

Nuclear Threats: the importance of Promoting the Treaty on the Prohibition of Nuclear Weapons (TPNW) in Francophone regions

Introduction:

On February 27th, 2022, Vladimir Putin ordered Russia's Defense Minister and Chief of the General Staff to "switch the Russian army's deterrent forces onto a high alert mode of combat standby duty." (Putin, 2022, [online](#)). Although often neglected or overlooked, nuclear weapons are one of the most threatening issues our world is facing.

Reverse the Trend (RTT) is highly concerned about current nuclear threats and rising tensions. The RTT initiative seeks to address the catastrophic effects of nuclear weapons and enable youth engagement through educational resources, encouraging movement building, and creating opportunities for affected communities and individuals to share their stories in public and policy spaces (Reverse the Trend, no date, [online](#)). As such, Reverse The Trend seeks to reinforce its efforts in raising awareness around this issue. This policy brief, by Reverse the Trend's Francophone branch, aims to highlight the impacts of nuclear weapons, as well as remind how crucial continuous efforts in promoting the Treaty on the Prohibition of Nuclear Weapons are. Although this is true on an international scale, the following policy brief will focus on the implementation of the TPNW in Francophone regions.



Reverse The Trend Logo¹

Nuclear weapons - the impact:

The use of nuclear weapons has chaotic effects on everything it comes across: it has the ability to destroy everything. In 1976, a Japanese study focusing on the Hiroshima bombing took place with the participation of "thirty-four Japanese scientists and physicians" (Rhodes in Graham, 2004, p.22). Its conclusion was simple, yet striking: "the whole of society was laid waste to its foundations." (Rhodes in Graham, 2004, p.23). Indeed, the study points out that every "kind of human organization" was "demolished in an instant" (Rhodes in Graham, p.22).

The International Campaign to Abolish Nuclear Weapons, who received the Nobel Peace Prize in 2017, also emphasize other key issues regarding nuclear weapons:

- the destruction caused by such weapons "cannot be limited to military targets or to combatants",
- "less than one percent of the nuclear weapons in the world could disrupt the global climate and threaten as many as two billion people with starvation in a nuclear famine",
- "nuclear weapons produce ionizing radiation, which kills or sickens those exposed, contaminates the environment, and has long-term health consequences, including cancer and genetic damage",

- “physicians and first responders would be unable to work in devastated, radioactively contaminated areas”; no humanitarian response would be possible.
- “nuclear weapons cause widespread harm to health and to the environment”, even if they are not detonated.

(ICAN, no date, [online](#))

Furthermore, the International Physicians for the Prevention of Nuclear War, which was born during the Cold War and has been working for more than four decades on the abolition of nuclear weapons, warns that: “a limited, regional nuclear conflict involving only 100 Hiroshima-size nuclear weapons would severely disrupt the global climate and agriculture for two decades or more. The resulting food shortages would place at least two billion people at risk of starvation. The massive arsenals held by the US and Russia can create a nuclear winter, destroying Earth’s fundamental ecosystems, on which all life depends.” (IPPNW, no date, [online](#)).

As such, it is impossible to respect the Geneva Conventions or International Law whilst using nuclear weapons: they threaten our very existence.

The magnitude of a nuclear strike:

In recent years, programs who have the ability to calculate and simulate a nuclear detonation using a variety of different parameters (Wellerstein, 2012, [online](#)), have been developed. NUKEMAP programmed by Alex Wellerstein helps visualize the impacts and magnitude nuclear explosions have:

The effects that would be caused if “Little Boy”, the bomb that was launched on Hiroshima on August 6th, 1945, were to explode near the Eiffel Tower in Paris, France.²

Effect distances for a 15 kiloton surface burst: ▼

● Fireball radius: 230 m (0.17 km²)

Maximum size of the nuclear fireball; relevance to damage on the ground depends on the height of detonation. If it touches the ground, the amount of radioactive fallout is significantly increased. Anything inside the fireball is effectively vaporized.

○ Heavy blast damage radius (20 psi): 0.54 km (0.9 km²)

At 20 psi overpressure, heavily built concrete buildings are severely damaged or demolished; fatalities approach 100%. Often used as a benchmark for **heavy** damage in cities.

○ Moderate blast damage radius (5 psi): 1.13 km (4 km²)

At 5 psi overpressure, most residential buildings collapse, injuries are universal, fatalities are widespread. The chances of a fire starting in commercial and residential damage are high, and buildings so damaged are at high risk of spreading fire. Often used as a benchmark for **moderate** damage in cities.

