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Evolution of Treaties: From Conception to Birth, How Are Arms Control Treaties Made?

Charlie JP Bennett

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About Charlie JP Bennett

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Background

This research was commissioned to better understand the production process of Arms Control Treaties (ACTs) – the intimate details of how they work, and which factors and aspects make them more likely to be successful. For this, an in-depth assessment of ACTs was required to clarify how newer such instruments might be made, and which avenues may be available toward success.

Methodology

The research employed two primary methods of research: first, an interview series with current and former negotiators, diplomats, and other experts directly involved in, or possessing expertise on, the arms control formation process. 21 such interviews were conducted. Secondly, a review of secondary literature and primary sources were used as sources themselves, or to support, challenge, or otherwise qualify the interview series findings. This second method principally revolved around 10 specific treaties selected based on the following criteria: (weighed) state ratifications; rates of compliance; overall reduction of harm; and a range of types of ACTs. This ensured that in the absence of a comprehensive assessment, the findings remain both useful and broadly applicable.

QUESTION I: THE PROCESS OF THE DEVELOPMENT OF ARMS CONTROL TREATIES

General Observations

Favourable geopolitical circumstances are essential for a successful ACT to be developed. Changes within them, which may come in the form of specific events, can lead both to periods of relative ease and relative difficulty. Preparation for the potential alignment of many factors, leading to a window of opportunity, must be undertaken – and in most cases, this occurs years, or even decades, beforehand. As a result, ACT-making must be seen as a series of ongoing conversations that result in successful instruments if numerous factors align at once – and not as single, isolated instruments. They are, rather, different components of a broader system heading toward a stable international system to the greatest extent possible. Not doing so fails to account for many treaties' interconnectedness, and especially, the amount of preparatory work conducted behind closed doors by concerned states. Most instruments are decades in the making, in the hope that political circumstances will eventually allow them to be used. This is especially true with respect to WMD/nuclear-limiting treaties, many of which were designed with future steps/instruments in mind – a pathway toward minimal possession that for now remains in limbo. For this reason, it is fundamentally irresponsible, and in the disservice of humanity, to suggest that current difficulties in arms control mean that work on disarmament should not continue. Sufficient apparatus, technical knowledge, and legal clarity must be in place for when a window of political opportunity to enact an instrument eventually opens.

States are, as with all international law and relations, the supreme actors. In this field, they act primarily on the basis of maximising their relative geopolitical advantages; ACTs are inherently an interest-based system. Accordingly, the presence of trust – that the other party genuinely believes and supports the ACT regime in question – might make both more likely, and the whole process smoother, but is not itself essential for a successful ACT. Given the fact that ACTs are so intimately connected with the national security apparatus of states, they could certainly be said to be a particularly contentious type of treaty. Further, this means that although there are many aspects that are not dissimilar to other treaty-making processes, such as the importance of the chairperson within negotiations, many aspects of ACT production are unique.

Phases of Development

The Initiation Phase of an ACT depends, first and foremost, on timing the geopolitical situation. Various political factors, balances, perceptions and guarantees must align at the right time for success. Some can be favourably influenced. There must also be a sense of urgency – whether that be an event of horrific use of the weapon in question, or an imminent threat of disaster.

In the majority of cases, there has been a very significant amount of work that has been done on the treaty – whether that be technical definitions, or feasible verification mechanisms – over years, and sometimes decades, before the instrument officially begins negotiations. The reflects the 'ongoing conversation' of disarmament and arms control that underpins each instrument, and which each is a part of. Substantive ACT proposals are, in many cases, thus waiting for a viable political situation in which they can be enacted.

The Negotiation and Production Phase is highly dynamic and non-linear in terms of process, which can vary dramatically between instruments. Of course, the forum venue in which the ACT is negotiated affects this, as does the type of treaty: bilateral, a coalition of willing partners, or a multilateral treaty. Broadly speaking, treaties are quid-pro-quo or problem-solving in terms of nature by how they are negotiated. Strategic and WMD-treaties generally fall in the former, while especially multilateral humanitarian treaties fall into the latter.

In all types of negotiation, the often highly technical nature of ACTs means that the majority of negotiation process is done in small groups, whether during main sessions or informal, late-night negotiations. Their composition is often dictated by the chairperson of proceedings, making them especially important. Within negotiations, a basic level of legal and technical knowledge is both required and expected by attendees.

There is certainly an involvement disparity between states with more resources, and those with less. The latter often leads to a decreased ability to meaningfully participate. Civil society can help bridge this gap through providing technical and subject matter expertise to aid both individual actors and the overall negotiating process. ACTs are overwhelmingly negotiated in capital cities or those with UN bases. This is simply due to logistics and expenses. Holding them elsewhere would simply render fewer countries able to take part due to resource constraints.

The Adoption and Dissemination Phase is viewed by many practitioners as actually being the start of the treaty. It is when the arms control conversation is opened up to a wider audience for approval. Civil society can be particularly influential here. The norms of behaviour that are built at this stage can be very important – in fact, perhaps the most important function of a given instrument outside the WMD context. It is difficult to assess whether a norm is brought into existence by a treaty, or whether the latter helps codify it (both examples of a continuous conversation regardless), but there are numerous arguable examples of both. For this, as many states as possible to ensure a perception of universality, potency, and effectiveness, is required.

The reasons for a country's accession to a treaty post entry into force vary. They can have diplomatic (quid-pro-quo), political, economic, and perception benefits to them. Joining can generally boost a country's standing within the international community on all of those aforementioned fronts, leading to new opportunities. That said, there is no doubt that security considerations come first in the eyes of states who may join arms control treaties.

Further, such instruments must be vigorously maintained through continuous dialogue between the parties to them, especially the case with respect to WMDs. Lack of dialogue can lead to the second guessing of intentions in the absence of information verified beyond reasonable doubt, which in turn becomes dangerous. It is important that even partially successful treaties be kept going, if possible, as – and again referring back to a theory of continuous conversation – they may provide a step necessary for another instrument. That said, in the case of repeated violations and especially in the case of bilateral disarmament treaties, it can be better to entirely kill a treaty rather than let it become a monument to what can be ignored.

The Roles of Specific Actors

Larger States' sponsorship or championing of an ACT is hugely important to its success in the vast majority of cases. This form is primarily through directly diplomatically pushing forward an initiative. This is absolutely true with respect to WMDs. However, one other avenue is sponsorship of other initiatives, which may take place regardless of whether they themselves are a state party. In such cases, treaties without any major power's ratification nonetheless obtain direct support for the treaty functions which is essential for their normative force and taboo-making. It is indeed tricky to determine whether it comes from the treaty itself, or whether it crystalises an assertion that already existed.

Smaller States' support for an ACT initiative are not necessarily essential for certain types of treaty, but definitely are for others. If the instrument relies on the creation – or maintenance – of a taboo of a specific type of weapon to function, the legitimacy of this norm certainly requires as many states as possible: the support of smaller states is essential for its emergence.

Small states have at multiple points been critically important championing states for various especially humanitarian-focused initiatives, but sometimes lack the resources to build the critical mass necessary for procedural blossoming. Larger states alongside are thus also necessary. Further, smaller states', and especially some of their star diplomats, can make great strides in the development of individual instruments during negotiations. Those that work in the field of arms control, both those representing the Global South and many of those representing the Global North, agree that their contributions are underutilised. Similarly, especially with respect to nuclear arms, there is a great sense of both being sidelined and betrayal. Perception of breach of the 'grand bargain' between the nuclear weapon states and the non-nuclear weapon states is something that is routinely mentioned in negotiations.

Individual Diplomats, or at least several well-placed persons, can be pivotal for successful ACT initiation and negotiation. There have been notable instances where it has been individual diplomats striving for a particular instrument and who convinced their states to back it often at significant cost. In some cases, civil society helps foster that determination; they are able to help establish the negotiation positions of large and smaller states alike.

In negotiations, the variance in both their competence and the resources available to them vary widely. Despite the (sometimes severe) restrictions given to their state-sanctioned positions, skilled and creative diplomats have managed to find ways through difficult position to link with the other side. Bitter arguments between diplomats are not uncommon, but the presence of less capable or unhelpful persons will not normally destroy the successes of a treaty given that, as stated, they are interests-based systems often with precise requirements dictated by the home state. It may result in the others, however, having to work harder.

Negotiation Chairpersons are of huge importance to especially multilateral but also other discussions. An incompetent or partisan chair will render progress impossible in most circumstances. It is often the chair that decides to separate discussions into smaller groups, and often puts together a final text they determine may be palatable

to all parties. To serve this purpose, it is essential that the chairperson is viewed by all as a neutral, fair, and considerate partner. Being of a non-aligned nationality can sometimes help this perception, but more important is a proven track record of neutrality.

The United Nations (UN) in general and the UN General Assembly (UNGA) in particular have roles that are important in some circumstances. Some, including those currently at, or having worked for, the UN, argue that UNGA votes only reflect the opinion of states. Regardless of whether this is true in the moment, such votes have significance later on as they can act as a benchmark for the direction, content, and purpose of negotiations. During negotiations, they are continually referred to, especially at difficult points.

Further, the UNGA is being increasingly used to bypass the deadlocked Conference on Disarmament (CD) to achieve progress on arms control issues. Its significance to the field will thus likely increase over time. Other bodies, such as the secretariat, can also contribute via auxiliary functions, but are infrequently used due to their innate constraints as international civil servants. The UN Security Council (UNSC) is generally not relevant to most arms instruments, though has proven to be occasionally useful within the nuclear context in providing certain security guarantees.

Civil Society can have a pivotal role under certain circumstances, though they usually act in a plethora of auxiliary functions. From technical and legal expertise, to providing administrative assistance to smaller delegations with fewer resources, they are very important for the maintenance of an ACT process.

They can also be the primary initiators of ACTs in very specific cases, though this is exceedingly rare – and ultimately through a state proxy, even if they are directly causally responsible. More commonly, they can assist championing states or groups thereof by providing the information that may indicate the utility and need for (substantive parts of) a specific instrument; they serve as a form of catalyst. Further, they may convince a potential champion state to proceed with its ideas through boosting its confidence in the interest, need for, and political feasibility of the instrument. This is, surprisingly, a frequent occurrence, and reflects both the limitations of governmental actors and their non-homogeneity. Though they may not be essential in the true sense of the word, it seems likely their actions sped up the process in several treaties that were mostly, but not exclusively, humanitarian in nature. The above, however, only applies outside the nuclear context, where the ability of civil society to effect change in the treaty process is significantly diminished.

Civil society has the most **natural** influence when it comes to the dissemination phase of a treaty. Through rallying as many areas of society as possible, civil actors can greatly contribute to the creation of a taboo of a particular weapon's use – strengthening the ACT by making it far more domestically politically difficult for its use to be justified. Further, through substantial and sustained effort, they can dramatically widen the cases for adoption of specific instruments by lobbying as-of-yet non-state-parties to join by explaining why it is in their interest, but this takes time. Additionally, they can have great influence in assuring accountability for violations, through monitoring mechanisms, research, and putting together different stakeholders.

QUESTION II: WHAT AREAS ARE CONDUCTIVE TO ARMS CONTROL TREATY-MAKING, AND WHICH ARE NOT?

General Observations

It is unfortunately the case that ACTs appear to be overwhelmingly reactive in nature; disaster or direct/imminent threat must come first. It furthermore is undoubtedly also true that, outside of nuclear weapons, the weapons that may be subject to arms controls are militarily obsolete in the vast majority of cases. This obsolescence does not have to be total, but does have to be strong relative to other available weapons systems. In such cases, it is easier for their portrayal as a humanitarian issue at least in part. They can be re-strategized, however – as is arguably happening with respect to both cluster munitions and anti-personnel landmines in the context of the war in Ukraine. This happens once military utility re-emerges for them.

The perception of exclusion of certain types of weaponry for only strategic reasons should be minimised for best chances of success. The Global South has grievances with the conduct of nuclear weapon states; this has ripple effects elsewhere, and has made it at times more challenging to forge controls upon new weaponry types, especially those related to space.

The Susceptibility of Areas for ACT-Making

ACTs appear more likely to succeed if they are portrayed as humanitarian in nature. This makes them significantly easier to disseminate among a wider array of states – a role that civil society can step into with significance. It also seems, somewhat counterintuitively, that an ACT is likely to have more success if it is concerning a WMD. Of course, this is contrary to the argument that lighter treaties, mattering less, would be able to be concluded easier. This does not seem to be the case, and the specific dynamics examined in Question I explains why to some extent: more parties, often insufficiently resourced, leads to greater opportunities for deadlock.

Successful treaties generally control weapons or activities of at least limited military utility **when compared to other weapons/activities available**. Further, limiting the instrument to only behavioural limitations may make its conclusion easier, but comes with the obvious drawback of being more reactive in nature. Similarly, ACTs are far more likely to be successful – in terms of getting an instrument text concluded – without a specific verification regime. Though losses to the long-term functioning of the treaty are arguable, however, and several practitioners posit that quality should surpass quantity in the long term. That said, the baseline of verification for an ACT is never zero; intelligence agencies and civil actors, at least in larger countries, can obtain useful information. It is level of confidence that changes – but if it is insufficient, that can lead to unhelpful or dangerous interpretations.

ACTs are also significantly more likely to succeed if the weapons in question are not of a dual-use nature. This is because their increasingly level of technical complexity comes with dramatically increased levels of uncertainty and ambiguities as regard the intentions of the user. Such technical barriers are, sometimes, seemingly insurmountable in conjunction with resulting security considerations.

Overall, the most important point is that these instruments are generally years in the making. Even throughout the most dire periods of the Cold War, progress was made in this field on the basis of work carried out years beforehand. Thus, to give up on these regimes would be a grave disservice to the future of humanity in general, but specifically to those in the future who may depend on the work that is being done now – by the international community, international civil society, and individual scientists and diplomats– to ensure that the future is more secure in every political, legal, and security sense.

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Second, heartfelt thanks to the interviewees who generously sacrificed their time to be grilled by an early-career researcher on the subject of arms control treaties. It has been genuinely inspiring to meet such dedicated, knowledgeable, honourable, and yet humble professionals who, no doubt, have the best interests of humanity at the core of their work. Many, without any prompt from myself, opted to reach out to other professionals they thought would be helpful for this research; showing both their dedication to the field, as well as their kindness towards those finding their way through this highly complex field.

Finally, further thanks go to the numerous colleagues and friends who sacrificed their time both to offer their advice in tackling the project, and who kindly referred some of the abovementioned interviewees to me.

Acronyms and Abbreviations

ABM
Anti-Ballistic Missile Treaty

ACI(s)
Arms Control Instruments

ACT(s)
Arms Control Treaties

ASAT
Anti-Satellite

ATT
Arms Trade Treaty

BWC
Biological Weapons Convention

CCW
Convention on Certain Conventional Weapons

CD
Conference on Disarmament

CFE
Conventional Armed Forces in Europe Treaty

CS
Civil Society

CTBT
Comprehensive Nuclear Test Ban Treaty

CTBTO
Comprehensive Nuclear Test Ban Treaty Organisation

CWC
Chemical Weapons Convention

DA-ASAT
Direct-Ascent Anti-Satellite

EU
European Union

EEAS
European External Action Service

FMCT
Fissile Material Cut-Off Treaty

INF
Intermediate-Range Nuclear Forces (INF) Treaty

JCPOA
Joint Comprehensive Plan of Action

MTCR
Missile Technology Control Regime

New START
New Strategic Arms Reduction Treaty

NGA
Non-Governmental Actor

NGO
Non-Governmental Organisation

NPT
Treaty on the Non-Proliferation of Nuclear Weapons

NSG
Nuclear Supplies Group

OPCW
Organisation for the Prohibition of Chemical Weapons

OST
Outer Space Treaty

SALT I
Strategic Arms Limitation Treaty I

SALT II
Strategic Arms Limitation Treaty II

START
Strategic Arms Reduction Treaty

TPNW
Treaty on the Prohibition of Nuclear Weapons

UN
United Nations

UNGA
United Nations General Assembly

UNIDIR
United Nations Institute for Disarmament Research

UNSC
United Nations Security Council

WMD(s)
Weapon(s) of Mass Destruction

Introduction

The militarisation of space has continued to grow as humanity's use of space-based infrastructure – including for military purposes – has steadily increased. Research, development, testing, and even usage of counterspace capabilities have been demonstrated by at least twelve countries, and there are others who are undoubtedly looking to develop their own capabilities as well. Due to the increasing dependence upon satellites for modern military operations, as has been demonstrated during the Russian-Ukrainian conflict, there is no doubt that such weapons or capabilities will continue to proliferate without further action.

These concerns were raised to new heights on February 14, 2024, when the world's media were made aware of U.S. intelligence estimates that Russia is building a nuclear warhead with the intention of having the ability to put it in orbit and be used in an anti-satellite (ASAT) capacity. If used, this would be capable of eliminating entire constellations of satellites at once, and almost certainly with catastrophic collateral damage.

From the standpoint of the space environment and its sustainability, the testing or use of conventional destructive ASAT weapons seriously harms and degrades orbital viability through the production of copious amounts of space debris. The use of even a single nuclear-based ASAT weapon may be several orders of magnitude more dangerous. Their use would gravely impair orbital sustainability via the production of both debris in the form of dead, unresponsive satellites, but furthermore also through radioactive contamination.[1] Such contamination could potentially render entire regions of orbit unusable for non-hardened satellites – or other crewed space vehicles – for nearly a year at low Earth orbit or a month at geostationary Earth orbit.[2] Such an incident would do incalculable damage to the world economy and the global space industry.

It is thus imperative for space sustainability that such capacities are limited to the greatest extent possible.

One such method to curtail the proliferation of specific types of weapons, weapons systems, or capabilities, is the use of international Arms Control Treaties (ACTs). These are legally-binding international agreements that outright prohibit, or otherwise limit the possession of specific types of weapons, or do the same for certain actions, and are often coupled with bi – or multilateral monitoring and enforcement systems to ensure the adherence to this agreement.

The success of such treaties historically has varied dramatically. On the one hand, agreements such as the Chemical Weapons Convention (CWC), with its implementing Organisation for the Prohibition of Chemical Weapons (OPCW) located in the Hague, has been hugely successful in its overall reduction of the harm such weapons pose around the globe.[3] However, other attempts, such as the Fissile Material Cut-off Treaty, (FMCT) have either failed to conclude a text, or featured only an insufficient number of state parties post-adoption to be truly effective. Many treaties are in-between these in terms of success. What separates their degrees of success remains unclear.

