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Visions of the Future: A review of current thinking on the future of conflicts

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Index - List of Acronyms

AI - Artificial intelligence

AWS - Autonomous weapons systems

CEBMa - Center for Evidence-Based Management

ESCAW - United Nations Economic and Social Commission for Western Asia

EU - European Union

IHEID - The Graduate Institute of International and Development Studies, also known as the Geneva Graduate Institute

ISIS – Islamic States in Iraq and Syria

IoT- Internet of Things

LTS - Literature tracking sheet

MENA - Middle East and North Africa

NATO - North Atlantic Treaty Organization

NGO - Non-Governmental Organization

PRL - Preliminary Literature Review

PMC - Private Military Companies

REA - Rapid Evidence Assessment

UAE - United Arab Emirates

UK - United Kingdom

UN - United Nations

UNIDIR - United Nations Institute for Disarmament Research

US/USA - United States of America

SDG - Sustainable Development Goals

ToR - Terms of Reference

VPN - Virtual private network

Executive Summary

"Visions of the Future: A review of current thinking on the future of conflicts" presents a comprehensive analysis of key findings that shed light on the evolving landscape of conflict and security dynamics. Authored by Maisam Alahmed, Aya Barhdadi, Lia Gerber, and Iuliia Novikova as part of the Graduate Institute of International and Development Studies's Applied Research Project, and in partnership with United Nations Institute for Disarmament Research, this study delves into the diverse perspectives and emerging trends shaping the future of conflicts.

Key Findings:

- 1. The recurrence of authors among the literature are a rarity in contrast to the recurrence of institutions, however, the several instances of cross-referencing are highly dominated by the English language.
- 2. The majority of literature is predominantly authored by male authors, distributed equally across countries, while female authors have higher concentrations in certain locations than others.
- The geographical distribution of publications is impacted by publication hubs, which are typically capital cities and significant urban centers, with authors predominantly writing in the primary language of the country of publication, highlighting regional linguistic influences.
- 4. Accessibility, feasibility, and research tools impact the quality, quantity, and variety of search results on topics regarding the future of conflicts.
- 5. Government affiliated publications predominantly use policy recommendations and analytical methods, focusing on immediate to mid-term future scenarios, with a strong emphasis on national security and direct governmental concerns, often reflecting the institutional perspectives and priorities of their respective countries.
- 6. Independent publications exhibit greater methodological diversity, often look further into the future, and tend to have a more global perspective discussing broader implications and global repercussions of future conflicts beyond immediate national security concerns.
- 7. Distinct patterns of combinations and pairings of types of conflicts in the future emerge among the literature, giving further indications of their frameworks and inferences among other implications on their definitions.
- 8. Predictions of state actors involved in future conflicts are influenced by current implications of geopolitical influence and significance.
- 9. Predictions of non-state actors involved in future conflicts are influenced by their roles and specific geopolitical context and issues.
- 10. The extension of the concept of battlefield to now include outer space and cyberspace signifies the role of evolving technologies in future conflicts.

- 11. Predictions on areas of future conflicts are heavily influenced by current conflicts and areas of on-going crises.
- 12. Future conflicts are expected to arise from multiple, interconnected, but not necessarily interdependent, drivers; highlighting the complexity and variability of the different combinations leading to future conflicts.
- 13. The integration of new weapons and advanced technology in future conflicts is expected to level the playing field between different actors, significantly altering traditional concepts of military power and expanding conflict into new domains.

Implications for Policymakers: The findings presented in this report offer valuable insights for policymakers and practitioners in the field of conflict, peace, and security studies. Understanding the evolving nature and trends of conflicts, including the role of emerging technologies is crucial for developing effective strategies and policies to address future challenges. Policymakers can leverage the insights provided in this report to anticipate potential conflict scenarios, identify key actors, and prioritize resources for conflict prevention and resolution. In conclusion, "Visions of the Future" serves as a valuable source for academics, policymakers, and practitioners seeking to navigate the complex landscape of future conflicts.

Word count: 11,909¹

¹ From Introduction to Conclusion.

Introduction

The potential of future conflicts is currently being addressed on multiple occasions, such as the "Pact for the Future: Zero draft" and will be discussed at the upcoming "Summit of the Future in 2024" by the United Nations (UN). Therefore, to maintain international peace and security, interrelated global threats, drivers and trends regarding future conflicts must be assessed and understood. Considering increasing geopolitical tensions, risks of global pandemics, the impacts of climate change, and Artificial Intelligence (AI), including digital technologies, it is imperative to adopt a comprehensive approach to rigorously identify and address the unforeseen impacts and challenges on the international realm of peace and security. A re-visit to investigate the potential of emerging conflicts in the future is of significance. The United Nations Institute for Disarmament Research (UNIDIR) has initiated this research project to help its staff and the wider international community to navigate the large amount of existing literature on the future of conflicts, identify potential areas of convergence, and detect gaps.

The project's objectives entail: the mapping of existing literature on the future of conflicts from scholars in different parts of the world and in the six UN languages; conducting a structured comparative analysis of existing literature to identify areas of convergence and divergence of thoughts among scholars; and generating a consolidated overview of key findings. With that scope in mind, the project will attempt to answer the following questions:

- 1. How much and what type of literature exists on the future of conflicts?
- 2. How are leaders and academics worldwide thinking about the future of conflicts?
- 3. What are the main threats identified?
- 4. How much convergence and agreement exists?

Following this introduction, the report introduces the research method applied, followed by a description of the sample collected to answer the research questions. The analysis of the literature mapped in the Literature Tracking Sheet (LTS), is mainly split into two approaches: the analysis of the description of the sources (Authors, Locations of Publications, Accessibility, and Research Methods), followed by the analysis of the content of the sources (Types of Conflicts, Conflict and Locations, Threats and Drivers to Conflict, and New Weapons and Technologies). Following this structure, the report aims to identify key findings for each section that can be concluded from analyzing the data, answering the research questions, and giving concrete ideas about the existing literature on the future of conflicts. Finally, the report concludes with an overall perspective on the key findings, followed by the identification of research gaps and recommendations for future areas of research.

Methodology

This research project applied the Rapid Evidence Assessment (REA) method to collect and analyze the data, which "provides a balanced assessment of what is known (and not known) in the scientific literature about an intervention, problem or practical issue by using a systematic methodology to search and critically appraise empirical studies."² This method was selected as it allows a tailored research strategy to specific research questions, both a quantitative and qualitative evaluation of the relevant literature, and reliable conclusions based on the analysis of the data.3 Various institutions, most prominently government institutions, have effectively employed this method as a primary tool to enable research for assessing available studies within a given timeline.⁴ Furthermore, the REA research methodology provides systematic mapping with a more structured and thorough assessment of the evidence than general literature reviews, but is less exhaustive than systematic reviews. Instead, it provides an overview of the evidence density and quality on a specific issue, assists in programming decisions by presenting key topics, and identifies gaps for further research.⁵ The team utilized the document by the Center for Evidence-Based Management (CEBMa) Guideline for REAs for the methodology standards. Following the steps outlined in the guidelines, the team has adapted and altered them to fit the research process, objectives, and deliverables.⁶

November - December 2023

The first phase of this research included a Preliminary Literature Review (PLR)⁷ and a first outline of a mapping in the form of a LTS that listed all the sources selected along different indicators (e.g. date of publication, methodology used, mention of new weapons). Using the research questions detailed in the terms of reference (ToR), the team conducted a general search utilizing the Graduate Institute of International and Development Studies' (IHEID) online library database and general search engines (i.e. Google) to start exploring the types of literature and topics that could be found regarding the future of conflicts. Entering each source in the preliminary LTS, the research team was able to recognize emerging trends and categories of topics among the existing literature and conduct a PLR with findings and shortcomings.⁸

² (Barendes, Briner, and Rousseau 2017).

³ (C. Boyd et al. 2015).

⁴ (GSR members and EPPI Centre 2015).

⁵ (Department for International Development 2017).

⁶ See Annex I - REA Guidelines.

 $^{^{7}}$ (Alahmed et al. 2023).

⁸ Ibid.

February - March 2024

The second phase of the research entailed a revision of the PLR conclusions, followed by modifications of the next steps of the research and mapping of the existing literature. Simultaneously, the team continued gathering sources to add to the database, while conducting weekly meetings to go over the findings. These meetings focused on finding common trends and topics in the literature, and defining concepts, for further enhancement and targeted research. This was the most essential part of the research, which impacted the direction moving forward. Through this step, the categories in the LTS were expanded and structured based on recurring concepts that were defined within the parameters of this research.

The team also discussed and applied different research methods to overcome limitations of access, which were outlined in the conclusions of the PLR.9 One method was the utilization of a Virtual Private Network (VPN), to access sources limited to certain geographical locations, while another method focused on snowball outreach to access sources that have limited accessibility on other databases and are not subscribed to by the UN Library or IHEID.

The initial research parameters detailed in the ToR indicated that sources collected would be in the six UN languages (Arabic, Chinese, English, French, Russian, and Spanish). Four of those languages were already part of the team's skills. 10 The team reached out to student colleagues at IHEID to recruit support in exploring literature in Chinese and Spanish languages. This led to the discovery of an American database, Interpret: China, that is dedicated to translating Chinese sources into English. Unfortunately, not much progress was made with the Spanish language due to the lack of tools to access translated material and the time consumption of externalizing the research process.

While the main research and selection of sources heavily depended on topics and related keywords using open search engines (i.e. Google) and private institution libraries (i.e. IHEID) in the beginning, more targeted search was conducted later in the data collection phase. With the progression of the research and the increased findings of sources, selections were focused on satisfying different categories in the LTS. For example, search and selection of sources started taking into consideration the gender of the author(s), type of publication, drivers of a conflict, and location of publication. This was not done in a way to tip the balance towards certain points of analysis or to serve a specific conclusion, but rather to investigate emerging themes and recognize outliers where possible.

⁹ Ibid.

¹⁰ Arabic, English, French, and Russian.

April 2024

The third phase focused on targeted research and preliminary analysis. Each week, one team member would go over the entire LTS reviewing each source in all languages under all categories to begin making general points of analysis, while identifying shortcomings or lack of cohesions among concepts and indicators. This assisted the team to utilize the remaining time to be more selective of sources. The focus was on topics not covered equally, omitting those sufficiently covered, diversifying types of sources and the regions and institutions they were published in, and listing outliers that are still relevant to the overall analysis of this research. The end of this phase saw the finalization of the LTS, which is then used for the final phase.

May - June 2024

The fourth and final phase is the main analysis and production of this report. Using the collected sources in the database, the team used the different columns to select main points of analysis in cross reference to other categories to make generalized conclusions concerning the existing literature on the future of conflicts, the methods of publication, and the content discussed. These findings were presented to the partner and faculty, along with a preliminary report, where feedback was provided on both to incorporate in this final report.

Sampling

Following the initial deliberations during the first meeting with the partner in November 2023 and the conclusions of the PLR, the research sample selected was under the following parameters:¹¹

- UN languages: Arabic, Chinese, English, French, and Russian. 12
- Date of publication: 2018 and later. 13
- Type of source: As diverse as possible, giving preference to any other type (e.g. books, speeches, policy briefs etc.) over journal articles due to their abundance.
- Topics: Selecting topics that are uniquely found or not as heavily mentioned in comparison to others.
- Point of reference: Using author names, institutions, or publications mentioned in one source to conduct further research.
- Accessibility: Sources that have limited access were given priority in selection due to their rarity.
- Key words: A list agreed upon concepts that was developed and refined during the second phase.¹⁴

The research sample for this report included a total of 280 different sources to produce the mapping, conduct the analysis, and establish key findings on the future of conflicts. The following is a table indicating basic numbers and indicators that the sample covers, which were used through cross referencing with one another to produce the analysis in this report.

Sample Indicator ¹⁶	Number
Sources	280 sources in total
Authors	449 authors in total
	84 Females 312 Males

¹¹ These parameters were flexible to an extent to sometimes include sources beyond them for the purpose of the research and analysis where suitable. These are evident in the analysis part of the report.

¹² This selection was limited to the researcher's language skills and project's requirement of sources in the 6 UN languages. Spanish, which was not spoken by the team members, and German and Turkish, which were other languages spoken by some members, were thus omitted.

¹³ This was decided in the first phase during the discussion with the partner, and based on the expectation that literature before that date would not discuss the future in 2040 and later. However, this was flexible to incorporate dates before 2018 if relevant, and before 2040 if relevant. More can be seen through the analysis. ¹⁴ See Annex II - Literature Tracking Sheet Definitions.

¹⁵ See attached Literature Tracking Sheet for a full view of the mapping of the sources.

¹⁶ See Annex II - - Literature Tracking Sheet Definitions for definitions of categories/indicators.

Languages	53 Institutions 156 Solo authors 124 Group authors ¹⁷ Arabic: 70 Chinese: 29 English: 110 French: 26 Russian: 45
Year of Publication ¹⁸	2000: 2 2004: 1 2005: 1 2009: 1 2010: 1 2011: 3 2012: 1 2013: 5 2014: 7 2015: 9 2016: 3 2017: 12 2018: 16 2019: 35 2020: 36 2021: 29 2022: 49 2023: 52 2024: 17
Type of Publication	Article: 20 Book: 18 Book Chapter: 13 Book Review: 2 Chaillot Paper: 17 Conference Paper: 6 Journal Article: 91 National Security Strategy: 38 News Article: 7 Policy Brief: 4

^{1,}

 $^{^{17}\,}$ Institutions were counted as group authors.

¹⁸ The research filtered publication dates from 2018 onwards, but some articles with relevant information that were published before 2018 were included for analysis and relevance. Additionally, sometimes the publication date was expanded before 2018 in some searches to ensure that no relevant publications or sources were being omitted.

	Report: 27 Research Paper: 10 Speech: 2 Thesis: 1 Webpage: 23 White Paper: 1
Type of Publisher	207 different types of publishers: 19 Government institution: 40 International organization: 3 Journal: 22 Journalistic institution: 11 Magazine: 2 Military journal: 5 Non-Governmental Organization (NGO): 2 Political/Research institution: 20 Publisher (Books): 17 Publisher (Electronic): 2 Tech Company: 2 Think Tank: 21 University: 8 University/Journal: 52 Government Affiliated: 85 Not Government Affiliated: 122
Country of Publication	41 different countries of publication Algeria: 8 Armenia: 2 Australia: 2 Austria: 1 Bahrain: 1 Belarus: 2 Belgium: 5 China: 29 Croatia: 1 Denmark: 1 Egypt: 9 Estonia: 3 France: 42 Germany: 2 Ghana: 1 Hungary: 1

 19 This means that a number of sources are from the same type of publisher (see LTS for the list of publishers).

Iceland: 1 Iraq: 17 Israel: 1 Japan: 1 Jordan: 3 Kazakhstan: 1 Kuwait: 2 Lebanon: 7 Morocco: 1 The Netherlands: 7 New Zealand: 1 Pakistan: 1 Palestine: 4 Philippines: 1 Poland: 1 Oatar 8 Russia: 40 Saudi Arabia: 2 Serbia: 1 South Africa: 1 Sweden: 1 Switzerland: 10 Tunisia: 1 Turkey: 5 Ukraine: 2 United Arab Emirates (UAE): 3 United Kingdom (UK): 19 United States of America (USA): 27 Type of Conflict Armed conflict: 170 Asymmetric conflict: 53 Civil war: 10 Cyber conflict: 78 Democratic conflict: 2 Geopolitical conflict: 13 Hybrid war: 23 Hyper war: 1 Information war: 11 International tensions: 1 National security threats: 18 Nuclear conflict: 19 Occupation/Invasion: 16 Outer space conflict: 3 Political conflict: 10 Proxy war: 4

> Revolution: 4 Sanctions: 2

Technological conflict: 6 Territorial conflict: 21 Terrorism: 6 Trade war: 2 War of attrition: 1 **Current Conflict: 165** New Conflict: 115 Drivers/Threats Arms race: 61 Climate change: 52 Criminality: 15 Economy: 38 Election outcome: 3 Ethnicity and religion: 23 Food insecurity: 7 Fragmentation: 9 Genocide: 1 Geopolitical: 49 Globalization: 10 History: 7 Human frailty: 1 Ideologies: 41 Migration: 16 Military threat: 65 Misinformation: 31 Nationalism: 4 Nuclear deterrence: 15 Pandemic: 9 Polarization: 20 Political: 12 Poverty: 6 Power transformation: 56 Radicalization: 21 Resources: 31 Revolutions: 8 Social economic: 38 Technology: 74 Territory: 41 Terrorism: 29 Weak governance: 38

Table 1: Research Sample. Quantification of the research sample.

Authors

Key Findings

The recurrence of authors among the literature are a rarity in contrast to the recurrence of institutions, however, the several instances of cross-referencing are highly dominated by the English language.

The majority of literature is predominantly authored by male authors, distributed equally across countries, while female authors have higher concentrations in certain locations than others.

Across the sources, a constellation of familiar authors repeatedly emerges, adding depth and continuity to the research on the future of conflicts. Within the English discourse, the single authors Bruno Tertrais, Halvard Buhaug, James Johnson, Jean-Marie Guéhenno, Katariina Mustasilta, Nayef Al-Rodhan, and Thomas Greminger appeared multiple times. Whereas the reappearing collectives of authors were Can Kasapoğlu and Barış Kırdemir, and Cohen et al. Additionally, the British Ministry of Defence's Development, Concepts and Doctrine Centre and the White House Washington each appeared twice. For the Arabic language, two recurring authors were identified, Ali Ziyad Abdullah and Zahraa Abass Hadi. Russian, the prominent authors were Dmitry Stefanovich, and the collective of Barabanov et al. Alexander Chekov was the only author tracked in English and in Russian. Amidst the Francophone literature, Philippe Gros is the only recurring author. In Chinese, recurring authors were Tengfei Ge, as a solo author and in co-authorship with Xi Chen, and Xiying Zuo. The National Defense University was included twice in the database.

²⁰ (Al-Rodhan 2023); (Al-Rodhan et al. 2022); (Buhaug et al. 2016); (Buhaug 2015); (Greminger 2023); (Greminger, Guéhenno, and Moller 2023); (J. Johnson 2020); (J. Johnson 2019); (Mustasilta 2021); (Mustasilta 2020); (Tertrais 2020a); and (Tertrais 2020b).

²¹ (Kasapoğlu and Kırdemir 2019b); (Raphael S. Cohen, Han, and Rhoades 2020); (Raphaeal S. Cohen et al. 2020); (Couttenier and Soubeyran 2015); (Couttenier and Soubeyran 2011); and (Kasapoğlu and Kırdemir 2019a).

²² (Ministry of Defence's Development, Concepts and Doctrine Centre (DCDC) 2014); (Ministry of Defence's Development, Concepts and Doctrine Centre (DCDC) 2010); (The White House Washington 2023); and (The White House Washington 2022).

²³ (A. Z. Abdullah 2022); (Al Ali 2017); (Hadi and Hamed 2023); and (Hadi 2021).

²⁴ (Barabanov et al. 2023); (Barabanov et al. 2022); (Barabanov et al. 2020); (Chekov et al. 2023); (Stefanovich and Yermakov 2023); and (Stefanovich 2021).

²⁵ (Chekov et al. 2023) and (Chekov et al. 2023).

²⁶ (Delory and Gros 2021) and (Facon, Gros, and Tourret 2020).

²⁷ (Xi Chen and Tengfei 2022); (Ge 2021); (Zuo 2022b); and (Zuo 2022a).

²⁸ (National Defense University 2022b) and (National Defense University 2022a).

Some recurring authors and institutes of publication are cross-cutting, as for example Barbanov et al. only published in the Valdai Club and Jean-Marie Guéhenno including Nayef Al-Rodhan at the Geneva Science and Diplomacy Anticipator and Geneva Centre for Security Policy. ²⁹ However, in each language, clear recurrences and hubs of places of publication can be identified. Specifically, 39% of the 280 sources were published by institutions that appear multiple times within the database. Most of the replica institutions in Arabic are universities, ³⁰ while in English they are think tanks and political research institutions. ³¹ The recurring places in French are a journal and political research institution. ³² In the Russian language, university and military journals stand out as top publishers. ³³ The recurring Chinese institutions of publications are prominently university journals. ³⁴

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²⁹ (Al-Rodhan 2023); (Al-Rodhan et al. 2022); (Barabanov et al. 2023); (Barabanov et al. 2022); (Barabanov et al. 2023); (Chekov et al. 2023); and (Greminger 2023).