● Radiation radius (500 rem): 1.34 km (5.64 km²)

500 rem ionizing radiation dose; likely fatal, in about 1 month; 15% of survivors will eventually die of cancer as a result of exposure.

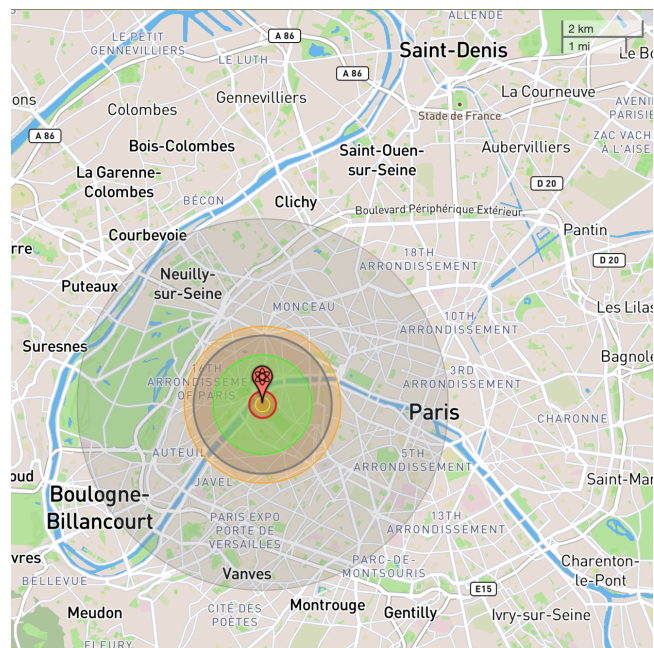
● Thermal radiation radius (3rd degree burns): 1.68 km (8.92 km²)

Third degree burns extend throughout the layers of skin, and are often painless because they destroy the pain nerves. They can cause severe scarring or disablement, and can require amputation. 100% probability for 3rd degree burns at this yield is 8.7 cal/cm².

○ Light blast damage radius (1 psi): 2.9 km (26.4 km²)

At a around 1 psi overpressure, glass windows can be expected to break. This can cause many injuries in a surrounding population who comes to a window after seeing the flash of a nuclear explosion (which travels faster than the pressure wave). Often used as a benchmark for **light** damage in cities.

Note: Rounding accounts for any inconsistencies in the above numbers.



Estimated fatalities:

87,520

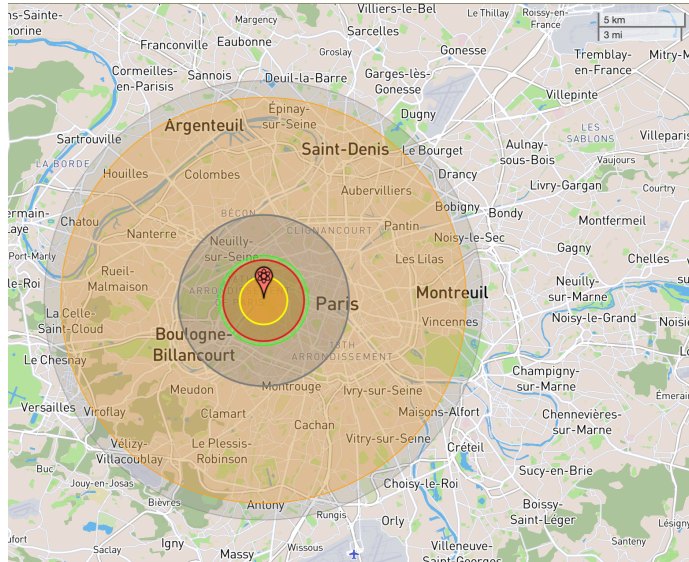
Estimated injuries:

216,100

In any given 24-hour period, there are on average 693,031 people in the light (1 psi) blast range of the simulated detonation.

Modeling casualties from a nuclear attack is difficult. These numbers should be seen as evocative, not definitive. Fallout effects are deliberately ignored, because they can depend on what actions people take after the detonation. For more information about the model, [click here](#).

The yield of “Little Boy” was 15 kilotons. Since 1945; however, weapons with higher capacity and increased power have been developed. For instance, B-83 in the United State’s nuclear arsenal yields 1.2 Mt (1200 kilotons). That is 80 times more than “Little Boy.”



The effects that would be caused if B-83 were to explode near the Eiffel Tower, in Paris, France.³

The difference in scale is *massive*.

