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RESEARCH ARTICLE



Nuclear Non-Proliferation and the Global South: Understanding Divergences and Commonalities

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ABSTRACT

For the first time since the end of the Cold War, the heightened risks of a nuclear catastrophe are being seriously felt around the world. Over the past decade, the Nuclear Non-Proliferation Treaty (NPT) – the central instrument of the global non-proliferation regime – has been rife with divisions among its members and has been undermined by the failure of two consecutive Review Conferences (RevCons) to adopt a consensus outcome document. The basic assertion underlying this Special Issue is that there is growing criticism or contestation from countries in the Global South about the role and future of the nuclear non-proliferation regime, in particular with regard to the obligations imposed by the NPT and the lack of a reciprocal benefit for these countries. This contestation could hinder the optimal functioning of the NPT, for instance through reduced cooperation in the implementation of its provisions. As such, a serious examination of the Global South's criticism of the NPT and what this means for the future of the non-proliferation regime is both timely and necessary.

KEYWORDS

nuclear weapons; NPT; Global South; export controls; test ban

The global nuclear non-proliferation regime is undergoing various crises. Over the last decade, the heightened tensions between major powers, like the United States (US) and Russia, and the breakdown of the regime's main confidence-building arrangements like the Intermediate Nuclear Forces (INF) Treaty and the New START¹ Treaty (currently suspended), have contributed to the failure to adopt final documents at two consecutive Review Conferences (RevCon) of the Non-Proliferation Treaty (NPT). The uncertain future for the Joint Comprehensive Plan of Action² (JCPOA) regarding Iran's nuclear programme; the escalation of nuclear tensions over North Korea's expanding nuclear and missile programme; and Russia's nuclear threats in the context of the war in Ukraine, weaken the regime and undermine its ability to strengthen non-proliferation in the future.

The other crisis – perhaps less observed – is the regime's legitimacy crisis in the eyes of the Global South. As the Treaty on the Prohibition of Nuclear Weapons (TPNW)³, whose

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¹Treaty Between the United States of America and the Russian Federation on Measures for the Further Reduction and Limitation of Strategic Offensive Arms.

²The agreement was signed in 2015; the United States (US) withdrew from it in 2018.

³The Treaty entered into force in 2021 and at the time of writing has 92 state parties.

signatories are predominantly countries from the Global South, also highlights, there is increasing contestation⁴ based on the criticism that NPT discussions have been dominated by Western and Global North concerns. This contestation is creating new disputes within the non-proliferation regime, especially between Global South countries on one side and Nuclear Weapon States (NWS)⁵ and NATO countries on the other. Among the main issues of contention are the latter's failure to make progress toward the goal of global nuclear disarmament and the obstacles to granting other NPT states parties' access to nuclear materials and technology for peaceful purposes.

Despite these issues, the Global South's criticism and contestation of the regime deriving from a growing perception that the NPT's lack of commitment to disarmament makes the Treaty 'unfair', continues to be an underacknowledged issue. This Special Issue focuses specifically on this group of countries and their regions,⁶ which constitute a relative majority within the non-proliferation regime with a significant potential to determine its functioning.

However, as the definition of the 'Global South' shows, there is substantial diversity within the group. While in certain policy areas, such as development cooperation or international trade, the Global South has often proved capable of presenting similar agendas and/or positions (UNDESA 2019), this is not so evident in the area of nuclear non-proliferation. Given the conditioning capacity of this group of countries for the non-proliferation regime itself, inasmuch as they can exert influence on the proper functioning of the regime, it is important to consider whether they operate as a unified entity. This is all the more relevant in the context of the current situation described above, as the effectiveness of the international regime depends on whether states parties see membership of the regime and its rules as necessary or useful (Keohane 1982). In this sense, the countries of the Global South could increasingly perceive the nuclear non-proliferation regime and the NPT as barriers to achieving their goals (that is, gaining access to peaceful uses of nuclear energy, being protected from nuclear threats from states that possess them, and honouring the goal of nuclear disarmament from the NWS).