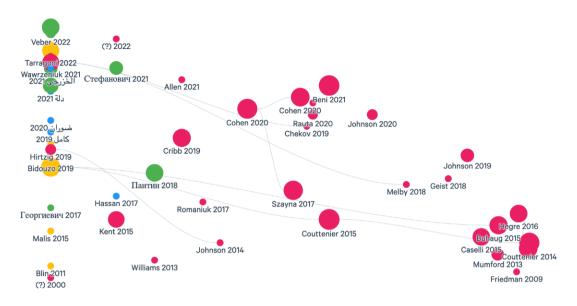
³⁰ (Al Nadawi 2022); (Al-Khodary 2022); (Aladba 2022); (Al Hamdani 2005); (Alrasool 2022); (Duran 2020); (Elkadaoui 2023); (Hadi and Hamed 2023); (Hussain 2020); (Kusar 2018); (Kazem and Yasien 2023); (Nouri and Ottwan 2015); (Salah 2019); and (Tetik 2020).

³¹ (Allen, Hodges, and Lindley-French 2021); (Al-Rodhan 2023); (Al-Rodhan et al. 2022); (Bajema 2020); (Barnes 2019); (Boswinkel 2020); (Chalk et al. 2015); (Raphael S. Cohen, Han, and Rhoades 2020); (Raphaeal S. Cohen et al. 2020); (Demus et al. 2022); (Fathollah-Nejad 2020); (Fiott 2020); (Fredrick et al. 2017); (Gady 2020); (Garcia 2023); (Gaub 2020); (Geist and Lohn 2018); (Göransson and Wawrzeniuk 2021); (Greminger 2023); (Greminger, Guéhenno, and Moller 2023); (Grice and Roaniuk 2017); (Guéhenno 2022); (Juozaitis 2023); (Kaushal 2019); (Keegan 2000); (Lacy 2024); (Maisel 2019); (Mantellassi and Rickli 2024); (Mcinnis 2020); (Ministry of Defence's Development, Concepts and Doctrine Centre (DCDC) 2014); (Munford 2013); (Mustasilta 2021); (Mustasilta 2020); (Oakley and Waxman 2022); (Pawlak 2020); (Pietz 2020); (Rauta 2020a); (Saari 2020a); (Secrieru 2020); (Stanley-Lockman 2020); (Stickings 2019); (Tertrais 2020a); (Tertrais 2020b); (Van Creveld 2000); (The White House Washington 2023); and (The White House Washington 2022).

³² (Alzamili and Sukar 2014); (Delory and Gros 2021); (Facon, Gros, and Tourret 2020); (Feindouno and Wagner 2020); (Gani and Sijelmassi 2019); (Henrotin 2021); (Hirtzig 2019); (Kahous 2014); (Laville 2018); (Malis 2015); (Menet 2024); and (Nöel 2018).

³³ (Adebayo et al. 2023); (Barabanov et al. 2023); (Barabanov et al. 2022); (Barabanov et al. 2020); (Baunov 2023); (Brychkov, Dorokhov, and Nikonorov 2019); (Burenok 2021); (Chekov et al. 2023); (Danilin 2020); (Deich 2018); (Frolov 2023); (Dynkin et al. 2017); (Gusarova, Kazennov, and Pankova 2019); (Karaganov 2018); (Kashin and Sushentsov 2023); (Khomkin 2020); (Kliueva et al. 2019); (Pantserov 2022); (Smagin 2024); (Stefanovich and Yermakov 2023); (Stefanovich 2021); (The Ministry of Foreign Affairs of the Russian Federation 2023); (The Ministry of Foreign Affairs of the Russian Federation 2021); and (Ulanov 2023).

³⁴ (Xi Chen and Tengfei 2022); (Dong and Han 2024); (Ge 2021); (Haolong and Huang 2023); (Jie 2024); (National Defense University 2022b); (R. Wu 2021); and (Zuo 2022b).



<u>Graph 1:</u> Cross-Referencing of Authors. Pink is English literature, yellow is French, green is Russian, and blue is Arabic. The arrangement on the x-axis indicates the citation count, the y-axis the year of publication, and the size of the bubbles indicate the reference count, including the cross-referencing by the lines.³⁵

The graph above displays 56 out of 280 pieces of literature,³⁶ and despite constraints of accessibility, it clearly indicates the influence of highly cited English literature in the right-hand corner, including Hegre et al., Buhaug et al., Caselli et al., and Friedman, all published before 2017.³⁷ Additionally, cross-referencing between different languages is indicated, such as between English and French, and English and Russian literature. For example, the French author Laville, who has a high reference count, cited two English authors, Buhaug et al. and Couttenier and Soubeyran, who then also cited the earlier work by Couttenier and Soubeyran.³⁸ Similarly, Chekov et al. was cited by Görnasson and Wawrzeniuk.³⁹ Not all citations and papers are indicated, thus, more connections between the sources can exist. For example, the book "The Future of War: A History" by Lawrence Freedman was mentioned by multiple English authors as a starting point for their research,⁴⁰ where the book itself cites the study by Hegre et al.⁴¹ Additionally, when looking at the bibliography of Arabic sources, it appears that the majority of the references that Arabic research explores are in the English language, including a book

³⁵ This mapping only includes 56 sources from the database, which was produced using the program Litmap. Litmap has access to only open metadata literature and the databases Crossref, Semantic Scholar, and Open Alex.

³⁶ Ibid.

³⁷ (Buhaug et al. 2016); (Buhaug 2015); (Caselli, Morelli, and Rohner 2015); (Friedman 2009); and (Hegre et al. 2013).

³⁸ (Buhaug 2015); (Couttenier and Soubeyran 2015); (Couttenier and Soubeyran 2011); and (Laville 2018).

³⁹ (Chekov et al. 2019) and (Göransson and Wawrzeniuk 2021).

⁴⁰ Who uses historical examples to predict the future.

^{41 (}Freedman 2017) and (Hegre et al. 2013).

review written in Arabic on an English authored book.⁴² One unique reference was an Arabic source by Hussain, which reviewed another Arabic book on "Cyber Weapons in Israel's Future Wars".⁴³

The following table shows the distribution of the gender and authorship categories against the five main languages used in the data collection process. All languages had more male than female authors, and more solo than group writing.⁴⁴

Authors in Languages

	Female	Male	Institution	Solo	Group
Arabic	13	61	9	51	19
Chinese	9	28	4	17	12
English	32	129	30	51	59
French	13	19	5	15	11
Russian	17	75	5	22	23
Total	84	312	53	156	124

Created with Datawrapper

<u>Table 2:</u> Gender and Authorship per Language. The gender of the authors and authorship style, split by the five main languages.

The 280 sources within the LTS that produced the analysis for this report had a total of 449 authors. 56% of these articles had a solo author, while the remaining 44% were group authored by two or more authors. 45 Of the 449 authors, 69% were male, 19% were female, and 12% were institutions. 54% of female authors either worked solely (33%) or with a group of all female authors (20%) in 33 sources, while the remaining 46% worked in co-authorship with male authors in 25 sources. In contrast, 81% of male authors worked solely (41%) or with a group of all male authors (40%) in 169 sources, while the remaining 18% worked in co-authorship with female authors in 25 sources. It is important

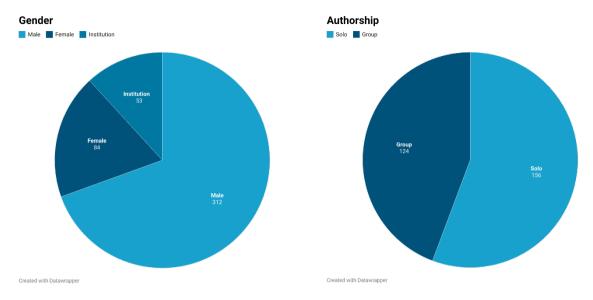
⁴² (Della 2022) and (Scharre 2018).

^{43 (}Haydar 2018) and (Hussain 2020).

⁴⁴ In the Russian language sources, author names are usually published with the abbreviation of the first name, followed by the surname. However, in Russian, the gender of the person is evident in the spelling of their surname, which is common knowledge among Russian speakers, but not generally known or distinguishable by non-speakers.

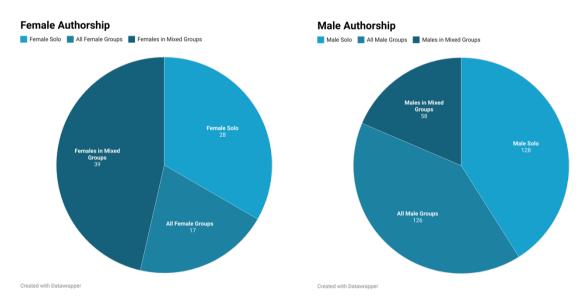
⁴⁵ Sources published under the name of an institution with no indication to specific authors were counted as group authorship.

to note, however, that 53 sources were published under the name of an institution, with no reference to a single author.



<u>Graph 2:</u> Gender Distribution. 53 sources were authored by institutions without indication of specific authors.

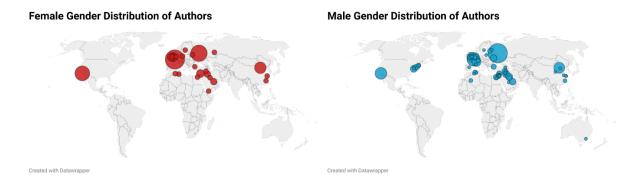
Graph 3: Authorship Distribution.



Graph 4: Female Authorship Distribution.

Graph 5: Male Authorship Distribution.

The location, however, where these sources were published shows a different pattern. While male authors seem to be almost equally represented in the different regions, this report has found that female authors are focused in certain locations more than others. For example, sources published in France, Russia, UK, and USA have 21, 16, 8, and 12 female authors respectively, while sources published in Egypt, Iraq, Qatar, Turkey, and the UAE have 1, 4, 2, 1, and 0 female authors respectively.



<u>Map 1:</u> Female and Male Distribution of Authors. Indicating the gender distribution of authors by cities of publication.

Box 1: Topics Covered by Different Genders

The gender distribution in the literature reveals a higher number of male authors compared to female authors. In this sense, distinct trends emerge when analyzing the different topics that authors address.

Male authors often focus on long-standing geopolitical conflicts, international relations, and historical perspectives of conflicts.⁴⁶ Their work tends to examine the strategic, military and political dimensions of warfare that involve state and non-state actors.

In contrast, female authors tend to concentrate more on evolving issues,⁴⁷ recent conflicts, and socio-political movements.⁴⁸ Human impacts also seen in the effects on populations,⁴⁹ human rights concerns, and the socio-economic implications of conflicts.⁵⁰ Additionally, the impact of international interventions is also a commonly addressed topic among female authors.⁵¹

Female authors have a notable concentration of works published between 2020 and 2023, suggesting a surge in recent contributions to the literature. Male authors, however, have a more dispersed range of publication years, indicating a steady contribution over a longer period.

⁴⁶ (Allen, Hodges, and Lindley-French 2021); (Blin 2011); (Friedman 2009); (Hamzatov and Popov 2018); (R. A. Johnson 2014); (Kaushal 2019); (Kashin and Sushentsov 2023); (Keegan 2000); (Maisel 2019); (Mumford 2013); (Najim 2021); (Rauta 2020a); and (Stefanovich and Yermakov 2023).

⁴⁷ (Della 2022); (Dong and Han 2024); (Hadi and Hamed 2023); (Haydar 2018); (Mustasilta 2020); and (Thare 2023).

⁴⁸ (Dostanko 2021).

⁴⁹ (Al-Moussawi 2023).

⁵⁰ (Buhaug et al. 2016).

⁵¹ (Boswinkel 2020) and (Shadi 2015).

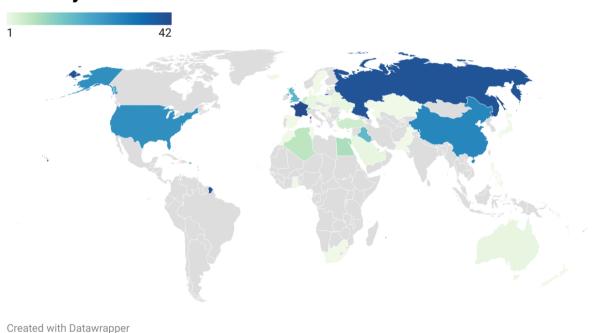
Locations of Publications

Key Finding

The geographical distribution of publications is impacted by publication hubs, which are typically capital cities and significant urban centers, with authors predominantly writing in the primary language of the country of publication, highlighting regional linguistic influences.

France is the top country with published sources within the research sample, namely 42. Thereby, Paris emerged as the French publication hub with one outlier in Aix-en-Provence. Notably, half of the 42 sources are in French and the others in English. Russia closely follows France in number of publications (40 sources). Moscow is the main city of publication with one outlier in St. Petersburg and one in Ekaterinburg, where the publishers were university institutions. In China, with 29 sources, the majority is gathered around Beijing.

Country of Publication



<u>Map 2:</u> Countries of Publication. The map indicates the distribution of literature by countries of publication, ranging from 1 to 42 publications in one place.

⁵³ (Mikhaylenko 2017) and (Yakovenko 2023).

⁵² (Bidouzo 2019).

Whereas in other places like in the UK and USA, the literature is less gathered around one location. In the Middle East and North Africa (MENA) region, the cities Baghdad and Mosul in Iraq can be identified as centers of publications in the Middle East, ⁵⁴ while in North Africa, the focus lies on Egypt and Algeria for Arabic sources. ⁵⁵ Generally, the cities of publication are capital cities, or cities of international importance. The countries mapped below indicate regional hubs of places of publication of literature on the future of conflict.

Cities of Publication



Created with Datawrapper

Map 3: Cities of Publication. The map indicates the distribution of literature by cities of publication.

The commonality of the language among countries is an important factor of consideration when looking at the distribution of sources across countries. For example, literature in Russian is majorly centered in Russia, while Arabic sources are spread among multiple countries in the MENA Region. Additionally, almost all authors have written in the main language of the country of publication, whereas no publications were detected in the secondary language(s) of the country of publication (e.g. French language sources in North African countries). A gap that must be highlighted is the lack of sources from the Latin American region and Spanish speaking countries. This does not mean no literature on the future of conflicts is published there, but instead is a research gap due

⁵⁴ (Ahmad and Salman 2017); (Al Hamdani 2005); (Albiati 2020); (Al-Moussawi 2023); (Al Nujo 2022); (Alrasool 2022); (Hasan and Jassim 2021); (Kazem and Yasien 2023); (Kusar 2018); (Najim 2021); (Salah 2019); (Thanoon 2019); and (Thare 2023).

⁵⁵ (Abdul'hai 2020); (Abdulsalam 2019);(Aldwuaik 2018); (Alhalabi 2023); (Beleloucha and Bouchenafa 2021); (Fahmi 2022); (Ghabayin and Bu Raghda 2022); (Ismail 2012); (Khamees 2022); and (Saidum 2020).

to language constraints. This, however, further proves the assumption that language and geographical locations of publications are strongly correlated.

Accessibility

Key Finding

Accessibility, feasibility, and research tools impact the quality, quantity, and variety of search results on topics regarding the future of conflict.

There is no question about the amount of material and sources available regarding the topic of future conflicts. However, questions of accessibility and research feasibility of these materials have more determining factors than their availability. A general search on public search engines (e.g. Google) in any of these languages provides a variety of results, starting with articles published through journalistic institutions, followed by government institutions, international organizations, research institutions, and think tanks. Almost all focus on topics regarding the nature of wars in the future and the different forms they will take, most notably were ones related to technological advancement of weapons and cyberspace as a new arena for warfare. Although these findings are general, some searches have shown that the regions or parties of concern differ in each language. For example, searches in the Arabic language would show articles predicting the future of ongoing concerns in the Middle East, while searches in English showed concerns about Russia as the aggressor in these future scenarios.

Scholarly research had more in-depth results with a variety of specialized topics, research methodologies, and different publishers. What assisted in getting a rich data collection was the ability to search through specific library databases, such as the IHEID and the UN Library, which have high subscriptions to resources in the English and French languages. However, this shows that results are limited to those who have access to educational or international institutions with semi-global access and subscriptions to publications in dominant languages. Additionally, external searches done on scholar search engines (such as Google Scholar or Cairn) or through limited access library databases outside of the network, still provided the same results in titles and bibliography, but without free access to the full text.

The same, however, cannot be said about sources searched in the Arabic and Russian languages, where the number of results were significantly less, and the relevance of the topics to the key words were inadequate. Additionally, the same titles appeared in search results in the Arabic language in multiple libraries, lacking variety.⁵⁶ An extra layer of research was required for the Arabic and Russian languages to find more sources.

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⁵⁶ (Al Hamdani 2005); (Al Nadawi 2022); (Hasan and Jassim 2021); and (Saidum 2020).

For the Arabic language, through the institutional network of the UN Library with other institutes around the world, a list of connections was provided to request assistance in searching their databases and getting full text access to related sources. The most notable connections were the UN Economic and Social Commission for Western Asia (ESCAW), and Hamad Bin Khalifa University. Following a quick search through the University's database, a request was sent to the focal point who would then download the desired sources and send them back in an email attachment. However, ESCAW requested the topic of interest, conducted the research on their end, and sent the articles as attachments through an email. Consequently, the sources shared by the University were richer in content and variation than those shared by ESCAW, which would have needed an extra layer of communication and middleman to access. Although not explicit, being connected through the UN Library might have facilitated the response time and positive outcome, whereas an assumption could be made that individual external outreach might have required financial fees.

Research in the Russian language took a different path in attempting to locate and access more sources. Although many of the sources are open access in Russia, access to them was restricted or prohibited in outside locations. However, the application of a VPN provided access to them. Additionally, it was discovered that many Russian academic journals and articles were accessible internationally, however a manual search had to be done through separate websites to locate them as they would not show up in immediate searches through public or private search engines and databases. These included the Peoples' Friendship University of Russia, the National Research University Higher Schools of Economics, Moscow State Institute of International Relations, and Russia's Academy of Sciences.

Research in the English language is the most prominent in search results and one of the top languages that sources are published in, globally. Authors who write in other languages are limited to the audiences that speak them, and with English being the most prominent second language spoken internationally, sources in English have a higher accessibility rate than any other. This assumption was confirmed when the team explored scholars who work in other languages, mainly French and Russian, 62 but also in

⁵⁷ (Abu Umra 2017); (Abdul'hai 2020); (Al Ajmi et al. 2019); (Al Nadawi 2022); (Al Sharif 2011); (Alrasool 2022); (Beleloucha and Bouchenafa 2021); (Duran 2020); (Hadi 2021); (Jari and Mustafa 2018); (Karbaj 2014); (Kusar 2018); (Najim 2021); (Nouri and Ottwan 2015); and (Shadi 2015).

⁵⁸ (Albiati 2020) and (Alhalabi 2023).

⁵⁹ (Burenok 2021); (Gerasimov 2019); (Khomkin 2020); and (Ulanov 2023).

⁶⁰ (Adebayo et al. 2023); (A. G. Abdullah, Gunawan, and Ratmono 2023); (Naumenko and Saltanov 2024); and (Pantserov 2022).

⁶¹ Ibid.

⁶² (Buhaug 2015); (Caselli, Morelli, and Rohner 2015); (Chekov et al. 2019); (Couttenier and Soubeyran 2015); (Couttenier and Soubeyran 2011); and (Kwiatkowski 2020).