Within the context of space, there are already attempts to limit certain weapons or capabilities. Regarding conventional ASAT weapons, although numerous international initiatives have been attempted to be undertaken at the United Nations (UN) and through bilateral channels, no legally-binding results have yet been yielded. Regarding nuclear weapons, specific treaties have been ratified. Most famously, Article IV of the Outer Space Treaty (OST) prohibits the stationing of WMDs anywhere in outer space. The Partial Nuclear Test Ban Treaty (PTBT) also prohibits testing of such weapons in space.

Knowing how ACTs can be formed effectively, how this process is structured, which factors are important at which stages, which actors are important at which stages, and generally which areas have previously experienced success (or failure) can expedite future ACT-making – should that be determined to be a productive path forward. To be clear, in spite of the context of commissioning this research, this research is not specifically on space restrictions. A more general examination of the process of arms control development is required and called for.

Scope of Research

DEFINING ARMS CONTROL TREATIES

Considering identifiable nuance within the definition, it is firstly important to define the main subject of this research – which below the surface is actually quite complex. An Arms Control Treaty (ACT) is a legally binding international agreement that limits any combination of the production, deployment, or other behaviour or use of a specific weapon, or group or type thereof.

Some sources include instruments such as export controls, like the Wassenaar Arrangement and Missile Technology Control Regime, as forms of arms control. Ignoring the fact that many such instruments, including the two examples above, are not treaties and thus not legally binding, the more salient point is that they are **unilateral** in nature. ACTs are thus, innately, defined by some kind of **quid-pro-quo** between two or more state parties. Such instruments could also be split into strategic arms/WMDs, non-proliferation agreements, conventional arms controls, and humanitarian treaties.[4]

THE RESEARCH QUESTIONS

The two primary questions, and their sub-questions that form the basis of this research, are as follows:

Question I: What is the usual process for the development of arms control treaties?

- **What are the components of treaties, who authors them, and how does one decide who needs to be part of the negotiations?**
- **What is their development process? How and where are treaties drafted? How do they get matured? What factors affect deciding who needs to be parties to a treaty and when they enter into force?**
- **What roles do states, international fora, commercial sector entities, and civil society play in developing and socializing treaties?**

The purpose of this this question is to ascertain, at the most basic level, how ACTs come into existence. This especially includes the question of what kind of actors are involved throughout their production – including those able to instigate their formulation, which are involved throughout the treaty-making process. This also includes empirical questions such as where (and why) treaties are negotiated and originally brought into force. Furthermore, it asks whether non-state actors can influence this process (and if so, in what kinds of fora, and at which stages of negotiation).

Question II: In arms control, what subjects and areas of activity lend themselves to treaty-making, and what subjects and areas of activity are not regularly conducive to treaty-making?

The second question – of a more normative and general nature than the first – examines the types of weapons, and types of restrictions, that are proven to be susceptible to treaty-based restrictions. For the purposes of Question I, I make no systematic distinction between different categories of ACTs as briefly described above, as it is an exercise in finding patterns between all types. With respect to question II, the difference becomes integral to the question, and so is routinely visited. It is also important to note that arms controls often include, perhaps counterintuitively, defensive weapons. This is fundamentally because increased defensive measures can induce greater offensive deployment from the other side. These are included within the scope of ACTs, the most important example of which is the now-defunct Anti-Ballistic Missile (ABM) Treaty.

The requirements and remit of both of these questions are examined in further detail within their respective sections.

Methodology

SOURCING AND INVESTIGATION METHODS

The two primary research questions are complex in terms of their scope, and as is explained further below, consist of numerous sub-questions that must be answered. Additionally, given the fact the questions concern not only the successes, but the failures of ACTs, evidence for the latter is unlikely to be available through primary sources, nor through conventional secondary sources such as literature reviews. Thus, I adopted two mediums of investigation to conduct this research:

1. **An interview series** with relevant experts involved with the development of ACTs or multilateral arms control discussions.[5]
2. **A primary source and literature analysis to build a database** of the relevant characteristics of each selected treaty.[6]

These two methods together ensure that all aspects of the primary questions are answered, and provide two independent sources of verification of my findings.

SELECTION CRITERIA OF TREATIES EXAMINED

As mentioned, the utility of this study, with limited time and resources, will be aided by focusing on the most useful instances of ACT development. There are only so many treaties' developmental processes that can be examined within this study. Thus, selection of treaties examined will be limited according to four different factors[7]:

1. (Weighted)[8] State Ratifications;
2. (Verifiable)[9] Rates of Compliance;
3. Overall Reduction of Harm Derivative from the Treaty;
4. Assurance of a range of types of ACTs[10]

From the 35 known bilateral and multilateral ACTs enacted that I have identified,[11] the application of these four criterions leads to the selection of ten[12] legal instruments, which can be found in the first column of the database in Annex II, to be the subject of this more detailed research for the purposes of answering the first primary question.

STRUCTURE OF DATABASE

There are numerous factors to consider when assessing the question of how (successful) ACTs are made. They include amongst others:

- Dates of first known conception, adoption, and entry into force of each treaty.
- Where UN resolutions have specifically supported their creation.
- The location, duration, size and number of negotiation rounds.
- The number of definitional and procedural articles within the treaty.
- The presence of verification, enforcement, or monitoring mechanisms.
- The number of withdrawals, reservations, signatures and ratifications the treaty has received after 2, 5, 10 and 20 years.
- The type of weapon or activity restricted, and its method of restriction.

These database factors are devoid of the context and reasoning behind specific decisions or results, especially with regard to aggregate trends. These factors are thus supplemented (mutually) by the results of the standardised interviews with experts that have been involved in or are highly knowledgeable on the processes of multilateral ACT-making.

LIMITATIONS OF INVESTIGATION

This investigation is naturally limited according to its own scope and methodology – which have in turn been partly dictated by external factors. It is not a comprehensive assessment of the development of **all** ACTs within existence; indeed, this has been deliberately limited. The findings of this research are thus an incomplete, but well-reasoned aggregate of observations taken from the treaties included in the research through the accumulation of various sources (both primary and secondary), and the accounts of experts within the field.

Additionally, I have intentionally ignored any specific temporal periods when deciding which selection of treaties to examine, preferring to instead focus upon their objective characteristics regardless of the timeframe in which they existed or continue to exist. The general effectiveness of new ACT regimes, whether due to the contemporary state of international relations or otherwise, may thus differ in effectiveness than the previous periods examined. However, I reference these temporal aspects where relevant to do so – and the timing of the emergence of ACTs as a contributing factor to their success is something that is continually revisited throughout the paper.

Finally, with limited time to complete the report, the interviewees selected had to be available before a necessary cut-off point. While geographic diversity was sought after in terms of the interviewees' state positions, the group as a whole ultimately skews towards a more Western perspective.

Question I: The Process of the Development of ACTs

SCOPE OF QUESTION & RELEVANT DATA

The first question involves examining the developmental process of ACTs in as minute detail as possible, and identifying the actors, considerations, and other factors that affect how they are pushed over the line.

The analysis first starts with **observations that are generally applicable to the entire ACT development process**, including the lenses through which they can collectively be viewed, factors that affect their emergence, and their prominence over periods of time. The developmental period of ACTs can be generally separated into three distinct phases, which are marked by the legal status of the instrument as it evolves. This also corresponds to periods of differing intensities and relevance of the involvement of different actors, and the points of relevance of specific factors.

STRUCTURE OF QUESTION ANSWER

Following this, the presentation of data required to answer this question is built and split between three distinct phases: **Initiation**, covering the period leading to the start of formal negotiations; **Negotiation and Production**, covering the period between the start of formal negotiations until the adoption of the treaty; and the **Adoption, Dissemination and Verification** phase, covering the entire period following the formal adoption of the treaty. Each phase section is then further split into three subsections: **General Observation**s, concerning findings generally applicable to that section; **Specific Observations**, concerning findings applicable only to specific treaties or groups thereof, and **Roles of Individual Actors**, addressing the findings applicable to a certain groups or persons within a specific phase. While the actors examined under the latter section varies slightly, owing to different stages involving different entities, actors examined within all sections include the UN, Civil Society (CS), (State-appointed) diplomats, and negotiators.

Observations Applicable to Entire Process

We firstly address the broadest issues of narrative that are relevant for the entire ACT development process, and the lens and eras through which arms control can be viewed.

STATE CENTRISM

Though obvious to international lawyers, it is important to reiterate first and foremost that within the parameters of international law and international relations, states are the supreme and dominant actor at any and all stages of any legal process. This undoubtedly is also the case with respect to the development of ACTs. That does not mean, however, that other actors cannot act as sources of pressure, catalysts, knowledge, confidence, or expertise relevant to the instrument in question. As we shall see, in some situations, this is limited to only lobbying states, or responding to their specific requests. Less common, but important – and arguably increasingly the case – are the direct contributions that non-state actors can make.

GEOPOLITICAL SITUATION

Unsurprisingly, strategic geopolitical concerns are of huge importance to the emergence of ACTs in a general sense. However, the most pertinent points to, and effects upon, the process as a whole are worth reiterating.

The geopolitical situation must, without question, be right for the negotiations of instruments to be instigated. Changes to the geopolitical situation can quickly scupper any potential instrument (though in some instances also allow for their formation – see below). If a great idea is introduced at a time not conductive to it, there is zero possibility of it being successfully implemented. This especially applies to the initiation of initiatives, but applies also mid-negotiation. They require a correlation of numerous forces at a single point in time.

To take advantage of instances where this occurs, there must be good knowledge of where the world is strategically – to predict what kind of agreements might be feasible. Governments, and indeed civil actors across the world, must continually reassess this via continually reviewing the narrative to determine when introduction may become feasible. Geopolitical changes – that often come in the form of specific events – can lead both to periods of relative ease and relative difficulty within the ACT field. Regarding the latter, interviewees revealed, for instance, that an ASAT ban under discussion between the US and USSR was abandoned as a direct consequence of the latter's invasion of Afghanistan.

Regarding periods of relative ease, however, the end of the Cold War following the collapse of the USSR was undoubtedly the most important factor in what some interviewees termed the 'golden age' of arms control in the 1990s. In particular, it allowed for a shift away from a preoccupation with strategic arms, and allowed for far greater focus on arms of a particularly humanitarian detriment and upon arms issues that immediately affected the Global South. Thus, the emergence of the Ottawa Treaty, the Cluster Munitions Convention, the Comprehensive Test-Ban Treaty (CTBT) and the CWC, to name but several, happened during this particularly productive geopolitical time.

SENSE OF URGENCY

ACTs are usually instigated reactionarily from a place of acute urgency– certainly more so than most other types of treaties. As this research makes clear from all sources, it is true that in the vast majority of cases, ACTs are formally instigated and created in response to a serious destructive event, or the upheaval of a particular security dynamic or balance.

However, this does certainly not mean that they are not thought about or prepared beforehand **informally**, or by individual states themselves. Quite the opposite. As shall be detailed more substantially below, certain parts of treaties are worked on by individual states with vested security or humanitarian interests long before – sometimes decades before – formal preposition and eventual adoption of the instrument itself. This is not an absolute, entirely exclusive rule – but close to it.[13]

Fundamentally, any successful effort needs to address an ongoing problem, or something that would cause enormous harm if nothing were done. Examples include: the CWC, owing to chemical weapons' heinous and inhumane nature, and in response

to their use in Iran-Iraq war; nuclear weapons treaties in response to the grave threat of total global annihilation; and landmines and cluster munitions in light of the heinous civilian casualties they inflict continuously long after a conflict has been concluded. Further, the extent of the disaster required to spur action can also vary dramatically. Being only one part of the equation, other factors such as the complexity or sensitivity of the technology in question, can overpower this and prevent progress.

AN ONGOING CONVERSATION

Many interviewees went out of their way to explicitly make the point of understanding that the ACT system should be viewed as a set of instruments that are part of an ongoing conversation, and that it makes no sense to view them merely individually or outside of their broader context. In essence, this ongoing conversation is being held between both allies and between adversaries regarding what is acceptable (in terms of in their common security interests) and what is not. In this sense, an individual ACT could be said to be a snapshot of the security situation at the specific time that it was enacted. This element is continuously revisited, given its pertinence. Though perhaps an obvious statement in some sense, this reflection underpins and helps explain a great many other dynamics both past and present within the field.

This is important because the framing of these instruments as part of a conversation – each individual instrument being a different clause of that conversation – underlines the need for continuous dialogue and maintenance of their underlying fabric. If the participants aren't consistently meeting, then the minds of the actors drift to other issues; arms issues are then given less priority, and the security landscape can be reassessed without consideration for such instruments. ACTs are always part of a process, and for this process to continue, actors need both a clear vision and knowledge of how to facilitate it. This applies also to instruments such as the CTBT which, while not in force, is an important building block of the wider disarmament story. Indeed, many treaties will expire in the next few years, reducing continuous conversation further.[14] This is dangerous, as at that point, actors are second-guessing each other's intentions.

As an additional point, the notion of continuous conversation applies not only to and between states, but between civil actors and societies as a whole. Many interviewees expressed dismay at a perception of an unawareness of the danger of WMDs amongst the global general public, and the resulting complacency that has arisen. The generation that provided strategic stability through hard bargaining throughout the Cold War are largely deceased or retired. As a result, say multiple interviewees, there is now a generation of practitioners who have a less-than-adequate impression about how much effort it took to get to the current legal regime.

This is perhaps particularly visible with respect to the CTBT and instruments that came immediately before and after it. As interviewees reveal, the discussions surrounding it developed a whole path of (near) total nuclear disarmament: it was intended to be one step of many, and was never to be an isolated effort. The next intended step along this pathway was the FMCT: after testing, the FMCT was intended to prevent more weaponized nuclear material from being produced. The thinking was then that there would next be an instrument to cease producing weapons from existing stocks, followed by then another to start bringing down the weapons' numbers globally, and

then finally get rid as many as possible. For reasons detailed below, this halted at the second hurdle with the failure of even the beginnings of the formal negotiation of the FMCT. Despite the acute nuclear testing taboo the CTBT encapsulated, there is a danger that we reach a point in time where countries no longer appear to be on their way to complete disarmament, and at which point the nuclear taboo may be undone. For instance, the nuclear weapon states agreed under Article 6 of the Non-Proliferation Treaty (NPT) to good-faith negotiations toward disarmament. If the perception that this is not being followed reaches critical mass, there is little in the way of currently non-nuclear weapon states attempting to develop their own weapons.

ACTs are not stable entities but rather are part of a story that must be continuously retold. And if the story changes, the narrative that surrounds them may also change. There is an entropic-esque tendency towards disorder among such instruments, and without efforts to preserve existing narratives or without progress at meeting those narratives, they will crumble – as is beginning to happen to the nuclear regime currently.

CHANGING NATURE AND FUTURE OF ARMS CONTROL TREATIES

Finally, though this project was framed around past instruments so as to learn from them, several interviewees went out of their way to note that this does not mean that the nature of arms control will stay the same. In fact, there are good reasons to think it will evolve substantially. Demographic change, the continuing prominence of social media, Artificial Intelligence, the increasing prominence of certain values (such as the recognition of gender) down to the way children develop may all have an effect upon the future patterns of ACT emergence.

In light of the above, it is hugely important to recognise that arms control as a field has had phases before of ups and downs. Institutions, ideas, people, and organisations must be ready for when factors align once more, though there is no guarantee when that will happen, or at all. History shows, however, that this can happen suddenly and unexpectedly. If the apparatus for the quick implementation of ACTs is not there when that happens, there is a risk of inability of the international community to fully seize the moment. The reforms of Gorbachev toward the latter stages of the USSR opened possibilities for a larger number and greater scope of ACTs,[15] and also occurred at a time when the U.S. government and Senate were particularly open to arms control initiatives. Certain individuals in government, the civil service, and in civil society, who were unwaveringly resolute in their mission to reduce arms, were also in place at that time – but this was possible only due to continuous effort. Civil society and other actors thus need to keep elected officials, civil services, and the general public aware of issues of arms control and disarmament.

There may not be new treaties in next 5-10 years – but the gestation period of arms control treaties is often not years, but decades. The FMCT was first talked about decades before. The CWC verification mechanism was being worked on individually by champion states for 30 years beforehand,[16] as was the CTBT mechanism.[17] States, civil society, and many other actors in eras prior have been patiently waiting for the opportune moment, and struck when relevant stars briefly aligned. This framework of diplomatic apparatus and thinking must be preserved for the sake of taking advantage of the next period during which circumstances are favourable to ACT development.

INITIATION PHASE

As explained earlier, the initiation phase comprises all activities up to the formal beginning of negotiations of an instrument. It thus especially includes the factors that affect the decision to start formal negotiations in the first place.

General Observations

TIMING AND BUILD-UP OF INITIATION

As stated earlier, the timing of the instrument's initiation has to be right for it to not be immediately struck down.[18] Their ability to be successfully implemented is in large part a reflection of the correlation of forces at a point in time. In many cases, as is discussed at several points throughout the report, the emergence of a treaty was building for a long time beforehand, and continually discussed and pushed for until certain points aligned. Before negotiations start or are even agreed to be started, there has often been years of significant anticipatory work done on an instrument. This not only includes a significant amount of normative development and discussion before the codification of such norms into law via an ACT, but also applies to some of the specific mechanisms later used within treaties, such as verification mechanisms, the specificity of definitions, and so on.

In this sense, a lot of work is already done, and is in fact waiting for the appropriate time politically, for progress to then be embraced comparatively rapidly. Per interviewees, this was the case for many, many instruments, including the CWC, the Biological Weapons Convention (BWC), CTBT, and the OST. This is particularly true, and important, regarding verification mechanisms. Interviewees noted in particular that the CTBT and CWC both had state scientists working on possibilities of verification for multiple decades before the treaty itself got to the negotiating table. Once political developments allowed for it – in the case of the CTBT, U.S. President Bill Clinton (a stark proponent) took office, while in the CWC's case, it was the end of the Cold War – the aforementioned technical work was then pushed through.

Furthermore, alongside timing requirements for multilateral discussions, would-be champion states themselves must be in certain positions. For instance, if an election is coming, a state will not be able to do much with regard to an ACT. The internal position of the state must be sufficiently unified too – it is far from homogenous the vast majority of the time. This is examined further at several points below.

Finally, both the United States and the USSR had scientists working the scientific and technical (for issues of verification, identification, detection, etc) backgrounds throughout the production of the Cold War-era nuclear treaties. This was also the case with middle-power countries such as the United Kingdom and other states with resources to conduct such background scientific and technical research. As is explored in the following section, this also helps set guidelines about what is pushed for in the treaty negotiations. This is one of the reasons that ACTs should be understood as a continuous conversation – that must be continued – and not simply the spontaneous convergence of isolated factors out of which a brand-new treaty is produced. This does occur, sometimes, but is far from the majority of instruments, especially the successful ones. **Overwhelmingly, the initiation phase is a multi-year process of (technical) research and the development of palatable ideas which are then implemented once a sufficient alignment of innumerable geopolitical factors occurs.**

It seems that the alignment of different factors then dissipates. In other words, once an ACT is concluded, there seems to be little scope for them to be modified. Primary source research shows that at least among the treaties examined in depth as part of this research, none had further mandatory or optional protocols – perhaps suggesting once complete, the window of opportunity for that is closed.[19] The sole exception is the CWC, with two mandatory protocols adopted after the original treaty, but which were essentially agreed to be developed during the original negotiations following from the fact that the system was so complex. Like many features of the CWC, this is an outlier.

