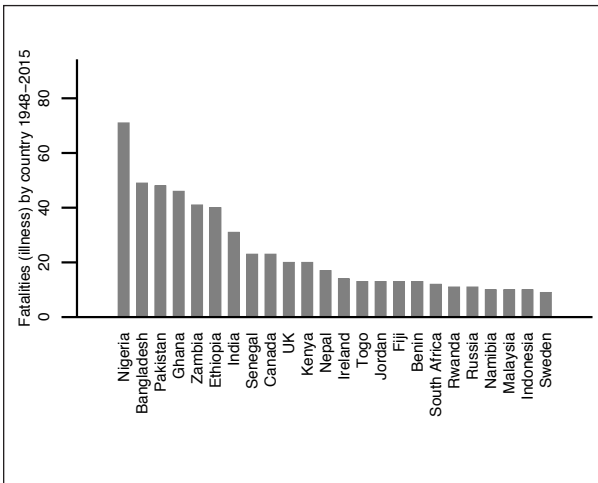


Figure 6.4 Fatalities by contributing country (malicious acts)

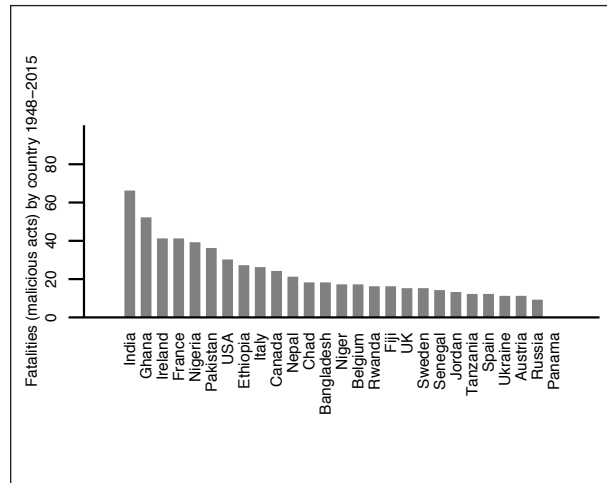


Figure 6.5 Most fatal months by peacekeeping contingent

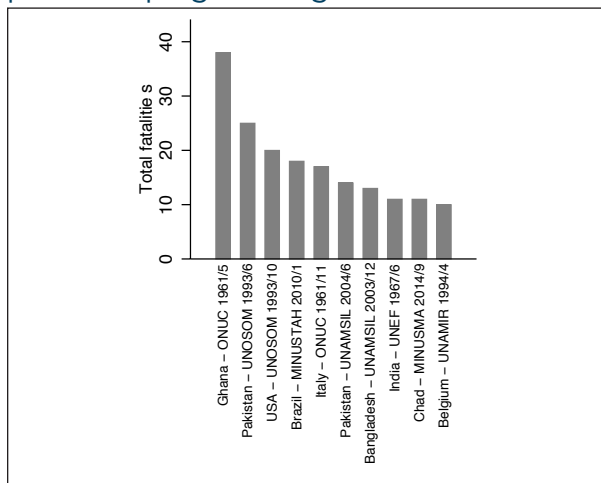


Figure 7.1 Overall fatality ratios by contributing country

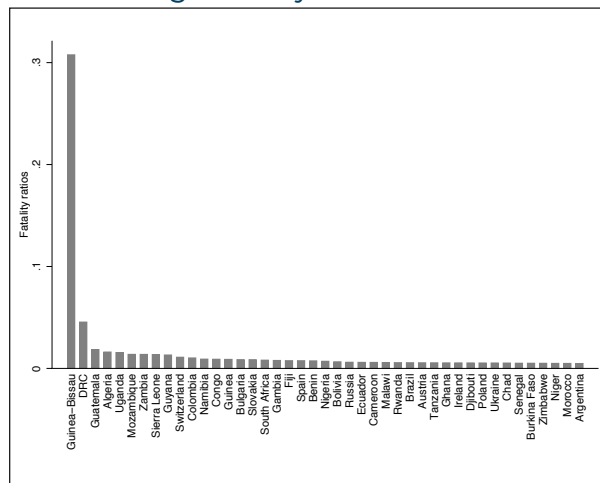


Figure 7.2 Fatality ratios by contributing country (accidents)