Swedish and Lithuanian who came up in searches of Russian scholars publishing on security in the Baltic states. 63

Furthermore, some publishers and authors produced translated versions of their sources into English, or provided English keywords within the publication, thus allowing them to show up more often in search results. Multiple entries in the literature mapping of Russian language origin, and a few in the Arabic language, produce a translated version of their literature into English as well.⁶⁴ The Carnegie branch stands out as the Carnegie Endowment for International Peace published literature on the future of conflicts in Russian,⁶⁵ also available in English, while Carnegie Europe is just in English.⁶⁶ Al Jundi Journal, a monthly, print, electronic, cultural, and military journal published in Arabic by the Ministry of Defence of the UAE also has its entire publications produced in English, as well as the main language, Arabic.⁶⁷ Almost half of the Arabic sources in the database provide their abstract in both English and Arabic at the beginning of the publications or the webpages that provide access to them.⁶⁸

English in Arabic Sources

Includes English 44

Does not Include English 26

Created with Datawrapper

<u>Graph 3:</u> English in Arabic Sources. The graph indicates the distribution of Arabic language literature including English.

For Chinese sources, a native Cantonese speaker was contacted to provide a glimpse on the Chinese literature on the future of conflicts. Using related keywords, a search was

⁶³ (Göransson and Wawrzeniuk 2021); (Juozaitis 2023); and (Oxenstierna and Westerlund 2019).

⁶⁴ (Adebayo et al. 2023); (Abdul'hai 2020); (A. G. Abdullah, Gunawan, and Ratmono 2023); (Deich 2018); and (Pantserov 2022).

^{65 (}Baunov 2023) and (Smagin 2024).

^{66 (}Kasapoğlu and Kırdemir 2019a).

⁶⁷ (Al Jundi Journal 2024).

⁶⁸ (Abdul'hai 2020); (Abdulhai 2023); (J. Abdullah 2022); (K. K. A. A. S. Abdullah 2021); (Abdulmajid 2021); (Abdulsalam 2019); (Abu Umra 2017); (Ahmad and Salman 2017); (Aladba 2022); (Alhalabi 2023); (Alkhamees 2021); (Al-Khodary 2022); (Almaari 2023); (Al-Moussawi 2023); (Al Tayif 2023); (Alzamili and Sukar 2014); (Beleloucha and Bouchenafa 2021); (Communication & Info. Technology Regulatory Authority (CITRA) 2017); (Duran 2020); (Elkadaoui 2023); (Fahmi 2022); (Ghabayin and Bu Raghda 2022); (Hadi 2021); (Hadi and Hamed 2023); (Hasan and Jassim 2021); (Hassan 2017); (Jari and Mustafa 2018); (Kahous 2014); (Kazem and Yasien 2023); (Mizyani 2019); (Najim 2021); (National Council for Artificial Intelligence 2021); (National Cyber Security Center 2024); (National Cybersecurity Authority 2020); (Nuur Aldin 2020); (Rashed 2022); (Salah 2019); (Tetik 2020); (Thanoon 2019); (Thare 2023); (The Egyptian Supreme Cybersecurity Council (ESCC) 2024); and (The United Arab Emirates' Government 2019).

conducted using Aisixiang, a public database for scholarly search.⁶⁹ This led the team to discover *Interpret: China*, a project established by Centre for Strategic and International Studies, a think tank based in Washington, D.C., which provides noncommercial, educational access to translated articles, speeches, policy documents, and other important materials originally published in Chinese.⁷⁰ With this research tool, the team was able to access a large number of sources originally published in China in their main language, but utilized the English translation to interpret the content for the purpose of this repost.⁷¹

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⁶⁹ (Dong and Han 2024); (Long and Zhang 2024); and (J. Zhang 2024).

⁷⁰ (Interpret: China 2024).

⁷¹ (Cai 2022); (Bu, Cheng, and Lin 2023); (Xi Chen and Tengfei 2022); (Xiancai Chen 2018); (Dai 2023); (Feng 2023); (Ge 2021); (Guo 2022); (Haolong and Huang 2023); (He and Nishan 2021); (Huajun et al. 2023); (Huang 2022); (Institute of American Studies, CICIR 2023); (Jie 2024); (National Defense University 2022b); (National Defense University 2022a); (Ouyang and Yuxin 2023); (Renmin University Chongyang Institute for Financial Studies 2024); (Tang 2022); (Wang 2022); (H. Wu 2022); (R. Wu 2021); (Zhao 2023); (G. Zhang 2023); (Zuo 2022b); and (Zuo 2022a).

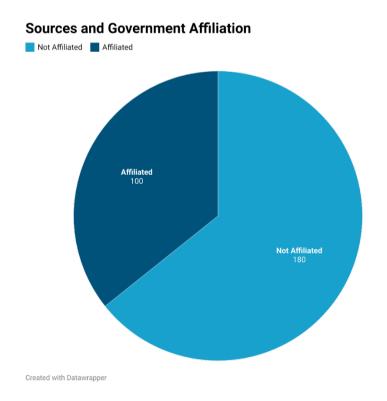
Research Methods

Key Findings

Government affiliated publications predominantly use policy recommendations and analytical methods, focusing on immediate to midterm future scenarios, with a strong emphasis on national security and direct governmental concerns, often reflecting the institutional perspectives and priorities of their respective countries.

Independent publications exhibit greater methodological diversity, often look further into the future, and tend to have a more global perspective; discussing broader implications and global repercussions of future conflicts beyond immediate national security concerns.

For this section, the sources were split into two main categories, those that are published by government institutions or government affiliated institutions, and those published by institutions independent from or not affiliated with a government. Within each subheading, a closer look is taken at how the two categories produce their sources regarding topics on future conflicts.



<u>Graph 6:</u> Government and Independent Source. Sources that are published under government or government affiliated institutions versus sources published by independent institutions.

Publication by Government and Government Affiliated Institutions

Sources by government institutions publish their reports under the name of an entire institution without a specific indication to an author or group of authors 49% of the time. In the instances where publications are produced under a specific author, it is found that the majority are males (83%). Most of the sources are produced directly under the name of a government institution (e.g. The Ministry of Defence) or under the name of an affiliated institution (e.g. a think tank). However, a number of these publications are published in periodic journals or magazines that are produced by publishers that are indirectly affiliated with a government institution. The clearest examples of that were indicated by the Chinese sources, where many articles were published under academic journals of public Chinese universities and academies, who under further investigation, are found managed by certain ministries or branches of the government, or even under a specific political party.⁷²

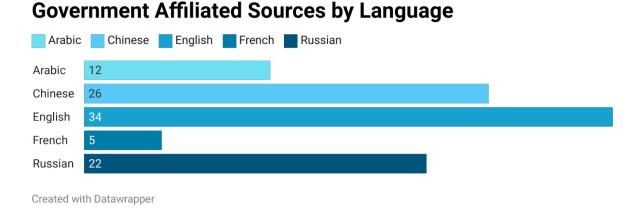
It is anticipated that these institutions publish their material in the main language of the country they are published in (i.e. USA publications are in English and UAE publications are in Arabic). However, what was unexpected is that almost all the Arabic language sources produced their material in the main language, in addition to English. 73 Tying this back to the findings in the previous section on Accessibility, it was presumed that authors tend to provide keywords, abstracts, or entire publications in English to increase their outreach overall, with English being the dominant second language globally. This was mostly expected from scholars or academic/research institutions that wanted to increase the outreach of their work. However, providing that within government sources this could imply their openness and overall transparency, especially in traditionally conservative governments. For example, Al Jundi Journal, was launched in October 1973, first with the aim of covering news and activities of the Ministry, and now with the objective of supporting the military, aerospace, and security sector in the UAE with specialized content that helps to achieve an accurate and realistic understanding of the UAE interests and national security. Therefore, it has its entire publications prominently produced in English.⁷⁴ With that being said, Arabic sources that are directly published by

⁷² (Xi Chen and Tengfei 2022); (Xiancai Chen 2018); (Bu, Cheng, and Lin 2023); (Cai 2022); (Dai 2023); (Feng 2023); (Ge 2021); (Guo 2022); (Haolong and Huang 2023); (He and Nishan 2021); (Huajun et al. 2023); (Huang 2022); (Institute of American Studies, CICIR 2023); (Jie 2024); (National Defense University 2022a); (National Defense University 2022b); (Ouyang and Yuxin 2023); (Renmin University Chongyang Institute for Financial Studies 2024); (Tang 2022); (Wang 2022); (H. Wu 2022); (R. Wu 2021); (G. Zhang 2023); (Zhao 2023); (Zuo 2022a); and (Zuo 2022b).

⁷³ (Al Jundi Journal 2024); (Communication & Info. Technology Regulatory Authority (CITRA) 2017); (National Council for Artificial Intelligence 2021); (National Cybersecurity Authority 2020); (National Cyber Security Center 2024); (Presidency of the Council of Ministers National Authority 2019); (The Egyptian Supreme Cybersecurity Council (ESCC) 2024); and (The United Arab Emirates' Government 2019).

⁷⁴ (Al Jundi Journal 2024).

government institutions are much less in quantity overall, in comparison to sources in the English language, which are more frequently produced.



<u>Graph 7:</u> Government Sources by Language. Sources that are published under government or government affiliated institutions in the five languages.

The most common type of research method used in these publications are policy recommendations, followed by overall analytical methods. These sources tend to cover topics that are directly concerning or involving the government of the country of publication. While some contain topics regarding national strategies on special topics such as AI or cyberspace, others discuss the impact of international global events on their own defense and national strategies. Some have used specific events (Russia's invasion of Ukraine being the most prominent) as either an anticipation of future aggressions or conflicts, or as a form or lessons learned of how they can either utilize the conflict to benefit or protect their own national strategies, or to improve and adopt strategies for their national defenses. Thus, research methods such as policy recommendations or qualitative analysis were the most suitable to produce material on specific government concerns regarding the future of conflicts.

Publications by Independent Institutions

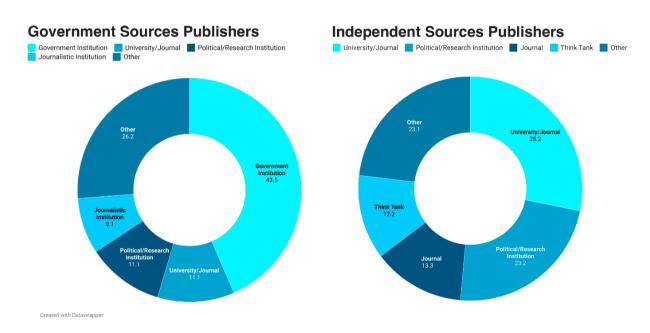
While government or government affiliated institutions seem to have a much more structured and assumed approach to their production, publications not affiliated with government are more diverse in their methods. While similar to previous conclusions that group authorship and male authors are more dominant, authors of independent publishers are specifically indicated for each publication, with only four sources published under the name of an institution.⁷⁵ The assumption here is that the content of

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⁷⁵ (Belfer Center for Science and International Affairs 2016); (Red Team 2022); (Ukrainian Institute for the Future 2024); and (United Nations 2019).

these works are independent thoughts and ideas of the authors, and sometimes are not even affiliated with the publishers themselves, as is the norm with independent writing and research. Authors in these types of publications are considered experts in their fields. Additionally, authors in this category can think beyond political limitations or interest and are thus more daring in the topics they propose. They additionally have the freedom to discuss topics beyond the political borders of the country of publishing. With that in mind, it is then evident why the most prominent type of publications in this section were journal articles (46%).

In this section, sources in the Chinese language are almost non-existent within the sample, except for three. This is probably due to a bias in the research sample, rather than a concrete conclusion. The first three sources in Chinese entered into the LTS were published independently. All the remaining Chinese sources were selected from the *Interpret: China* database, which has a specific selection criterion and perhaps some bias, as all sources that were selected based on the topic alone were all government affiliated sources as discussed above.



<u>Graph 8:</u> Types of Publishers. Two graphs that show the different types of publishers and their distribution between government and independent publishers.

⁷⁶ (Dong and Han 2024); (Long and Zhang 2024); and (J. Zhang 2024).

 $^{^{77}}$ They were selected by the support of a Chinese speaking colleague.

⁷⁸ (Cai 2022); (Xi Chen and Tengfei 2022); (Xiancai Chen 2018); (Bu, Cheng, and Lin 2023); (Dai 2023); (Feng 2023); (Ge 2021); (Guo 2022); (Haolong and Huang 2023); (He and Nishan 2021); (Huajun et al. 2023); (Huang 2022); (Institute of American Studies, CICIR 2023); (Jie 2024); (National Defense University 2022a); (National Defense University 2022b); (Ouyang and Yuxin 2023); (Renmin University Chongyang Institute for Financial Studies 2024); (Tang 2022); (Wang 2022); (H. Wu 2022); (R. Wu 2021); (G. Zhang 2023); (Zhao 2023); (Zuo 2022a); and (Zuo 2022b).

Overall, sources within this section vary in types of publishers, covering almost all categories from research institutions to universities, and the research methods they apply are just as diverse. A noteworthy research method among the sources not affiliated with government institutions was science fiction. In these sources, the authors use hypothetical scenarios to envision and analyze potential conflicts, their causes, dynamics, and consequences. This imaginative and speculative storytelling approach allows for the exploration of a wide range of possibilities and testing ideas in a controlled, narrative-driven environment. Almost all these sources, however, were in the English language and published by the same institution, the European Union (EU) Institute for Security Studies. Only one Arabic source in the LTS employed this method when analyzing a published novel to indicate the future repercussions of an already existing conflict.

All sources in the LTS comparing new versus current conflicts to discuss the future of conflicts is quite equally distributed, 82 while the time in the future that they explore differs greatly between government sources and independent sources. Government sources, which were mostly national security strategies (38%), looked at immediate future scenarios and contexts within the next few years and decades, but never surpassing the year 2050. However, these sources almost always had either an explicit or implicit mention of the years into the future they investigated. On the other hand, independent sources were more daring, including looking far into the future up to the year 2100.83 Yet, it is also important to note that out of the 180 sources by independent publishers, only 37% of them mention a specific time, year, or decade into the future. Overall, independent sources tend to cover general topics regarding the future of conflict, where their concerns range beyond the worries of national security or immediate threats to the state. These sources look at global effects, impacts, and repercussions of future conflicts, in both specific and global perspectives. Independent sources tend to have a rather global perspective on topics regarding the future of conflicts, while literature produced by government or government affiliated institutions is more focused on thinking in their respective languages, their national concerns, and international events impacting their stability and safety.

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⁷⁹ (Abdul'hai 2020); (Bajema 2020); (Boswinkel and Sweijs 2022); (Çelik 2022); (Fathollah-Nejad 2020); (Fiott 2020); (Gady 2020); (Hirtzig 2019); (Mcinnis 2020); (Monaghan 2020); (Mustasilta 2020); (Pawlak 2020); (Pietz 2020); (Red Team 2022); (Saari 2020a); (Secrieru 2020); (Stanley-Lockman 2020); (Tertais 2020a); (Tertais 2020b); and (Vandomme 2022).

⁸⁰ (Bajema 2020); (Boswinkel and Sweijs 2022); (Çelik 2022); (Fathollah-Nejad 2020); (Fiott 2020); (Gady 2020); (Hirtzig 2019); (Mcinnis 2020); (Monaghan 2020); (Mustasilta 2020); (Pawlak 2020); (Pietz 2020); (Red Team 2022); (Saari 2020a); (Secrieru 2020); (Stanley-Lockman 2020); (Tertais 2020a); (Tertais 2020b); and (Vandomme 2022).

^{81 (}Abdul'hai 2020).

⁸² See Annex II – Literature Tracking Sheet Definitions.

^{83 (}Buhaug et al. 2016).

Box 2: Religious Text Analysis

Within the Arabic sources, a noticeable research method was found using religious text analysis to predict the future of current conflicts. While conducting research, a good number of sources were found that used this methodology, four were selected from completely different publications to portray the commonality of this method. This research method was specifically used on conflicts regarding Palestine. However, the texts either referred to it as the conflict of "the Jews in Palestine", "the Zionist-Islamic conflict", or in multiple variations of similar terminology. No other sources used this method for any other type of conflict, nor was it utilized by any other language. These sources were published in academic settings, ones that also published other material in social sciences of a more familiar nature. This indicates that many scholars and researchers in the Arab/Islamic region may deem this type of religious text interpretation as an expert method to conduct analytical research and make predictions and conclusions. These texts see the conflicts within Palestine as an important part of Islamic history and future, with many indications within religious texts and occurrences (miracles) that can predict the future of this conflict through deep analysis and understanding of Islam. Some spoke about the future in the sense of inevitable events, while others use a form of religious recommendations for Muslims.⁸⁴

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⁸⁴ (Abu Umra 2017); (Alzamili and Sukar 2014); (Kahous 2014); and (Saidum 2020).

Types of Conflicts

Key Finding

Distinct patterns of combinations and pairings of types of conflicts in the future emerge among the literature, giving further indications of their frameworks and inferences among other implications on their definitions.

In the literature on the future of conflicts, multiple types of different conflicts can be identified. Armed conflict is the most frequent type throughout the literature with 168 mentions. In the conflict category within the LTS, each source was assigned not just one, but also multiple types of conflicts, indicating the interconnectedness of different types of conflicts. In this regard, armed conflict is frequently combined with either asymmetric conflict or cyber conflict. Notably, sources in the Arabic language emphasize concerns regarding territorial conflict and occupation/invasion in the Middle East and Arab Region. ⁸⁵ In total, these types of conflicts are indicated 30 and 15 times, respectively. ⁸⁶ This high occurrence of these types of conflicts highlight the continuity of traditional conflicts.

Hybrid and proxy war, occurring 26 and 25 times, respectively, emerge as prominent conflicts in the future. Hybrid war is exclusively observed in combination with other types of conflicts, which illustrates its nature, involving the integration of military, political, economic, and informational means to achieve strategic objectives.⁸⁷ Conversely, proxy

⁸⁵ (K. K. A. A. S. Abdullah 2021); (Abdulsalam 2019); (Al Nadawi 2022); (Al Sharif 2011); (Alzamili and Sukar 2014); (Ghabayin and Bu Raghda 2022); (Hadi 2021); (Hadi and Hamed 2023); (Hasan and Jassim 2021); (Kahous 2014); (Karbaj 2014); (Kazem and Yasien 2023); (Khamees 2022); (Najim 2021); (Nouri and Ottwan 2015); (Salah 2019); (Saidum 2020); and (Shunaikat 2018).

⁸⁶ (K. K. A. A. S. Abdullah 2021); (Abdulsalam 2019); (Abu Umra 2017); (Al Ajmi et al. 2019); (Al Nadawi 2022); (Al-Rodhan 2023); (Al Sharif 2011); (Alzamili and Sukar 2014); (Anghel 2023); (Belfer Center for Science and International Affairs 2016); (Cordesman 2019); (Eldadi and Meridor 2019); (Xi Chen and Tengfei 2022); (Ghabayin and Bu Raghda 2022); (Gomez 2023); (Hadi 2021); (Hasan and Jassim 2021); (Huang 2022); (Kahous 2014); (Karbaj 2014); (Kazem and Yasien 2023); (Khamees 2022); (Khomkin 2020); (Korenev 2022); (Kupriyanov 2019); (Manatū Kaupapa Waonga New Zealand Ministry of Defence 2023); (Menet 2024); (Najim 2021); (National Security Division Pakistan 2022); (Naumenko and Saltanov 2024); (Nouri and Ottwan 2015); (Ouyang and Yuxin 2023); (Ukrainian Institute for the Future 2024); (Ulanov 2023); (Saidum 2020); (Salah 2019); (Shunaikat 2018); (Strategic Planning Department 2021); (The Government of the Republic of Armenia 2020); (The Republic of Croatia 2017); (Wang 2022); and (Zuo 2022a).

⁸⁷ (Allen, Hodges, and Lindley-French 2021); (Arduino 2023); (Bartosh 2018); (Chekov et al. 2019); (Council of the European Union 2022); (Cribb 2019); (Egmont Institute 2022); (Freedman 2017a); (Göransson and Wawrzeniuk 2021); (Government of the Netherlands 2023); (Grice and Roaniuk 2017); (Hamzatov and Popov 2018); (Iskandarov 2019); (Jie 2024); (Juozaitis 2023); (Kaitse Ministeerium 2023); (Kasapoğlu and Kırdemir 2019a); (Lacy 2024); (Ministry of Defence 2022); (Ministry of Defence's Development, Concepts and Doctrine Centre (DCDC) 2010); (National Security Division Pakistan 2022); (Oakley and Waxman 2022); (Ostankov 2019); (Republic of France 2022); (The Government of the Republic of Armenia 2020); (The Republic of Croatia 2017); (The Security Policy Analysis Group 2022); and (Zhang 2023).

war denotes conflicts fought indirectly, where major powers support smaller actors to fulfill strategic goals. Proxy war emerged both as a standalone conflict and within combinations. The prediction of combinations includes proxy war with armed conflict, asymmetric warfare, nuclear conflict, cyber conflict, and information war, possibly indicating the involvement of diverse actors in prolonged, low intensity conflicts. Perrorism always occurred in combination with different drivers, commonly with armed conflict, which explains the lack of security during the pandemic leading to further terrorist acts. Three out of the four times terrorism was combined with cyber conflict, suggesting that terrorist activities extend into cyberspace.