Estimated fatalities:
1,293,900
Estimated injuries:
1,676,930

In any given 24-hour period, there are on average 5,397,473 people in the light (1 psi) blast range of the simulated detonation.

Modeling casualties from a nuclear attack is difficult. These numbers should be seen as evocative, not definitive. Fallout effects are deliberately ignored, because they can depend on what actions people take after the detonation. For more information about the model, [click here](#).

Nuclear weapons are weapons of mass destruction. They have the capacity to destroy entire cities and communities, whilst having innumerable long-lasting effects on health, the environment, all types of life, and every kind of “human organization” (Rhodes in Graham, 2004, p.22) as we know them. As such, they are immoral - and the only way to be safe from such threat is to eliminate them completely.



Ground view of Nagasaki before and after the bombing; radiuses in increments of 1,000 feet from Ground Zero are shown. (Photo from U.S. National Archives, RG 77-MDH) ⁴

The Treaty on the Prohibition of Nuclear Weapons:



Photo: Ralf Schlesener - Formal session at the United Nations for the negotiation of the TPNW, July 3rd, 2017. ⁵

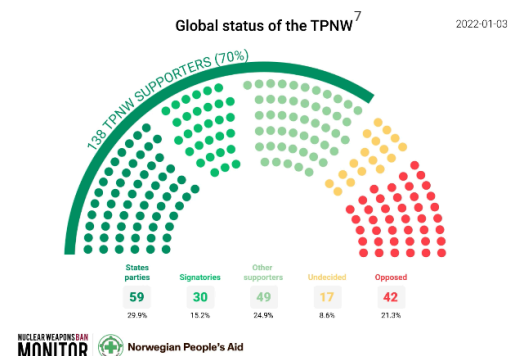


Photo: Ralf Schlesener. ⁶

In the past couple of years, major milestones have been achieved in international nuclear disarmament. In 2017, the Treaty on the Prohibition of Nuclear Weapons (TPNW) was negotiated (Ritchie and Kmentt, 2021, p.70) at the United Nations in New York City. Indeed, the United Nation’s General Assembly adopted the resolution 71/258 in 2016, deciding to “convene in 2017 a United Nations conference to negotiate a legally binding instrument to prohibit nuclear weapons, leading towards their total elimination” (UN General Assembly, 2016, [online](#)). As such, the TPNW was negotiated in 2017 and entered into force on January 22nd, 2021 - 90 days after 50 states had ratified the treaty (Ritchie and Kmentt, 2021, p.70). With the treaty into force, a historical achievement was realized: it is “the first legally binding instrument which comprehensively prohibits nuclear weapons, aimed at their eventual total elimination.” (Løvold, 2019, [online](#))

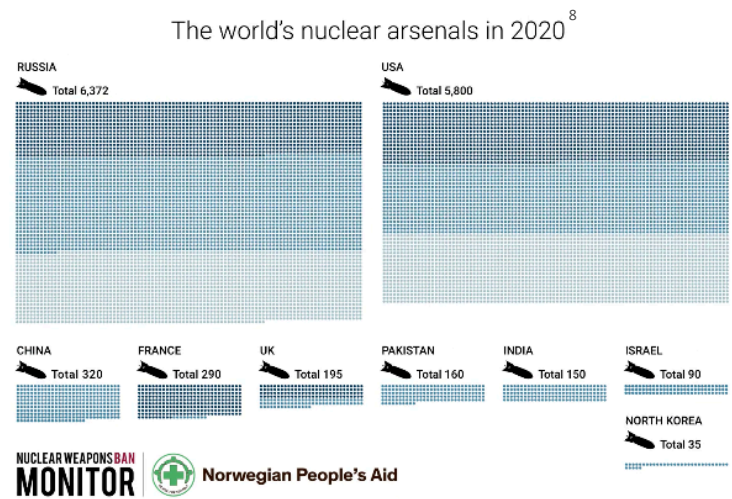
Going forward, the major challenge is to strive for the universalization of the TPNW. In other words, universalization “should be understood as a strategy to maximise the authority of the treaty’s norms and principles in order to influence the nuclear weapons policies of nuclear-armed states and ‘nuclear client states’ – those states such as NATO members on behalf of whom nuclear deterrent threats are made by nuclear patrons – in the direction of nuclear disarmament.” (Ritchie and Kmentt, 2021, p.71). Although the TPNW prohibits nuclear weapons through a legally binding instrument (UNODA, no date, [online](#)), states with nuclear weapon as well as nuclear umbrella states aren’t abiding by it as they didn’t participated in the negotiations and didn’t ratify the treaty. However, the treaty sends a message that nuclear weapons are unacceptable and condemn them.