SOURCES OF INITIATION

Interviewees consistently underlined the multi-faceted nature of the emergence of ACTs, and named many different sources of the 'first push' for an ACT to emerge – from states' purely strategic assessments, to external NGA lobbying. This is supported by contemporary literature, and a review of the treaties features in the report database.[20]

There was broad agreement that especially with respect to the more successful treaties, there is a significant top-down skew for the initiation of ACTs. The (first) champion of the instrument should ideally be as powerful a state as possible, and within it, a high-ranking public official pushing for it. The Intermediate-Range Nuclear Forces (INF) Treaty would not have been completed without the initiative of then-US Secretary of State George Shultz. The CWC would not have been finished without extensive support from President George HW Bush, who announced a series of steps to strengthen the prospects of an early conclusion of the CWC on May 13, 1991, and who also made extensive contributions during his time as Vice President under Reagan[21] – and which further enjoyed very strong support from Margaret Thatcher. This appears, furthermore, particularly essential for the (successful) nuclear treaties or instruments concerning WMDs, where involvement of a very powerful actor featured in every instance. This is not an absolute rule, however, and there are examples, albeit limited in number, where extensive involvement of an extremely powerful geopolitical actor was not part of the ACT's initiation: for example, the Cluster Munitions Convention was initiated largely by Norway. But they are the exception, not the norm.

Particularly common among successful treaties is the initial assembling by a champion state, or groups of like-minded countries that rally around a common issue. Individual relationships between diplomats cannot be overstated in making this happen, as is further analysed below. This arrangement allows a base of support to be built before putting it to a wider range of countries – a stepping stone, instead of going straight into multilateralism. This is also true, it was noted, with respect to non-legally-binding instruments such as the Missile Technology Control Regime (¢), the Hague Code of Conduct against Ballistic Missile Proliferation, and the Wassenaar Arrangement.

It is also true that outside of merely groups of the richest states, smaller states are able to instigate multilateral arms treaties – albeit to a less frequent extent. Examples include the Arms Trade Treaty (ATT), where Australia, Mexico, and several others pushed heavily, initially by themselves. Success of these instruments appears contingent on the participation of larger countries within the latter stages of the treaty's lifecycle, however – as was present above.

RAPID GEOPOLITICAL CHANGES

While, timing is important, a sudden change of the security situation can rapidly induce states to throw their support behind drafts of initiatives too. For instance, apartheid-era South Africa vehemently resisted the NPT before joining it in 1991—shortly before transitioning to a democracy in 1994. Further, though not specifically examined, the formation of the Nuclear Suppliers Group was triggered by the testing of a nuclear weapon by India in 1974. At the time, the NPT was in place (having entered into force in 1970), but it was evidently not enough. This act was shocking enough to induce the expansion of non-proliferation rules by concerned states, mostly Western and nuclear-armed countries.

Internal changes can lead to rapid development too. For example, France was starkly opposed to the Ottawa Treaty until a transfer of power to President Jacques Chirac in 1995 saw France reverse its stance, becoming the first permanent UNSC member to join the treaty.

THE ROLE OF TRUST

Though many interviewees agreed that trust is important to a degree, some also went out of their way to note that it should not be overstated. ACTs are fundamentally an interests-based system, especially obvious when considering that many parties to restrictive treaties are often geopolitical rivals.

Trust is, rather, something that is built once something is implemented and proves workable. Further, initiatives can be made a little easier if trust is built into an ongoing conversation by dampening the effects of external interferences, such as changing security situations.[22] Trust that the other party genuinely believes and supports the ACT regime in question makes it both more likely, and the whole process smoother – but is not itself essential for a successful ACT. In a somewhat optimistic turn, this means that a lack of trust is not in and of itself a reason for there not to be progress with respect to arms control. It may aid it in some circumstances by reducing certain frictions, but is not in and of itself a pivotal factor.

Trust between the smaller and larger states of an alliance is also often present. In many cases, if countries know their positions align, the smaller may simply follow the position of the larger without any contestation or other involvement within the discussions. Several interviewees gave anecdotes of delegations that trusted the judgement of other allied states on the basis that 'if it is good enough for them (the larger state), it is good enough for us (the smaller state),' given their alliance and similar interests. This is especially the case with areas that require a great deal of resources to properly understand, such as technical aspects or verification systems. This is often seen with among European countries, and particularly among EU member states – though in decades prior, the UK was a reliable leader in this regard due to its extensive technical research facilities and work. In any case, it means that not every state has to have enormous delegations to be able to participate in the discussions, or feel the need to make verbal statements during the negotiations themselves. Military alliances can also hinder ACT creation, however. States can be leery of contradicting their allies' positions if they are not fleshed out enough from the beginning, which may slow negotiations somewhat. Or it can also mean that the critical mass to initiate a treaty is not reached, especially if there is a lack of public discourse.

Specific Observations

INITIATION OF WMD-ACTS AND NON-WMD-ACTS

The initiation of ACTs addressing nuclear WMDs was overwhelmingly instigated by the United States and USSR/Russia through bilateral talks during the Cold War. In fact, the ongoing conversation with regard to specifically nuclear weapons has its roots in the 1950s when such discussions between the post-WWII superpowers first took place. Non-nuclear WMD disarmament discussions, such as those that led to the BWC and CWC, were also largely derived from the actions of the superpowers, though with greater room for other (often middle-power) countries in those cases. Indeed, the establishment of the Conference on Disarmament (CD) itself, which started with only 40 state parties,[23] was a result of these high-end discussions.

There are specific geopolitical dynamics that underpinned their creation – owing to the unique relationship between the superpowers and the influence they had. In many instances, say interviewees at the heart of negotiations between them, such instruments were as much about projecting a positive view of public relations, and relations between the nuclear superpowers, as they were about controlling the arms in question. Both wanted to be seen as the (more) responsible party among the eyes of the rest of the world. Indeed, interviewees and treaty research demonstrated that with respect to WMDs, it was overwhelmingly the permanent five members of the UNSC that instigated such treaties, with the exception of the Treaty on the Prohibition of Nuclear Weapons (TPNW).

ENTANGLEMENT OF INITIATIONS

To partly reiterate the previous point regarding treaties being ongoing, entangled conversations, it is further worth observing that the development of some treaties was heavily suggested and premeditated by previous treaties. For instance, the BWC strongly suggested the creation of the CWC by enticing its state parties to do so in Article IX. Further, many treaties are initiated because some kind of weapon was not addressed adequately within a previous treaty. The Convention on Certain Conventional Weapons (CCW) entirely failed to address landmines; this ultimately resulted in a push for what became the Ottawa Treaty.[24]

GRASSROOTS INITIATION

The sole shining exception to the overwhelming state-centrism laid out above is the development of the Ottawa Treaty which, though eventually led by states, was ultimately spurred by the coordinated efforts of multiple NGOs who directly induced those states to act.[25]

It is further true that civil society and NGOs were somewhat involved in lobbying states to produce a specific ACT, but it is of course extremely difficult to quantify the extent to which they were integral to those ACTs' initiation. This is expanded upon below.

Roles of Individual Actors

CIVIL SOCIETY

Civil society, furthermore, can have a pivotal role under certain circumstances, aside from being the primary initiators in very specific cases.

Civil society can in the first place make substantial contributions and tangibly influence the shape of emergence of a treaty by moulding the discourse and narrative with regards to the weapons or items being controlled. They can, for example, compile the information that may indicate the utility and need for a specific instrument, or help portray certain weapons as particularly heinous.

Further, in the absence of an enthusiastic state representative willing to kickstart and set the direction of negotiations, or of a disaster or overwhelmingly pressing concern, civil society can help instigate the ACT process by building confidence in a particular state regarding the popularity (and thus political viability) of an ACT initiative, which may then spur the first step toward active negotiation. In other words, they seek out and attempt to convince already-interested state parties to champion a certain initiative. Interviewees revealed that in several cases, numerous states expressed informally (behind closed doors) that they wanted to initiate the negotiation of a new instrument, but perceived a lack of political will to do so. Sustaining this political will is also essential for their continued existence.[26] In such cases, pressure and encouragement from civil society was indirectly highly important for these instruments – which were often, but not exclusively, humanitarian in nature. Considering their limitation to indirect influence (as a result of states being prime actors) it is difficult to quantify exactly the extent to which this is true. Aside from the Ottawa Treaty, it is unclear whether the push from civil society was **essential** for the success of other treaties. At least, **I have seen no specific evidence that they were truly integral actors in starting any other negotiation processes**. More likely, said interviewees, is that they induce the initiation of instruments sooner than would have otherwise occurred; but in such cases, they are not strictly essential for the ACT's conception.

It is also important to observe that this initiation-inducing influence does flatly not apply with respect to ACTs concerning strategic arms. At least, there is no evidence in favour of this, and multiple interviewees stated that, even in the case of the more humanitarian-oriented CTBT, the effect of civil society's influence in the early stages of its negotiation was exactly zero. In any case, the results civil society can have on national governments is primarily to make certain ACT ideas more palatable. They do this through building grassroots support by making people, especially parliamentarians or those in positions of authority in the civil service, aware of the issue and why it matters. According to those in the know, civil society was integral in convincing the Carter administration to pursue an ASAT ban with the USSR, though this was quickly abandoned due to outrage over the USSR's invasion of Afghanistan, as stated earlier. Several more interviewees stated that the ability of civil society to foster the ability and support for the starting of initiatives is underestimated, at least outside of the nuclear context. As seen above, it is difficult to quantify exactly how essential civil society involvement was for many initiatives, but we can at least assert that they positively influenced the process in terms of time and the form of the final product.

Finally, civil society can also have a role in the technical side of things. They were important in the formation of the BWC verification protocol, which only began negotiation after civil scientists proved that it was actually possible to verify the restrictions of the treaty accurately and reliably. They further often provide extensive technical expertise during the negotiation phase, as examined below.

Thus, to the extent that treaties can be initiated from the bottom up – which is far from all circumstances – and excluding the nuclear context, civil society can be indirectly relatively consequential through targeted lobbying and confidence-building within states themselves, but can only very rarely directly induce an ACT.

INITIATIONS FROM SMALLER STATES

The ability of smaller states to, by themselves individually, or in groups, induce ACT creation appears both more difficult and simply less common when it comes to multilateral treaties. This is partly down to resource limitation, expanded upon in the 'Negotiation' phase. Even in cases where the idea of an instrument was first initiated by a third country, a lot of the negotiations were effectively taken over by the superpowers – not out of malice, but because they had the political, diplomatic and resource capital to see them through.

That said, smaller states have had significant success in the creation of the 'Nuclear Weapons Free Zone' treaties amongst themselves.[27] This was partly in response to the perceived failings of the 'grand bargain' encapsulated in Article IX of the NPT. Though they were not specifically analysed as part of their research, they remain a highly significant exception (and additional clause) to the otherwise superpower-dominated nuclear disarmament and non-proliferation discussion.

PUBLIC INDIVIDUALS

Further from the above, the testimony of individuals that have been affected by certain weapons, and want to do something about it, often spurs NGOs themselves into action. For example, with respect to landmines (and the beginnings of the Ottawa Treaty which curtailed them), both African victims of landmines and veterans of the Vietnam war – where they were extensively used – made extensive public appearances and campaigns for action decades beforehand. Globally famous figures such as Princess Diana and Nelson Mandela can also have significant influence – as they did with respect to the Ottawa Treaty – depending on the type of treaty, and weapon being controlled. This is addressed in further detail in the section below.

INDIVIDUAL DIPLOMATS

Some of the most experienced interviewees asserted that especially with respect to strategic arms, the success of the instrument is only possible if someone very senior within a state is willing to champion the initiative. Details of the exact persons in question were extremely difficult to obtain with clarity, but interviewees noted several instances of treaties, including many of those examined in detail through this report, being induced and pushed by one specific, highly competent individual. The presence of such a person is also necessary for the homogeneity of the position of a state as a whole, as is discussed more extensively in the 'Negotiation Phase' section.

Additionally, the ability of civil society and individual diplomats to effect change is intimately intertwined. After all, it is these individuals that civil society attempts to lobby; additionally, it provides platforms for all persons to have exchanges, and to talk about it – for example, in dedicated conferences. Within these fora, people start thinking about how they can control such weapons, and it is often from such places that treaty ideas are initially born. To an extent, individual diplomats can only be effective within platforms and communities. From there, they are used as a means by which to insert the issue into the strategic considerations of governments – not the other way around. As discussed, governments are conservative to the status quo, and so need significant encouragement from within their own ranks.

UN ORGANS

The significance of UN endorsement at the birth of ACTs raised a mixture of views among interviewees. The utility of UN involvement across the board was in fact the most obvious point of contention between them. Some interviewees argued that having the support of the UN at the start of negotiations was incidental at best, largely because their votes only reflected the discussions already occurring between states informally, or through other channels. Others, primarily from the Global South, viewed the UN(GA) votes as an absolutely integral part of building the legitimacy of a specific instrument. In fact, overall, it seemed from these (relatively small sample by number) interviews, that the closer the individual had worked with UN bodies, the more pessimistic they were about the positive effects of UN organs and votes upon ACT processes.

Regardless of individual viewpoints, the UNGA is being increasingly used to mark the initiation of ACT initiatives. As explained more so in the 'Negotiation and Development' section of this question, this is due to veto-induced deadlock within the CD, whereas the UNGA works by simple majority and thus cannot be blocked by any single state or group thereof.[28] The UNGA further appears to be of more use later in the negotiations, where its resolutions may act as checkpoints – to know where the treaties are coming from, and what the end goal in mind is. According to interviewees, when the going gets tough during negotiations, parties will often specifically refer to these resolutions as the basis for their position, and they can thus set the stage of what the final product may look like as a result. They can also indicate when it may be time to take the next step, which is especially true if the (official negotiations of a) treaty did not begin with a UN resolution.

UNSC involvement was, overall, far less relevant than the UNGA in terms of initiating treaty negotiations. In fact, some interviewees expressed concern at the notion that the UNSC have any kind of law-making authority, whether that be endorsement, or initiation, of any kind. Indeed, its role within the UN is to respond to immediate crises affecting global stability so it does not lend itself to arms control treaty building, which by design take many years to come to completion.

NEGOTIATION & PRODUCTION PHASE

This section comprises all the actions taken with respect to a treaty between the beginning of formal negotiations, and the adoption of the treaty text.

General Observations

MULTILATERAL PRODUCTION STRUCTURES

With regard to their production structure, multilateral ACT-making is often very open – ended. The exact parameters of how a treaty is negotiated – the number and length of the sessions, who is involved – is thus essentially **ad hoc** to a great degree outside of fora with some specific procedural rules like the CD, and depends on an innumerable number of factors. Some sessions, interviewees detailed, can go for up to 40 hours. There is thus substantial variance that can be found between the treaty-making processes in terms of staging.

Outside of dedicated fora, some treaties start with a UNGA resolution, while others do not. In either case, they may then go through a series of pre-negotiation working groups and/or conferences (which is also where other stakeholders may be given the chance of their voice to be heard). However, regardless of the multifaceted nature of the production-related inputs and the different preliminary bodies that are formed in the initial stages of treaty negotiation, eventually, all the relevant (state) representatives must get in a room together to agree the text of the instrument. How long they discuss this, and how frequently, is still relatively open-ended.

As a particularly long-winded (in terms of steps) example, the ATT begun with UNGA resolution 61/89 (2006) that only stated that parties would start negotiations 'exploring' a future ATT.[29] Then, the following year, an experts group formed through private channels between interested states, eventually resulting in the creation of a more public working group after a year, in 2008 where a broader range of input (and actors giving that input) was possible. Negotiations then begun in 2012. The draft and scope were defined later amongst the coalition championing the treaty through a painstaking bartering process.

Though there are innumerable factors that could be relevant, a couple of particularly salient ones seem to be, firstly, the degree to which research for the treaty has already been conducted, and second, which parties are initially part of the negotiations. Some countries are far more open than others in terms of hearing third parties, or even smaller states.[30] Further, interviewees consistently highlighted that individual ambassadors, fora chairs, and multilateral negotiators can be pivotal in making such processes a reality and in driving the entire process forward. All of these factors are explored in far more detail in subsections on the roles of these specific individuals below.

INITIAL SIZE OF STATE SUPPORT

When it comes to the negotiating processes of treaties, there are several different flavours of what kind of states are included, with important consequences for negotiation. They range from 'Bilateral' treaties, to those initially supported by only a relatively small group of states, to open-ended multilateral treaties. Bilateral treaties, most often between the United States and the USSR/Russia (as was the case with

many nuclear treaties), are by their nature closed. They don't shift between these categories, and generally either fail or succeed to adopt a text which both then ratify (as opposed to, for instance, a multilateral treaty that few states sign despite the text being adopted).

As was noted above, it is relatively uncommon for sufficient multilateral support to immediately unfold. Some treaties start with the intention of going multilateral, but cannot get consensus to do so immediately. Thus, a group of like-minded countries who are broadly committed to the cause of the treaty takes over and often negotiate the beginnings and basics of the treaty between themselves, with vision of going toward multilateralism. This process from small to larger groups of states is spoken more about with regard to research Question II, in which this point is more relevant; but in essence, the parties can move forward quickly with a small group, or more slowly and laboriously with a larger one.

GENERAL TYPES AND FORMATS OF TREATY NEGOTIATION PROCESSES

It could be said that approaches to ACT-making can be roughly divided into two groups: quid pro quo arrangements, and problem-solving efforts. While strategic controls, especially bilateral ones, tend toward the former, humanitarian-focused treaties tend toward the latter. The problem-solving approach, which is also more common in multilateral treaties, is a lot more difficult to pull off due to the requirement of dynamic and highly complex negotiation skills, as well as the need for many motivated states. In such cases, the roles of individual diplomats, examined below, become even more important.

That said, there is no specific process that the negotiations must adhere to. There is no standardised process template from which the final process is derived – notwithstanding the rules outlined in specific fora such as the CD – and there is no specific diplomatic precedent for guidance. For this reason, and as examined below, the designated chairperson of the negotiation, who largely dictates the negotiation procedure through the use of different forms of meetings, is absolutely essential. Even within established fora such as the CD, there is ample room for the chairperson to manoeuvre.