Nuclear conflict is predominantly foreseen as a standalone conflict, yet it also occurs in combinations with armed conflict, proxy war, cyber conflict, civil war, and revolution across numerous sources in various languages. The principal involved actors anticipated in a nuclear conflict include China, Russia, the USA, with less frequent mentions of Iran, Iraq, Israel, North Atlantic Treaty Organization (NATO), and Ukraine. Remarkably, in government affiliated sources published in China, France, Russia, and the USA, the occurrence of a nuclear conflict was intertwined with armed, asymmetric, and geopolitical conflicts. The conflicts are coupled with the drivers of climate change, geopolitics, ideologies, and weak governance on a global scale.

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⁸⁸ (A. Z. Abdullah 2022); (Ahmad and Salman 2017); (Al Ali 2017); (Al Nujo 2022); (Al-Moussawi 2023); (Australian Government Defence 2024); (Barnes 2019); (Beleloucha and Bouchenafa 2021); (Göransson and Wawrzeniuk 2021); (Grice and Roaniuk 2017); (Hamzatov and Popov 2018); (Institute of American Studies, CICIR 2023); (Kaushal 2019); (Lacy 2024); (Maisel 2019); (Ministry of Defence 2022); (Mumford 2013); (Rauta 2020); (Sanajlah 2022); (Smagin 2024); (The Government of the Republic of Armenia 2020); (Zhao 2023); and (Zuo 2022a).

⁸⁹ (Al-Moussawi 2023); (Australian Government Defence 2024); (Göransson and Wawrzeniuk 2021); (Grice and Roaniuk 2017); (Lacy 2024); (Kaushal 2019); (Maisel 2019); (Ministry of Defence 2022); (Mumford 2013) (Sanajlah 2022); (The Government of the Republic of Armenia 2020); (Zhao 2023); and (Zuo 2022a).

⁹⁰ (Tetik 2020).

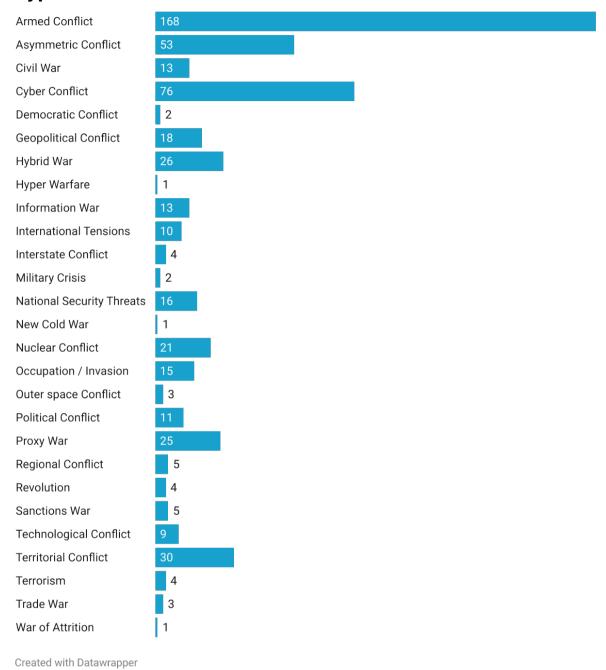
⁹¹ (The Egyptian Supreme Cybersecurity Council (ESCC) 2024); (Egmont Institute 2022); and (Lacy 2024).

⁹² (Abdul'hai 2020); (Almaari 2023); (Al-Moussawi 2023); (Bricker, Saxton, and Tully 2023); (Coates 2016); (Institute of American Studies, CICIR 2023); (Johnson 2020); (Kashin and Sushentsov 2023); (Kent 2015); (Leben 2024); (Tertrais 2020a)

⁹³ (Abdul'hai 2020); (Almaari 2023); (Al-Moussawi 2023); (Barabanov et al. 2020); (Bricker, Saxton, and Tully 2023); (Institute of American Studies, CICIR 2023); (Johnson 2019); (Kashin and Sushentsov 2023); (Leben 2024); (Eldadi and Meridor 2019); (Mikhaylenko 2017); (Office of the Director of National Intelligence 2021); (Republic of France 2022); (Stefanovich 2021); (Tertrais 2020b); and (The Ministry of Foreign Affairs of the Russian Federation 2023).

⁹⁴ (Institute of American Studies, CICIR 2023); (Office of the Director of National Intelligence 2021); (Republic of France 2022); and (The Ministry of Foreign Affairs of the Russian Federation 2023).

Types of Conflicts



<u>Graph 9:</u> Types of Conflicts. The total number of occurrences of types of conflicts within the literature.

Out of the 280 sources, 112 indicated a single conflict, whereas the remaining 168 mentioned two or more conflicts in combination. The most frequent combination was of armed and asymmetric conflicts, found 18 times. 95 This combination indicates the

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⁹⁵ (Al Hamdani 2005a); (Al-Rodhan et al. 2022); (Bowsinkel 2020); (Boswinkel and Sweijs 2022); (Raphael S. Cohen et al. 2020); (Coker 2004); (De Guglielmo Weber, Tasse, and Thienpont 2023); (Fiott 2020); (Gaub 2020); (Government of Hungary 2021); (Greminger, Guéhenno, and Moller 2023); (Guéhenno 2022); (Johnson

involvement of actors with unequal military capabilities, such as state and non-state actors. The combination of armed and cyber conflicts occurred 19 times, ⁹⁶ and 8 times when including asymmetric conflict, ⁹⁷ suggesting that the battlefield for each actor extends into cyberspace. Therefore, state and non-state actors must be capable of engaging in both traditional armed conflict and cyber warfare. In cases where armed, cyber, and asymmetric conflicts were not mentioned, only a few recurring combinations were detected, underscoring the significance of these three types of conflicts in the future.

Some further recurring patterns were geopolitical conflict and international tensions, both indicating arms race and geopolitics as drivers. This highlights the global implications diplomacy and opposition have in a multipolar space. Whereas national security threats and cyber conflict occurred twice in combination with each other. The increased focus of states on cyber security and technology perceived as a threat is further highlighted with governments publishing national cyber security strategies.

The combination of territorial conflict with outer space and technological conflicts, 102 as well as trade war and sanctions, 103 reflect a multifaceted approach to the future landscape of conflicts. Generally, the combination with outer space signifies the potential expansion of battleground into new domains. This finding is highlighted by Ulanov, who focused on activities around the moon and indicated the construction of military space bases in preparation for warfare in space. 104 Conversely, the combination of trade war and sanctions, as highlighted by Danilin, underscores the utilization of non-military avenues to exert influence, with a particular emphasis on economic and technological competition between China and the US. 105 This perspective is reinforced by Yakovenko's findings, which depict instances of sanctions between China, Russia,

^{2019); (}Mantellassi and Rickli 2024); (Ministry of Defence's Development, Concepts and Doctrine Centre (DCDC) 2014); (Mustasilta 2021); (NATO 2023); (Schimmel 2021); and (Waslekar 2014).

⁹⁶ (Al Hamdani 2005b); (Berthier 2023); (Boyd, Gady, and Nouwens 2023); (Burenok 2021); (Çelik 2022); (David 2018); (Federal Intelligence Service 2022); (Gady 2020); (Gani and Sijelmassi 2019); (Gusarova, Kazennov, and Pankova 2019); (Haydar 2018); (Hirtzig 2019); (Hussain 2020); (Johnson 2019); (Konikowski et al. 2021); (Nöel 2018); (United Nations 2019); and (Vandomme 2022).

⁹⁷(Arduino 2023); (Raphaeal S. Cohen et al. 2020); (Freedman 2017a); (Frolov 2023); (Monaghan 2020); (Mustasilta 2020); (Pawlak 2020); and (The Federal Government 2023).

 $^{^{98}}$ (He and Nishan 2021) and (Tang 2022).

⁹⁹ (He and Nishan 2021).

 $^{^{100}}$ (Federal Chancellery of the Republic of Austria 2013) and (The Republic of Croatia 2017).

¹⁰¹ (Communication & Info. Technology Regulatory Authority (CITRA) 2017); (Ministry of Communication Technologies and Digital Economy of Tunisia 2019); (Ministry of Higher Education, Science and Innovation 2022); (National Cybersecurity Authority 2020); (National Cyber Security Center 2024); (Presidency of the Council of Ministers National Authority 2019); (Royaume du Maroc - Administration de la Défense Nationale 2013); (The Egyptian Supreme Cybersecurity Council (ESCC) 2024); (The United Arab Emirates' Government 2019); and (The White House Washington 2023).

¹⁰² (Ulanov 2023).

 $^{^{103}}$ (Danilin 2020) and (Yakovenko 2023).

¹⁰⁴ (Ulanov 2023).

¹⁰⁵ (Danilin 2020).

and the US, alongside armed conflict in regions such as Africa, the Middle East, North-East Asia, and Ukraine. 106

Another typology signifying non-military confrontations is information war, which is consistently referenced across the different languages. The combination of information, hybrid, and political wars underscores the cruciality of information control as a component of conflict. This, alongside hybrid war, highlights the fusion of conventional and unconventional tactics, and the potency of political manipulation and influence. Consequently, actors will possess the capacity to effectively manage and engage in multiple fronts simultaneously, thereby addressing diverse challenges concurrently. An article authored by Aladba titled "Forecasting the Impact of Technological Development on Modern Wars and the Military Power of Small States" explores how advancements in technology within the realm of arms and military capability have reshaped the conventional notion of warfare. Traditionally, a state's military power was measured based on the number of soldiers, ammunition, and military arsenal, making them unmatched against smaller states and non-state actors. However, Aladba argues that the transformation to modern war concepts that depend on technology will level the playing field for all types of actors in future conflicts. 109

Conflicts in Government vs. Independent Sources

The conflict type, military crisis, is identified only in two Chinese government affiliated sources, where it is combined with armed conflict. These sources are chapters from a revised textbook by the PLA's National Defence University, which serves as an authoritative study reference for senior PLA officers on military doctrine and strategy. The focus of the military crisis is on China's military and its approach to handling and preventing crises, in addition to developing its strategic deterrence, which is a common topic of concern among the Chinese sources.

The typology of new cold war is identified exclusively in a Russian source. The term Cold War commonly references the history of hostility between the Soviet and Western countries. According to the author, this new type of conflict describes a contemporary world with changing or non-existent rules, a focus on nuclear proliferation, and rising concern about the effectiveness of global restrictions on military technologies of mass

¹⁰⁶ (Yakovenko 2023).

¹⁰⁷ (Alexandrov et al. 2015); (Derbin, Gareev, and Turko 2019); (Dostanko 2021); (Egmont Institute 2022); (Göransson and Wawrzeniuk 2021); (Iskandarov 2019); (Renmin University Chongyang Institute for Financial Studies 2024); (Sanajlah 2022); (The Ministry of Foreign Affairs of the Russian Federation 2021); and (Zhao 2023).

¹⁰⁸ (Iskandarov 2019).

¹⁰⁹ (Aladba 2022).

 $^{^{110}}$ (National Defense University 2022a) and (National Defense University 2022b).

¹¹¹ Ibid

destruction. This type of conflict of a new cold war is combined with nuclear conflict and underscores the emergence of a new nuclear world. It suggests an increasing prominence of nuclear arms, focusing on relations between Russia and the US, thus reflecting the renewed tensions reminiscent of past geopolitical rivalries.¹¹²

National security threats are uniquely indicated as a type of conflict in government affiliated sources, specifically in national security strategies. This type of conflict does not directly indicate confrontation but refers to the perception of certain drivers as threats to state security. In numbers, national security threats occur six times as a solo conflict and nine times in combinations. 113 National security threats are combined with armed conflict, cyber conflict, geopolitical conflict, information war, and territorial conflict. 114 To give some examples, national threats encompass issues such as climate change, criminality, food insecurity, migration, technology, and terrorism. This type of conflict indicates the perception of multiple drivers as threats but not yet as a conflict. However, there is the potential for these perceived threats to evolve into actual conflicts as government perceptions shift. Additionally, as these sources are authored by governments, there is a tendency to be more cautious in predicting conflicts. This assessment is shared with the high occurrence of international tensions and geopolitical conflict in government affiliated sources. International tensions highlight strains or hostilities between nations over various issues, while geopolitical conflict arises from competition over strategic important resources and fields such as the economy and territory.¹¹⁵

Independent sources present a broader range of conflict types, the most prominent were cyber conflict, 116 occupation and invasion, 117 territorial conflict, and proxy war. This suggests a wider perspective on the nature of conflicts with both traditional and modern forms of battles beyond conventional military capacities. 118 The following three types of

^{112 (}Mikhavlenko 2017).

¹¹³ (Huajun et al. 2023); (Ministry of Defense and National Security 2013); (Mizyani 2019); (National Council for Artificial Intelligence 2021); (National Cybersecurity Authority 2020); (National Security Council 2023); (Nuur Aldin 2020); and (The United Arab Emirates' Government 2019).

⁽Federal Chancellery of the Republic of Austria 2013); (Government of Japan 2022); (Kazinform 2021); (National Cyber Security Center 2024); (Presidency of the Council of Ministers National Authority 2019); (Rusnak et al. 2021); (Strategic Planning Department 2021); and (The Republic of Croatia 2017).

¹¹⁵ (Alkhamees 2021); (All-Belarusian People's Assembly 2024); (Bal'awi 2023); (Cai 2022); (Xiancai Chen 2018); (Xi Chen and Tengfei 2022); (Bu, Cheng, and Lin 2023); (Cordesman 2019); (Council of the European Union 2022); (Dai 2023); (Feng 2023); (Hadi 2021); (Haolong and Huang 2023); (He and Nishan 2021); (Hooker, Jr. 2023); (Huang 2022); (Institute of American Studies, CICIR 2023); (Jari and Mustafa 2018); (Kazinform 2021); (Rashed 2022); (Tang 2022); (The Ministry of Foreign Affairs of the Russian Federation 2023); (Veber 2022); (Wang 2022); (H. Wu 2022); (R. Wu 2021); (Zuo 2022b); and (Zuo 2022a).

¹¹⁶ (Aldwuaik 2018); (Boyd, Gady, and Nouwens 2023); (Communication & Info. Technology Regulatory Authority (CITRA) 2017); (Gady 2020); (Haydar 2018); (Kasapoğlu and Kırdemir 2019a); (Markov and Romashkina 2022); (Mustasilta 2021); (Pantserov 2022); and (Saari 2020).

 $^{^{117}}$ (Al Ajmi et al. 2019); (Al-Rodhan 2023); (Alzamili and Sukar 2014); (Ghabayin and Bu Raghda 2022); (Ouyang and Yuxin 2023); and (Saidum 2020).

¹¹⁸ (Ahmad and Salman 2017); (Al Ali 2017); (Al Nujo 2022); (Barnes 2019); (Beleloucha and Bouchenafa 2021); (Rauta 2020); and (Smagin 2024).

conflicts are observed only in independent sources. First, democratic conflict, overall indicated twice and explained by Tarrangoni, which highlighted a philosophical perspective on conflicts occurring between democratic states. He attributed this conflict to ideological differences and described the emergence of social tensions within democracies. This conflict type is also prominent in China, the EU, Russia, and the USA. Second, hyper war, mentioned once, refers to the rapid technological advancement in conflicts that disrupt traditional military paradigms. Allen et al. focused on European states and their relations with China, including the involvement of non-state actors, Russia, and the USA. Third, war of attrition, in combination with asymmetric and hybrid conflicts as indicated by Barthos, highlighted the continuous transformation of modern conflicts from linear to non-linear models. He links this to a shift in balance between military and non-military forms, means, methods, and technologies. 122

The prediction of civil wars is notably more prominent in independent sources compared to government affiliated sources, with ten versus one occurrence respectively. Civil war is consistently associated with armed conflict and occasionally with other types of conflicts, such as asymmetric conflict or nuclear conflict. Each source indicating a civil war point to the involvement of state and non-state actors. The primary regional focus of civil wars was on Africa and the Middle East. 125

Overall, government affiliated sources tend to predict conflicts more cautiously, using terms such as tensions, crises or threats. While independent sources use clear conflict terms to predict the future of conflict, by being more explorative and discussing new types of conflicts such as hyper war and democratic war. However, it is important to note that both categories of sources frequently mention armed and cyber conflict, highlighting their significance in the future of conflict.

The Future Timing of Conflicts

Out of 280 sources, 60 specified a particular year for when conflicts are anticipated to occur. These projections were illustrated in the following graph, categorized by conflict type and combinations. For certain conflict types, a timespan was indicated in the graph, reflecting predictions from multiple sources, which indicated various years for the same

¹¹⁹ (Tarragoni 2021).

 $^{^{120}}$ (Lapkin and Pantin 2018).

¹²¹ (Allen, Hodges, and Lindley-French 2021).

¹²² (Bartosh 2018).

¹²³ (Al-Khodary 2022); (Alrasool 2022); (Bricker, Saxton, and Tully 2023); (Brychkov, Dorokhov, and Nikonorov 2019); (Buhaug et al. 2016); (Cederman and Pengl 2019); (Coates 2016); (Couttenier and Soubeyran 2011); (Couttenier and Soubeyran 2015); (Pietz 2020); and (Shadi 2015).

¹²⁴ (Bricker, Saxton, and Tully 2023) and (Coates 2016).

¹²⁵ (Al-Khodary 2022); (Brychkov, Dorokhov, and Nikonorov 2019); (Cederman and Pengl 2019); (Coates 2016); (Couttenier and Soubeyran 2011); (Couttenier and Soubeyran 2015); (Freedman 2017b); and (Shadi 2015).

type of conflicts. It is important to interpret the dots on the graph not as isolated incidents confined to the years indicated but rather as the anticipated offset of these respective conflicts, according to the authors.

The most common projected year for conflict is 2030, with armed conflict the most frequent in that year. This indicates a more short-term outlook from the 2020s to the 2040s, with most conflicts anticipated to occur within this period. During this time frame, the prevalent types of conflicts include armed conflict, asymmetric conflict, cyber conflict, hybrid war, and nuclear conflict. In contrast, a mid-term outlook from the 2040s to the 2060s suggests that armed conflict, cyber conflict, information war, and territorial conflict will continue to extend into the mid 21-st century. Only a few sources project conflicts extending towards the end of the century, indicating a long-term outlook from the 2060s to 2100. Notably, the combination of armed, asymmetric, and cyber conflicts is anticipated from 2030 to 2080. Similarly, and a clear outlier with the widest timespan, the combination of armed conflict and civil war spans over from 2030 to 2100.