The TPNW is a major step towards achieving a world free of nuclear weapons. Yet, continuous efforts have to be maintained to ensure the universalization of the treaty. As the president of the IFRC Francesco Rocca stated, “the entry into force of the Nuclear Ban Treaty is the beginning, not the end, of our common efforts.” (IFRC, 2021, [online](#)).



Implementing the TPNW in Francophone Regions:

Looking at Francophone regions is key to promote the universalization of the TPNW. Indeed, France is one of the five nuclear states recognized under the Nuclear Proliferation Treaty, and currently “possesses the world’s fourth largest nuclear stockpile” (NTI, 2022, [online](#)) with 290 nuclear warheads (NTI, 2022, [online](#)). Additionally, it has conducted 210 nuclear tests between 1960 and 1996 (CTBTO, no date, [online](#)). Populations in both Algeria and French Polynesia, where tests were conducted, were greatly affected by a variety of impacts. These include Francophone Communities, whose voice have been neglected. One of our primary mission with Reverse The Trend Francophone is to amplify the voices of young people, primarily coming from these frontline communities, who have been directly affected by nuclear weapons. (Reverse The Trend, no date, [online](#)). Listening to testimonies and learning about the impacts of nuclear weapons - both through quantitative and qualitative data - is absolutely crucial. We must hold governments accountable for decisions made, and must raise awareness on the tragic effects of such weapons. As such, not only is France a major actor when regarding nuclear weapons, but Francophone communities throughout the world have been impacted by nuclear testing.



The Heavy Consequences of France’s Nuclear Testing Programs:

French nuclear tests in both Algeria and French Polynesia have led to grave consequences. Firstly, nuclear explosions have engendered serious contamination of the environment (CTBTO, no date, [online](#)), with radioactive waste which is still currently present in the atmosphere, various organisms, and waters, decades after testings (Právělie, 2014, p.729). In 1983, scientists from Australia, New Zealand, and Papua identified radionuclides, more specifically iodine-131, in marine organisms near Moruroa. Other radionuclides were detected both in the air and water. The group of scientists discovered that: “plutonium-239 concentrations in the air were about four times greater than in continental France.” (CTBTO, no date, [online](#)).

Additionally, nuclear blasts which were carried out underground have triggered landslides, tsunamis, and earthquakes. On July 25th, 1979, a landslide was provoked by a nuclear test, leading to tsunami-like tidal waves which hit Moruroa (CTBTO, no date, [online](#)).

Next, French nuclear tests have affected food chains. Ciguatera fish poisoning had become a big public health issue in parts of French Polynesia during the 1980's (Ruff in CTBTO, no date, [online](#)). Evidence proves that plutonium-239, produced by nuclear testing, had actually accumulated in the food chain (Ruff in CTBTO, no date, [online](#)).

This relates to yet another impact of French nuclear testing: the heavy long-term health effects on populations. AVEN, the French nuclear test veterans' association, conducted a survey in 2008 which revealed that 35% of French 'nuclear test' veterans had one or multiple types of cancer (AVEN, 2008, [online](#)). Additionally, 20% were infertile (AVEN, 2008, [online](#)). The survey concluded that veterans suffered from a wide range of illnesses, and that health complications were often passed on to their children and grandchildren. In 2006 a French medical research body called INSERM found a correlation between an increase in thyroid cancer and people living within 1,000 miles of French-owned Polynesian atolls on which nuclear tests were conducted (INSERM in Lichfield, 2006, p.) Overall, French nuclear testing has affected the environment, organisms, and populations in various ways - some of which are still problematic decades after the last conducted test.

Conclusion and Recommendations:

Nuclear weapons present one of the greatest threats to humanity. They have the capacity to destroy entire populations and have tragic immediate and long-term effects. In times of rising tensions, Reverse The Trend Francophone wishes to highlight the importance of the Treaty on the Prohibition of Nuclear Weapons, as well as continuous efforts towards its universalization. It calls upon governments to abide to this legal instrument, and condemns the threatening of nuclear strikes by nuclear powers. Indeed, these weapons are not, and will never be, a solution. Reverse The Trend supports continuous diplomatic relationships between all states and calls



Photo: UNA-UK⁹

for continuous efforts from governments, with the help of the International Committee of the Red Cross and the United Nations, in achieving nuclear disarmament.