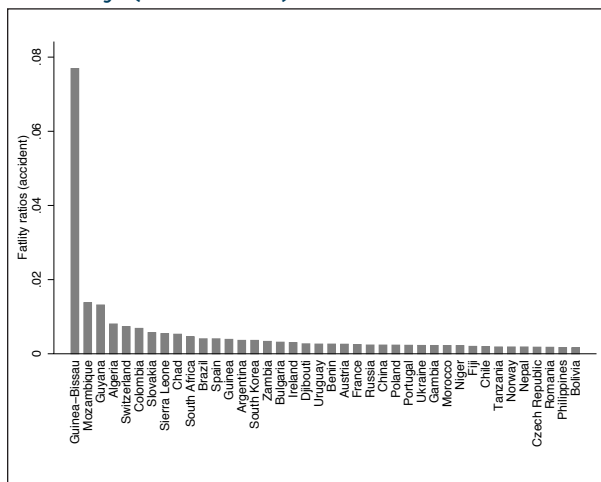


Figure 7.3 Fatality ratios by contributing country (illness)

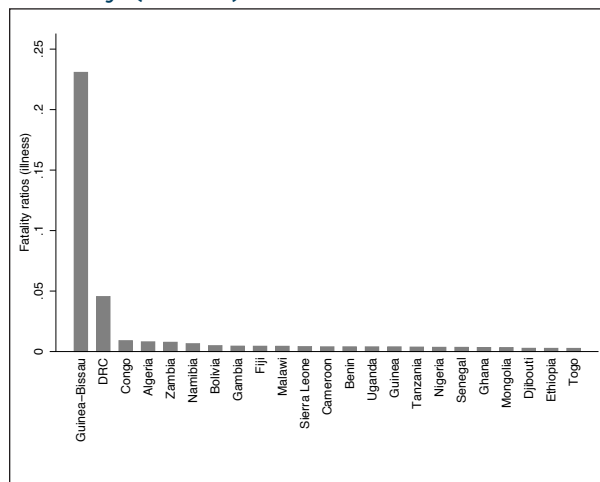
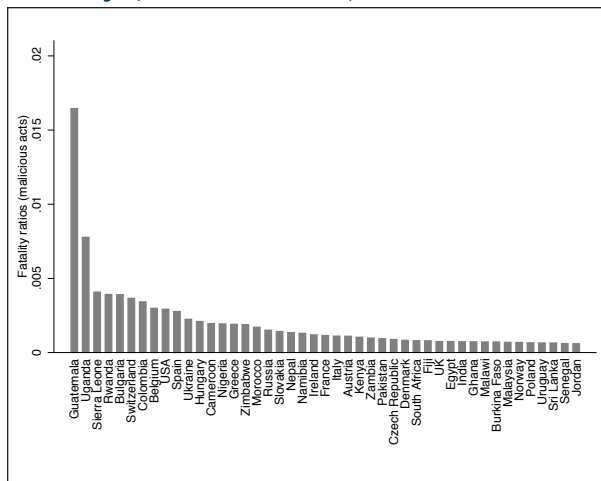


Figure 7.4 Fatality ratios by contributing country (malicious acts)