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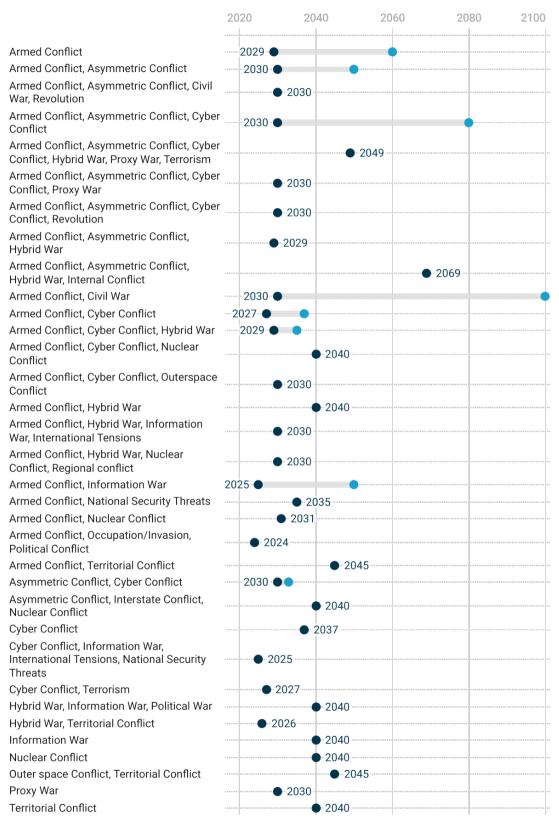
¹²⁶ (Bajema 2020); (Barnes 2019); (Cederman and Pengl 2019); (Council of the European Union 2022); (Gaub 2020); (Government of Hungary 2021); (Kasapoğlu and Kırdemir 2019b); (Kaushal 2019); (Maisel 2019); (Malis 2015); (Mcinnis 2020); (Monaghan 2020); (Mustasilta 2020); (Mustasilta 2021); (Pietz 2020); (Raphael S. Cohen, Han, and Rhoades 2020); (Raphaeal S. Cohen et al. 2020); (Republic of France 2022); (Schimmel 2021); (Secrieru 2020); (Stanley-Lockman 2020); (Stickings 2019); and (Tertrais 2020a).

¹²⁷ (Alexandrov et al. 2015); (De Guglielmo Weber, Tasse, and Thienpont 2023) (Demus et al. 2022); (European Defence Agency 2023); (Fredrick et al. 2017); (Hegre et al. 2013); (Lacy 2024); and (NATO 2023).

¹²⁸ (Buhaug et al. 2016).

¹²⁹ (Friedman 2009).

Conflict Combinations in the Future



Source: ARP 13, Future of Conflicts • Created with Datawrapper

<u>Graph 10:</u> Conflict Combinations in the Future. This graph shows the different combinations of conflicts, single or in group, that occur in sources with a specific time reference.

Conflicts and Locations

Future Actors in Conflicts

Key Finding

Predictions of state actors involved in future conflicts are influenced by current implications of geopolitical influence and significance.

Predictions of non-state actors involved in future conflicts are influenced by their roles and specific geopolitical context and issues.

Some sources identify actors, states, and regions as parties involved in future conflicts, while others indicate a global outlook on the involvement. A total of 146 sources exclusively mentions states as the main actor, highlighting the literature's focus on states remaining as the main actors in the future. On the other hand, non-state actors as sole actors involved in conflict are mentioned by a total of six sources, indicating a low likelihood of conflicts between non-state actors. The most common combination of actors involved in future conflicts are state and non-state actors. Thereby, the nature of non-state actors varies from armed groups, 131 guerilla groups, 132 hackers, 133 ideological movements, 134 militias like mercenaries and cybercriminals, 135 to networks of criminals, 136 private military companies (PMC), 137,138 quasi states, 139 radical groups, 140

^{130 (}Bidouzo 2019); (Gaub 2020); (Hassan 2017); (Salah 2019); (Thanoon 2019); and (Van Creveld 2000).

¹³¹ (Bricker, Saxton, and Tully 2023); (Blin 2011); (Coates 2016); (Coker 2004); (Freedman 2017); (Ministry of Defence's Development, Concepts and Doctrine Centre (DCDC) 2010); (Mustasilta 2020); (Oakley and Waxman 2022); (Ostankov 2019); (Tetik 2020); and (Van Creveld 2000).

¹³² (Gaub 2020).

¹³³ Ibid.

^{134 (}Coker 2004).

¹³⁵ (Allen, Hodges, and Lindley-French 2021); (Arduino 2023); (Coker 2004); (Grice and Roaniuk 2017); (Kaushal 2019); (Pantserov 2022); (Pawlak 2020); (Saari 2020a); and (The White House Washington 2023).

¹³⁶ (Kaushal 2019); (Manatū Kaupapa Waonga New Zealand Ministry of Defence 2023); (NATO 2023); and (The Federal Government 2023).

¹³⁷ Which are believed to be stronger than traditional military forces.

¹³⁸ (Arduino 2023); (Brychkov, Dorokhov, and Nikonorov 2019); (Frolov 2023); (Gaub 2020); (Gerasimov 2019); (Grice and Roaniuk 2017); and (R. A. Johnson 2014).

^{139 (}Gerasimov 2019).

¹⁴⁰ (Department of Defence Republic of South Africa 2020).

rebel groups,¹⁴¹ separatist groups;¹⁴² and terrorist groups.¹⁴³ A handful of authors name specific non-state actors such as Islamist groups,¹⁴⁴ specifically Al-Qaeda,¹⁴⁵ Hamas and Hezbollah,^{146,147} and the Islamic State of Iraq and Syria (ISIS).¹⁴⁸ Only mentioned once were the Congolese Party of Labour and Pan-African Union for Social Democracy and Syrian militias.¹⁴⁹ The possibility of radicalized environmental movements such as former members from Fridays for Future and Extinction Rebellion as involved non-state actors was discussed by Pietz and linked to climate change and radicalization.¹⁵⁰

Civil society actors and organizations are only identified in the English literature as future actors. On one hand, individuals are predicted to not be extensively involved in future conflicts, but some are expected to wield significant power and influence, potentially supported by PMCs. On the other hand, the future involvement of multilateral institutions, such as the UN, is greatly predicted. For example, Pawlak even specifically mentions the Human Rights Council with an active role as an actor. The involvement of NATO or general military alliances was strongly prominent in government affiliated sources. The continuance of multilateralism is highlighted further by the

¹⁴¹ (Couttenier and Soubeyran 2015).

¹⁴² (Huang 2022) and (Zhao 2023).

¹⁴³ (Adebayo et al. 2023); (Allen, Hodges, and Lindley-French 2021); (Chekov et al. 2019); (Raphael S. Cohen, Han, and Rhoades 2020); (Raphaeal S. Cohen et al. 2020); (Gaub 2020); (Ostankov 2019); (Pietz 2020); (Pantserov 2022); (Tetik 2020); and (The Federal Government 2023).

¹⁴⁴ (Belfer Center for Science and International Affairs 2016) and (Cederman and Pengl 2019).

¹⁴⁵ (Federal Intelligence Service 2022); (Maisel 2019); (Ministry of Defence's Development, Concepts and Doctrine Centre (DCDC) 2010); (The White House Washington 2022); and (Waslekar 2014).

¹⁴⁶ Hamas and Hezbollah were always mentioned together.

¹⁴⁷ (Belfer Center for Science and International Affairs 2016); (Gusarova, Kazennov, and Pankova 2019); (Malis 2015); and (Eldadi and Meridor 2019).

¹⁴⁸ (Belfer Center for Science and International Affairs 2016); (Federal Intelligence Service 2022); (Maisel 2019); (Malis 2015); and (The White House Washington 2022).

¹⁴⁹ (Boswinkel 2020) and (Fiott 2020).

¹⁵⁰ (Pietz 2020).

¹⁵¹ (Buhaug et al. 2016); (Fredrick et al. 2017); (Lacy 2024); (Oakley and Waxman 2022); and (Schimmel 2021). ¹⁵² (Freedman 2017); (Kent 2015); and (Mustasilta 2021).

¹⁵³ (R. A. Johnson 2014).

¹⁵⁴ (A. Z. Abdullah 2022); (Brychkov, Dorokhov, and Nikonorov 2019); (Coker 2004); (European Defence Agency 2023); (Juozaitis 2023); (Lapkin and Pantin 2018); (Schimmel 2021); and (Veber 2022).

¹⁵⁵ (Department of Defence Republic of South Africa 2020); (Federal Chancellery of the Republic of Austria 2013); (Greminger, Guéhenno, and Moller 2023); (Grice and Roaniuk 2017); (Hafi 2014); (Khomkin 2020); (Lacy 2024); (Ministry of National Security Ghana 2022); (National Security Division Pakistan 2022); (Pawlak 2020); and (Strategic Planning Department 2021).

¹⁵⁶ Using the method of Sci-Fi forecasting, Pawlak envisions a future scenario where digital authoritarianism manifests through both online and offline conflicts. He particularly describes a scenario in 2030 involving human rights abuses and mass protests in Iran. In response, the Human Rights Council Resolution on the Protection of Human Rights Online, adopted in September 2023, is prominently invoked through an initiative and collaboration involving Human Rights Watch and the International Crisis Group to intervene.

¹⁵⁷ (Pawlak 2020).

¹⁵⁸ (Almaari 2023); (Anghel 2023); (Bajema 2020); (Dai 2023); (Demus et al. 2022); (Dostanko 2021); (Egmont Institute 2022); (Federal Chancellery of the Republic of Austria 2013); (Federal Intelligence Service 2022); (Government of Hungary 2021); (Government of the Netherlands 2023); (Grice and Roaniuk 2017); (Gusarova, Kazennov, and Pankova 2019); (Hooker, Jr. 2023); (Kasapoğlu and Kırdemir 2019a); (Kasapoğlu and Kırdemir

mentions of the African Union,¹⁵⁹ the military security partnership by Australia, the UK, and USA, also known as AUKUS, mentioned exclusively in the Australian national security strategy,¹⁶⁰ the Association of Southeast Asian Nations,¹⁶¹ the EU,¹⁶² the Economic Community of West African States indicated by the Ministry of National Security of Ghana,¹⁶³ or the Organization for Security and Co-operation in Europe.¹⁶⁴ Conflicts were also predicted to take place exclusively between global governance bodies and national states according to Brychkov et al.¹⁶⁵

The influence of multilateral companies, more specifically the private sector and tech companies, as conflict actors are predicted by various sources. ¹⁶⁶ Mark Lacy identifies rare actors, namely humanitarian agencies, such as the International Committee of the Red Cross and Médecins sans Frontières, indicating that their involvement prolongs the resolution of conflicts. ¹⁶⁷ Whereas the Red Team identifies transhumans ¹⁶⁸ as a new vulnerable actor, ¹⁶⁹ linked to the increased usage of technology and genetic alterations. ¹⁷⁰ Supported by the findings of Kobrinskaya et al., the number of actors involved in future fighting will increase, indicating an evolution of conflicts from the traditional two-sided to tens and hundreds of participating actors varying in structure, involvement, and accessibility, making the possibility of resolution more complicated. ¹⁷¹

The map below indicates states specifically mentioned in the literature of being involved in a future conflict. 199 sources indicated specific states in 92 different locations. The indication does not reversely mean that a conflict will take place in the respective

²⁰¹⁹b); (Kaitse Ministeerium 2023); (Kazem and Yasien 2023); (Khomkin 2020); (Lacy 2024); (Lukyanov 2023); (Ministry of Defence 2022); (NATO 2023); (Ouyang and Yuxin 2023); (Republic of France 2022); (Stefanovich 2021); (The Republic of Croatia 2017); (The Security Policy Analysis Group 2022); (The White House Washington 2022); and (Zhao 2023).

¹⁵⁹ (Department of Defence Republic of South Africa 2020); (Lacy 2024); and (Ministry of National Security Ghana 2022).

¹⁶⁰ (The Security Policy Analysis Group 2022).

¹⁶¹ (Ge 2021).

¹⁶² (Almaari 2023); (Council of the European Union 2022); (Dostanko 2021); (Egmont Institute 2022); (European Defence Agency 2023); (Federal Chancellery of the Republic of Austria 2013); (Government of the Netherlands 2023); (Juozaitis 2023); (Khomkin 2020); (Lapkin and Pantin 2018); (Ministry of Defence 2022); (Office of the Director of National Intelligence 2021); (Republic of France 2022); (The Federal Government 2023); (The Republic of Croatia 2017); and (Ukrainian Institute for the Future 2024).

¹⁶³ (Ministry of National Security Ghana 2022).

¹⁶⁴ (Federal Chancellery of the Republic of Austria 2013) and (The Security Policy Analysis Group 2022).

¹⁶⁵ (Brychkov, Dorokhov, and Nikonorov 2019).

¹⁶⁶ (A. G. Abdullah, Gunawan, and Ratmono 2023); (Arduino 2023); (Bricker, Saxton, and Tully 2023); (Bu, Cheng, and Lin 2023); (Coker 2004); (Gaub 2020); (Gerasimov 2019); (Greminger, Guéhenno, and Moller 2023); (Kent 2015); (Lacy 2024); (Mustasilta 2021); (Mustasilta 2020); (Oakley and Waxman 2022); and (The Security Policy Analysis Group 2022).

¹⁶⁷ (Lacy 2024).

¹⁶⁸ Transhumans are individuals on which advanced technology was used to enhance their physical and cognitive abilities, surpassing typical human limitations. This concept further involves integrating cybernetic, genetic, or technological enhancements into the human body.

¹⁶⁹ The Red Team is an initiative supported by the French Ministry of Defense.

¹⁷⁰ (Red Team 2022).

¹⁷¹ (Kliueva et al. 2019).

countries. As geographically mapped, a high probability of involvement includes China (92 times), Russia (94 times), and the USA (93 times); representing today's global powers and highlighting their geopolitical significance of shaping global security dynamics. Top references in the Middle East were Israel and Iran,¹⁷² commonly being mentioned together as actors in the same source. European states are generally indicated as a collective instead of individually, 26 times, highlighting a regional approach and perception on conflict.¹⁷³ Also, current hubs of conflicts are highly predicted to be involved in future conflicts such as Palestine and Ukraine.¹⁷⁴ States in the continents of Africa, South America and the region of Oceania are the least frequently mentioned involved actors.¹⁷⁵

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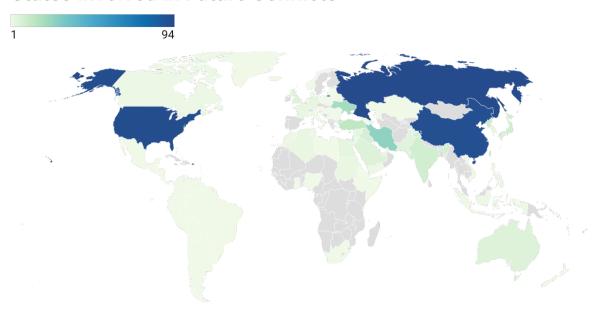
¹⁷² (K. K. A. A. S. Abdullah 2021); (Abdul'hai 2020); (Abu Umra 2017); (Al Ajmi et al. 2019); (Al Hamdani 2005); (Alkhamees 2021); (Almaari 2023); (Al-Moussawi 2023); (Al Nadawi 2022); (Al Sharif 2011); (Alzamili and Sukar 2014); (Belfer Center for Science and International Affairs 2016); (Baunov 2023); (Cederman and Pengl 2019); (Çelik 2022); (Raphael S. Cohen, Han, and Rhoades 2020); (Eldadi and Meridor 2019); (Ghabayin and Bu Raghda 2022); (Fathollah-Nejad 2020); (Friedman 2009); (Grice and Roaniuk 2017); (Gusarova, Kazennov, and Pankova 2019); (Hadi 2021); (Haydar 2018); (Hussain 2020); (Kahous 2014); (Karbaj 2014); (Khamees 2022); (Kusar 2018); (Malis 2015); (Nouri and Ottwan 2015); (Office of the Director of National Intelligence 2021); (Pawlak 2020); (Rauta 2020a); (Saidum 2020); (Smagin 2024); (Thare 2023); (The White House Washington 2023) and (Waslekar 2014).

¹⁷³ (Al Ali 2017); (Alexandrov et al. 2015); (Allen, Hodges, and Lindley-French 2021); (Arduino 2023); (Barnes 2019); (Raphael S. Cohen, Han, and Rhoades 2020); (Dostanko 2021); (European Defence Agency 2023); (Federal Intelligence Service 2022); (Fiott 2020); (Gady 2020); (Göransson and Wawrzeniuk 2021); (Government of Hungary 2021); (R. A. Johnson 2014); (Juozaitis 2023); (Kazem and Yasien 2023); (Khomkin 2020); (Konikowski et al. 2021); (Lapkin and Pantin 2018); (Maisel 2019); (Mcinnis 2020); (Office of the Director of National Intelligence 2021); (Ouyang and Yuxin 2023); (Oxenstierna and Westerlund 2019); (Pawlak 2020); (Schimmel 2021); (Stanley-Lockman 2020); (Stefanovich and Yermakov 2023); (Veber 2022); and (H. Wu 2022).

¹⁷⁴ (K. K. A. A. S. Abdullah 2021); (Abu Umra 2017); (Al Ajmi et al. 2019); (Alzamili and Sukar 2014); (Anghel 2023); (Baunov 2023); (Beleloucha and Bouchenafa 2021); (Çelik 2022); (Demus et al. 2022); (Eldadi and Meridor 2019); (Federal Intelligence Service 2022); (Ghabayin and Bu Raghda 2022); (Haydar 2018); (Huang 2022); (Kahous 2014); (Karbaj 2014); (Kashin and Sushentsov 2023); (Kazem and Yasien 2023); (Mantellassi and Rickli 2024); (Saidum 2020); (Smagin 2024); and (Stefanovich and Yermakov 2023).

¹⁷⁵ Regarding Africa and South America, this observation highlights a research gap. In contrast, the low involvement of Oceania is a notable research finding.

States Involved in Future Conflicts



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 $\underline{\textbf{Map 4:}} \textbf{ States Involved in Future Conflicts.} \textbf{ States that are involved in future conflicts, but not necessarily where conflicts will take place.} \\ \textbf{ }^{176}$

 $^{^{176}}$ Look at <u>Map 5:</u> Regions of Conflict in the following section to compare parties involved versus locations of conflicts.

Key Findings

The extension of the concept of battlefield to now include outer space and cyberspace signifies the role of evolving technologies in future conflicts.

Predictions on areas of future conflicts are heavily influenced by current conflicts and areas of on-going crises.

A significant portion of the literature takes a global outlook on the future of conflicts (98 out of 280) and does not specify a distinct location where conflicts will take place. Thus, the following section analyzes the remaining 183 sources that indicated specific areas. The literature shows that the concept of area where wars and conflicts will occur extends to outer space and cyberspace, ¹⁷⁷ including the informational and cognitive battlefields. With the increased prominence of cyberspace, many states have published a national security strategy specifically addressing cyber threats or incorporated cyber security into their national security strategies as a potential area of future conflict. This reflects the evolving nature of warfare, expansion of battlefields, and reliance on technology in modern conflicts. More traditionally, naval areas, ¹⁷⁹

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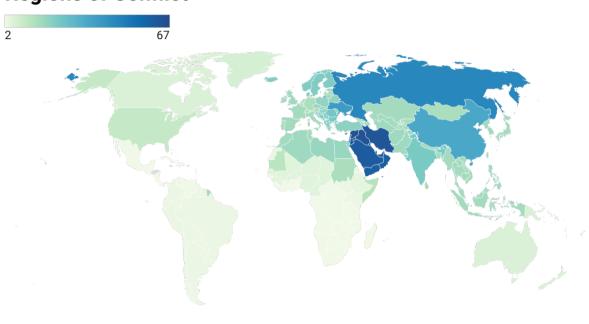
^{177 (}J. Abdullah 2022); (Aldwuaik 2018); (Alhalabi 2023); (Allen, Hodges, and Lindley-French 2021); (Al-Rodhan 2023); (Al-Rodhan et al. 2022); (Arduino 2023); (Australian Government Defence 2024); (Bricker, Saxton, and Tully 2023); (Council of the European Union 2022); (Raphaeal S. Cohen et al. 2020); (Freedman 2017); (Göransson and Wawrzeniuk 2021); (Government of the Netherlands 2023); (Greminger, Guéhenno, and Moller 2023); (Grice and Roaniuk 2017); (Guéhenno 2022); (He and Nishan 2021); (Iskandarov 2019); (J. Johnson 2019); (Kasapoğlu and Kırdemir 2019a); (Kasapoğlu and Kırdemir 2019b); (Kent 2015); (Kwiatkowski 2020); (Lacy 2024); (Leben 2024); (Markov and Romashkina 2022); (Ministry of Defence 2022); (Ministry of Higher Education, Science and Innovation 2022); (Mumford 2013); (Mustasilta 2021); (National Cybersecurity Authority 2020); (National Cyber Security Center 2024); (NATO 2023); (Nazee 2017); (Oakley and Waxman 2022); (Presidency of the Council of Ministers National Authority 2019); (Republic of France 2022); (Royaume du Maroc - Administration de la Défense Nationale 2013); (Sanajlah 2022); (Thare 2023); (The Egyptian Supreme Cybersecurity Council (ESCC) 2024); (The Federal Government 2023); (The Ministry of Foreign Affairs of the Russian Federation 2021); (The Republic of Croatia 2017); (The United Arab Emirates' Government 2019); (The White House Washington 2023); (Ulanov 2023); and (Wang 2022).