Additionally, Reverse The Trend Francophone would like to remind the importance of civil society, various non governmental organizations, and initiatives in achieving a world free of nuclear threats. Various types of organizations, from ones concerned by Human Rights to Climate Change, should be concerned by nuclear weapons. Their participation in advocacy and involvement against the development and use of nuclear weapons is required to put pressure upon governments and change the norm that such weapons are acceptable. Continuous and new efforts are essential in both holding governments accountable for their actions as well as promoting the TPNW.

Furthermore, initiatives can start at a local scale. For instance, Reverse The Trend Francophone focuses on Francophone regions, while other branches of Reverse The Trend focalize on other regions. This enables to scale initiatives and enable relevant advocacy, choices, and actions. Reverse The Trend Francophone highlights the importance of promoting the TPNW in Francophone regions, notably in France, Algeria, and French Polynesia.

Finally, the involvement of the Youth is also key. Reverse The Trend Francophone asks for increasing efforts to educate on this issue. It hopes to see and enable more involvement from younger generations. In Francophone regions, Reverse The Trend Francophone continuously seeks to develop its initiative, as it hopes to educate and promote Youth involvement by organizing various events. It also wants to enable communities who have been affected by nuclear testing to share their stories, as they are absolutely essential. It calls for dialogue between various organizations and the creation of mediums to discuss, raise awareness, advocate, and create change. The first meeting of states parties to the TPNW will take place in Vienna in July 2022. Reverse The Trend will attend with a delegation composed of Youth participants. The TPNW is indeed, as ICRC's arms policy advisor Magnus Løvold said, a result of "young people's refusal to accept the status quo and their courage to bring to life what others lacked like the ability or willingness to even imagine" (Løvold, 2019, [online](#)). The treaty's success, as well as striving for a safer and peaceful world, depends on the continued engagement of younger generations.

Reference List:

AVEN - Association des Vétérans des Essais Nucléaires au Sahara, en Polynésie et leurs familles. (2008). *Revue Scientifiques*. Available at: <https://aven.org/informations/revue-scientifique/> (Accessed: March 8th, 2022).

CTBTO - Comprehensive Nuclear-Test-Ban Treaty Organization. (no date). *France's nuclear testing programme*. Available at: <https://www.ctbto.org/nuclear-testing/the-effects-of-nuclear-testing/frances-nuclear-testing-programme/> (Accessed: March 8th, 2022).

Graham, T. (2004). *Common sense on weapons of mass destruction: the effects of nuclear weapons*. Washington D.C., USA: University of Washington Press. [Online]. Available at: <https://www.jstor.org/stable/j.ctvcwnwp2.6> (Accessed: March 3rd, 2022).

ICAN - International Campaign to Abolish Nuclear Weapons. (no date). *Catastrophic harm: what makes nuclear weapons the worst*. Available at: https://www.icanw.org/catastrophic_harm#:~:text=1%20A%20single%20nuclear%20weapon,would%20reach%20hundreds%20of%20millions (Accessed: March 7th, 2022).

IFRC - International Federation of Red Cross and Red Crescent Societies. (2021). *The International Red Cross and Red Crescent Movement celebrates the entry into force of the Treaty on the Prohibition of Nuclear Weapons*. Available at: <https://www.ifrc.org/press-release/international-red-cross-and-red-crescent-movement-celebrates-entry-force-treaty-prohibition-nuclear> (Accessed: March 6th, 2022).

IPPNW - International Physicians for the Prevention of Nuclear War. (no date). *Nuclear weapons fact*. Available at: <https://www.ippnw.org/programs/nuclear-weapons-abolition/nuclear-weapons-facts#:~:text=Environmental%20destruction,people%20at%20risk%20of%20starvation> (Accessed: March 4th, 2022).

Lichfield, J. (2006). 'France's nuclear tests in Pacific 'gave islanders cancer'', *Independent*, August 4th, 2006. [Online]. Available at: <https://www.independent.co.uk/news/world/europe/france-s-nuclear-tests-in-pacific-gave-islanders-cancer-410474.html> (Accessed: March 8th, 2022).

Løvold, M. (2019). *Courage, responsibility and the path towards a world without nuclear weapons: a message to youth*. Available at: <https://blogs.icrc.org/law-and-policy/2019/08/21/courage-responsibility-path-towards-world-without-nuclear-weapons/> (Accessed: March 9th, 2022).

NTI - Nuclear Threat Initiative. (2022). *France*. Available at: <https://www.nti.org/countries/france/> (Accessed: March 6th, 2022).