This dynamicism means that negotiations are furthermore not simply linear from one end of the instrument to the other: the points at which certain features of the treaty are agreed upon vary dramatically from treaty to treaty. For instance, in the case of the CTBT, the exact type(s) of nuclear test to be banned under the treaty was debated until the very end. For others, such as the CWC, the verification regime took up a great deal of the treaty negotiation time.

The involvement of states within these often-dynamic processes is, to a great extent, self-selecting. Few countries make constant interventions on the floor, but it is indeed those more outspoken states – notwithstanding the major powers that are always invited to such discussions – that are invited for the late-night session to hammer out a draft text. Certain very powerful states are consulted on all developments, while states of less immediate relevance largely have to choose to be involved by committing sufficient resources to meaningfully take part. Many get orders from their overarching national ministries to just take notes. This does mean that louder states (in this context, meaning states with more resources) are heard more. This is further explored in the roles of specific types of states below.

In both bilateral negotiations as well as within fora such as the CD, a huge amount of work, perhaps the majority, towards completion of the instrument is done in small groups. In general, the more complex the treaty is, the more reliance is placed upon the small negotiating groups for incremental compromises and successes to eventually get it over the line. There is essentially a back and forth bartering engagement on specific provisions until a final provision is preliminarily agreed.[31] In such instances, parties move at the pace of the slowest participating state, and the result is essentially always the lowest common denominator.

NEGOTIATION POSITIONS

Negotiation positions are, as with any negotiation, calculated to extract concessions, and can often be disingenuous. States can also take provisions hostage so as to attempt to extract concessions elsewhere, perhaps on entirely unrelated instruments or situations. Interviewees noted that this tendency has increased over time, and can lead to very strange situations if bluffs are called. There were many such anecdotes conveyed by interviewees with respect to many individual negotiations. In one instance, said interviewees, during negotiations of the CWC's verification regime, many states, and the USSR in particular, did not like on-site inspection at first. The United States initially did not either, but proclaimed that they were in fact open to it in order to use it as bait with which to bash the Soviets, as they knew they'd reject… until they did not. At which point, the U.S, delegation had to perform a 180 on their previously steadfast position, which certainly slowed the progress of the negotiation of those specific provisions.

Within multilateral fora such as the CD, there must be a party that first puts some kind of text on the table. This can often have advantages for the position of the state proposing if done early enough. Though this does not necessarily result in adoption, say interviewees, it can draw attention to specific articles that in the end lead to positive outcomes.

Sudden changes in the situations of states can, and often do, change the fortunes of a treaty, and can do so for both better or worse. For instance, the CWC looked to many like it was going to fail, as there was no shift in the Soviet position on certain definitions or verification aspects. There were few breakthroughs, and non-aligned states were getting fed up with being ignored – until the reforms of Gorbachev paved the way for concessions that not only broke specific deadlocks, but provided momentum for the remainder of the negotiation. Further consolidating support for it was the use of chemical weapons in the Iran-Iraq war (1980-1988), as well as the second Gulf war (1990-1991) between Iraq and Kuwait, which made the very real need for this treaty unignorable.

TENSIONS WITHIN STATES THEMSELVES

Many interviewees further highlighted the discrepancies and tensions amongst the government agencies within individual states themselves. State positions themselves are far from internally homogenous. The negotiating position of an individual state is often, and especially without direct intervention from the head of government, a compromise between the views and interests of different departments which in some cases is the result of negotiations that are at least as extensive as the actual

international treaty negotiations. High-level individuals are important also here as well as in international negotiations – they can be very important to obtaining an acceptable position from internal entities. There were numerous efforts, stated interviewees, during multiple US administrations – including consideration of US-USSR total nuclear disarmament – that failed to get traction due to internal disagreement. Various proposals for disarmament or arms control were, at least within the United States, rejected by many actors at different times, including the senate, Department of Defence, the president, and the intelligence services.

The processes by which states arrive to their position are extremely broad, and so are far beyond the scope of this research. Salient here, however, is that this compounds the issue of timing within negotiations, and can occasionally lead to unhelpful, sudden shifts in position if the situation within any single government department changes. This is also why the timing and length of negotiations is critical in the formation of these instruments.

LENGTH OF NEGOTIATIONS

The length of negotiations is very contextually dependant, but is largely dictated by geopolitical circumstances, and the willingness of main players to actually conclude the negotiations. Changing the status quo is always difficult politically, but this is especially the case with respect to ACTs, from which there may be obligations for decades to come, with acute security and defence (and thus sovereign) implications.

Generally speaking, with notable exceptions, the shorter the negotiation time, the higher the likelihood of success. The longer a discussion is does not causally result in a better result in any sense – it is not the case that a longer negotiation results in more acceptable, detailed, or workable texts. But this is not just because of pre-determined positions (on the part of states) or a result of negotiations being there to codify what are known to be common positions, or reflect the willingness of the parties to complete negotiations.

Rather, the primary reason for this correlation is that a shorter time prevents other external factors from getting in the way.[32] Stagnation and fatigue of negotiations does happen, but is less common than more immediate issues. Red lines, entire governments, and security situations can change quickly, which gives more opportunity for external (especially security-based) factors to change the balance of considerations informing a state's position. As stated above, a change in the situation of a single governmental department can lead to positional changes.

The most important factor for this observation is most likely the effect upon the persons involved rotating and changing. The more the persons representing the states change, the more individual relationships have to be re-fostered, and thus, the more difficult it gets to come to agreement. According to several interviewees, a key factor in the failure of the SALT II negotiations was an acute change in the U.S. delegation's approach, methods and aim after the staff changed as part of the shift from the Carter to Reagan administrations. This was against the advice of persons working on the treaty negotiations at the time, as they understood the Soviet position would not allow for this sudden shift in both position and tactics, but their warnings were largely ignored.

With respect to several other instruments' negotiations, interviewees that were either in the room or close to those that were noted that, in some cases, transitions in diplomats, ambassadors and negotiations meant that the newest delegates were not aware of why their country had even contested specific provisions, as they were being used to extract concessions elsewhere on entirely different subjects. This led to both confusion and delays in negotiations.

There are notable exceptions to this rule, however – chief among them, the CWC, perhaps the most successful ACT in existence, took many years for negotiations to conclude. The fact that the CWC was able to be concluded at all was described by one interviewee as 'extraordinarily lucky in terms of timing'. Many concurred that the chances of an instrument like the CWC arising again are near zero.

Finally, technological advancements – more likely to occur with time – have also been demonstrated to add complexity that can hinder negotiations. Many initiatives have been undermined for such reasons, including several space weapon-related instruments which were informally discussed in the 1970s, but became obsolete in terms of thinking by the 1980s, due to the increasingly inherent entanglement of civil and military uses within space assets as those technologies evolved.

SCIENTIFIC AND TECHNICAL ADVICE

Given that ACTs, especially those with verification mechanisms, are highly technical in nature, scientific expertise is very important to their negotiations. To the extent that this is possible to verify from spoken accounts of interviewees and literature reviews, it appears that technical advisors are often present in discussions (among state officials) from the very beginning to expedite their negotiations – at least in regard to the richer, often treaty-championing states.

LEGAL ADVICE

Legal advice is continually available to negotiators to some degree, but it serves an auxiliary function. The adherence of any such treaty with the obligations laid out by the Vienna Convention on the Law of Treaties (VCLT),[33] is generally processed by advisors back home, rather than discussed by diplomats, except at very specific times. Inspectors' rights, for instance, may provoke several legal issues surrounding diplomatic immunity, and the rights of such inspectors under international law more generally. Such pure legal issues are not commonplace, however – and for the most part, states are able to simply rely on their own counsel, and upon treaty phrases and provisions that are known to be correct from previous accepted instruments.

Interviewees stated, and primary source review supports, the observation that many treaties echoed previous ones in terms of the wording of operative articles (those that confer obligations upon the state party),[34] but more commonly procedural articles (articles which state how obligations are processed, e.g accession, denouncement, modification or similar mechanisms). To a great extent, this reflects known legal boundaries, and ensures legal issues are avoided. If there's nothing wrong with the previously enacted provision, they are often reused if just as relevant and applicable.

More detail on the form of this advice is examined below, especially in subsections on the UN Secretariat and individual diplomats.

DIPLOMATIC NARRATIVES

Certain narratives and perspectives can carry across treaties, both within and outside of a specific type of treaty. Such elements have been observed by interviewees as frequently arising within negotiations – to the point they form a general observation and are worth specifically mentioning here.

Specific to nuclear arms control is the idea of a 'grand bargain' effectively struck between the nuclear weapon states, and the then-near nuclear-capable states. In exchange for those states not developing nuclear weapons – remaining only civil nuclear powers – it was effectively agreed for the nuclear weapon states to both work towards nuclear disarmament and not threaten them with nuclear blackmail. This is something that has been remembered by non-nuclear weapon states, which predominantly lie in the Global South, ever since.

This grand bargain is pointed out firmly and frequently within negotiations that are in any way related to nuclear non-proliferation and disarmament. This is especially so given that there are mounting impressions that this bargain is being unilaterally renegotiated (i.e. ignored) by the nuclear superpowers – hinting at their withdrawal from many of the treaties that constituted the so-called 'grand bargain' in the first place. There remains a lot of anger and unfairness with the nuclear weapon states that have not yet delivered on those promises. Operational warheads have indeed been brought down dramatically, but this was of their own choice and often part of bilateral treaty obligations.

Interviewees further mentioned several anecdotes of representatives of countries in the Global South expressing feelings of immense frustration that the nuclear weapon states are 'putting us in a vice and squeezing', referring to impressions of the Global North dictating to the Global South across multiple ACT regimes – that the attitude has been spilling beyond the nuclear disarmament context, and into other arms control discussions.

DIPLOMATIC PRECEDENT

It was observed by interviewees (some of whom mentioned it directly, though others also alluded toward it) that toward the end of the 20th century, it became increasingly common – and accepted – for states to use their effective vetoes within the CD, and in other international fora (the CD does not operate with vetoes per se, but its consensus-based decision-making requirements effectively affords each vote such ability). Before this point, countries were a lot more reluctant to block issues singlehandedly via the veto – rather, they were keener to at least build a group of concerned states in opposition rather than veto an issue singlehandedly – as is now commonplace. Further, interviewees argued that many of the vetoes used within the CD are nothing to do with the issue being discussed – rather, they are a form of diplomatic hostage-taking, so that they may extract concessions from other, often entirely unrelated discussions.

This was not always the case, but changed in the 1990s in what could be described as the undermining of what was previously a strong diplomatic norm (or the creation of a new one). Indeed, this has been one of the primary reasons for the 30-year deadlock within the CD. The fact that this change, quite rapidly, occurred within the so-called

'golden age' of arms control in the 1990s is an important point. It shows that the current dip in the relevance and prominence of arms control is not simply the result of the deterioration of the geopolitical security situation. This also means, as has been observed by several interviewees, and as mentioned briefly above, that the UNGA is taking an increasingly large role in current negotiation processes in order to avoid the endless deadlock of the CD – which adopts only by consensus and effectively confers every state a veto, rendering inability to agree even a programme of work.[35]

NEGOTIATION LOGISTICS

Finally, a word must be given to the logistics of the negotiation process. Given the requirements of getting high-ranking officials in the same room, interpreters for many different languages, finding appropriate facilities, and other day-to-day expenses, the costs of negotiation can be very, very high. This is ultimately why the vast majority are done in dedicated facilities, such as the CD in Geneva or UN headquarters in NYC. Strategic weapons are practically always negotiated in capital cities of major countries concerned – principally Washington DC, London, or Moscow, or combinations thereof. Humanitarian or conventional weapon-concerned treaties most often are too, but with some exceptions and mixed instances.[36] Outside of these places, they are usually hosted in the capital cities of the champions of the treaty, who bear those expenses themselves. The UNGA and CD obviously pay for things hosted within them – another point in why both are often used.

In all these cases, not only are the facilities already there, but all of the people (or major embassies) are in the same place already. This is in fact particularly important for smaller countries' delegations who, in addition to often being stretched to capacity, do not have the resources to constantly move all of their staff required to other places.

Roles of Individual Actors

THE UN AND ITS ORGANS

Similarly with respect to UN organ involvement in the 'Initiation stage', there were mixed observations about their input within the negotiation phase. It is little use in the specific endorsement of UN organs to bless negotiations outside of specific exceptions. They can, however, act as checkpoints for certain positions to be defaulted to in the case of deadlock or suggestions that violate the ideas proposed by a UNGA vote. They thus help establish where the treaties are coming from, and what the end goal in mind is. They may also have some external political effects, though not often large ones.

The UNGA and its resolutions have no effect on the negotiating positions of the P5 beyond their already-determined positions. Further, for the same reason, they generally also exert no influence in relation to nuclear treaties. But with regard to the positions of smaller states, however, if many other bigger states in the region are getting involved in the UNGA discussions, then, interviewees observed, UNGA resolutions can produce a galvanising effect for the middle-ground, indecisive states. The fact it's a UN process matters to the vast majority of states, as it lends a degree of both political and legal legitimacy that is otherwise absent. UNGA resolutions thus do have concrete value, but such resolutions will not shift the big states.

Further, the UN can help the adoption of a treaty if other means are closed. For example, India and Pakistan refused to support the CTBT in the CD. It was thus then taken to the UNGA, which then passed a resolution on the CTBT in 1995.[37] As mentioned above, this process is becoming increasingly common due to the deadlock of the CD.

Aside from the major organs, the UN Secretariat can also be called upon to provide legal advice, especially with respect to the VCLT, as well as to help with the interpretation of UNGA and UNSC resolutions. This is sometimes called upon by member states for particularly contentious issues that require legal advice to be as objective as it can possibly be. However, states generally prefer to consult their own legal experts. This is often because due to the UN's position and efforts to avoid allegations of bias, it must be extremely careful in its assertions, and thus often takes a very long time to reply to any requests for such advice.

SMALLER STATES

Smaller, less powerful (especially those less 'relevant' to the weapons subject to the instrument in question) states are often not directly necessary for getting the treaty over the line, and in fact, the involvement of too many can lengthen the negotiation process duration, with net-negative effects. As stated above, most treaties do not start on a multilateral basis.

Such states can be critically important, however, under certain circumstances. This is especially if the instrument relies upon a normative effect as part of its overall utility. Given enough time, the taboo that can be produced is both important and potent. The support of smaller states is essential for the emergence of such a norm. All states look for more general basic acceptance when thinking about accepting certain kinds of approaches or behaviors as a norm – and this includes a geographical spread to argue that it is becoming universal.

Smaller states also face unique challenges. Many delegations are small, and lack the expertise or support to participate in negotiations the same way larger states might. Lack of staff or auxiliary support may mean that the members of their delegation are spending a very small portion of their total time on a specific issue. Though the enthusiasm of an individual diplomat can overcome this hurdle – and many such states have had such persons play pivotal roles in many ACTs – other sources are also important. To an extent, civil society can assist in filling this gap – as is detailed below.

INDIVIDUAL DIPLOMATS

The actions and abilities of individual diplomats can be pivotal to the success of ACT negotiations. This is not to say that they can do so alone and purely via their own actions. Rather, individuals can provide vision for, and set the direction of, the collective effort behind them. Several interviewees named instances of instruments which, had certain specific representatives not been present during negotiations and been replaced by others, would have been unlikely to be adopted.

States often provide their diplomats with highly detailed positions – but even these leave room for manoeuvre for skilled negotiators. It is certainly true that some instructions leave zero room for any kind of deal, but where there is scope for

agreement, individuals are pivotal in finding it. For this reason, they have to be adept at playing both their internal state processes, and how they are presented externally. Personalities matter: when down to the wire, it sometimes comes down to the individual diplomat as to whether or not to go the extra mile. The Iran Nuclear Deal (formally known as the Joint Comprehensive Plan of Action (JCPOA), for instance, was possible only, in the estimation of some interviewees, through the actions of specific Iranian diplomats who staked their reputation at home to convince the government that what they were doing was beneficial, and that the other side would honour it.

Interviewees and research furthermore identified several instances, also, of acute disagreement during negotiations that was exacerbated, and in fact caused, by the conduct of specific diplomats.[38] Many strong personalities exist within such fora. Especially between the non-nuclear and nuclear armed states, relationships were not always the best due to various impressions, arrogances and prejudices – as hinted at above. These factors did not, however, in and of themselves lead to any substantial change in outcome with respect to any treaty as far as any of the interviewees were aware. Fundamentally 'pig-headed' (as one interviewee said) negotiators can and do occur within any delegation. There are always reasons to block things and not many to overcome issues; negotiators with no emotional investment can thus easily, though perhaps inadvertently, scuttle a deal. Such attitudes are usually limited to specific individuals, however, not entire delegations.

Some interviewees further pointed out that that may be partially due to resource constraints on smaller delegations, and the additional stress that inevitably comes with being continuously stretched. This is not always the case, and in fact, smaller rich countries' delegations were perhaps the most likely to contain such individuals.

Other important factors relatively specific to ACTs include a technical understanding. There is a presumption that the participating diplomats have at least relatively competent non-specialised knowledge of legal affairs, treaty law, and the technical basics of what is being negotiated. In instances noted by interviewees where this did not occur, they perhaps slowed, but ultimately did not stop, the process. The highly technical nature of such discussions, especially with regard to verification regimes, means that parties must be highly fluent in technical terms, and the intervener must have the confidence to speak to several hundred people at once on such topics – to participate to the fullest extent possible. This is difficult at the best of times, but especially when not in one's native language. Sometimes, negotiators that are less senior than full ambassadors can also feel they do not have the authority to speak on such critical matters, especially considering their defence and security-related nature much of the time.

In spite of all of this, in the face of serious treaties – such as those concerning WMDs – that directly and substantially affect the immediate security of participating states, the role of individual is limited – because they are bound to act within certain policy confines, and thus have only a limited effect upon individual national positions. In other words, though confined to a specific scope, skilled diplomats can play with a lot of leeway regardless. **Overall, the presence of skilled individual diplomats, or at least several well-placed persons, are essential for a successful ACT negotiation – but the presence of less capable or unhelpful persons will not normally destroy their successes.**

NEGOTIATION CHAIRPERSONS

Chairpersons within multilateral fora or really any setting of multilateral negotiations are pivotally important. An incompetent chair who doesn't care for the process or who is insufficiently diplomatically skilled can be fatal for a treaty negotiation, review process, or other form of international agreement.

The chairperson's role is principally to control the direction of negotiations, set priorities for attention, and ultimately persuade and convince all parties that the text outcome – which they themselves have a critical role in producing – is both fair and entirely unbiased. It is an extremely difficult job, where once must be available for a long time, and involves a lot of preparatory work leading up to it.[39] Qualified individuals are also few in number: there are only 12 Ambassadors in Geneva dedicated specifically to disarmament, with others are stretched over multiple initiatives. This is made worse since people don't want to be affiliated with something that is likely to fail.