¹⁷⁸ (Göransson and Wawrzeniuk 2021); (Kasapoğlu and Kırdemir 2019a); (The Ministry of Foreign Affairs of the Russian Federation 2023); and (The Ministry of Foreign Affairs of the Russian Federation 2021).

¹⁷⁹ (Al Nadawi 2022); (Arduino 2023); (Göransson and Wawrzeniuk 2021); (Kasapoğlu and Kırdemir 2019b); (Leben 2024); and (Stanley-Lockman 2020).

specifically the Black Sea,¹⁸⁰ the Indo-Pacific,¹⁸¹ North Atlantic,¹⁸² Persian Gulf,¹⁸³ Red Sea,¹⁸⁴ and the South Chinese Sea remain significant points of contention in the future.¹⁸⁵ In contrast, the airspace as a place of conflict is only mentioned by two authors.¹⁸⁶ Urban coastal areas impacted by climate change are increasingly places of friction identified only in the English literature,¹⁸⁷ highlighting the emerging intersection between environmental factors and urbanization with future security concerns.

Regions of Conflict



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<u>Map 5:</u> Regions of Future Conflicts. This map indicates the geographical locations identified by the literature on where future conflicts will take place using the SDG global regions as a point of reference.

Much of the literature discusses general geographical regions where conflicts will be taking place, such as the Balkan or the Arab region, lacking clear definitions of classifications and categorizations between naming geographical regions, continents, states, and cities. Thus, the map displayed above indicates the geographical locations

¹⁸⁰ (Facon, Gros, and Tourret 2020); (Hooker, Jr. 2023); (Republic of France 2022); and (Zhao 2023).

¹⁸¹ (Australian Government Defence 2024); (Xi Chen and Tengfei 2022); (Raphael S. Cohen, Han, and Rhoades 2020); (Cordesman 2019); (Government of Japan 2022); (Leben 2024); (Manatū Kaupapa Waonga New Zealand Ministry of Defence 2023); and (Monaghan 2020).

¹⁸² (Government of Hungary 2021); (Hooker, Jr. 2023); (Juozaitis 2023); (Republic of France 2022); and (Tertrais 2020a).

¹⁸³ (Azizpour et al. 2021).

¹⁸⁴ (Al Hamdani 2005) and (Hadi 2021).

¹⁸⁵ (Cederman and Pengl 2019); (Coker 2004); (Cordesman 2019); (Ge 2021); and (Wang 2022).

¹⁸⁶ (Göransson and Wawrzeniuk 2021) and (Kasapoğlu and Kırdemir 2019b).

¹⁸⁷ (Göransson and Wawrzeniuk 2021); (Iskandarov 2019); (Ministry of Defence's Development, Concepts and Doctrine Centre (DCDC) 2014); (Mustasilta 2021); and (Schimmel 2021).

of future conflicts by referencing the UN Sustainable Development Goals (SDG) global regions. ^{188,189} The most frequently mentioned region in the literature is the Middle East, (43 times), which is indicated in dark blue on the map. Hotspots for future conflicts include the regions of North Africa and West Asia, East and South-East Asia (specifically China), and East Europe with Russia and Ukraine as main spots. Some literature indicates broad areas such as Africa, ¹⁹⁰ while others are more specific, mentioning Jerusalem. ¹⁹¹ Additionally, places of conflict included contested territories such as Crimea, ¹⁹² Kashmir, ¹⁹³ Kurdistan, ¹⁹⁴ Nagorno-Karabakh, ¹⁹⁵ Taiwan, ¹⁹⁶ and Palestine which appear under internationally recognized borders on the world map graph, ¹⁹⁷ even though they refer to different political borders within the text.

When analyzing the potential involvement of future states and the geographical locations of future conflicts, several key parallels emerge. Middle Eastern states, such as Iran, Israel, and Palestine, are frequently predicted to be involved in future conflicts. This is underscored by the high frequency of mentions of the Middle East as a likely conflict zone. Similarly, states like China, Ukraine, and Taiwan are also identified as potential actors and flashpoints for future conflicts. In contrast, the USA has a high probability of being involved in future conflicts, however, is less likely to occur on American soil. Instead, Africa is predicted to have a high likelihood of future conflicts, even though African states are less frequently mentioned as primary conflict actors. On Sequently, clear hotspots for future conflicts can be identified, with the Middle East, parts of Asia, and Africa being prominent regions of concern.

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¹⁸⁸ Margin of error: Due to the different indications of geographical areas by the sources, the UN SDG regions were used as a point of reference. Therefore, countries and regions indicated by the sources and the portrayal of them on the map include a margin of error, which influences the conclusions made. Meaning the areas of future conflict indicated could be bigger or smaller and include different states.

¹⁸⁹ (United Nations 2019).

¹⁹⁰ (Buhaug 2015); (David 2018); (De Guglielmo Weber, Tasse, and Thienpont 2023); (Deich 2018); (Fiott 2020); (Federal Intelligence Service 2022); (Friedman 2009); (Grice and Roaniuk 2017); (Mcinnis 2020); (Mustasilta 2021); (The Republic of Croatia 2017); (The White House Washington 2022); and (Yakovenko 2023).

¹⁹¹ (Al Ajmi et al. 2019).

¹⁹² (Cederman and Pengl 2019).

¹⁹³ (Abdulsalam 2019); (Cederman and Pengl 2019); and (National Security Division Pakistan 2022).

¹⁹⁴ (De Guglielmo Weber, Tasse, and Thienpont 2023) and (Nouri and Ottwan 2015).

¹⁹⁵ (The Government of the Republic of Armenia 2020).

¹⁹⁶ (Australian Government Defence 2024); (H. Boyd, Gady, and Nouwens 2023); (Cai 2022); (Xiancai Chen 2018); (Cordesman 2019); (Gomez 2023); (Government of Japan 2022); (Jie 2024); (Leben 2024); (National Security Council 2023); (Tertrais 2020b); (The Security Policy Analysis Group 2022); (Wang 2022); and (Zuo 2022a).

¹⁹⁷ (Abu Umra 2017); (Al Ajmi et al. 2019); (Alzamili and Sukar 2014); (Kahous 2014); (Karbaj 2014); (Naumenko and Saltanov 2024).

¹⁹⁸ This finding is linked to a research gap and necessitates further assessment.

Threats and Drivers to Conflicts

Key Finding

Future conflicts are expected to arise from multiple, interconnected, but not necessarily interdependent, drivers; highlighting the complexity and variability of the different combinations leading to future conflicts.

An overall range of 32 different drivers were identified in the literature. ¹⁹⁹ The majority of the sources presented drivers in different groupings, while only 93 pieces of literature presented a single threat or driver of conflicts. This highlights the significance of the combination of multiple drivers leading to conflicts in the future. ²⁰⁰ Further, the most frequently mentioned drivers varied across languages, indicating that different regions of publications have diverse perspectives on the drivers and threats. The most frequently mentioned drivers in the Arabic, Chinese, English, French, and Russian languages were territory, geopolitical, climate change, arms race, and military threat respectively.

Two categories were identified as outliers. First, genocide, which was mentioned once, combined with economy, geopolitical, nationalism, territory, and weak governance, predicting an information war with non-military pressure. This source may seem out of context or as an exaggerated scenario at a first glance. However, a closer look into the comparative analysis conducted indicates the on-going national security concerns regarding Russia's current state of affairs in comparison to its historical past of mass human loss among its population in the 20th century, which allowed it to predict the aforementioned threats in a future context. ²⁰²

Second, human frailty combined with nuclear deterrence and technology predicting an armed, cyber, and nuclear conflict. This driver highlights the impacts of the decision making of individuals. Specifically, the characteristics of leaders taking decisions based on their ego, emotions and public sentiments.²⁰³ This driver along with election outcome, mentioned three times,²⁰⁴ go against the common implications made within the general analysis of the report that current conflicts and crises across the world heavily influence future thinking of conflicts. With multiple crises in the 21st century led by election

¹⁹⁹ None of the sources identified consider gender issues as a driver for future conflicts. However, no focused or targeted research was conducted attempting to explore whether this topic occurs or overlaps with topics related to the future of conflict. Therefore, no concrete assumption can be made that gender violence and gender issues are not forecasted in or part of the future of conflicts.

 $^{^{200}}$ See section on Locations of Publications for analysis between location of publication and languages.

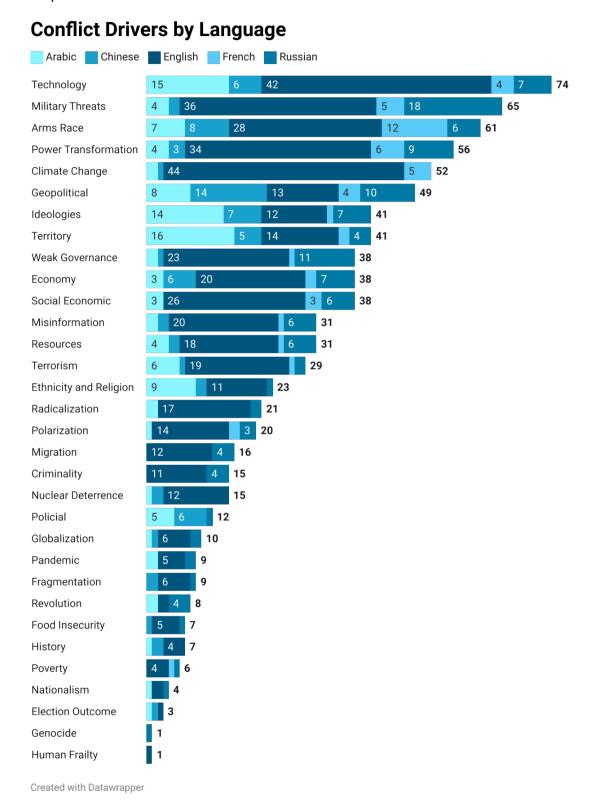
²⁰¹ (Derbin, Gareev, and Turko 2019).

²⁰² Ibid.

²⁰³ (Leben 2024).

²⁰⁴ (Jie 2024); (Karbaj 2014); and (Ministry of National Security Ghana 2022).

outcomes as a driver and sustained by individuals, a higher frequency was expected to come up.



<u>Graph 11:</u> Conflict Drivers by Language. The 32 conflict drivers identified in the literature descending from most mentioned to least, indicating the occurrence in the five main research languages.

Two sources do not identify traditional topics or trends, but instead highlight specific actors as threats to peace and security. One source is the national security concept of Estonia, which identifies Russia as one of the greatest threats due to geographical location and history. Russia as a threat is further paired with climate change, geopolitics, military threats, misinformation, and terrorism as potential contributors to instability. The other source is a translation of the Israel Defense Forces security strategy by the Belfer Center for Science and International Affairs. This document outlines the perception of various states, failed states, substates, and non-state organizations as security threats, while specifically naming Iran, Lebanon, Syria, Hamas, Hezbollah, Palestinian Islamic Jihad, and ISIS as the greatest threats to national security. 206

The perception of conflict drivers differs depending on the government affiliation of the source. Government sources uniquely identify food insecurity as a national threat, while emphasizing the importance of food security for national stability and the interdependence of the global food system. Other prominent drivers in government affiliated sources include the rise in poverty, both internally and externally, and migration, particularly mass and illegal migration, frequently mentioned in European and Western security strategies. The dominant perception of the threat of terrorism as a destabilizing factor reflects the impact of past events such as 9/11 and the ongoing fear of similar attacks on a state in the future, coupled with the increasing involvement of non-state actors. Criminality, specifically through organized crime and transnational networks, is another significant driver identified, highlighting the growing awareness of organized groups and non-state actors as contributors to future conflicts. The concern

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²⁰⁵ (Kaitse Ministeerium 2023).

²⁰⁶ (Belfer Center for Science and International Affairs 2016).

²⁰⁷ (Australian Government Defence 2024); (Federal Chancellery of the Republic of Austria 2013); (Kazinform 2021); (The Federal Government 2023); and (The White House Washington 2022).

²⁰⁸ (Australian Government Defence 2024); (Ministry of National Security Ghana 2022); (The Federal Government 2023); and (The Government of the Republic of Armenia 2020).

²⁰⁹ (Federal Chancellery of the Republic of Austria 2013); (Federal Intelligence Service 2022); (Government of Hungary 2021); (Strategic Planning Department 2021); (The Republic of Croatia 2017); (The Security Policy Analysis Group 2022); and (The White House Washington 2022).

²¹⁰ (Council of the European Union 2022); (Department of Defence Republic of South Africa 2020); (Eldadi and Meridor 2019); (Federal Chancellery of the Republic of Austria 2013); (Federal Intelligence Service 2022); (Government of Hungary 2021); (R. A. Johnson 2014); (Kaitse Ministeerium 2023); (Manatū Kaupapa Waonga New Zealand Ministry of Defence 2023); (Ministry of Defense and National Security 2013); (Ministry of National Security Ghana 2022); (National Cybersecurity Authority 2020); (National Cyber Security Center 2024); (Presidency of the Council of Ministers National Authority 2019); (Republic of France 2022); (Strategic Planning Department 2021); (Tang 2022); (The Federal Government 2023); (The Government of the Republic of Armenia 2020); (The Ministry of Foreign Affairs of the Russian Federation 2021); (The Republic of Croatia 2017); (The Security Policy Analysis Group 2022); and (The White House Washington 2022).

²¹¹ (All-Belarusian People's Assembly 2024); (Federal Chancellery of the Republic of Austria 2013); (Manatū Kaupapa Waonga New Zealand Ministry of Defence 2023); (Ministry of Defence 2022); (Ministry of Defence's Development, Concepts and Doctrine Centre (DCDC) 2014); (Ministry of National Security Ghana 2022); (National Security Division Pakistan 2022); (Strategic Planning Department 2021); (The Federal Government 2023); (The Government of the Republic of Armenia 2020); (The Ministry of Foreign Affairs of the Russian Federation 2023); (The Republic of Croatia 2017); and (The Security Policy Analysis Group 2022).

over pandemics, including the potential spread of viruses and diseases, underscores the lasting impacts of the COVID-19 pandemic on national security.²¹² The drivers of terrorism and pandemics exemplify how governments draw on past experiences to learn and prepare for future threats. On the other hand, independent sources exclusively indicate nationalism as a conflict driver.²¹³ The drivers of arms race and radicalization are most prominently featured in independent sources. Conversely, technology is the most cited driver overall, highlighted by both types of sources as a leading factor for future conflicts, indicating the significance of advancements and new developments in this field.

Overall, 188 sources identify more than one driver leading to a conflict, where their combinations are crucial. The most common recurring combination of two drivers is technology with climate change and technology with power transformation, occurring a total of 26 and 24 times respectively. Despite the combination of climate change and technology, the topic of geoengineering did not occur within the research. No source focused on technology or climate change solely as drivers for future conflicts. Thus, the implications of their combination can be interpreted to be on the technological advancements and modernization including their direct impact on the climate. Conversely, modern technologies can also play a role in dealing with the consequences of climate change such as the storage of CO₂ emissions and the accessibility of these technologies. Whereas for the combination of technology and power transformation, the central focus is on the opening of a new battlefield through technological developments, having the potential to impact global power structures. This is specific through cyberattacks or Al and their threat to current positions.

Generally, no source has the exact same combination of three or more drivers. Thus, it is difficult to detect any distinctive patterns of occurrence and combination. However, some notable observations can be made, such as revolutions as a driver, which showed

²¹² (All-Belarusian People's Assembly 2024); (Federal Chancellery of the Republic of Austria 2013); (Kazinform 2021); (Manatū Kaupapa Waonga New Zealand Ministry of Defence 2023); (Ministry of National Security Ghana 2022); and (The White House Washington 2022).

²¹³ (Bricker, Saxton, and Tully 2023); (Cederman and Pengl 2019); (Derbin, Gareev, and Turko 2019); and (Duran 2020).

²¹⁴ (Allen, Hodges, and Lindley-French 2021); (Boswinkel and Sweijs 2022); (Bricker, Saxton, and Tully 2023); (Bu, Cheng, and Lin 2023); (Chalk et al. 2015); (Cordesman 2019); (Department of Defence Republic of South Africa 2020); (Egmont Institute 2022); (Federal Chancellery of the Republic of Austria 2013); (Feindouno and Wagner 2020); (Freedman 2017); (Friedman 2009); (Government of the Netherlands 2023); (Greminger 2023); (Greminger, Guéhenno, and Moller 2023); (Guéhenno 2022); (Haolong and Huang 2023); (J. Johnson 2019); (Kent 2015); (Lacy 2024); (Manatū Kaupapa Waonga New Zealand Ministry of Defence 2023); (Ministry of Defence 2022); (Ministry of Defence 2022); (Ministry of Defence 2022); (Ministry of Defence 2022); (Mumford 2013); (Mustasilta 2020); (National Security Council 2023); (NATO 2023); (Red Team 2022); (Strategic Planning Department 2021); (The Government of the Republic of Armenia 2020); (The Ministry of Foreign Affairs of the Russian Federation 2023); (The Republic of Croatia 2017); (The Security Policy Analysis Group 2022); (The White House Washington 2022); and (Waslekar 2014).6/14/24 10:39:00 AM

great variability in combinations, suggesting its compatibility with different contexts.²¹⁵ The driver arms race occurred 21 out of 60 times as a stand-alone driver, indicating the significance of arms fueling conflicts independently.²¹⁶ In the 39 times arms race occurred in combination with a different driver, 14 of those were combined with military threat.²¹⁷ This implies that arms race can be perceived as a military threat and vice versa; indicating the dual nature of certain drivers. This can both exacerbate conflicts and serve as indicators of potential conflict escalation. The remaining combinations of drivers observed throughout the data do not show any distinct patterns or implications, indicating that future conflicts could erupt under many different combinations of drivers, making patterns of prediction less detectable.

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²¹⁵ (Adebayo et al. 2023); (All-Belarusian People's Assembly 2024); (Al Sharif 2011); (Chekov et al. 2019); (Gerasimov 2019); (Mumford 2013); (Shadi 2015); and (The Ministry of Foreign Affairs of the Russian Federation 2021).

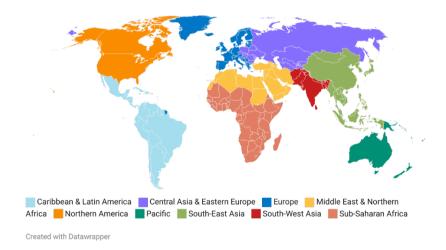
²¹⁶ (Abdulmajid 2021); (Aladba 2022); (Berthier 2023); (David 2018); (Della 2022); (Delory and Gros 2021); (Dong and Han 2024); (Gani and Sijelmassi 2019); (Gaub 2020); (Gautier 2019); (Geist and Lohn 2018); (Henrotin 2021); (Hirtzig 2019); (Konikowski et al. 2021); (Kwiatkowski 2020); (Long and Zhang 2024); (Nöel 2018); (Stefanovich and Yermakov 2023); (Thanoon 2019); (United Nations 2019); (Vandomme 2022); and (J. Zhang 2024).

²¹⁷ (Al-Rodhan 2023); (Al-Rodhan et al. 2022); (Della 2022); (Fiott 2020); (Keegan 2000); (Khomkin 2020); (Lacy 2024); (Ministry of National Security Ghana 2022); (Ostankov 2019); (Red Team 2022); (Scharre 2018); (Stickings 2019); and (Van Creveld 2000).

Drivers by Regions



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<u>Graph 12:</u> **Drivers by Region.** A colored graph indicating the region where drivers occur. The map functions as a legend indicating which color represents which region. The regions in the map are the closest possible way to display the drivers and are in reference to where conflicts will take place indicated by the literature.