Právělie, R. (2014). 'Nuclear Weapons Tests and Environmental Consequences: A Global Perspective', *Ambio*, (43/6). pp.729-744. [Online]. Available at: https://www.jstor-org.manchester.idm.oclc.org/stable/24709066?seq=1#metadata_info_tab_contents (Accessed: March 5th, 2022).

Putin, V. (2022). 'Putin puts Russia's nuclear forces on high alert', [Online]. Moscow. *Time*, February 27th, 2022. Available from: <https://time.com/6151905/russia-nuclear-forces/> (Accessed: March 4th, 2022).

ReverseThe Trend Francophone, Policy Brief 2022

Reverse The Trend. (no date). *Reverse The Trend's Mission*. Available at: <https://rttreversingthetrend.org/mission> (Accessed: March 3rd, 2022).

Reverse The Trend. (no date). *Rise up, take action, and share your voice!*. Available at: <https://rttreversingthetrend.org> (Accessed: March 3rd, 2022).

Ritchie, N. and Kmentt, A. (2021). 'Universalising the TPNW: Challenges and Opportunities', *Journal for Peace and Nuclear Disarmament*, (1/4), pp.70-93. [Online]. Available at: <https://www.tandfonline.com/doi/full/10.1080/25751654.2021.1935673> (Accessed: March 6th, 2022).

TPWN - Treaty on the Prohibition of Nuclear Weapons. (2017). Available at: <https://www.un.org/disarmament/wp-content/uploads/2017/10/tpnw-info-kit-v2.pdf> (Accessed: March 3rd, 2022).

UN General Assembly. (2016). *Resolution 71/258 [Taking forward multilateral nuclear disarmament negotiations]*, 23 December, 2016, A/RES/71/258 (2016). [Online]. Available at: <https://documents-dds-ny.un.org/doc/UNDOC/GEN/N16/466/69/PDF/N1646669.pdf?OpenElement> (Accessed: March 4th, 2022).

UNODA - United Nations Office for Disarmament Affairs. (no date). *Treaty on the Prohibition of Nuclear Weapons*. Available at: <https://www.un.org/disarmament/wmd/nuclear/tpnw/> (Accessed: March 5th, 2022).

Wellerstein, A. (2012). *NUKEMAP*. Available at: <https://alexwellerstein.com/projects/nukemap/> (Accessed: March 3rd, 2022)

Illustrations:

¹ Reverse The Trend Logo. (2022). Available at: <https://rttreversingthetrend.org/> (Accessed: March 9th, 2022).

² NUKEMAP. (2012). Simulation of a 15kt nuclear explosion near the Eiffel Tower in Paris, France. Available at: <https://nuclearsecrecy.com/nukemap/> (Accessed: March 5th, 2022).

³ NUKEMAP. (2012). Simulation of a 1200kt nuclear explosion near the Eiffel Tower in Paris, France. Available at: <https://nuclearsecrecy.com/nukemap/> (Accessed: March 5th, 2022).

⁴ U.S. National Archives. (1945). Ground view of Nagasaki before and after the bombing. Available at: <https://nsarchive.gwu.edu/briefing-book/nuclear-vault/2020-08-04/atomic-bomb-end-world-war-ii> (Accessed: March 8th, 2022).

⁵ Schlesener, R. (2017). Formal session at the United Nations for the negotiation of the TPNW, July 3rd, 2017. Available at: <https://www.flickr.com/photos/icanw/35537207612/in/album-72157678775327224/> (Accessed: March 8th, 2022).

⁶ Schlesener, R. (2017). NYC Central Park and 'ban the bomb' banners, July 4th, 2017. Available at: <https://www.flickr.com/photos/icanw/34921863214/in/album-72157678775327224/> (Accessed: March 8th, 2022).

⁷ Nuclear Weapons Ban Monitor & Norwegian People's Aid. (2022). Global Status of the TPNW. Available at: <https://banmonitor.org/> (Accessed: March 8th, 2022).

⁸ Nuclear Weapons Ban Monitor & Norwegian People's Aid. (2020). The World's Nuclear Arsenals in 2020. Available at: <https://banmonitor.org/> (Accessed: March 8th, 2022).

⁹ UNA-UK. (2021). Landmark day for disarmament: UN Treaty Banning Nuclear Weapons becomes international law. Available at: <https://una.org.uk/news/landmark-day-disarmament-un-treaty-banning-nuclear-weapons-becomes-international-law> (Accessed: March 8th, 2022).