The chairperson often has the ability to break out expert working groups, assign responsibilities within them, and nominate leaders of those working groups, which can often produce results away from the political heat from the main chamber.[40] Interviewees consistently asserted that this is ultimately where most progress is made. Furthermore, it is the chairperson that invites delegates for talks beyond the allotted timeframe to facilitate breakthroughs (which often means stopping the clock just before 18:00 and running it again only when negotiations have concluded, at times often well into the early morning). Though the states most relevant to the process are invited, this is also the point at which individual diplomats can make a real difference.

The nationality of the chair, regardless of whether it should, matters a great deal. Within multilateral fora, or even closed treaty processes, interviewees observed that it was significantly harder for Western-origin (or specifically NATO) chairpersons to make progress. Neutrality is a critically important factor in the final stretch when the chairperson must put forward a text that practically inevitably puts forward a general position that forces everyone to compromise to some extent. Any perception of bias will scuttle this broad pill-swallowing process. **Overall, chairpersons have the critically important role of steering the direction of the negotiations, and facilitating agreement between the parties by acting as a mediator and a problem-solver, and by bringing together the right parties at the right time.**

CIVIL SOCIETY AND NON-GOVERNMENTAL ACTORS

Highlighted consistently by all three avenues of research, civil actors have played a key role in providing technical knowledge in a multitude of treaties. In many instances, this knowledge is required for the negotiations to be concluded at all, and has also resulted in the addition of very specific parts to the final text of the treaty.[41] Though ultimately an auxiliary role, it is an important one. This has increased in recent years due to the continuous development (and complexity) of new technologies. They can further provide assessments of environmental impacts or weighted effects upon

different groups, or other areas tangentially affected by an ACT instrument that governments may have overlooked or purposefully ignored.

As alluded above, civil society further has the important role in helping smaller states, with fewer diplomatic resources, to understand and keep track of all the negotiations occurring. Some states may only have one delegate for multiple treaties across a great range of subjects. This assistance provided by civil society can range from technical know-how to translations of individual state statements, and everything in between. This makes the entire process far more efficient for them, and allows their voices to be heard – an important factor in building broad international behavioural norms. Not all governments can have expertise in-house. This has been especially important in space-related arms control discussions due to the breadth of stakeholders in the area, which includes well-established space powers, new actors in space, and states that don't have space programs but depend upon space-provided services and data. This does not mean they are involved to the extent as was uniquely the case in the Ottawa Treaty process – but rather all sizes of states, not only relatively smaller ones, rely on them for technical expertise to understand newer technologies. Both here and generally, they have a lot more input than industry. Their role used to be secondary, like academics who write papers; they are considered, but do not directly steer discussion. This has changed significantly, and far more states are now keen to have them involved.

There remains, however, a significant valley between countries that are very open and willing to have NGOs take part, and a (now comparatively smaller) number of others actively oppose it. Several interviewees mentioned numerous instances within negotiation proceedings where there were disputes about this involvement. It is now more commonplace for civil society participants, though of course never having decision-making capabilities, to sit in and comment upon ongoing proceedings. This was institutionalised in the case of the Ottawa Treaty, as described above.

Finally, experts from civil society, including academia, can often be part of the advisory units or even nominated members of state delegations for their historical and technical knowledge. Scientists and technical advisors were there from the start in the case of the more technical treaties and, as mentioned, often were working on them long before they became even remotely politically viable. Interviewees mentioned multiple countries where this was certainly the case, and assured that it was also the case with many others although they could not specifically confirm them all.[42] This advice was crucial in seeing many negotiations through to the end. **Overall, civil society acts in a plethora of auxiliary functions, and is important for helping establish the negotiation positions of large and smaller states alike.**

INDUSTRY

Commercial entities, generally, rarely make any contribution to such negotiations directly except in limited cases of very direct and consequential provisions. For instance, there were many discussions with chemical industries associations during the negotiation of the CWC. Perhaps their most extensive involvement was during the negotiations of the ATT, where, concerned about their potential liability for the misuse of their weapons, manufacturers such as BAE Systems in the United Kingdom (itself a key player in those negotiations) made effort to be as involved as possible.

This is currently relatively uncommon, but increasing in frequency. Industry, with respect especially to emerging technologies, are very interested in the additional clarity on the norms and rules that come with codified ACTs.

NON-DIPLOMATIC INDIVIDUALS

Non-diplomatic individuals, such as survivors of the application of already-used weapons or celebrities, can play important roles regarding non-nuclear instruments. In particular, the presence of such individuals at some point in the negotiation process can be instrumental in the framing of a control instrument as a humanitarian necessity, rather than merely a strategic or security issue. For instance, Princess Diana and Nelson Mandela were essential for convincing their respective countries (the United Kingdom and South Africa) to support the creation of the Ottawa Treaty, who otherwise would have dragged their feet. As stated though, and similarly to the limitations of effects that institutionalised civil society (in the form of NGOs) experience, their effect upon nuclear treaties – owing to their overwhelming strategic and security importance – is minimal. Though several interviewees pointed out that the testimony of survivors of (for instance) nuclear testing within negotiations can lead to awkward and cringeworthy responses from ambassadors forced to defend their state's track record, this did not lead to any noticeable material difference in their position.

ADOPTION, DISSEMINATION AND VERIFICATION PHASE

This phase refers to all aspects of ACT development that occur after the final text is adopted.

General Observations

Interviewees consistently pointed out that it is important to keep established treaties alive to allow for fall-back or other referrals to them. As parts of ongoing conversations, they provide both baselines and waypoints for what may come next.

There is a question of how long they can hibernate before they become irrelevant, or, far worse, an example of what can be ignored. In this sense, having a treaty legally in force but not actually adhered to can be very dangerous in terms of norm-setting behaviour. This is a large part of the reason why countries abandon or effectively destroy a treaty before it gets to this point, rather than have it as a monument to what can be ignored, which can itself lead to troubling international norms. Treaties can die silently too, with quiet withdrawals; one example would be the CFE Treaty (1990). For this reason, from many states' perspectives, and as relatively consistently asserted by interviewees, **the conclusion of an ACT should be seen, quite distinctly, as the beginning of a process – not the end of one.**[43] **They are machines that must be constantly maintained post-negotiation.**

REASONS FOR POST-ADOPTION RATIFICATIONS

Outside the nuclear context where this is already abundantly obvious, there are often different considerations driving countries to join particular treaties.[44] Many countries ratify treaties to signal their reliability as a member of the international community, and thus open, or keep open, trade opportunities among other things. For especially

humanitarian treaties, there is rarely a direct strategic benefit, but there are ethical benefits in terms of signalling virtue or demonstrating moral principles of the supporting countries. Civil society can of course stress the humanitarian impacts of the weapons, but the security aspects fundamentally come first in the eyes of states when it comes to joining arms control treaties.

TREATY VERIFICATION

The importance and difficulties of verification came up in almost every interview conducted. It was consistently highlighted as perhaps the most difficult single element of ACTs to negotiate and implement, all things considered. It ensures that all parties see the that others are complying with the text of the treaty and not gaining an advantage – essential for states' security and the functioning of an ACT.

In the most acute cases, verification provides an overriding security benefit by committing to transparency as a way of preventing misperceptions in action, or deception, on the part of one party which may lead to the perceived disadvantage of another. For example, a treaty limiting the development of delivery vehicles for nuclear weapons would require strong verification provisions to ensure that both sides felt secure enough to enact those treaty requirements. That said, a lack of verification mechanism substantially simplifies the treaty negotiation process. This is relatively common, but makes the instrument far less legally (or politically) enforceable. Further, without verification mechanisms, the boundaries of what states will agree to limit – or will actually limit – will be lower than without them. Their absence substantially reduces the treaty's effectiveness. They are thus a very difficult balancing act to get right.

However, an important point raised by one interviewee in particular highlighted that even without specific verification within a treaty, the baseline of verification is far from zero. Modern intelligence services of some (comparatively richer) countries are often aware of the status of many controlled weapons, though surprises do occasionally happen. Thus, some states can often conduct some kind of verification, but the level of confidence, which is important for interpreting the actions of others, matters.[45] Furthermore, much of this intelligence is not actionable in terms of policy, especially when attempting to include many other states as part of the (multilateral) treaty. Interviewees also stated that there have been times where they knew of countries that, though openly complying with a treaty – that in fact had verification mechanisms – were in fact consistently violating its terms. Confrontation, however, is not always politically or normatively preferable. In a similar way, non-governmental actors can be instrumental in assisting states to verify compliance with certain behavioural limitations. This is often imperative to the production of preventative norms derived from such instruments – explored below.

Verification mechanisms are often extremely expensive, intrusive, and can take decades to establish – all factors an ACT wants to minimise. But they can provide enormous benefits even in spite of the baseline level of verification not being zero for some states. For example, the verification mechanisms of the CTBT provided so much technical data that the United States and other large non-ratified parties were extremely interested in supporting it – and the former continues to do so financially

and otherwise, without ratifying it. Its seismic verification system furthermore has provided a lifeline – in terms of continued acute relevance – for a treaty that has not even entered legal force. This is a feature no other non-legally-in force treaty can claim to have.

The expense of verification regimes varies dramatically, depending on the technology. Sometimes, like with the Conventional Armed Forces in Europe (CFE), verification is simply comparison of images by trained eyes to spot, for instance, tanks. The CTBT mechanism, however, constitutes hundreds of tons of equipment (for detecting any nuclear explosions worldwide), as does the CWC verification system. Another factor is the sensitivities for trade secrets of, for example, the pharmaceutical industry in the case of the CWC. Intrusion into such sensitive trade secrets was avoided through an extremely complex mechanism. It can be immensely difficult in some cases to know what a weapon is, and comparatively easy in others. Nuclear weapons are relatively easy to detect due to their specific radioactive signatures. However, other weapons – especially dual-use assets – are almost impossible to definitively categorize as weapons. Worryingly, new technologies fit far more often into the latter category than the former; this is explored more extensively in Question II.

NORMATIVE EFFECTS

Normative effects of treaties were consistently underlined as an extremely important effect of their adoption – a conclusion that is only partially contingent on the number and relative weight of state party ratifications, if any.

In the first place, several interviewees asserted that, even without ratification, the emergence of a treaty tangibly affects the oral narrative and behaviour of countries within international fora – both during formal negotiations, and behind closed doors. This can have distinct political and diplomatic effects. Again, a treaty cannot be viewed in isolation. The norm-setting narrative that comes from such instruments occurs from and forms across multiple instruments within the same issue area. This is also another area in which civil society can play an indispensable role through grassroots organisation and education about the effects of certain weapons or capabilities to stigmatize them. This is critical in the stigmatisation of such weapon systems.

Even without entry into force, the CTBT proves that highly effective norms – meaning expectations of behaviour that apply beyond treaty ratifiers and signatories – can be introduced. There is broad concurrence amongst practitioners and secondary sources that the CTBT, in particularly the CTBTO and its verification mechanism, has essentially halted testing. Since its adoption (not entry into force) in 1996, there has been a very small number of nuclear tests – the sole exceptions being those from the DPRK, India, and Pakistan. Similarly, the Ottawa Treaty practically entirely destroyed the landmine trade; landmines are now largely only made domestically, or come from older reserves, and there are just a few persistent instances of use remaining. The CWC has had a huge normative effect on the (un)acceptance of chemical weapons, and though their use by the Assad regime during the Syrian civil war (2011-2024) put some pressure on this, they are still very rarely used – and indeed their use in Syria lead to widespread international condemnation. The BWC, even without a verification mechanism, has created a norm against usage that has so far, at least to public

knowledge, never been violated.[46] This normative effect is also not limited to only states. Armed groups overwhelmingly insist they do not possess such weapons (such as chemical or other weapons of mass destruction).

The building of norms has practical effects too. The lapse in time from previous acceptability of, for example, nuclear testing also means that the infrastructure required to conduct testing no longer exists in many states. While this does not always create a difficult barrier for some states, it does help generate a 'downwards pressure' on nuclear weapons overall. Further, the pressure from norms comes both from the international community and also domestic groups. Once the norm has been crystalised, and domestic groups are both aware of and can rely upon it, it becomes difficult to overturn without burning through domestic political capital – and doing so will inevitably come with opportunity costs leaders would often rather not bear. Thus, the crystallisation of a norm can provide a means to hold governments to account from multiple directions at once. Sometimes, the norm is insufficient to prevent reemergence of weapons through a process called 're-strategisation'. This is examined further in the dedication section in the second part of Question II.

Such norms have to be maintained: as has been often highlighted, they are part of a continuous conversation. If this fails to occur, at some point uncertainty regarding the weapons or capabilities will become part of the equation, and some states may want to confirm that the weapons they possess still function the way they had intended. This is a problem regardless of eventual disarmament. There is a tangible tendency towards disorder here. Without progress, things will gradually unravel. One place we very well may be seeing this is in regard to nuclear arms control. The nuclear issue has largely been relegated to the past, with the generation that provided strategic stability all retiring or deceased – and many new leaders do not want to think about those issues again. Thus, it is critical for civil society, for the preservation of the function of the CTBT and other instruments, to convince current and next generation leaders of the importance of these issues. Relatedly, with respect to the CD, many say that after 1996, the CD has hardly been able to do anything due to no consensus. This may be true, but a more fundamental point is that the international community still needs such institutions (also including other bilateral and multilateral fora) because there most likely will be a strategic moment where they will become relevant again. This may occur as suddenly as the events of the late 1980s and 1990s that rapidly paved the way for numerous, often powerful treaties.

Specific Observations

SPEED OF DISSEMINATION

There does not seem to be any particular link between the initial number of ratifications of ACTs upon entry into force, and the number of states that may join it within several years afterwards. The reasons for states joining ACTs, as mentioned throughout the report, are manifold and highly contextually dependant.

Further, there are mixed effects regarding the eventual effectiveness of a treaty and how quickly it gains ratifications. The CWC took four years – two longer than widely expected – to achieve the required 60 ratifications for its entry into force, which is relatively slow for such a successful instrument.[47] This did not in any way affect its

overall effectiveness, however. Though at first a little counterintuitive, this perhaps proves logical considering that the more effective regimes, across the board, tended to possess stronger verification mechanisms – or indeed have them at all. This in turn would make them more burdensome to adhere to and more intrusive to military and other apparatus. Resultingly, a slower adoption rate is both predictable and reasonable.

ENTRY INTO FORCE REQUIREMENTS

The date of the entry into force of the treaty, whether with the lapse of a specific amount of time/on a specific date, or by reaching a minimum number of ratifications, is the result of a mixture of factors.

In the first place, the implementation of a treaty can be very expensive, and the extent of this expense can vary substantially. Specific institutions, for instance, may need to be set up both internationally and within each country's own civil service and/or regulatory infrastructure. Following from this, ratification without a sufficient number of other states joining may put them at a resource disadvantage.

Further, the effectiveness of a treaty may depend on the ratio of activity occurring within the treaty structure as opposed to outside it. For instance, with respect to the ATT, a key factor considered within negotiations was whether most controlled arms would occur within or outside the scope of the treaty. If not enough states joined the treaty, with a particular focus on the larger weapons-producing or – buying states, most arms trades would be occurring outside its structure. This would not only undermine the effectiveness of the treaty in the first place, but also cripple the emergence of any international norms – and in fact perhaps lead to the establishment of norms working against the text of the treaty. Hence, negotiators worked hard to hit the right balance when building the treaty so that it would contain as many of the weapons-related states as possible.

TREATY DROP-OUTS

As has been mentioned above, there are numerous instances where countries have been very active in starting and shaping negotiations of a treaty, or who actively partake in its adoption, but who themselves either don't sign or ratify the final product. In the case of the TPNW, the Netherlands gave a great deal of input, even though they remain a non-signatory; the reason likely being was the importance they placed on their continued protection under the U.S. nuclear umbrella. Further, although the United States is not formally part of the framework laid down by the Ottawa Treaty, it is amongst its biggest funders of efforts to find, verify, and destroy known landmine stocks, and prevent their return. It supports the CTBT in a similar way, as do other states too.

WITHDRAWALS FROM ACTS

Withdrawal from ACTs, something which we have seen a great deal of in the past few years by key states, is a complex issue. A change in the geopolitical situation is of course part of this equation. If an ACT intolerably constrains the abilities of a state, it may suddenly feel it needs extra leeway in the case of changes. The burdensomeness of the instrument seriously affects the extent to which it will be

adhered to in difficult times, and this is increased by the number of operative articles, the extent of verification required, and how expensive and time-consuming the ACTs are to implement. Other literature has covered this extensively, so this shall not be repeated here.[48]

Internal politics plays a key part in this equation too, however. For instance, the U.S. Senate must agree by two-thirds for a treaty to be ratified by the United States; if it does not, then the United States is precluded from ratifying that treaty. This effectively precludes the United States from signing up to provisions that could unduly and unpopularly constrain the actions of the state. Even countries with a more centralised system, such as China, have to worry about their internal constituency. They strive to make sure that their subjects remain loyal by ensuring that state actions are in the national interest.

In the same way that ACT formation is, as discussed extensively above, the product of decades of ongoing conversation, many withdrawals are reactions to dips in that conversation – where less discussion occurs. Withdrawal of the ABM treaty by the United States in 2001 was, according to several interviewees, the original action which set off a spiral of withdrawals. Others view that as simply a part of a longer chain of tit-for-tat exchanges. A number of reasons ultimately explain this phenomenon, but in respecting Hanlon's Razor,[49] also relevant is simply the possibility that the U.S. government, as the then sole reigning superpower, felt a lot more powerful and dominant, and failed to properly consider the second-order consequences. Withdrawal of the CTBT by Russia, and others, was also done partly due to internal dynamics coupled with strategic calculations of imbalances and capabilities. A breakdown of trust also occurred, and ongoing discussions have gradually wound down over the years. Regardless of the underlying reason, interviewees were entirely concordant in agreeing that such withdrawals made the world less safe.

Roles of Individual Actors

CIVIL SOCIETY

Civil society has played an essential role in making other countries, elected officials, and societies aware of specific issues, including the making of a treaty; again, this has primarily been in regard to humanitarian-focused treaties. They can, and do, contribute to the continuous functioning of the treaty by assisting states, especially smaller ones, with the implementation of treaty articles, and do so by providing expert technical and legal advice, amongst other fields.

They can, furthermore, ensure compliance with the behavioural limitations of the treaty by conducting independent investigations and ensuring that government findings are accurate. Notwithstanding the norms that follow them – which as mentioned above, civil society is critical for establishing – the ratification of treaties becomes a highest-order security consideration.