Which drivers lead to which conflict?

To have a comprehensive understanding of the future of conflicts, not only do the drivers need to be understood, but they also must be linked to the identified conflicts themselves. Ideologies, as a single driver, leads to different types of conflicts; twice with proxy wars in the Middle East, 218 twice with armed civil war in Yemen and Kazakhstan, 219 democratic conflicts from a global perspective, 220 and twice with armed conflicts involving Russia and Ukraine, and Israel and Palestine. 221 When looking at arms race as a single driver, it mostly leads to an armed conflict, 222 some in combination with asymmetric warfare. 223 All French language sources cited arms race as a driver leading to armed and cyber conflicts, 224 in addition to one Arabic language and two Chinese sources that combined it with technological conflict, 225 as well as one stand out source that indicated arms race leading to a nuclear conflict.²²⁶ Further, a variety of drivers are linked to nuclear conflict, thereby, a high frequency of combination with military threat is notable. 227 Unexpectedly, the driver of nuclear deterrence only leads twice to a nuclear conflict.²²⁸ Instead, nuclear deterrence can lead to either an occupation/invasion, when a military threat is present as well, or to various combinations of armed conflict, asymmetric warfare, cyber conflict, or a national security threat.²²⁹ This indicates that the threat of nuclear deterrence has become a habit but few actually link it to a full scale nuclear conflict.

The drivers radicalization and fragmentation both generally lead to an armed conflict and asymmetric warfare, the involvement of armed non-state actors,

²¹⁸ (Ahmad and Salman 2017) and (Al Nujo 2022).

²¹⁹ (Al-Khodary 2022).

²²⁰ (Tarragoni 2021).

²²¹ (Baunov 2023).

²²² (Abdulmajid 2021); (Delory and Gros 2021); (Garcia 2023); (Henrotin 2021); (Long and Zhang 2024); and (Stefanovich and Yermakov 2023).

²²³ (Gaub 2020) and (Thanoon 2019).

²²⁴ (Berthier 2023); (David 2018); (Gani and Sijelmassi 2019); (Gautier 2019); (Hirtzig 2019); (Konikowski et al. 2021); (Nöel 2018); (United Nations 2019); and (Vandomme 2022).

²²⁵ (Aladba 2022); (Dong and Han 2024); and (J. Zhang 2024).

²²⁶ (Geist and Lohn 2018).

²²⁷ (Barabanov et al. 2022); (Coates 2016); (J. Johnson 2020); (Kashin and Sushentsov 2023); (Republic of France 2022); (Stefanovich 2021); (Tertrais 2020a); (The Ministry of Foreign Affairs of the Russian Federation 2023); and (Van Creveld 2000).

²²⁸ (Leben 2024) and (Republic of France 2022).

²²⁹ (Chekov et al. 2019); (Raphael S. Cohen, Han, and Rhoades 2020); (Federal Chancellery of the Republic of Austria 2013); (Federal Intelligence Service 2022); (Government of Japan 2022); (Kazem and Yasien 2023); (Ministry of Defence 2022); (National Security Division Pakistan 2022); and (The Security Policy Analysis Group 2022).

²³⁰ (Arduino 2023); (Buhaug et al. 2016); (Coates 2016); (European Defence Agency 2023); (Fathollah-Nejad 2020); (Federal Chancellery of the Republic of Austria 2013); (Federal Intelligence Service 2022); (Freedman 2017); (Government of the Netherlands 2023); (Greminger, Guéhenno, and Moller 2023); (Guéhenno 2022); (Hassan 2017); (Huang 2022); (Maisel 2019); (Ministry of Defence's Development, Concepts and Doctrine Centre (DCDC) 2010); (Mustasilta 2020); (NATO 2023); (Pietz 2020); (Renmin University Chongyang Institute for Financial Studies 2024); (Saari 2020b); (Secrieru 2020); (Waslekar 2014)

companies, individuals and civil society is implied. Armed conflict with civil war is in seven out of ten cases driven by climate change and social economy, solo or combined, which further implies the role of non-state actors.²³¹

For some concepts, the distinction between being a driver but also a type of conflict has been more difficult, thus they occur in both categories. Only by Al Sharif was the concept of revolution used as both a driver and conflict.²³² This source looked at past Arab revolutions to predict future revolutions against the Israeli occupation in Palestine.²³³ The remaining sources mentioning revolutions as a driver lead to a variety of different types of conflicts such as armed or asymmetric conflicts, civil war, cyber conflict, or international tensions.²³⁴ Whereas the conflict type revolution is driven by different combinations of climate change, economy, geopolitical, history, ideologies, radicalization, and technology, ²³⁵ highlighting again multiple causes for a revolution to take place. Similarly, only in two instances in Arabic language sources does a geopolitical driver lead to a geopolitical conflict. 236 Whereas, political drivers, combined with territory, ideologies, and ethnicity and religion drivers, either lead to a territorial conflict or to an occupation/invasion.²³⁷ The majority of the driver territory leads to a territorial conflict or an occupation/invasion, 238 both generally prefaced by an armed conflict. Thereby, the term territory can also be understood to be in outer space or cyberspace, ²³⁹ when combined with the threat of misinformation. ²⁴⁰ The driver and type of conflict terrorism are not mentioned together. Instead, terrorism has been linked to armed and asymmetric conflicts, indicating the involvement of non-state actors with this driver, which is supported by the respective findings in the category of type of actors, ²⁴¹

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²³¹ (Bricker, Saxton, and Tully 2023); (Brychkov, Dorokhov, and Nikonorov 2019); (Buhaug et al. 2016); (Cederman and Pengl 2019); (Couttenier and Soubeyran 2011); and (Pietz 2020).

²³² (Al Sharif 2011)

²³³ Ibid.

²³⁴ (Adebayo et al. 2023); (All-Belarusian People's Assembly 2024); (Chekov et al. 2019); (Gerasimov 2019); (Hassan 2017); (Ministry of National Security Ghana 2022); (Mumford 2013); (Shadi 2015); and (The Ministry of Foreign Affairs of the Russian Federation 2021).

²³⁵ (Abdul'hai 2020); (Pietz 2020); and (Secrieru 2020).

²³⁶ (Hadi 2021) and (Jari and Mustafa 2018).

²³⁷ (Al Ajmi et al. 2019); (Al Nadawi 2022); (Alzamili and Sukar 2014); and (Kahous 2014).

²³⁸ (A. Z. Abdullah 2022); (Abdulsalam 2019); (Abu Umra 2017); (Al Ajmi et al. 2019); (Al-Rodhan et al. 2022); (Anghel 2023); (Demus et al. 2022); (Ge 2021); (Ghabayin and Bu Raghda 2022); (Hasan and Jassim 2021); (Huang 2022); (Karbaj 2014); (Khamees 2022); (Kupriyanov 2019); (Menet 2024); (Naumenko and Saltanov 2024); (Salah 2019); (Shunaikat 2018); (Ulanov 2023); and (Wang 2022).

²⁴⁰ (C. Boyd et al. 2015); (Ghabayin and Bu Raghda 2022); (Haydar 2018); and (Hussain 2020).

²⁴¹ (Adebayo et al. 2023); (Council of the European Union 2022); (Demus et al. 2022); (Department of Defence Republic of South Africa 2020); (Federal Intelligence Service 2022); (Government of Hungary 2021); (Hassan 2017); (R. A. Johnson 2014); (Kaitse Ministeerium 2023); (Maisel 2019); (Manatū Kaupapa Waonga New Zealand Ministry of Defence 2023); (Ministry of National Security Ghana 2022); (Republic of France 2022); (The Federal Government 2023); (The Security Policy Analysis Group 2022); and (The White House Washington 2022).

or cyber conflict,²⁴² indicating an expansion of the field where terrorism can take place, or as a general national security threat by government institutions.²⁴³ In seven out of five instances, technological conflict is linked to developments in technology as a driver, and is generally either combined with arms race or military threat.²⁴⁴ Sanctions occurred in Russian language sources, and was linked to socio-economic driver, and indicated China and the USA as being the parties involved.²⁴⁵ However, no causal linkages or assessments of the level of influence of drivers, singular or combined, can be made to determine the leading or most prominent causes of conflict.

Overall, the identified drivers in the literature and their combinations in specific events can be predicted but only general trends detected. This finding is supported by the assessment of sources published before 2018. Notably, the criteria for the selection of literature were the analysis of future conflicts after 2045 and published after 2018. But 44 earlier published sources from 2000 to 2017 cover similar themes and years in the future. Specifically, sources published in 2009 and 2016 predict conflicts further into the future, namely in the years 2080 and 2100, respectively. Some of these sources touch upon the present and support the general conclusion on drivers, that the sources are relatively good at defining trends and topics, but not always right with specific events. For example, topics that were discussed in the literature were the UK and EU relationship, but the UK was predicted to remain in the EU, 246 or the influence of Israel's demographic policy on the tensions in its conflict with Palestinians, ²⁴⁷ the detection of the trend for the increasing role of information and fighting narratives to achieve geopolitical objectives.²⁴⁸ and the potential isolation of Russia.²⁴⁹ Concludingly, further analysis of more data would be needed to explore whether the causal pathways and feedback mechanisms through which drivers contribute to which conflict could exist.

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²⁴² (Federal Chancellery of the Republic of Austria 2013); (Federal Intelligence Service 2022); (Kaitse Ministeerium 2023); (Maisel 2019); (Ministry of National Security Ghana 2022); (National Cyber Security Center 2024); (Presidency of the Council of Ministers National Authority 2019); (The Federal Government 2023); (The Government of the Republic of Armenia 2020); (The Ministry of Foreign Affairs of the Russian Federation 2023); (The Republic of Croatia 2017); (The Security Policy Analysis Group 2022); and (The White House Washington 2022).

²⁴³ (Federal Chancellery of the Republic of Austria 2013); (Ministry of Defense and National Security 2013); (Mizyani 2019); (National Cybersecurity Authority 2020); (National Cyber Security Center 2024); (Presidency of the Council of Ministers National Authority 2019); (Strategic Planning Department 2021); and (The Republic of Croatia 2017).

²⁴⁴ (Bu, Cheng, and Lin 2023); (Danilin 2020); (Della 2022); (Haolong and Huang 2023); (Nazee 2017); (Scharre 2018); and (The Ministry of Foreign Affairs of the Russian Federation 2023).

²⁴⁵ (Danilin 2020) and (Yakovenko 2023).

²⁴⁶ (Ministry of Defence's Development, Concepts and Doctrine Centre (DCDC) 2010).

²⁴⁷ (Karbaj 2014).

²⁴⁸ (R. A. Johnson 2014) and (Ministry of Defence's Development, Concepts and Doctrine Centre (DCDC) 2010).

²⁴⁹ (Dynkin et al. 2017).

New Weapons and Technologies

Key Finding

The integration of new weapons and advanced technology in future conflicts is expected to level the playing field between different actors, significantly altering traditional concepts of military power and expanding conflict into new domains.

English and French language sources mention new weapons and technologies the most, followed by the Russian and Chinese language literature, and very little mentions among the Arabic. The literature investigates multiple areas regarding new weapons, technologies, and areas of future warfare. The mention of new weapons and technologies in future conflicts within the literature reveals major trends that shape the future of warfare: autonomous weapon systems (AWS), outer space warfare, cyber weapons, quantum technology, biotechnology, nuclear arsenals, information war, and advanced surveillance and communication technologies.

The rapid development of AI and AWS significantly influences modern warfare.²⁵⁰ AI is increasingly being incorporated into cybersecurity, warfare management, and decision-making processes, driving an arms race towards more technologically advanced military capabilities. This shift is marked by a growing reliance on unmanned vehicles for intelligence collection and reconnaissance operations, with drones and robots becoming central to these efforts.²⁵¹ Simultaneously, there is a rising interest among scholars in outer space warfare and satellite technology. The use of armed forces in outer space and the development of space-based monitoring systems highlights the strategic importance of space in military operations.²⁵² This is indicative of a rising understanding of space's strategic significance in military operations.

Cyber warfare and cyber weapons are also gaining prominence, particularly among regional powers.²⁵³ This expansion of the battlefield to include cyberspace increases the number of actors, including small states and non-state actors.²⁵⁴ In parallel, research

²⁵⁰ (National Defense University 2022b); (National Defense University 2022a); and (Zuo 2022b).

²⁵¹ (Albiati 2020); (Demus et al. 2022); (Freedman 2017); (Frolov 2023); (Kasapoğlu and Kırdemir 2019b); (Iskandarov 2019); (J. Johnson 2020); (Nazee 2017); (Ostankov 2019); (Smagin 2024); and (Stanley-Lockman 2020); and (Wang 2022).

²⁵² (Al-Rodhan 2023); (Al Tayif 2023); (Fahmi 2022); (He and Nishan 2021); (Ministry of Defence's Development, Concepts and Doctrine Centre (DCDC) 2014); (Mumford 2013); and (Stickings 2019).
²⁵³ (Thare 2023).

²⁵⁴ (Aldwuaik 2018); (Federal Chancellery of the Republic of Austria 2013); (Federal Chancellery of the Republic of Austria 2013); (Freedman 2017); (Kaitse Ministeerium 2023); (Markov and Romashkina 2022);

and development in quantum technology and hypersonic weapons are advancing rapidly, aiming to transform military capabilities and vulnerabilities.²⁵⁵ With their incredible speed and maneuverability, the concern revolves around hypersonic weapons' ability to overcome traditional defense systems and shorten reaction time, marking a significant shift in warfare capabilities.²⁵⁶

Furthermore, there is growing concern about militaries' exploration of biotechnology, focusing on genetic modification to enhance weapons and army technologies with implications for terrorism, since the potential misuse of such technologies by non-state actors could lead to new forms of bioterrorism.²⁵⁷ Also, in nuclear conflict predictions, the development and maintenance of nuclear arsenals continue to raise serious concerns about enduring nuclear threats and their future implications.²⁵⁸

Artificial Intelligence 84 Biological Weapons 2 Blockchain 1 Cyber Weapons 5 Hypersonic Weapons 6 Internet of Things 1 Nuclear Weapons/Threats 17 Satellite Technology 3 Transhuman 1 Unmanned Systems 12

<u>Graph 13:</u> New Weapons and Technologies. A bar graph showing the number of mentions of new weapons and technologies within the literature on the LTS. ²⁵⁹

(Ministry of Defense and National Security 2013); (Ministry of Higher Education, Science and Innovation 2022); (Office of the Director of National Intelligence 2021); (Pawlak 2020); (Sanajlah 2022); (Strategic Planning Department 2021); (The Egyptian Supreme Cybersecurity Council (ESCC) 2024); (The Federal Government 2023); (The Government of the Republic of Armenia 2020); (The Republic of Croatia 2017); (The Security Policy Analysis Group 2022); and (The White House Washington 2022).

Created with Datawrapper

²⁵⁵ (Abdulhai 2023); (Freedman 2017); (Henrotin 2021); (Manatū Kaupapa Waonga New Zealand Ministry of Defence 2023); (National Security Council 2023); (Oakley and Waxman 2022); (Office of the Director of National Intelligence 2021); and (The Security Policy Analysis Group 2022).

²⁵⁶ (Henrotin 2021).

²⁵⁷ (Al-Rodhan et al. 2022); (Coker 2004); (Cribb 2019); and (Dostanko 2021).

²⁵⁸ (Chekov et al. 2019); (David 2018); (Fredrick et al. 2017); (Geist and Lohn 2018); and (Ministry of Defence's Development, Concepts and Doctrine Centre (DCDC) 2010).

²⁵⁹ See Annex II – Literature Tracking Sheet Definitions for definitions of each category.

Information warfare, heavily influenced by AI and social media platforms, is becoming more prevalent. Misinformation operations linked to these technologies are increasingly used to disseminate propaganda and false information.²⁶⁰ This rise in information warfare is paralleled by the development of advanced surveillance and communication technologies, such as blockchain and the Internet of Things (IoT). These technologies are being employed for data and intelligence collection, thereby enhancing the capabilities of military strategies to monitor and counter misinformation efforts more effectively.²⁶¹

In general, there is a strong emphasis on highly specialized and technologically advanced military forces, with a focus on integrating advanced technologies for warfare management and soldier rehabilitation into their strategy.²⁶² Overall, these trends indicate a shift towards more technologically sophisticated warfare, where AI, cyber weapons, space-based technologies, and biotechnology emerge as alarming concerns for a variety of states and further play significant roles in shaping future conflicts.

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 $^{^{260}}$ (Gady 2020); (Fiott 2020); (Kasapoğlu and Kırdemir 2019b); (Mustasilta 2021); and (Office of the Director of National Intelligence 2021).

²⁶¹ (Allen, Hodges, and Lindley-French 2021); (Bartosh 2018); (Gusarova, Kazennov, and Pankova 2019); (Kashin and Sushentsov 2023); (Kent 2015); (Khomkin 2020); (Kwiatkowski 2020); and (G. Zhang 2023).

²⁶² (Burenok 2021); (National Defense University 2022a); (National Defense University 2022b); and (Alexandrov et al. 2015).

Box 3: Al and the Future of Conflicts

The use of AI in future conflicts is set to change the dynamics of warfare, shaping drivers, locations and actors involved. AI technologies such as AWS and AI-powered cyberattacks are becoming important in modern conflicts, ²⁶³ these technologies improve the capacities of states and give non-state actors advanced tools for conflict. For instance, states like China, Russia, and the US are heavily investing in AI for military purposes making it a key driver of their strategic military development, whereas non-state actors use AI to gain strategic advantages. ²⁶⁴

The use of AI in conflict tends to increase the existing tensions; intelligence and surveillance can lead to escalations for example, and AI-driven cyberattacks can disrupt infrastructure, causing wider geopolitical issues.²⁶⁵ Conflicts are mainly happening in politically unstable regions like the Middle East and South Asia, thereby, these regions will see the first extensive use of AI in conflict including precise targeting, surveillance, and logistical support to armies.²⁶⁶ Additionally, with the advancement of AI and satellite technologies, cyber space and outer space are becoming important battlefields.²⁶⁷

Overall, AI role in future conflicts means better strategic capacities for the parties, a wider range of actors and enhanced strategies that focus on certain regions. The future of conflicts will be closely linked with AI advancements requiring new approaches and a change in the power dynamics of warfare.

²⁶³ (Albiati 2020); (Demus et al. 2022); (Freedman 2017); (Frolov 2023); (He and Nishan 2021); (Kasapoğlu and Kırdemir 2019b); (Iskandarov 2019); (J. Johnson 2020); (National Defense University 2022b); (National Defense University 2022a); (Nazee 2017); (Ostankov 2019); (Smagin 2024); and (Stanley-Lockman 2020); (Thare 2023); (Wang 2022); and (Zuo 2022b).

²⁶⁴ (Cordesman 2019); and (Stefanovich 2021).

²⁶⁵ (Xi Chen and Tengfei 2022); (He and Nishan 2021); (Wang 2022); and (Zuo 2022b).

²⁶⁶ (Raphaeal S. Cohen et al. 2020); (Friedman 2009); (Haydar 2018); (Hussain 2020); and (Rauta 2020b).

²⁶⁷ (Raphaeal S. Cohen et al. 2020); (Government of Hungary 2021); (Kent 2015); (Mumford 2013); and (NATO 2023).

Conclusion

The literature on the future of conflicts is rich in context and varies across multiple languages and areas of publication across countries and regions. The content of these sources highly reflected the background of their authorship, and was determined mostly by factors such as location, language, and regional situations. Overall, the analysis of the literature reveals that future conflicts will likely arise from a complex interplay of multiple, interconnected drivers and threats. The predictions regarding future types of conflicts and the involvement of different actors in warfare are deeply linked with current geopolitical dynamics and specific regional issues. This was a clear indication that today's geopolitical landscape significantly informs future conflict scenarios. Therefore, current conflicts and ongoing crises are strong predictors of future conflict zones, suggesting that areas experiencing instability today are likely to face enhanced or continuous crises in the future. While this heavily relies on predicting the future through the lens of currently ongoing conflict, other pieces of literature use past and present-day tensions to predict new conflicts in the future. Although current types of conflicts, such as armed conflict and occupation, are still prevalent in the future, emerging technologies and advanced weapons become an imminent factor in the nature and intensity of these conflicts. In other instances, topics of future conflicts included new emerging concepts, such as hyper war, and new combinations of drivers and threats that lead to conflict.