FATALITIES BY UN MISSION

Figure 8.1 Total fatalities by mission

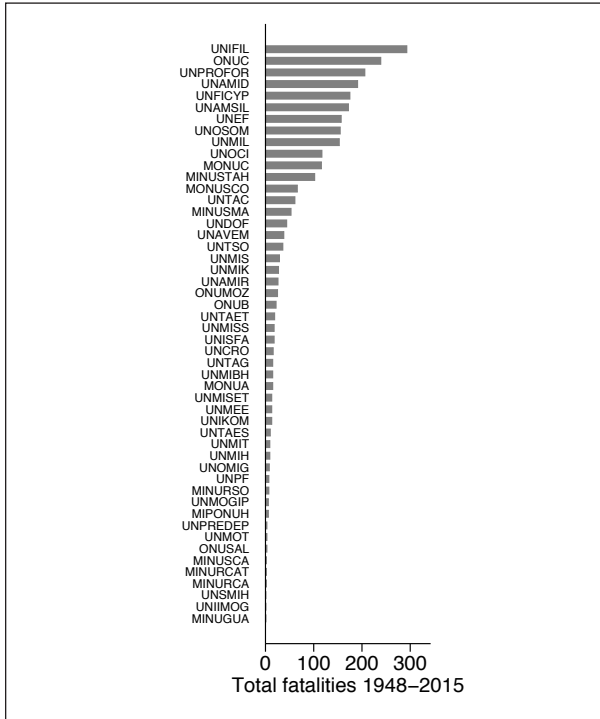


Figure 8.2 Fatalities by mission (accidents)

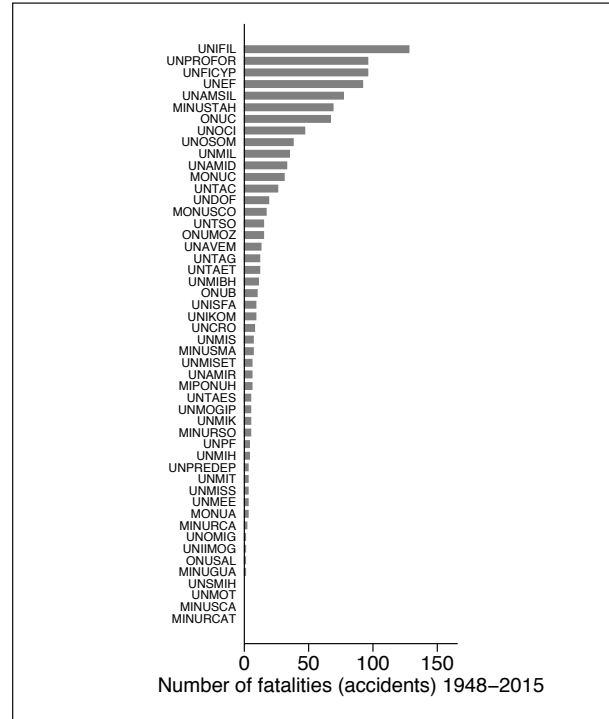


Figure 8.3 Fatalities by mission (illness)

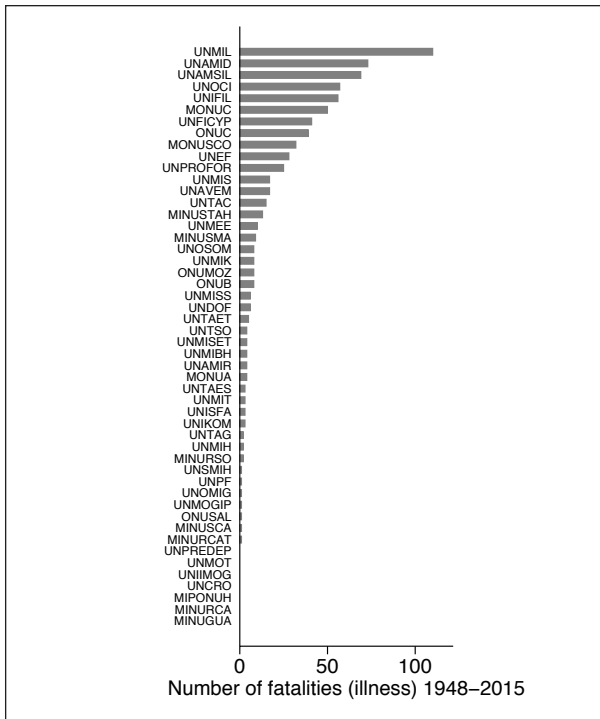


Figure 8.2 Fatalities by mission (malicious acts)