INDIVIDUALS

Individual diplomats, ambassadors and other actors would appear to be far less important at this 'crunch' stage where security considerations ultimately take over. This may partly explain, as mentioned multiple times, why states will partake (sometimes extensively) in negotiations, but not necessarily sign up to the instrument they helped create.

QUESTION I – FINDINGS AND CONCLUSIONS

To conclude the analysis of the first research question, the production process of arms control treaties can be said to be highly varied and dynamic in nature. There are many actors involved in their production, both national and international – and they can have substantially different levels of influence at different stages of the ACT production process. They are very difficult instruments to get right, as there is no shortage of things that can wrong during their production owing to their high-stakes subject matter.

Given the fact that ACTs are so intimately connected with the national security apparatus of states, they could certainly be said to be a particularly contentious type of treaty. Further, this means that although there are many aspects that are not dissimilar to other treaty-making processes, such as the importance of the chairperson within negotiations, there are many aspects of ACT production that are unique.

While the production of nuclear-concerned ACTs certainly broadly follows a developmental process more in keeping with classical 'realpolitik' thinking, this research has shown that there is indeed room for other conceptualisations that can be successful in the right circumstances. With regard to their normative forces, it is indeed tricky to determine whether they come from the treaty itself, or whether it crystalises an assertion that already existed. In either case, however, ACTs are enormously useful to those striving to rid the world of devastatingly destructive, cruel, or inhumane weapons.

This research has attempted to distil the most generally appliable observations with respect to the ACT production process as a whole. Of such observations, the notion that ACTs are merely points or clauses within an ongoing arms control conversation is, in my mind, certainly the most significant – and sets them starkly apart from many other types of treaty.

Adopting this viewpoint not only serves as a means of greater understanding of the relationship between instruments, but also constitutes an inevitable call for action for the sake of the requirements of future arms control initiatives. As has been shown with respect to the most successful ACTs, future negotiators, civil servants, politicians and other public servants perhaps decades from now will be dependent on the research – technical, legal, and so forth – that is being conducted now in order to advocate for the next generation of ACT.

Question II: Areas Conductive to Successful ACT-making

The second question of this report asks, in essence, which types and areas of arms and weapons are conductive to treaty-making, and which are not. Conductivity, in this context, refers to the relative likelihood for an ACT to be successful if it could be said to belong to one of these areas.

There are essentially two broad criteria for success within this context: **procedural success** and **substantive success**. Procedural success refers to the completion of a treaty's text and its successful negotiation. Substantive success refers to the tendency for that treaty text to actually be ratified by a sufficient number of states to become legally effective. This includes clearly observable normative effects they may have in spite of its number of ratifications, as has been detailed at multiple points in Question I.

Unlike the first question, the scope of this question is not limited to a particular set of treaties, but is more open ended, as some initiatives do not even make it to the stage of adoption as a formal treaty – which in turn provides an important delimitation of what is generally successful, and what is not.

This leads to two primary categories:

1. Areas Conductive to Arms Control Treaty-making

The first group is straightforward. These are features of ACTs (areas to which ACTs belong) that have exhibited consistent success both procedurally and substantially.

In many cases, these are the treaties that matched the criteria that identified the list of treaties whose developmental process was analysed to answer Question I. Given the success of such treaties, it is reasonable to conclude that the area or group of arms that they concern are 'conductive' to treaty-making for the purposes of this question.

2. Areas only partially, or not conductive to Arms Control Treaty-making

This category includes areas that have tended toward failure in at least one of the two identified aspects for success. They are more common in instruments that, although they may have received some success, are undergoing continued implementation.

Since they managed to reach at least some kind of procedural progress, the treaties that were **excluded** from the scope of the first question on the basis of the aforementioned criteria could be said to fall into this category. This will show which areas are partially conductive to treaty-making in the sense of reaching a level of development, but which are not **sufficiently** conductive to result in successful treaties.

Further, there may be, and are, ACT initiatives that failed to gain traction in either domain of procedural or substantive success. Such initiatives could be said to have entirely failed as a result. It was my initial intention to include a separate section to examine such instances specifically, but although interviewees agreed that there must be plenty such initiatives that entirely failed to get off the ground, they were unable to point to them with sufficient precision as to allow them to be identified. The FMCT – which remains a formal idea but not even a text – is the best example of such

an instance. This is, in my view, perhaps a product of individual ACTs being part of a wider conversation between states: such initiatives in many cases were revisited and became partially successful, but this would be difficult to verify. They will be placed in the second category as mixed instruments as a result.

GENERALLY APPLICABLE OBSERVATIONS

It is firstly worth reiterating several points made within the answer to the first question that are also applicable to answer the second research question.

Timing

The first is that the timing of the initiation of ACT instruments has to be right – but with this question, we are attempting to control for this factor. We are asking, if the timing is roughly right, what factors can better predict success, and which make success less likely.

In this regard, it is obvious from research that it was only really in the 1990s that negotiations allowed for proper verification regimes for multilateral instruments (some mechanisms were present in, for instance, the SALT I treaty and other bilateral instruments) that carried any kind of non-trivial intrusiveness, such as on-site inspections. This indeed matches with the more general observation that a majority of ACTs have been enacted in times of (strategic) stability and relative peace.

General Categories of Treaties

Research confirms the findings of other reports that there is, from many viewpoints, a real and present separation between humanitarian, strategic, and conventional types of ACTs. Mixes of these are possible, further adding to the complexity. These broad categories of treaties are different in many ways: the most relevant states for their formation differ with respect to different types of treaties, as are the range of civil society actors willing to get involved and who can meaningfully make a difference. Furthermore, they have been shaped by the contexts in which they are created, which changes considerably from treaty to treaty. But this does not mean that any single such category could be said to be more conductive to treaty-making. In other words, there is insufficient evidence to state that any specific type of ACT lends itself to greater success. There are too many other factors present for such a determination.

Technological Limitations to Treaty-Making

While hinted at in the first question, the factor of technological complexity is far more significant for this question. The importance of such complexity as a factor affecting the success of attempts to subject a weapon to arms controls can hardly be understated.

Some particularly useful research in this regard comes in the form of a recent article by Dr. Vaynman and Dr. Coe.[50] The piece very convincingly argues the existence of a direct link between the entanglement of the civil or military functions of a weapon, and its ability to be successfully subject to international controls. As they show through a comprehensive review of the technology controlled by existing treaties, the more ubiquitous and inseparable the civil-military functions of an individual

weapons system, the more difficult it is for those specific assets to be subject to controls in practice. The reason for this is severe detection and disclosure constraints, and thus greater monitoring measures needed to verify compliance. But, in turn, that same high integration increases the potential damage from monitoring – and all of the security concerns that come with these traits. When these two factors of ubiquitousness and inseparability are present together with regard to a particular type of weaponry, this places them in a 'dead-zone' of arms control.[51] This zone has one exception: the BWC, which aims to prohibit military biotechnology which is both ubiquitous and inseparable and largely inseparable from civilian biotechnology. It further has no verification system except for voluntary 'confidence-building' declarations on biological activities.

Future Complexities

Looking to the future, it seems that entanglement and other factors will become more prominent. The Veynman study demonstrates clearly that the more indiscriminate and ubiquitous a system is, the lesser its chances of the successful completion of its corresponding ACT negotiations – and dramatically so. Unfortunately, it is precisely these types of weapons and assets about which arms control officials, several of whom I interviewed, are now faced with. The regulation of artificial intelligence, autonomous weapons systems, and counterspace systems may all suffer from this fate.

But previous examples do show that this is not an entirely insurmountable barrier. The solution may be to avoid this entirely by pursuing new approaches. Norms and focus upon responsible behaviour can still be effective, even with the entire absence of direct and intrusive quantitative verification. Qualitative verification – on the basis of behaviour – is much easier to verify but comes with the obvious downside of only retroactive assessments. What is clear is that certain actors, especially civil society, now have a larger role to play than ever before as a result of these developments, and this role may indeed continue to grow.

AREAS IN WHICH ACTS HAVE BEEN SUCCESSFUL

We first turn to the areas – to which an ACT may belong – that appear to heighten its chances of success. In other words, the more of these areas an envisaged ACT may belong to, the more likely it is to procedurally or substantively succeed.

Reactive Instruments

It is unfortunately the case that the great overwhelming majority of successful ACTs were in response to an event or disaster, or the urgency of an imminent disaster.[52] Successful treaties almost always act reactively to specific incidents, or to ongoing acute threats. This has already been partly explored in the general analysis of Question I, so will not be repeated here in detail. It is a general rule with very few exceptions that apply essentially to weaponry of questionable military utility in the first place, such as the blinding-laser prohibiting protocol of the Convention on Certain Conventional Weapons.

Furthermore, states must be comfortable to publicly label such activities as dangerous, which is an inherent assertion (and necessary first step) in controlling them via an arms control treaty, and prevents future action in that specific area. This means that unless all adversaries are on board with this general idea, countries are concerned that they would give up their strategic advantage to others' benefit. Thus, for instance with respect to space, no state has yet said that the believe the actions of any others constitute a use of force or an armed attack in space. Even less serious terminology such as 'irresponsible' or 'reckless' ASAT testing is not always labelled as such; this may be because the actor is a political partner or ally, or states may be trying to leave open the possibility of conducting similar tests themselves. This can thus prevent any one party from taking the first step for an ACT with respect to new technologies.

Further still, successful narrative building can quite significantly affect the perception of this threat. Nuclear weapons are in fact perhaps the best example of this. Though they have only been used twice, they are certainly the most feared because of their unparalled potential for destruction – and this fear is partly narrative driven.

Weapons of Relative Military Obsolescence

For much the same reason, it must be noted that weapons appear more likely to be controlled, and individual countries more likely to sign up to their controls, if the weapons in question are either militarily obsolete, or are not operationally viable due to the existence of other weapons that can conduct the same function more effectively. Successful treaties generally control weapons or activities that are of at least limited military utility **when compared to other weapons/activities available**. This was the case with all treaties examined in detail, and remains true across the board according to background research and interviewee testimony. This requirement for military obscelence is unfortunate, and could be interpreted to mean that advancement in more targeted or specific weaponry can function as a means for reducing destruction.

Despite all existing and varying controls, countries never have, and certainly never would, agree to restrictions of weapons to the extent that it would jeopardise their own national security.[53] Largely, controls only apply to obsolete (in the sense of limited relative military utility compared to other, more useful or accessible) weapons. Chemical weapons for instance are mostly useful for inflicting severe harm on civilians; their contamination of a battlefield, causing possible harm to one's own troops and at the very least making it a severe challenge for one's military to effectively carry out operations, gives them limited military utility. The same can be said for biological weapons. They are no longer part of most modern military doctrines in any capacity.

Another place we have seen this is the tens of thousands of nuclear warheads that the United States and USSR held at the peak of the Cold War, which was an excess far beyond what was thought to be necessary to keep MAD-based (or any other kind of) deterrence. Hence, their numbers were able to be negotiated substantially downward. It is also possible that the opposite of this is true: if a weapon or capability that had been negotiated away suddenly has a new military utility, then countries may

decide to use them, ACT or its affiliated norms notwithstanding. For example, cluster munitions and landmines have only very specific military applications – the former, to attack personnel or lightly-armoured vehicles over a large area, the latter to restrict movement over a certain area. Yet, despite the bans and their (previously) limited utility, the Russian war against Ukraine has renewed their utility somewhat – see below on their recent re-strategisation.

Underlying Narratives of Justification

There is good evidence that there are greater chances of a treaty reaching at least moderate success if it is built with a humanitarian narrative underlying its reason for existence. This also appears increasingly true if the treaty in question starts, or is expanded to, a genuine multilateral approach.

Making something a humanitarian issue can allow for a greater array of pressure to be drawn from in support of the treaty, especially prior to the start of negotiations. This is a key role into which civil society could (and does) step, and this designation is derived not from the function of the treaty, but the given reasons for its existence. There is no innate reason why, for instance, the TPNW is considered a humanitarian treaty whereas the New START treaty is not. Indeed, interviewees submitted that in some cases, attempts were made to convert the narrative of focus of some treaties, but were out-shone by overwhelming security and political considerations.

This goes beyond the mere humanitarian-security distinction too, and applies to all impressions of what concerns and does not concern state parties as a result of a given narrative. For instance, the absence of knowledge about the space environment and the importance of space's role in daily lives, especially amongst states without their own indigenous space capabilities, played a role in the failure of ASAT-restricting initiatives during the 1960s-1980s. During this period, many states, said interviewees, had the impression that such instruments concerned only the strategic interests of the states with such space-based capabilities; they did not understand that the continuity of space communications and other services derived from space-based infrastructure was at stake. Thus, such instruments failed to get a sufficient number of backers that might have helped push through certain (then informal) initiatives.

Weapons of Mass Destruction[54]

Treaties addressing weapons of mass destruction have had the most objective success as a category – both by the number of treaties, and how effective they have been across the board.

This is perhaps counterintuitive, however. By reason of their strategic importance, complexity to verify and control, and the military advantage they provide, one line of reasoning would suggest that they are of such high-stakes nature that they would be more difficult to successfully conclude than lesser-stakes treaties.[55] One might reason that as a result, many more successful lesser-stakes treaties would exist – but that is not the case. For example, it may be that as a result of these higher stakes, it makes sense for far more resources to be spent on curtailing them. Additionally, because of their relatively exclusive nature, ACTs concerning WMDs often only directly concern a much smaller group of states – meaning less possibility for disagreement.

In spite of the above, there are indeed failures (according to the criteria laid out above) within this relatively broad category – but they are usually for specific reasons. In the case of the FMCT, the verification system would have been extremely expensive, but more importantly, it was blocked by India and Pakistan, owing to their perception that it was to the advantage of the other. This particular point is examined further below. Another example is the CTBT, which has been highly normatively successful, but remains unenforceable due to a very high bar for entry into force that requires the ratification of all nuclear-weapon possessing states. It is thus of mixed success according to our assessment criteria.

Behavioural (as opposed to quantitative) limits

Treaties that limit only behaviour[56] seem to be more likely to be successful than those that also or only impose quantitative limits. This is particularly the case, as per interviewees, with regard to procedural success (agreement on the text). The obligations that follow from such observations as opposed to quantitative ones are simpler to follow, less intrusive and expensive, and less limiting.

Behavioural limits are also much easier to verify compared to those required for quantitative verifications, though they can of course only occur after the treaty-violating activity has occurred. For instance, the CTBT's global system of seismometers which serves as its verification mechanism can detect violators only after they have held a nuclear test.

Flawless timing: The CWC

As a final note, it should be considered that the CWC constitutes a clear outlier whose success cannot really be explained in terms of categorisation of this kind. It possesses numerous attributes that in theory should be against it, including: the creation of an extremely extensive verification system with a dedicated international supervisory body; it concerned weapons that a huge number of countries possessed at the time; the subcomponents of those weapons are dual-use in nature; it implemented a legally binding deadline for their total destruction; and has almost universal ratification. And yet, it exists. Interviewees consistently stated that its existence is nothing short of a miracle.[57]

However, this does perhaps hint at the relative weight of numerous factors that have been addressed throughout this report. The CWC's negotiations were, as detailed in Question I, pushed for by several powerful countries at once, and the negotiations were concluded in the most receptive period of arms control (the early 1990s). It also had particularly deep roots in the form of the 1925 Geneva Protocol.[58] Further, it concerned weapons of a particularly acute heinousness that would likely breach international humanitarian law if used at all.[59] These factors together overcame what for other ACTs have proven to be insurmountably hindering factors.

AREAS IN WHICH ACTS HAVE HAD MIXED SUCCESS

We finally turn to areas and factors that ACTs may be part of, or have, that appear to suggest they are less likely to be fully successful. In other words, the more of these areas an envisaged ACT may belong to, the less likely it may be to procedurally or substantively succeed.

Areas Concerning Dual-Use/High Technological Complexity

The assertions of the Veynman paper, as examined in the general observations, hold true on the basis of copious evidence I have seen during the production of this report.[60] The more entangled the civil and military uses of a weapon system, the less chance it has of being successful for a multitude of reasons that are best laid out in the original paper. This is perhaps the factor that has the strongest correlation with failure.

Nuclear treaties without major nuclear powers

It seems clear that nuclear treaties without the backing of at least one (but likely more) major nuclear power will not be successful. In this sense, it remains the category of weapons that most closely follows a realpolitik theory of international relations. For instance, the TPNW, though formally adopted, has had extremely limited success in terms of tangible consequence. Though its normative force is more debatable, it cannot be quantified, and it is in any case not obvious in the same way the CTBT is. It indeed follows from all observations above, including within Question I, that nuclear treaties without the involvement of major nuclear powers from the very beginning are likely to be cripplingly limited in their overall success.

Ambiguous Strategic Impact

States must also consider the strategic impact of joining individual treaties. Many do not have a direct benefit for individual countries, but perhaps open future economic, trade and political opportunities that come with being a reliable international partner. Or it can be that while they do not plan on developing that capability themselves in the future, they want others who could decide not to do so, and believe that creating a treaty would prevent the emergence of this capability. Along those lines, treaties can be statements about what the international community believes to be responsible or irresponsible, and joining a treaty may be perceived as giving weight to these beliefs. Alternatively, states may worry that limitations may hinder their goals in the future in unpredictable ways.

Thus, the more uncertain such indirect benefits, then, the less likely the treaty is to be beneficial long-term, and the more sceptical states may be in joining it and building it to be successful. This depends on the specific subject of the treaty – but the more specific and defined, the better.

Verification Regimes

The presence of a verification regime appears to lessen the chances for successful completion of negotiations.[61] This is likely because they are complex to formulate, have challenging security implications, and can be expensive to set up and maintain. The weight of this effect varies with the variance in terms of their intrusiveness, however. They are not always an enormous hinderance; it depends on the technology in question. Some verification regimes, such as the CFE Treaty, are relatively simple and non-intrusive.

The CTBT, though impressively normatively effective through its verification mechanism, is by strict definition not successful within the meaning of criteria of procedural and substantive success set out above, as it has not entered into force. Nonetheless, interviewees pointed out that the norm against nuclear testing that the CTBT encapsulates comes in huge part from its verification regime, which has been partly implemented, even without legal force of the treaty, by the CTBT Preparatory Commission.[62] Another example is the CWC, which is no doubt effective largely due to its extensive verification regime. Thus, it is salient to point out that regardless of the success criteria laid out above, absence of a verification regime could certainly be pointed as a weakness of the regime. As one interviewee strongly asserted, the quality of a treaty (the strength of its regime) matters more than the quantity (the treaty (and likely other instruments) existing without concrete obligations), especially over the long-term. Verification regimes are thus highly complex additions to ACTs both in substance and effect.