To this end, the contributions to this Special Issue address the following questions regarding the role of the Global South in the non-proliferation regime: Why are we observing increasing contestation of the NPT regime by Global South countries? To what extent do Global South countries see participation in the current regime as necessary and/or useful? To what extent do regional and/or local priorities of Global South states affect the global nuclear order, and *vice versa*? How do equity issues relate to the interests of Global South states *vis-à-vis* the non-proliferation regime?

To discuss these issues, this Special Issue brings together a series of contributions from subject experts and academics, which focus on the Global South's growing criticism of

⁴As a conceptual clarification, we understand contestation as the social practice by which international actors (in this case states) express in a factual or discursive way their disapproval of norms (and actions that conform to them) (Herrera 2020).

⁵This refers to Nuclear Weapons States as recognised by the NPT; that is, the US, Russia, the United Kingdom (UK), France and the People's Republic of China (PRC).

⁶We define Global South as developing countries with emerging economies. The term emphasises that while developing nations possess a wide range of economic, social and political characteristics, they collectively face common vulnerabilities and challenges in terms of human progress in comparison to the wealthier nations of the world (UNDP 2004). For the purposes of this Special Issue, we categorise all NNWS as well as all non-NPT NWS that meet this definition as Global South countries.

the role and future of the nuclear non-proliferation regime, and subsequent implications for the regime's optimal functioning. In this direction, this Special Issue utilises the comparative methodology of area studies along with unique methodologies for each case study. This approach facilitates the integration of the insights from area studies with comparative methods, enabling the exploration of shared characteristics and differences among various regions or areas across the globe.

To introduce the Special Issue and frame the underlying debate, this article first provides a brief overview of the contentious issues within the non-proliferation regime for the countries of the Global South addressed in the contributions. This is followed by a section providing an overview of the different contributions and a conclusion highlighting the lessons learned as well as possible directions for future research.

The Global South and the nuclear non-proliferation regime

Commentaries on nuclear non-proliferation by and large fall into two categories. The first comes from experts and practitioners who argue that the primary goal of the NPT should be a strict prohibition on the proliferation of nuclear weapons to other states. They prioritise arms controls over calls for disarmament, focusing on the dangers of the breakdown of the NPT regime (Willrich 1968; Leitenberg 1977; Perkovich and Vaddi 2021; Miller 2022; Neuneck 2019). The second set of literature identifies the NWS's lack of progress in implementing Article VI⁷ as equally, if not more, important than Articles I and II,⁸ and see the NPT as a transitional stage towards a nuclear weapons-free world (Lodgaard 2009; Hamel-Green 2018; Borrie and Caughley 2013; Scheffran *et al.* 2005). This latter set of commentaries shows that there are diverging views regarding the importance attributed to each pillar of the non-proliferation regime which partly overlaps with a divide between Western experts and those from the Global South.

In the existing literature on the non-proliferation regime, Global South perspectives are often considered as part of a broader discussion of non-nuclear-weapon states (NNWS) and the Non-Aligned Movement (NAM) (Potter and Mukhatzhanova 2012). Not all Global South countries, however, are NNWS if one considers the People's Republic of China (PRC) as part of the Global South,⁹ which often makes this classification somewhat confusing and difficult to fit into a single analytical framework.

⁷Article VI of the NPT indicates that "each of the Parties to the Treaty undertakes to pursue negotiations in good faith on effective measures relating to cessation of the nuclear arms race at an early date and to nuclear disarmament, and on a treaty on general and complete disarmament under strict and effective international control" (UNODA 2023).

⁸Articles I and II of the NPT, respectively, oblige NWS "not to transfer to any recipient whatsoever nuclear weapons or other nuclear explosive devices or control over such weapons or explosive devices directly, or indirectly; and not in any way to assist, encourage, or induce any non-nuclear-weapon State to manufacture or otherwise acquire nuclear weapons or other nuclear explosive devices, or control over such weapons or explosive devices", and for NNWS "not to receive the transfer from any transferor whatsoever of nuclear weapons or other nuclear explosive devices or of control over such weapons or explosive devices directly, or indirectly; not to manufacture or otherwise acquire nuclear weapons or other nuclear explosive devices; and not to seek or receive any assistance in the manufacture of nuclear weapons or other nuclear explosive devices" (UNODA 2023).