Areas for Future Research

The general analysis presented in this report, as insightful as it was, faced some expected limitations in its potential to explore the research questions at hand. These limitations mainly revolved around needed skills, such as language, in addition to academic requirements for submission. However, the previously made conclusions prove that this area of research is only at the verge of explorations and can either be expanded on to emphasize its key findings or taken into different areas of exploration. These points were taken into consideration during the data collection and analysis phases and are now formalized in the form of recommendations for future areas of research.

An expansion of the current research and report entails overcoming the limitations stated previously, such as including all six UN languages, in addition to considering the inclusion of non-UN languages. New categories of description of sources or content can be created within the LTS, exploring other areas such as certain terminologies or theories, conducting a similar analysis path. Further considerations towards unaddressed topics or categories could be further included, such as gender-based violence and gender issues, both as a driver and a conflict in the future. Another level of exploration could assess the ability of scholars to predict conflicts by conducting a deep comparative analysis of much older pieces of literature and assessing their ability to accurately predict current states of affairs, then comparing that sample to the current ones looking into the future.

Regarding the overall topic of the future of conflicts, future research can further explore the existing literature through the lens of peace. So far, only a few of the sources within the research sample indicated a general decline in armed conflict in the future. 268 Waslekar, one of the authors considered in this report, bases his analysis of future conflicts in relation to peace studies, further indicating that in order to do peace building, one needs to understand coming trends in conflict. 269 Predicting the future of conflicts unravels further discussions on policy implications, international law and regulations, and early warning systems. These areas could also be indicators towards concepts of future peace and peace building. This type of research can be essential to current day's areas of interest and concern, namely the UN's Summit of the Future. As the international community gathers this year to enhance cooperation on critical challenges and address gaps in global governance, a study on future peace building through the scope of studies on the future of conflicts could present an influential document that contributes to these intergovernmental deliberations that concerns the future of this world.

 $^{^{268}}$ (Hegre et al. 2013) and (Keegan 2000).

²⁶⁹ (Waslekar 2014).

Annex I - REA Guidelines

8 Requirements of REA Assessment²⁷⁰

- 1. Find relevant search terms (keywords, related academic constructs, thesaurus terms, etc.);
- 2. determine the most relevant research databases for the REA question;
- 3. conduct a systematic and reproducible search in online research databases;
- 4. determine a study's methodological appropriateness and quality;
- 5. identify the impact (effect size) of a study;
- 6. assess and summarize a study's main limitations;
- 7. rate a study's trustworthiness;
- 8. assess and summarize a study's main findings, including practical relevance.

12 Steps for the REA Process²⁷¹

- Step 1. Background: What is the context of the REA question?
- Step 2. Formulating the question: What does the REA answer?
- Step 3. Defining inclusion and exclusion criteria: Which studies will be taken into account?
- Sept 4. Search strategy: How should the studies be sought?
- Step 5. Study selection: How should you select the studies?
- Step 6. Data extraction: What information should be extracted?
- Step 7. Critical appraisal: How to judge the quality of the studies?
- Step 8. Results: What was found?
- Step 9. Synthesis: What does it mean

²⁷⁰ (Barendes, Briner, and Rousseau 2017).

²⁷¹ Ibid.

Annex II – Literature Tracking Sheet Definitions

Type of Publication	
Article	This type of publication was only used for almost all of the Chinese sources, where they covered a range of article types including academic articles, reports, and journal articles. This was used as an indicator for Chinese due to the nature of the database where the sources were found, as they did not give specific or further details of publications (such as volume or issue numbers for articles published in a journal).
Book	An entire book that speaks to the topic of the future of conflicts as detailed in the LTS.
Book Chapter	A single chapter or section of a book that is used as a source to look into the future of conflict. This type of source is used without consideration to the entire publication.
Book Review	An opinion piece discussing a book related to the future of conflicts and relevant subtopics. This source is taken as a primary source and entered independently on the LTS and analyzed in contrast with other sources. In some cases, the book reviewed was entered as an independent source in the table and analyzed separately.
Chaillot Paper	Chaillot Papers are monographic publications of various topics issued by the European Union Institute for Security Studies
Conference Paper	Conference papers or proceedings were documents produced from an official or an academic event (conference, workshop etc.). These papers were used as the primary source of analysis. If the entire conference was of interest to the mapping, it would be added as a separate source.
Journal Article	A piece of research, usually scientific or scholarly, published in a peer-reviewed journal by academics or experts, and is available online and/or in-print.
National Security Strategy	A document prepared periodically by a branch of a government that lists the national security concerns and how the administration plans to deal with them.

News Article	Opinion pieces written about the future of conflicts and relevant subtopics and published in journalist institutions. This does not include current or recent news pieces.
Policy Brief	A short document that presents key findings and recommendations arising from a topic of concern. They are documents that are developed for either a specific audience or for a more general audience.
Report	A document or a statement that presents information in an organized format for a specific audience and purpose.
Research Paper	A piece of academic writing that provides analysis, interpretation, and argument based on in-depth independent research.
Speech	A formal address to an audience that has been delivered in an event. The content of this speech is considered the primary source of analysis, and not the event or context it was given in.
Thesis	A thesis, or dissertation, is an academic document submitted in support of candidature for an academic degree or professional qualification presenting the author's research and findings.
Webpage	A document online that is published by a website and is considered as an electronic source only.
White Paper	A government report giving information or proposals on an issue.
Place of Publication	

This refers to the journal, publisher, and/or institution where the document was originally published, not necessarily where it is found online. For example, several journal articles used in the research sample were found through search engines or reposted on a secondary source, but the place of publication refers to where it was originally published.

Type of Publisher			
Government Institution	Established bodies or entities, owned, controlled or established by federal, provincial or local governments.		
International Organization	An international organization, also known as an intergovernmental organization or an international		

	institution, is an organization that is established by a treaty or other type of instrument governed by international law.
Journal	A collection of articles that is published regularly throughout the year, online or in-print, and could be published by any form institution.
Journalistic Institution	A media outlet providing news, information and feature stories to the public by way of newspapers, magazines, social media and the Internet, television and radio.
Magazine	A periodical publication, generally published on a regular schedule, containing a variety of content.
Military Journal	A specific journal (see Journal above) dedicated to military related topics.
NGO	A non-governmental organization that generally is formed independent from government. They are typically nonprofit entities, and many of them are active in humanitarianism or the social sciences.
Political/Research Institution	A research institute, research center, or research organization is an establishment founded for doing research. Research institutes may specialize in basic research or may be oriented to applied research. This is also specific to research institutes in the social sciences.
Publisher (Books)	An individual, organization, or company responsible for producing and distributing printed content to the public.
Publisher (Electronic)	An individual, organization, or company responsible for producing and distributing digital content to the public.
Tech Company	A technology company that focuses on the studying, development, and/or application of new technologies.
Think Tank	A think tank, or policy institute, is a research institute that performs research and advocacy concerning topics such as social policy, political strategy, economics, military, technology, and culture.
University	An institution of higher education and research, which awards academic degrees in several academic disciplines.
University/Journal	A journal (see Journal above) that is produced by a university (see University above)

Country of Publication

This refers to the city and country of the physical location of the main publisher. For example, electronic sources are traced back to the location where the website is managed or produced from, so this does not cover the nationality of the author or the institute the author is affiliated with.

Research Method	
Analytical	Analytical is a systematic approach for breaking down complex topics by critically examining and interpreting data or information to identify patterns and draw conclusions. Often techniques of statistical analysis, logical reading, and comparison are incorporated.
Analytical/Religious	Referring to a systematic approach to studying complex topics by consulting religious text.
Comparative Analysis	A systematic approach involving the comparison of two or more entities to identify similarities, differences, and patterns, and assess the relationship between these.
Descriptive	Focusing on accurately and systematically describing a phenomenon, situation, or data. The aim is to provide a detailed account of the characteristics, behavior, and functions of the topic at hand.
Exploratory	To investigate a problem or phenomenon that is not well understood or relatively new. It is primarily used in an early stage of research and aims to gain insights, by for example using quantitative methods.
Historical Analysis	The systematic examination of past events, sources, and contexts to uncover patterns, trends, and insights. This can involve the critical evaluation of primary and secondary sources.
Historical Comparative Analysis	Commonly involves analyzing historical events and phenomena across different cases, time periods, or geographical regions to identify similarities and differences.
Policy Recommendations	These include proposals or suggestions put forth by experts, researchers, or policymakers, based on thorough analysis, research and consideration of relevant factors, with the aim of informing decision-making.
Quantitative Methods	Involves the collection, analysis, and interpretation of numerical data to understand phenomena and test

	hypotheses. It is generally used to identify trends, establish correlations, and make predictions.
Science Fiction	A speculative tool for envisioning potential future scenarios. Generally, not a conventional research method, but sparks imagination, critical reflection, offering creative insights.
Workshop	Convening participants in collaborative activities, discussing specific topics. Through interactive sessions and knowledge exchange, data and idea collections can be facilitated.
	Type of Conflicts
Armed Conflict	A conflict that involves the use of armed force between two or more parties, such as states, non-state actors, or a combination of both.
Asymmetric Conflict	A conflict that involves parties with significantly different military capabilities or strategies, where one side is much stronger than the other.
Civil War	A war or conflict between organized groups within the same state.
Cyber Conflict	A conflict that involves the use of computer networks and information systems to disrupt, damage, or gain unauthorized access to an opponent's information systems. It can include activities such as hacking, cyber espionage, and the spread of malware and misinformation.
Democratic Conflict	Conflict that occurs within democratic systems and involves competition between political parties or interest groups over policy, power, or resources. It can also occur between democracies.
Geopolitical Conflict	Conflict that arises from competition over strategic resources, territory, or influence between states or other geopolitical entities.
Hybrid War	Involves the use of a combination of military, political, economic, and informational means to achieve strategic objectives.
Hyper War	A term coined by John R. Allen and Amir Husain which refers to algorithmic or "Al"-controlled warfare with little to no human decision making.

International Tensions	Strain or hostility between nations that can arise from various issues such as territorial disputes, competition for resources, political ideologies, or economic rivalry.
Information War	Involves the use of information and disinformation to influence opinions, undermine adversaries, and shape the narrative of events. It can include propaganda, psychological operations, and cyber-attacks on information systems.
National Security Threats	In the context of the sources, this term refers to an overall concern of a government from a specific threat, whether international or national, that impacts its overall stability without a specific mention to a type of conflict.
Nuclear Conflict	Conflict that involves the use or threatened use of nuclear weapons by one or more parties.
Outer space Conflict	Use of space-based assets for offensive or defensive purposes and potential confrontations in or around Earth's orbit.
Occupation/Invasion	Occupation or invasion occurs when one state militarily occupies the territory of another state, often against the will of the invaded state.
Political Conflict	Conflicts that arise from differing political ideologies, interests, or objectives between individuals, groups, or states.
Proxy War	Conflicts in which two opposing states support combatants that serve their interests instead of waging war directly. Proxy wars are often fought in third-party countries and can involve local or regional actors as well as external powers.
Revolution	Violent change in political power or organizational structures, typically occurring when the population revolts against the current government due to perceived oppression or politics.
Sanctions	Restrictions limiting the freedom of a state, a group or individuals are imposed through a unilateral decision by a state or a collective decision by several states.
Technological Conflict	Conflicts centered around technological superiority, with advancements in technology playing a critical role in determining the outcome.

Territorial Conflict	Conflicts that arise from disputes over land or maritime boundaries between states or other territorial entities.	
Terrorism	Use of violence and intimidation, especially against civilians, to pursue political aims.	
Trade War	A trade war occurs when countries impose tariffs or other trade barriers on each other in response to trade practices they deem unfair, leading to a cycle of retaliation.	
War of Attrition	Prolonged conflict where each side aims to gradually wear down the other by continuously inflicting losses in personnel and material.	
	Drivers / Threats	
Arms Race	A competitive buildup of military capabilities, often driven by mutual distrust, fear, or the desire for security to enhance one's own military capacity, a balance of power or gain a strategic advantage, leading to a cycle of escalation between the actors and competition.	
Climate Change	Increase in global temperature leading to for example extreme weather scenarios, drought, heat waves, rise in sea levels.	
Criminality	Exacerbation of tensions and violence resulting from illicit activities such as organized crime, corruption, and trafficking, undermining societal stability and governance structures.	
Economy	Unstable economy affecting the society by disrupting supply chains, instability, change in consumer habits, differences in economic and trading interests.	
Election Outcome	The results of an election intensify or trigger social, political, or even violent tensions within a society, it can be linked to perceived unfairness, disputed legitimacy, or deep ideological divides among competing factions.	
Ethnicity and Religion	Ethnic or religious differences, including grievances lacking an intergroup dialogue within a society.	
Food Insecurity	The fact or an instance of being unable to consistently access or afford adequate food at the population or national levels.	
Fragmentation	Splintering or dividing societal, ethnic, or political groups along identity lines, exacerbating tensions.	

Genocide	As defined in the Genocide Convention, serving as a catalyst for profound and often long-lasting violent conflicts.
Geopolitical	Orchestrate international, national, and regional rivalries, influenced by internal and external pressures, alliances, interventions, geographical factors, and emerging military blocs and partnerships, fostering instability and chaos while exerting external pressure.
Globalization	The interconnectedness of nations, influencing both the increase and decrease in global integration sparking tensions over economic and political interests.
History	The enduring impact of past events, grievances, and power dynamics on present-day tensions, shaping identities, narratives, and territorial disputes.
Human Frailty	The characterization of leaders, which base their decision making on personal emotions, egoistic assumptions or the public sentiment.
Ideologies	Different political ideologies in a system of governance, which are in confrontation with each other.
Migration	Friction arising from the movement of people across borders, voluntarily and involuntarily, triggering disputes over resources, identity, cultural clashes, and economic competition within and between societies.
Military Threat	Whether offensive or defensive military threats, creating conditions of uncertainty, fear, and insecurity among actors. Offensive military threats involve the explicit or implicit intention to use force or coercion to achieve strategic objectives, thereby prompting defensive responses or preemptive actions from adversaries. Defensive military threats involve actions designed to deter aggression, protect territorial integrity, or maintain national security, but may inadvertently provoke perceptions of aggression or insecurity. In modern times this can also include cyber security.
Misinformation	The spread of false or misleading information, intentionally or unintentionally, manipulating perceptions, influencing public opinion, exacerbating social divisions, and undermining trust in institutions.
Nationalism	Involving the promotion of a nation's interests, identity, and sovereignty often leading to tensions or conflicts, prioritizing

	the concerns of one nation over others, potentially resulting in clashes with opposing national interests.
Nuclear Deterrence	The possession and threat of using nuclear weapons by states aiming to prevent adversaries from initiating conflict, thus maintaining stability through the fear of mutually assured destruction.
Pandemic	Societal, economic, and political disruptions caused by widespread disease outbreaks, often amplifying existing tensions and inequalities within and between nations.
Polarization	The deepening division and escalation of societal tensions along ideological, cultural, or political lines, leading to heightened hostility, mistrust between opposing factions.
Political	Encompassing the manipulation or contestation of power, resources, and governance structures, often resulting in social unrest, instability, and potential violence within a society or between nations.
Poverty	The exacerbation of societal tensions and instability resulting from economic deprivation, inequality, and lack of access to resources.
Power Transformation	Shifting dynamics in global order, marked by the waning hegemony of superpowers, emergence of new national leaders, and the erosion of established international organizations' influence, leading to uncertainty, increased competition contestation, as the old status quo dissolves and the new one is yet to be established.
Radicalization	Intensification of extremism, often rooted in religious fundamentalism or populist ideologies, which exacerbates social friction, heightens uncertainty, and marginalizes divergent viewpoints.
Resources	Intensified competition fueled by environmental shifts and scarcity of critical resources such as water, energy, and land, alongside disparities in resource distribution which strain geopolitical relations, and are exacerbated further by overconsumption in developed nations and a lack of systemic global resource distribution mechanisms.
Revolutions	Mass movements marked by socio-political upheaval, driven by discontent with existing power structures, inequality, and injustices, often leading to significant societal transformations, and potential violent

	confrontations as entrenched systems are challenged and redefined.
Social Economic	Encompassing multifaceted factors such as cultural shifts, healthcare and education disparities, urbanization, inequality, and demographic changes, contributing to social unrest, political exclusion, grapple of loss of cultural identity, diminishing patriotism, and disparities in access to resources and opportunities, while cultural erosion can also be perceived as a security threat by the state.
Technology	The rapid emergence of new technologies and digitalization, impacting various facets of society, economy, communication, surveillance, and military capabilities, which simultaneously create new vulnerabilities and enhance existing ones, potentially escalating tensions and conflicts as states and non-state actors exploit technological advancements for strategic advantage.
Territory	Contentious claims over geographical areas, resources, or strategic locations, often exacerbated by historical grievances, political rivalries, and competition for control.
Weak Governance	Encompassing issues like corruption, political oppression, and exclusion from political processes, leading to state failure, loss of public trust in national governments and international institutions, linked to a lack of effective legal frameworks and governance mechanisms.
	New / Current Conflict
Current Conflict	Conflicts that are currently ongoing, where the source predicts its future or future impact.
New Conflict	A specific type of conflict or a conflict involving specific parties or locations that have not happened, or are a source of future predictions and concerns.
	New Weapons / Technology
AI	Artificial Intelligence (AI) refers to the simulation of human intelligence in machines that are programmed to think and mimic human actions.
Biological weapons	Biological weapons, also known as bioweapons, are living organisms or replicating entities (viruses, bacteria, fungi) that are used with the intent to cause disease or death in humans, animals, or plants as a form of warfare.

Blockchain	Technology that provides secure, transparent, and permanent recording of exchanges. Within the military, it improves secure communication, guarantees data integrity, and enhances supply chain management by preventing fake materials and verifying personal identities.
Cyber weapons	Cyber weapons are tools, devices, or programs that are designed to inflict damage, disruption, or unauthorized access to computer systems, networks, or data. It can be used for espionage, sabotage, or to exert influence over a target's information systems.
Hypersonic Weapons	Hypersonic weapons are military tools that travel over five times the speed of sound, making them very fast and hard to stop. They can change direction during flight, which makes it difficult to detect and intercept.
Internet of Things (IoT)	It includes interconnected devices that collect and exchange information. Within the military, IoT improves situational awareness through real-time data from drones and sensors and improves operational efficiency by monitoring equipment and streamlining logistics.
Nuclear weapons	Nuclear weapons are explosive devices that derive their destructive force from nuclear reactions, either fission (fission bombs) or a combination of fission and fusion (thermonuclear bombs). They have enormous destructive power and can cause mass destruction, devastation, and loss of life.
Satellite technology	Satellite technology involves the design, construction, launch, and operation of satellites for various purposes, including communication, intelligence gathering, navigation and military communications and reconnaissance.
Transhuman	Transhuman refers to an individual who has undergone or seeks to undergo a process of enhancing their physical, mental, or intellectual abilities beyond what is considered typical for humans.
Unmanned systems	Unmanned systems are vehicles or machines that operate without a human operator on board. These systems can include drones, unmanned ground vehicles, unmanned surface vehicles, and unmanned underwater vehicles. Unmanned systems are used for a variety of military, civilian, and commercial applications.
Parties Involved	

This refers to the parties and actors mentioned in the literature which are to be involved in a future conflict. They can vary between states, non-state actors, and international organizations.

Reaction to Conflict

This section focuses on the source's context, whether the author makes clear indications to outcomes of predictions, or whether they explicitly write predictions to the conflict in question. Some also include the different scenarios some authors produce as their attempt to analyze the future of specific conflicts.

Time in the Future

If specified, the specific year(s) into the future mentioned was noted down in the tracking sheet, whether it was a number (i.e. 2030) or a general indication (i.e. in the next decade). Otherwise, this section was left blank if no indication of time was evident in the source and is talking about the future in a general large context.

Location / Region of Conflict

This refers to where future conflicts will take place geography in the world but also if in outer or cyberspace. The location indicated by the literature can vary between specific places or general regions.

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