Induced Perceptions of Exclusion

Another marker of the success of multilateral ACTs is the (absence of the) perception that the treaties allow more technologically advanced countries to maintain their lead over other countries. This is, of course, the entire purpose of the entire nuclear non-proliferation regime, but as examined in detail in question I, both sides of that bargain must believe that it is being fulfilled; without that belief, feelings of deliberate exclusion and throttling of progress begin to take hold, which we are seeing.[63] Treaties that have been particularly noted to equally treat all parties include the CWC, BWC and CTBT – and this was highlighted by interviewees to be a substantial factor toward their substantive success.[64] Thus, successful multilateral initiatives must not leave many states the impression of being in kept in a less attractive relative position to their peers and rivals, nor prevent them from getting a new system of far better utility. This thus ties in closely with the general requirement of obsolescence.

Potential for Re-strategisation

Though rarer, the opposite of the phenomenon mentioned under 'narrative metamorphosis' is also true – humanitarian treaties can also be re-strategized. This refers to the phenomenon that weapons systems that were previously subject to (legal and normative) restrictions suddenly become more acceptable and desirable due to a situation that lends military utility to them. As mentioned above, a lack of utility of a weapons system is often needed for the successful restriction of a weapon via an ACT.

This also demonstrates, as alluded to above, that normative forces can often be outmatched by immediate security requirements, as there have been a few circumstances recently where that has happened especially within the war in Ukraine.[65] If the balance in the equation (future humanitarian casualties versus immediate security benefits) changes, so does the aggregated perceived function of the treaty – from a humanitarian benefit, to a security and defence hinderance.

QUESTION II – FINDINGS AND CONCLUSIONS

Our findings for the second and final research question addressed by this report reiterates that ACTs are hugely complex creatures, with many factors that affect their effectiveness.

On the basis of interviews, and secondary source analysis, I have identified a range of factors for which there is evidence of their relevance to (procedural and substantive) ACT success. Factors seeming to spur treaty success include: the reactiveness of the instrument; relative military obsolescence of the capability or weapon being negotiated; a humanitarian focus of the ACT; dealing with weapons of mass destruction; and limiting the discussions to behavioural limits.

Conversely, areas that appear to limit ACT success include: dual-use/technological complexity; an ambiguous strategic impact; induced perceptions of exclusion; the weapon's potential for restrategisation; and, in the case of specifically nuclear treaties, the absence of backing from a major nuclear power. With regard to the presence of verification regimes, they appear to make an ACT less likely to be procedurally successful, but more substantially successful long-term if the former can indeed be achieved.

I cannot and do not claim that these areas represent a comprehensive range of applicable areas and factors. Since falsification is naturally more difficult, there is also a skew in this question in terms of detail and certainty toward areas owing to treaty success, as opposed to those that reduce this. What is clear is that different areas and factors have highly complex relationships with each other – such as between behavioural restrictions and the presence of verification regimes. Nonetheless, they collectively provide a broad indication of which areas are particularly susceptible to (ACT) treaty-making, and which are not.

Author's (Evolved) Perspective

For what it is worth, I as the author started this research relatively pessimistic about the continued efficacy of arms control treaties. This method of relations seemed outdated, insufficiently dynamic, and ultimately of limited utility. I am very far from the only one sharing this opinion. The present geopolitical situation, the continued pull-outs of the most significant countries from numerous arms control regimes, and general scepticism around the utility of international law as a whole is convincing – at least without intimate knowledge of the details.

My perspective at the conclusion of this research, however, is one that is cautiously optimistic. Things are difficult, no doubt. But having had the immense privilege to have conducted several dozen hours of interviews with hugely impressive individuals working in this field, and seen their dedication, wisdom, long-term perspective, and the extraordinary effort they put into the stability and maintenance of the international system, I have changed opinion on the subject substantially. Perhaps the most important point uncovered is – albeit obvious in the descriptive sense, though more difficult to fully comprehend the consequences of – that these instruments are decades in the making. Even throughout the most dire periods of the Cold War, progress was made in this field on the basis of work carried out years beforehand.

Thus, to give up on these regimes would be a grave disservice to the future of humanity in general, but specifically to those in the future who may depend on the work that is being done now – by the international community, international civil society, and individual scientists and diplomats – to ensure that the future is more secure in every political, legal, and security sense.

Further Research

The conclusion of the project indicates copious possibilities for further research in a variety of ways, and raises important further questions.

The most obvious such instance is a more comprehensive and resourced version of the same research without, or with fewer, limitations as regards the number of treaties examined, or persons interviewed. This would both corroborate the findings the of particular report, but also ensure that its findings are indeed generally applicable beyond only the treaties examined in detail – at least with regards to the first question.

Further, though I have identified a wide range of factors applicable to ACT formation and each in significant detail, I have not analysed – except incidentally – the relative weight between them all. There may well be further relationships between these factors that significantly affect how they each influence the process. This would no doubt require far more extensive research than possible here.

The research also reveals differences in the perspectives of both western and non-western perspectives. As seen, this does not come in the form of outright disagreement in most cases, but shows there to be variance in what is emphasised or focused upon. Further research into the scope of these differences would be useful for addressing contemporary challenges faced by arms control.

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ANNEX I – List of Interviewed Persons

Name[66] 66	Affiliation
Ms. Almudena Azcárate Ortega	Researcher, Space Security & Weapons of Mass Destruction– United Nations Institute for Disarmament Research
Dr. Aaron Bateman	Assistant Professor of History and International Affairs – George Washington University
Dr. Robert in den Bosch	Ambassador and Permanent Representative to the Conference on Disarmament – Netherlands Ministry of Foreign Affairs
Ms. Esmée de Bruin	PhD Candidate in International Arms Control – University of Amsterdam
Dr. David Chambers	Head, Arms Control and Disarmament Research Unit – UK Foreign, Commonwealth and Development Office
Ms. Marjolijn van Deelen	Special Envoy for Space – EU External Action Service; [Ex-] EU Special Envoy for Non-proliferation and Disarmament
Ms. Beatrice Fihn	Director – Lex International Fund; [Ex-] Executive Director, International Campaign to Abolish Nuclear Weapons
Mr. Gerben Hazebroek	Policy Coordinator – Netherlands' Ministry of Foreign Affairs
Ms. María Antonieta Jáquez Huacuja	Coordinator, Disarmament and Non-proliferation Department, Mexican Ministry for Foreign Affairs
Professor Margaret Kosal	Associate Professor of International Affairs – Georgia University of Technology; [Ex-] Advisor for Science and Technology – Office of the U.S. Secretary of Defense; Interagency Non-proliferation and Arms Control Technology Working Group – National Security Council
Mr. Onno Kevers	[Ex-] Head, Department of Non-Proliferation – Netherlands' Ministry of Foreign Affairs
Mr. Clàudio Medeiros Leopoldino	Counsellor, Permanent Delegation of Brazil to the Conference on Disarmament
Mr. Thomas Markram	[Ex-] Director and Deputy to the High Representative for Disarmament Affairs, United Nations; Chief of the Regional Disarmament Branch, UN Secretariat; Chief of the Weapons of Mass Destruction Branch, UN Secretariat
Dr. Peter Martinez	Executive Director, Secure World Foundation; [Ex-] Chair, Working Group on the Long-Term Sustainability of Outer Space Activities, UN Committee on the Peaceful Uses of Outer Space
Professor Paul Meyer	Professor of International Studies and Security – Simon Fraser University; [Ex-] Canadian Ambassador to the Geneva Conference on Disarmament
Mr. Peter Christiaan Potman	Permanent Representative to the UN Organisations in Vienna – Netherlands' Ministry of Foreign Affairs
Ms. Marina Wyss Ross	Head, Arms Control, Disarmament & Cybersecurity – Swiss Federal Department of Foreign Affairs

Name[66] 66	Affiliation
Ms. Rachel Stohl	Senior Vice President of Research Programs – The Stimson Center; [Ex-] Consultant to the UN ATT process and UN Group of Governmental Experts on the ATT
Dr. James Timbie	[Ex-] Senior Advisor, US Department of State; Arms Control and Disarmament Agency
Professor. Jane Vaynman	Assistant Professor – John Hopkins University; [Ex-] Senior Advisor – Bureau of Arms Control, Deterrence, and Stability – US Department of State
Dr. John Walker	[Ex-] Head, Arms Control and Disarmament Research Unit– UK Foreign, Commonwealth and Development Office
Total: 21 Interviewees	

ANNEX II – Database of Examined Treaties

The following sheets identify each treaty examined, providing data on adoption, compliance, and enforcement that underpin the analysis presented in this study.

To view the full database, **click here**.

Table 1a: Basic Information

To view the full database, **click here**.

Treaty Examined	Place of Adoption	Date of Entry into force	№ Parties at date of entry into force	Current № State Parties	Compliance rates/Known instances of violation	Regime of Verification?	Overall Reduction of Harm	Legally Binding on State Parties?
Anti-Personnel Mine Ban Treaty (Ottawa Treaty)	Ottawa, Canada	3/1/1999	65	164	None confirmed	No	Medium Reduction	Yes
Arms Trade Treaty (ATT)	NYC (UN)	12/24/2014	60	113	Numerous ongoing investigations	No	Ambiguous	Yes
Biological Weapons Convention (BWC)	London; Moscow; Washington D.C.	3/26/1975	22	185	None confirmed	Incidental or Voluntary	High Reduction	Yes
Chemical Weapons Convention (CWC)	Geneva (CD)	4/1/1997	87	193	Yes (Assad Regime in Syria; DPRK in Malaysia, Novichok (Russia) in UK)	Yes (Dedicated)	High Reduction	Yes
Comprehensive Nuclear Test Ban Treaty (CTBT)	NYC, USA	N/A	N/A	177	No; but tests from non-parties (DPRK, India, Pakistan)	Yes (Dedicated)	Ambiguous	Yes
Convention on Cluster Munitions	Dublin, Ireland	8/1/2010	30	123	None confirmed	No	Medium Reduction	Yes
Outer Space Treaty (Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies)	London; Moscow; Washington D.C.	10/10/1967	5	113	None confirmed	No	Unknown/Unprovable	Yes
The Limited Test Ban Treaty (LTBT) [AKA Partial-test ban treaty] [Treaty Banning Nuclear Weapon Tests in the Atmosphere, in Outer Space and Under Water]	Moscow	10/10/1963	3	126	None confirmed	Incidental or Voluntary	Unknown/Unprovable	Yes
New START Treaty	Prague, Czechia	2/5/2011	2	2	None confirmed	Yes (Dedicated)	Unknown/Unprovable	Yes
Treaty on the Non-Proliferation of Nuclear Weapons (NPT)	NYC (UN)	3/5/1970	43	191	None confirmed (though DPRK withdrawal and subsequent breaches)	Yes (Dedicated)	High Reduction	Yes

Table 1b: Initiation Phase

To view the full database, **click here**.

Treaty Examined	First known suggestion of treaty/regime	First Official Proposal of Treaty	UNGA Support?	UNSC Support?
Anti-Personnel Mine Ban Treaty (Ottawa Treaty)	Disucssions among civil actors throughout 1990s - establishment of ICBL in 1992	UNGA Resolution 51/45 S (1996)	Yes	No
Arms Trade Treaty (ATT)	From Mid-Late 90s onwards	UNGA Resolution 61/89 (2006)	Yes	No
Biological Weapons Convention (BWC)	At least 10 years prior to official proposal; concrete work from late 60s onwards	July 1969 - UK submission of draft BWC Convention to CD	Yes	No
Chemical Weapons Convention (CWC)	At least 20 years prior to official proposal; concrete work from mid 60s onwards	1968 - Draft Convention on Chemical weapons submitted to the CD (first proposal of specific instrument); also: 1966 UNGA Draft Resolution to adhere to 1925 Geneva Protocol. (Hungary)	Yes	No
Comprehensive Nuclear Test Ban Treaty (CTBT)	At least as far back as 1974; general proposals form 50s onwards; [Part of ongoing nuclear disarmament struggle]	1993 Ad-Hoc Committee - formally proposed by UNGA in 1993; ; 1995 UNGA Resolution formally started negotiations	Yes	No
Convention on Cluster Munitions	From early 2000s	2007 Oslo Conference	Yes	No
Outer Space Treaty (Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies)	1957 (USSR-led draft resolution on preventing the militarisation of space)	1966 US-USSR proposal	No	No
The Limited Test Ban Treaty (LTBT) [AKA Partial-test ban treaty] [Treaty Banning Nuclear Weapon Tests in the Atmosphere, in Outer Space and Under Water]	1963	First formal proposal was between the 3 main parties in 1963.	No	No
New START Treaty	From mid-2000s	Exact Year Unknown	No	No
Treaty on the Non-Proliferation of Nuclear Weapons (NPT)	Irish proposal to UNGA in 1958; [Part of ongoing nuclear disarmament struggle]	UNGA Resolution 1665 (XVI) led directly to negotiations	Yes	Yes: UNSC Resolution 255 (1968) provided security assurances to non-nuclear states.

Table 1c: Negotiation and Production–Participants

To view the full database, **click here**.

Treaty Examined	(Formal) Public Consultations?	Leading Negotiating State(s)	Non-State Participants	Chairperson Nationality	(Avg) № delegates per negotiating State	(Avg) № delegates per negotiating Non-State Actor	Location of Negotiation/ Discussion Rounds
Anti-Personnel Mine Ban Treaty (Ottawa Treaty)	Yes; directly through the ICBL	Canada, Norway	2 - ICBL and ICRC [Advisory role only]; Extensive Background Participation	Lloyd Axworthy (Canada)	No specific data found	No specific data found	Ottawa + preparatory conferences in Vienna and Oslo
Arms Trade Treaty (ATT)	Yes: indirectly via the CAC	UK, Japan, Mexico, Australia; numerous close supporters (e.g. Kenya), usually those closely affected	Extensive Background Participation	Roberto Garcia Moritan (Argentina)	No specific data found	No specific data found	New York, US
Biological Weapons Convention (BWC)	No	US, USSR, UK	None formally involved known	(Alva Myrdal (Sweden) [CD]	No specific data found	No specific data found	Geneva [CD]
Chemical Weapons Convention (CWC)	No	US, USSR; UK & Switzerland (technical aspects); Netherlands	None formally involved known	Ian Kenyon (UK); Oladeji A. Oyeleye (Nigeria) [CD]	Larger than majorty of other treaties due to presence of technical and auxillery staff.	No specific data found	Geneva [CD]
Comprehensive Nuclear Test Ban Treaty (CTBT)	No	Numerous	None formally involved known	Jaap Ramaker (Netherlands) (Latter phases)	No specific data found	No specific data found	Geneva [CD]
Convention on Cluster Munitions	Yes: indirectly via the CMC	Norway, Ireland, New Zealand.	Extensive Background Participation	Steffen Kongstad (Norway)	No specific data found	No specific data found	Dublin, Ireland; also in Oslo, Vienna
Outer Space Treaty (Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies)	No	US, USSR, Mexico	None formally involved known	Multiple [COPUOS]	No specific data found	No specific data found	NYC and Vienna [UN]
The Limited Test Ban Treaty (LTBT) [AKA Partial-test ban treaty] [Treaty Banning Nuclear Weapon Tests in the Atmosphere, in Outer Space and Under Water]	No	US, USSR, UK	None formally involved known	Averell Harriman (USA); Quintin Hogg (Lord Hailsham, UK); Andrei Gromyko (USSR)	No specific data found	No specific data found	Geneva [CD]
New START Treaty	No	N/A	None formally involved known	Rose Gottemoeller (USA); Anatoly Anatnov (Russia)	No specific data found	No specific data found	Geneva; also in Moscow
Treaty on the Non-Proliferation of Nuclear Weapons (NPT)	No	US, USSR	None formally involved known	William Foster (USA); Valerian Zorin (USSR)	No specific data found	No specific data found	Geneva [ENDC]

Table 1c: Negotiation and Production–Temporal Elements

To view the full database, **click here**.

Treaty Examined	№ negotiation/ discussion rounds	Official Start of Negotiations	Date of Adoption	Total Instrument Negotiation Time; (official proposal & adoption - for preparatory work, see page 61)	(Avg) Duration of negotiation/ discussion rounds	Definitional Articles?	Total № of Articles	Total № Procedural Articles
Anti-Personnel Mine Ban Treaty (Ottawa Treaty)	4 major conferences between 1996-1997 (continous negotiation); first 3 lasting 3-4 days each, and the last lasting 18 days.	1996	9/18/1997	~1 Year (excl. moderate preparatory work)	2 weeks	Yes: 1 (5 sub-paragraphs)	22	13
Arms Trade Treaty (ATT)	2	2010	4/2/2013	~3 Years (excl. moderate preparatory work)	4 Weeks	Yes (Article II)	28	12
Biological Weapons Convention (BWC)	~10 sessions (unclear)	1969	4/10/1972	~3 years, preparatory work significantly longer	No specific data found	0	15	5
Chemical Weapons Convention (CWC)	26 sessions between 1984 and 1992	1984	9/3/1992	~8 Years negotiation, preparatory work significantly longer	No specific data found	Yes: 1 (12 sub-paragraphs)	24	12
Comprehensive Nuclear Test Ban Treaty (CTBT)	6 (preparatory and diplomatic)	1993	9/10/1996	~2 Years, preparatory work significantly longer	No specific data found	Yes: (Article II, sub-paragraphs)	17	9
Convention on Cluster Munitions	5 major conferences	2007	5/3/2008	~1 year (excl. moderate preparatory work)	No specific data found	Yes (Article 2)	23	13
Outer Space Treaty (Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies)	4	1965	12/19/1966	~2 years	No specific data found	0	17	5
The Limited Test Ban Treaty (LTBT) [AKA Partial-test ban treaty] [Treaty Banning Nuclear Weapon Tests in the Atmosphere, in Outer Space and Under Water]	14 total formal negotiation rounds	1962	8/5/1963	>1 year	No specific data found	0	5	4
New START Treaty	~8 rounds	2009	4/8/2010	~1 year; preparatory work significantly longer	No specific data found	Yes ((mandatory) protocol 1, part 1): 90 subparagraphs; plus telemetric info annex, part one.	16 (many more if protocol and its annexes are included)	3
Treaty on the Non-Proliferation of Nuclear Weapons (NPT)	At least 15 formal sessions	1965	7/1/1968	~3 Years	No specific data found	0	11	4

Table 1c: Negotiation and Production–Instrument Structure

To view the full database, **click here**.