⁹For the purpose of this Special Issue, based on the abovementioned definition, the guest editors have decided not to consider the PRC as a Global South country because it is an NWS recognised by the NPT. As such, its needs and limitations within the regime are very different from those countries of the Global South. For example, the PRC is not required to comply with the IAEA (International Atomic Energy Agency) Comprehensive Safeguards Agreement and does not have any restrictions on access to peaceful uses of nuclear energy or limitations on military applications of nuclear energy.

Furthermore, two Global South countries (India and Pakistan) are also non-NPT States, thus showing the group's internal inconsistency relating to the obligations of the regime. In fact, as observed in this Special Issue, India considers itself at the same status as NWS recognised by the NPT and as fulfilling the same type of obligations defined by the Treaty, somewhat detaching itself from the Global South grouping (Singh [2023], this Special Issue).

In relation to this conceptual conundrum, contributions such as the ones by William C. Potter and Gaukhar Mukhatzhanova (2012) and the recent study undertaken by the German Institute of Global and Area Studies (GIGA)(Bandarra *et al.* 2022), have stimulated new studies on Global South perspectives, their positions and activities in the global nuclear order and the nuclear non-proliferation regime. This includes examinations of how *ad-hoc* groupings and/or alliances among states in the Global South have promoted policies often opposed to those of Western states on issues such as nuclear terrorism, IAEA safeguards, nuclear export controls, multinational fuel agreements, proliferation in the Middle East (especially in the case of Iran), the NPT (especially in the framework of the Treaty's Review Conferences), nuclear arms control and disarmament, and the Treaty on the Prohibition of Nuclear Weapons (TPNW).

Energy security and the lack of adequate access to peaceful nuclear energy

The issue of access to peaceful uses of nuclear energy has been a topic of significant controversy, particularly for Global South states. Article IV of the NPT acknowledges the right of all states parties to develop nuclear energy for peaceful purposes and to benefit from international cooperation in this area consistent with their non-proliferation obligations. In this regard, criticisms from the Global South relate to the apparent contradiction of the NPT's dual mandate. Indeed, the regime should not only impede the development or acquisition of military nuclear capabilities by NNWS, but also concurrently promote peaceful uses of nuclear energy, something that causes proliferation concerns (Ford 2007, 957).

This inherent contradiction in the current nuclear non-proliferation regime must be understood in the context of the relative decline of the West, both politically and economically. The loci of geopolitical and geoeconomic power are gradually shifting away from the West and toward regions like the Asia-Pacific. The Global South demands for more capabilities and access to energy sources, including nuclear power, are becoming increasingly pressing. In light of increasing demands for carbon-free energy amidst the climate crisis, despite its costs and risks, nuclear power may provide an attractive option for many countries (IAEA 2021). However, the institutional structures of the non-proliferation regime, particularly the International Atomic Energy Agency (IAEA), are often perceived as unhelpful in facilitating such access (Rajagopalan 2019). Throughout the years, the global nuclear energy framework and its central institutions have been defined predominantly by the ongoing threat of nuclear weapons and their potential use, rather than the enduring potential that nuclear technology holds for development (Walker 2012; Peoples 2015). Therefore, although Article IV of the NPT guarantees the signatories' right to access nuclear technology, there is a prevailing belief that this right has consistently been secondary to the Treaty's non-proliferation objectives. Crucially, while numerous developed nations have greatly profited from

nuclear technology in the past, there is a perception that these advantages have not been equitably shared. This accentuates the division between developed and underdeveloped countries, which forms the basis of the Global South concept. Consequently, one of the main demands of this group is a less restrictive application of Article IV (Lee and Nacht 2020). At the same time, however, it is a fact that peaceful uses of nuclear energy have provided an opportunity for some states to use nuclear energy for illicit purposes and to develop their nuclear weapons capabilities (ElBaradei 1998).