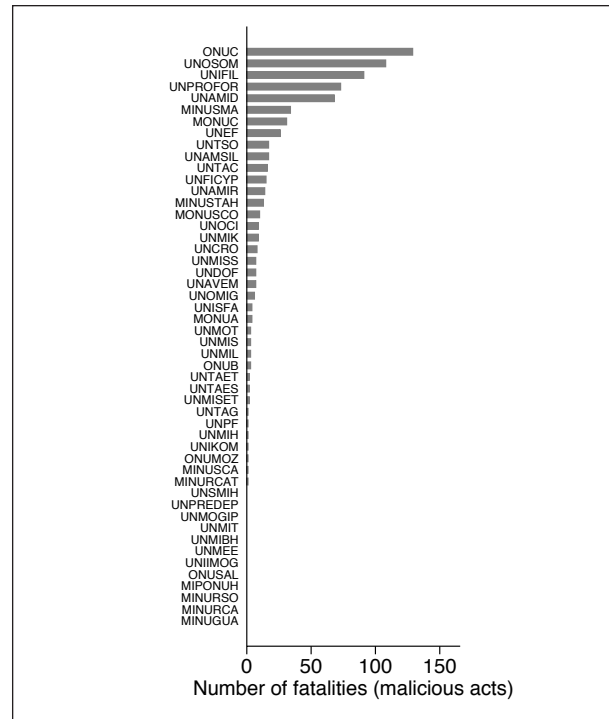


Figure 8.5 Most deadly months for individual missions

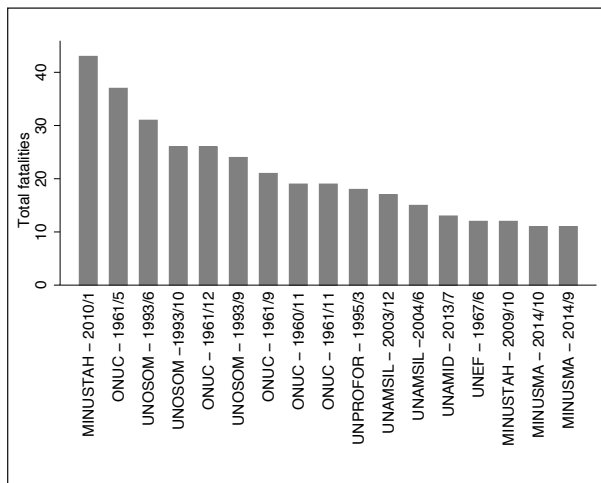


Figure 9.1 Missions by overall fatality ratios

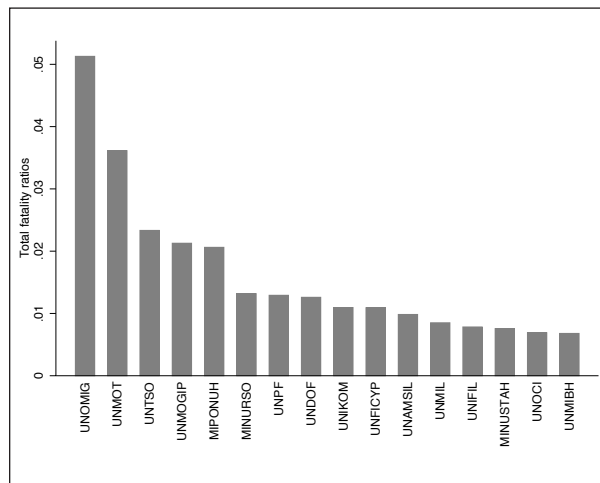


Figure 9.2 Missions by fatality ratios (accidents)

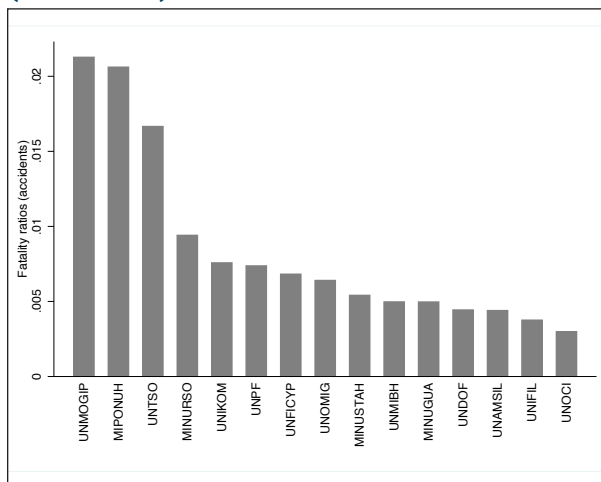


Figure 9.3 Missions by fatality ratios (illness)