Treaty Examined	№ Mandatory Protocols	№ Optional Protocols	Amendment Procedure Included?	Specific Verification and Monitoring Mechanisms?	Specific enforcement Mechanisms?
Anti-Personnel Mine Ban Treaty (Ottawa Treaty)	0	0	Yes (Article XIII)	No	No
Arms Trade Treaty (ATT)	0	0	Yes (article 20)	No	No
Biological Weapons Convention (BWC)	0	0	No (but periodic review)	No	No
Chemical Weapons Convention (CWC)	2 (Annexes on verification and confidentiality)	0	Yes (Article XV)	Yes (Articles VIII, IX)	Yes (Article XII)
Comprehensive Nuclear Test Ban Treaty (CTBT)	2 (On verification and technical annxes)	0	Yes (Article VII)	Yes	No
Convention on Cluster Munitions	0	0	Yes (Article XIII)	No	No
Outer Space Treaty (Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies)	0	0	Yes (Article XV)	No	No
The Limited Test Ban Treaty (LTBT) [AKA Partial-test ban treaty] [Treaty Banning Nuclear Weapon Tests in the Atmosphere, in Outer Space and Under Water]	0	0	Yes (Article III)	No	No
New START Treaty	1 +two annexes (Note: the protocol + annex were concluded at the same time as the treaty and 'form an integral part of it')	0	Yes (Article XV)	Yes (Protocol 1 parts 3, 4, 5, 6)	No
Treaty on the Non-Proliferation of Nuclear Weapons (NPT)	0	0	Yes (Article VIII)	Yes (Article III [IAEA])	No

Table 1d: Dissemination Phase

To view the full database, **click here**.

Treaty Examined	Ratifications at Time of Entry Into Force	№ Reservations	Additional Ratifications Within: 2 Years	5 Years	10 Years	20 Years	№ Withdrawals	№ Treaty Revisions	UN (UNGA/ UNSC) Adoption Encouragement	Systematic Dissemination Initiatives from States	Systematic Dissemination Initiatives from NSAs
Anti-Personnel Mine Ban Treaty (Ottawa Treaty)	40	N/A (Reservations prohibited (Article 19)	112	143	156	164	0	None	Numerous Resolutions; most recently UNGA Resolution 78/45.	Canada & Norway	Yes: ICBL and ICRC in particular.
Arms Trade Treaty (ATT)	50	0 (One declaration from S.Arabia regarding application to self-defence, but considered an 'interpretive declaration')	89	105	114 [2024]	N/A	0	None	UNGA Resolution 61/89; Plus other UNGA resolutions and general supportive documents.	EU and Australia - dedicated campaigns	Yes; Multiple within UN and civil society
Biological Weapons Convention (BWC)	22	0	64	80	100	137	0	None	Numerous Resolutions tied with efforts against WMDs	General state support following the 1925 Geneva protocol legacy	UNODA; EU-funded awareness campaigns
Chemical Weapons Convention (CWC)	87	N/A (Reservations prohibited (article XXII))	122	148	183	192	0	None	Numerous Resolutions tied with efforts against WMDs	Continued support for OPCW; General state support following the 1925 Geneva protocol legacy	OPCW
Comprehensive Nuclear Test Ban Treaty (CTBT)	N/A	0	[Post adoption] 51	[Post Adoption] 83	[Post Adoption] 135	[Post Adoption] 166; 183 signatories	1 [Russia]	N/A	Multiple Resolutions: UNGA50/245; UNSC2310;	Friends of the CTBT' campaign	Yes: CTBT-PC; UNGA and plethora of Civil society actors
Convention on Cluster Munitions	30	N/A (Reservations prohibited (Article 19))	77	95	110	110	0	None	Numerous Resolutions; most recently UNGA Resolution 77/79	Norway, Cluster Munition Coalition.	Yes: Led by Cluster Munition Coalition
Outer Space Treaty (Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies)	63	0	67	74	83	88	0	No formal (but has been clarified by further UNGA resolutions)	Resolution 2222 (XXI) - treaty unanimously endorsed - UNOOSA has undertaken continupis promotional initiatives	None specific	UNOOSA
The Limited Test Ban Treaty (LTBT) [AKA Partial-test ban treaty] [Treaty Banning Nuclear Weapon Tests in the Atmosphere, in Outer Space and Under Water]	23	0 (One statement from China regarding a definition, but considered an 'interpretive declaration')	60	95	100	100	0	None	None; but broad disarmament goals	US, USSR, and UK in partiuclar; General non-nuclear state support continuous; Particular support from nuclear states to prevent further atmospheric testing	Support from Numerous groups generally supporting nuclear restrictions or disarmament.
New START Treaty	2	N/A	2	2	2	N/A	0	None	Indirect	N/A	N/A
Treaty on the Non-Proliferation of Nuclear Weapons (NPT)	46	N/A (Reservations prohibited)	81	91	114	140	1 [DPRK, 2003]	None	Multiple Resolutions (UNGA Resolution 2373 (XXII)); UNGA Resolution 72/31)	Ireland, US, USSR; General non-nuclear state support continuous.	UN and IAEA especially

Table 1e: Weapons Subject Area Concerned

To view the full database, **click here**.

Treaty Examined	Did Weapon-Type Already Exist at Time of Treaty Ratification?	Background Treaty Narrative	Instrument Imposes Restriction of: Production?	Export	Testing	Deployment?	Use?	Concerns WMD?	Concerns Strategic Weapons?	Concerns Dual-Use Technologies?	Weapon Use = Automatic IHL Breach?
			Quantitative limitation	(Qualitative) Limitations of Behaviour				Limitation of Arms-type			
Anti-Personnel Mine Ban Treaty (Ottawa Treaty)	Yes	Humanitarian	Yes	Yes	No	Yes	Yes	No	No	No	No or unlikely
Arms Trade Treaty (ATT)	Yes	Humanitarian	No	Yes	No	No	No	No	No	Yes & non-DU	No or unlikely
Biological Weapons Convention (BWC)	Yes	Partially Humanitarian	Yes	Yes	Essentially Yes	Yes	Yes	Yes	No	Yes	Yes or Likely
Chemical Weapons Convention (CWC)	Yes	Partially Humanitarian	Yes	Yes	Essentially Yes	Yes	Yes	Yes	No	Yes	Yes or Likely
Comprehensive Nuclear Test Ban Treaty (CTBT)	Yes	Non-Humanitarian	No	No	Yes	No	No	Yes	Yes	No	Ambiguous
Convention on Cluster Munitions	Yes	Humanitarian	Yes	Yes	Yes	Yes	Yes	No	No	No	Ambiguous
Outer Space Treaty (Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies)	Yes	Non-Humanitarian	No	No	Essentially Yes	Yes	Essentially Yes	Yes	Yes	No	Ambiguous
The Limited Test Ban Treaty (LTBT) [AKA Partial-test ban treaty] [Treaty Banning Nuclear Weapon Tests in the Atmosphere, in Outer Space and Under Water]	Yes	Non-Humanitarian	No	No	Yes	Yes	Yes	Yes	Yes	No	Ambiguous
New START Treaty	Yes	Non-Humanitarian	Yes	No	No	Yes	No	Yes	Yes	No	Ambiguous
Treaty on the Non-Proliferation of Nuclear Weapons (NPT)	Yes	Non-Humanitarian	No	Yes	No	No	No	Yes	Yes	No	Ambiguous

Endnotes

1 This would be principally composed of lingering beta-particles. For a comprehensive assessment behind the physics of such radiation, see the work of the Los Alamos National Laboratory, including this short summary: Marksteiner Q, et al, (2020), Radiation Belt Remediation with Artificial Injection of Plasma Waves' (2020) American Geophysical Union (Presentation abstract, fall meeting 2020) Available at: https://ui.adsabs.harvard.edu/abs/2020AGUFMSM0020004M/abstract. Accessed 20-08-24.

2 Edward Conrad et al, 'Collateral Damage to Satellites from an EMP Attack' (US Defence Threat Reduction Agency, 2010) available at: https://apps.dtic.mil/sti/pdfs/ADA531197.pdf. Accessed 25-11-24.

3 No arms or weapons control regime is perfect, however, including the CWC regime; instances of the use of chemical weapons continue to plague humanity in certain parts of the globe; Natasha Hall, 'Emerging Trends in Chemical Weapons Usage in the Middle East (CSIS, October 16 2024) available at: https://www.csis.org/analysis/emerging-trends-chemical-weapons-usage-middle-easthttps://www.csis.org/analysis/emerging-trends-chemical-weapons-usage-middle-east. Accessed 11-01-2024.

4 For thorough definitions of 'humanitarian' treaties in particular, see: Jessica West and Branka Marijan 'Regulating new tools of warfare: Insights from humanitarian disarmament and arms control efforts' (Project Ploughshares, 24 March 2022) available at: https://www.ploughshares.ca/reports/regulating-new-tools-of-warfare-insights-from-humanitarian-disarmament-and-arms-control-efforts accessed 25-09-24.

5 The interview series examined all parts of all questions through the use of standardised questions that formed the basis of conversations with interviewees. A full list of the persons interviewed as part of the production of this report can be found in Annex I. Interviewees all acted within their personal capacity, and nothing within this report should be taken to represent the opinions or positions of any of their institutional affiliations. For reasons of professional sensitivity, I conducted this research with strict adherence to 'Chatham House' rules. Nothing in this report should be taken to be attributable to any specific individual, but rather reflects my own analysis of the aggregate opinion of all of them taken together.

6 The Database, consisting of select primary source data on the basis of pre-determined factors, and contextualised by secondary sources, provides the basis of my analysis and thus answers in relation to both questions, but especially the second. The database in its entirety can be found in Annex II attached with this report.

7 This mixed method is furthermore not without precedent within arms control research, see: Cecilia Albin and Daniel Druckman, 'Bargaining over Weapons: Justice and Effectiveness in Arms Control Negotiations' (2014) 19(3) international Negotiation 426, 437.

8 In this context, 'weighted' refers to the consideration of the relevance of the participation of a specific state party following from the context and aim of the treaty. For instance, in the context of a treaty aiming to limit the use of nuclear weapons, greater weight is afforded to the participation, if any, of those countries that actually possess such weapons.

9 'Verifiable' rates of compliance in this context refers to compliance rates that are supported by independent mechanisms, or mechanisms that are based on the analysis of primary sources.

10 'A range of types of ACTs' refers to ensuring the sample reflects a broad range of instruments, ensuring that the findings are more generally applicable and less susceptible to biases specific to an individual ACT area subgroup.

11 A full list of all multilateral instruments assessed for inclusion in the main research can be found within the Database referred supra in note 3, and are found listed within the Y-Axis of the tables featured within Annex II.

12 This number was subjectively selected as the likely maximum possible number of instruments to be examined within the timeframe and resources given for this research.

13 I could find only one instance, that being the additional protocol (IV) on blinding laser weapons to the CCW; Protocol IV of the 1980 Convention on Certain Conventional Weapons (13 October 1995) available at < https://www.un.org/en/genocideprevention/documents/atrocity-crimes/Doc.43_CCW%20P-IV.pdf> accessed 11-01-24.

14 For instance, the New START Treaty will expire automatically on February 4, 2026 without consent for renewal from both the United States and Russia.

15 ACTs adopted in the late 1980s - early 1990s.

16 John Walker, 'Lessons from the Chemical Weapons Convention: Negotiations and Implementation for the Diplomatic Challenges of Negotiating 'Irreversibility' [2024] Journal for Peace and Nuclear Disarmament, 2.

17 Freeman Dyson, Weapons and Hope (HarperCollins 1984), 172.

18 See also: Freeman Dyson, Weapons and Hope (HarperCollins 1984), 174.

19 See also: Annex II: Database, columns AE-AF.

20 See also: Annex II: Database, columns K-L.

21 Chemical Weapons Convention Archive, 'CWC Timeline' (2009) available at <https://cwc.fas.org/about-the-cwc/cwc-timeline/> accessed 02 November 2024.

22 See, for instance: Freeman Dyson (n 17), 175.

23 Later expanded to, and currently at, 65 states.

24 Vanessa Martin Randin and John Borrie, 'A comparison between arms control and other multi-lateral negotiation processes' in J. Borrie & V. Martin Randin (eds), Alternative Approaches in Multilateral Decision Making: Disarmament as Humanitarian Action (United Nations Institute for Disarmament Research (UNIDIR), 2005), 97-98.

25 See also: Nicola Short, 'The Role of NGOs in the Ottawa Process to Ban Landmines' (1999) 4(3) International Negotiation 481; Stuart Maslen and Peter Herby, An international ban on anti-personnel mines: History and negotiation of the "Ottawa Treaty" (Cambridge University Press, 2010).

26 Amy F Wolf, 'Irreversibility in Nuclear Arms Control: Lessons from the US-Soviet/Russian Arms Control Practices' (2024) 7(1) Journal for Peace and Nuclear Disarmament 27, 29.

27 These include, in no particular order: the Treaty of Pelindaba (covering Africa - adopted 1995, entered into force 2009); the Treaty of Tlatelolco (covering South America - adopted 1967, entered into force 1968); the Treaty of Rarotonga (covering the South Pacific - adopted 1985, entered into force 1986); the Treaty of Bangkok (covering South East Asia - adopted 1995, entered into force 1997); and the Treaty on a NWFZ in Central Asia (adopted 2006, entered into force 2009).

28 See also: Konstantin Larionov, 'Expanding the UN General Assembly's Role in Disarmament and Non-proliferation Challenges' (European Leadership Network, 2023) < https://europeanleadershipnetwork.org/commentary/expanding-the-un-general-assemblys-role-in-managing-disarmament-and-non-proliferation-challenges/> accessed 11-01-24.

29 UNGA Resolution 61/89 (2006), <https://undocs.org/Home/Mobile?FinalSymbol=A%2FRes%2F61%2F89&Language=E&DeviceType=Desktop&LangRequested=False> accessed 11-01-24.

30 This appears from aggregate interviewee testimony to be inversely proportional to the geopolitical influence of the state. I.e., the larger and more powerful, the less open they are to hearing from third parties. There are exceptions, for both processes and individual states.

31 See also: Lloyd Jenson, 'Negotiating Strategic Arms Control, 1969-1979' (1984) 28(3) Journal of Conflict Resolution 535, 540-543; Gerald Steinberg, 'The role of Process in Arms Control Negotiations' (1985) 22(3) Journal of Peace Research 261, 262.

32 Albin and Druckman (n 7), 432; Gerald Steinberg, 'The role of Process in Arms Control Negotiations' (1985) 22(3) Journal of Peace Research 261, 270.

33 The VCLT is a codification of international customary law that lays out, amongst other things: what constitutes a treaty; how they can be validly formed; how they must be interpreted, amended, or modified, terminated or suspended; their legally binding nature; and the effects reservations may have upon them.

34 Compare, for instance, the similarities between the text of the Ottawa Treaty with the Cluster Munitions Convention: Article 1 (the primary operative article), and articles 8-20 (largely procedural articles) are almost identical between the two treaties, and the other paragraphs share obvious similarities, though not in chronological order.

35 Randin and Borrie (n 23), 86.

36 See Annex II: Database columns 'B' and 'AX'.

37 UNGA Resolution 50/65 (1995) available at <https://documents.un.org/doc/resolution/gen/n96/760/33/img/n9676033.pdf> accessed 09-15-24.

38 See, for instance: Rebecca Johnson, Unfinished Business: The Negotiation of the CTBT and the End of Nuclear Testing (UNIDIR, 2009), available at: <https://unidir.org/files/publication/pdfs/unfinished-business-the-negotiation-of-the-ctbt-and-the-end-of-nuclear-testing-346.pdf> accessed 02-11-24, 130.

39 Randin and Borrie, 2005 (n 22), 83.

40 ibid.

41 Including, for instance, the recognition of those particularly susceptible to the effects of nuclear weapons, and obligations toward them laid out within Article 6(1) of the Treaty on the Prohibition of Nuclear Weapons – something included only as a result of the actions of civil society contributions; Treaty on the Prohibition of Nuclear Weapons (Adopted 07 July 2017, entered into force 22 January 2021) 3370 UNTS.

42 Specifically mentioned countries include: the United Kingdom, Germany, the United States, the Netherlands, Russia, Sweden, and Japan.

43 Philip Farley, 'How to negotiate a treaty' (1987) 43(8) Bulletin of the Atomic Scientists 33, 33.

44 For clarity: Adoption refers to the conclusion of the negotiation of a treaty text amongst the negotiating parties; signing (becoming a signatory) to a treaty indicates an intention of future ratification subject to domestic incorporation – the treaty is not fully legally binding, but the state cannot act against the 'object and purpose' of a treaty; ratification refers to a state fully incorporating a treaty within its own domestic law, and officially agrees to be bound by it – from then on, the treaty is fully legally binding.

45 See also: Philip Farley, 'How to negotiate a treaty' (1987) 43(8) Bulletin of the Atomic Scientists 33, 34.

46 Whether the treaty itself created the norm, or simply codifies a previously existing one, is debatable, and impossible to answer due to lack of quantifiability; see also: Freeman Dyson (n 17), 176-177.

47 See similarly: Annex II: Database, columns AM to AP.

48 See amongst copious literature: Stephen Meyer, 'Verification and Risk in Arms Control' (1984) 8(4) International Security 111; and with respect to the consequences: Linton Brooks, 'The end of Arms Control' (2020) 149(2) Daedalus 84.

49 The mantra that one should not attribute to malice what can be adequately explained by stupidity or incompetence.

50 Jane Vaynman and Tristan A Volpe, 'Dual Use Deception: How Technology Shapes Cooperation in International Relations' (2023) 77 International Organisation 599.

51 Ibid, 602-611; see in particular the table on 611.

52 See also: Annex II: Database, Column AW.

53 See also, in addition to extensive interviewee testimony: Amy F Wolf (n 25), 28.

54 Note that with the exception of the CWC and BWC, both this and the 'humanitarian focus' area appear to be mutually exclusive.

55 Particular thanks to Dr. Jane Veynman for raising this point, and with whom I discussed this issue at considerable length.

56 Such as the ATT, PTBT, OST, or CTBT; see also, partly evidentiary: Annex II: Database, columns AZ-BC.

57 Or rather, words to that effect.

58 Protocol for the Prohibition of the Use of Asphyxiating, Poisonous or Other Gases, and of Bacteriological Methods of Warfare (1925) (Geneva Protocol).

59 See also: Annex II: Database, column BG.

60 See also: Annex II: Database, column BF.

61 See also: Annex II: Database, columns AH-AI.

62 See also: Annex II: Database, columns AH-AI.

63 See similarly: Steinberg (n 30), 271.

64 Albin and Druckman (n 7) 437.

65 See with respect to landmines: Human Rights Watch, 'Landmines: New Use Despite Global Ban' (2023) <https://www.hrw.org/news/2023/11/14/landmines-new-use-despite-global-ban> accessed 11-02-24; and see more recently and of particular salience: Jaroslav Lukiv and David Willis, 'Biden agrees to give Ukraine anti-personnel mines' (BBC News, 11-20-24) <https://www.bbc.com/news/articles/cx2d1lj3nwqo> accessed 11-25-24.

66 Interviewees are listed in alphabetical order according to surname.

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