Ultimately, countries in the Global South express concern about the difficulty NNWS face in attempting to procure equipment and materials when they are included on lists that restrict such purchases. While it is not prohibited to supply materials and equipment to any NNWS, many imports are subjected to safeguard measures.¹⁰ Many Global South countries therefore complain that existing regulations complicate the procurement of supplies and technologies. This disparity has occasionally resulted in non-compliance with the fundamental principle of the regime. For example, and in relation to the cases addressed in this Special Issue, in the Middle East, the pursuit of nuclear energy is largely justified by both economic and energy security needs. This can be seen in cases such as Iran, the United Arab Emirates, Turkey and Saudi Arabia, all of whom have justified their development of nuclear energy on the basis of the need to diversify their energy mix. However, the restrictions on countries such as Iran to access this technology have arguably led it to seek materials and technology illicitly (Carrel-Billard and Wing 2010). It should be noted, however, that in the specific case of Iran, access to nuclear technology is not the only factor underlying its hedging strategy. Other regional and international security factors that undermine the integrity of the Iranian regime help to explain this behaviour as opposed to Tehran's NPT obligations under Articles III and IV of the Treaty, especially in the run-up to the signing of the JCPOA (Arslanian [2023], this Special Issue).

The conundrum of access to peaceful uses of nuclear energy within the context and constraints of the nuclear non-proliferation regime has also affected Latin American countries. In this region, the tension between free access to nuclear energy and the security imperatives of controlling this energy source has been further accentuated by the fact that the non-proliferation regime and its institutions and norms have been established primarily by the Global North. Many countries in Latin America have argued that their current lack of economic and technological development in this area is mainly due to the scrutiny that countries, such as the US, exercise over the supply of nuclear technologies and materials.¹¹ The emergence of new suppliers, such as the PRC, with lax nuclear procurement and trade rules, also favours a potentially dangerous unrestricted development of nuclear energy in the region (Thew [2023], this Special Issue).

¹⁰As per the Guidelines for Nuclear Transfers (INFCIRC/254, Part 1), the fundamental principles concerning safeguards and export controls must be enforced when transferring peaceful nuclear technologies to NNWS. Similarly, these principles should also be applied to transfers to any state with regard to regulating retransfers. Consequently, suppliers have established a trigger list, which outlines the guidelines for nuclear transfers. This comprehensive list encompasses various aspects, such as physical protection, safeguards, specific controls on sensitive exports, special provisions for the export of enrichment facilities, controls on materials applicable for nuclear weapons, controls on retransfers and supporting activities (IAEA 2019).

¹¹This is part of both a discourse and a much broader perception of the existence of widespread US neo-colonialism in Latin America, especially in the Southern Cone countries (that is, Argentina, Chile, Uruguay, Paraguay and occasionally Brazil).

It should be noted, however, that foreign assistance in the acquisition of peaceful nuclear technology has also had negative effects on the development of peaceful nuclear energy programmes in some countries. An instance of this can be seen in Brazil, specifically during the 1970s and 1980s. The unwavering drive to acquire nuclear energy collided directly with attempts towards national scientific and technological progress. Consequently, this hindered the establishment of an independent nuclear programme and, also due to the scarcity of skilled individuals, that is, professionals equipped with expertise in the domain, led to a reliance on foreign sources (Nicolini Gabriel [2023], this Special Issue). However, in comparison to Iran, where the JCPOA aimed to control the country's nuclear programme and never truly accommodated the Islamic Republic in the nuclear non-proliferation regime (primarily due to the lack of acceptance by the US), Brazil and Argentina have achieved a certain level of integration within the non-proliferation framework. This has been made possible by the ratification by both countries of the Treaty of Tlatelolco, as well as by the international community's recognition of their regional safeguards system, known as the Brazilian-Argentine Agency for Accounting and Control of Nuclear Materials (ABACC). As a result, both countries have become more active participants within the NPT framework and have expanded their involvement in the peaceful uses of nuclear energy since the 1990s (Singh [2023], this Special Issue).