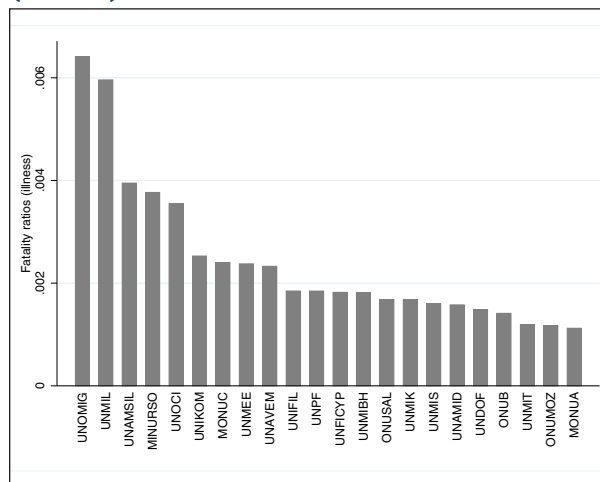
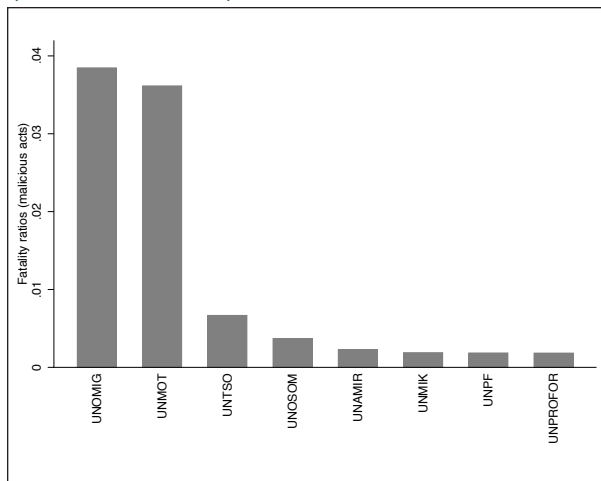
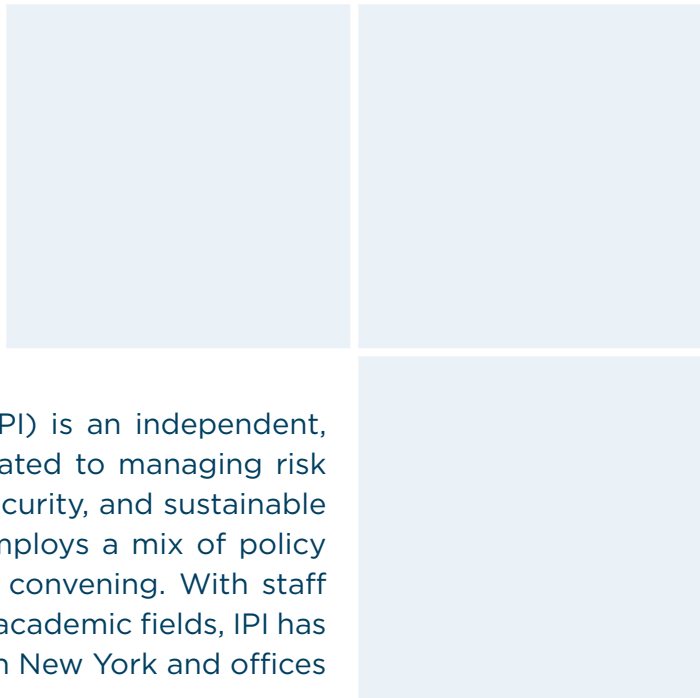


Figure 9.4 Missions by fatality ratios (malicious acts)





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