Comprehensive Nuclear Test Ban and restitution claims

A significant issue covered in this Special Issue, which is not covered by the NPT¹² and has traditionally been overlooked in academic discussions on the nuclear non-proliferation regime and the nuclear test-ban agenda, is demands for compensation from nations and/or communities that have suffered the consequences of colonialism and nuclear tests conducted by NWS, particularly in Africa, Central Asia and the South Pacific

Even today, the acquisition of credible data concerning the impact of nuclear testing on the local populations in these regions remains challenging. This difficulty primarily arises from the intentional distortion of information concerning the consequences of nuclear testing by the NWS, particularly France (Henley 2021). Nonetheless, there is an emerging transnational anti-nuclear grouping in the Global South, fortified by their common opposition to the lasting effects of colonisation.

However, during the period of colonial rule, the ability of local authorities and the populations to effectively resist nuclear testing in various regions was significantly limited.¹³ This limitation can be attributed to the deliberate choice of NWS to conduct their nuclear tests in these peripheral and colonial territories, where they anticipated minimal opposition or could easily exert control over it. Additionally, there was a prevail-

¹²The main reason for the NPT's omission of the issue of restitution to communities affected by nuclear testing is that the Treaty itself was initially conceived by two countries that were in fact conducting nuclear tests in territories whose communities were being affected by those tests: the US and the Soviet Union. Likewise, the Committee of Eighteen Nations, the group that was in charge of negotiating the NPT between 1965 and 1968, was also mainly made up of countries from the Western and Eastern blocs, leaving very little room for the so-called Third World countries to be visible.

¹³This was true initially, less so over time as a result of decolonisation.

ing notion that conducting tests in remote or sparsely populated areas would not result in significant international consequences.

In this regard, a consistent trend can be observed concerning the advocacy for a ban on nuclear testing. In all instances, although with very different timings depending on specific political circumstances, local actors, with support from like-minded international organisations, played a crucial role in opposing nuclear testing. This collaboration further facilitated the globalisation of a movement against nuclear testing after these territories achieved independence (Lacovsky [2023], this Special Issue).

In conclusion, the effectiveness of the anti-nuclear movement varied depending on the specific region and the NWS it confronted. For instance, France persisted with nuclear testing in Algeria until 1966 despite the emergence of a strong anti-nuclear movement, while the Soviet Union ceased nuclear testing in 1989 as a result of movements such as the Nevada-Semipalatinsk one, leading to the nuclear testing site in Semipalatinsk in Kazakhstan to be closed down after the collapse of the Soviet Union in 1991 by Kazakh President, Nursultan Nazarbayev (Hennaoui and Nurzhan [2023], this Special Issue). In the South Pacific, opposition to nuclear testing conducted by the US and the UK was less momentous and had mixed results. The US eventually agreed to compensate the islanders by creating a special fund and convened a conference of experts to study technical aspects of verifying atomic tests and a conference on the discontinuance of nuclear weapons tests, which paved the way for the 1963 Limited Test Ban Treaty. In Australia, however, opposition remained limited during the years that the UK tested nuclear weapons. The region also witnessed the emergence of a massive anti-nuclear movement that spread across many countries and took on a regional character, the most successful case being France's cessation of its nuclear tests thanks to international pressure from the people and governments of the South Pacific (Lacovsky [2023], this Special Issue). These movements exerted a substantial influence on the creation and formation of multiple Nuclear-Weapon-Free Zones (NWFZs), including those in Africa,¹⁴ the South Pacific and Central Asia.¹⁵ Additionally, they also played a role in regional integration initiatives (Hennaoui and Nurzhan [2023], this Special Issue).

Non-NPT nuclear states and the quest for legitimisation

Divisions also persist within the Global South with regard to the different treatment of NNWS and non-parties to the NPT. For instance, NNWS members in the Global South express their disapproval of the inequitable situation where non-NPT countries possessing nuclear capabilities are provided with access to nuclear technology and materials from the Nuclear Suppliers Group (NSG),¹⁶ without any constraints outlined in Articles I-IV of the NPT (Lee and Nacht 2020). In particular, this criticism has

¹⁴In the case of Africa, it is relevant to mention that South Africa played a leading role (notably, being the only non-NPT nuclear-weapon state to have completely disarmed voluntarily) in the creation of the African Nuclear-Weapon-Free Zone (also known as the Pelindaba Treaty) in 1996, becoming one of the first members in 1997.

¹⁵While in other cases, such as the creation of the Middle East WMDFFZ, it remains a controversial issue, which caused the 2015 NPT RevCon to fail.

¹⁶The Nuclear Suppliers Group (NSG) is an international grouping that aims to curb the spread of nuclear weapons by regulating the export and transfer of materials that could be utilised for nuclear technology development, while also enhancing security measures for current nuclear materials.

focused on the access to nuclear technologies that India has benefited from since the 2005 Indo-US nuclear cooperation initiative. In the context of this Special Issue, the NNWS would like to see countries such as India, Pakistan and Israel join the NPT. However, there are two main issues that need to be resolved: the prevention of the spread of nuclear technologies by these countries and the establishment of a framework in which all peaceful activities (that is, energy production) of these states are subject to safeguards. These objectives should be achieved without granting them NWS status, as this would be unacceptable to the NNWS, and without forcing them to accept NNWS status, which would be unrealistic in the current state of affairs (Singh [2023], this Special Issue).

In this regard, the case of India, a nuclear non-NPT State, is salient. New Delhi's nuclear discourse post-1998 in favour of preserving its arsenal is complemented by civilian control over its nuclear industry as well as a clear goal of developing nuclear energy for civilian purposes. More importantly, since its 1998 nuclear tests India has argued that it has behaved in accordance with NPT norms and rules and as an NWS, especially with regard to the transfer of dual-use materials and technologies and export controls (Perkovich 2010). However, despite the argument of responsible behaviour, India remains both *de jure* and *de facto* outside the non-proliferation regime, subject to the rules of the regime but with no influence on its development (Singh [2023], this Special Issue). This has led to the emergence of two parallel diplomatic tracks: one anchored in India's traditional advocacy of nuclear disarmament; the other in which it is committed to the existing nuclear non-proliferation regime even though it is not *de jure* part of it. In terms of disarmament, India has gravitated towards a position characterised by the preservation of its national security rather than the traditional defence of moral and ethical values. This stance is largely justified as a consequence of the lack of progress on nuclear disarmament by the NWS and the NPT regime. Overall, in terms of its commitment to the nuclear non-proliferation regime, New Delhi's priority has been to bolster its decision-making capacity within the regime (Patil and Vishwanathan 2022).

Including these nuclear non-NPT States within the regime has become a pressing concern for all countries who have a stake in the current regime as the existence of these non-NPT states may induce others to follow suit. Indeed, those countries that have acquired nuclear weapons outside the framework of the Treaty have not faced consequences for their actions. As such, some of the NPT members are inclined to revise their initial stance of refraining from possessing nuclear weapons, thereby intensifying their critique of the NPT's efficacy in controlling nuclear proliferation (Lee and Nacht 2020). The case studies included in this Special Issue thus highlight that the Global South as a group of countries does not act in a coordinated and cohesive manner in the nuclear non-proliferation regime, as they do not even share the same priorities regarding the issues addressed within the regime. This is evidenced by several factors, the most important being the fact that there is no formalised group of countries from the Global South acting within the regime or the NPT. In fact, NAM countries¹⁷ (not all of which are part of the so-called Global South) often participate in groups that bring together countries from both the Global South and the Global North (for example, the New Agenda Coalition). At the same time, cross-regional advocacy on

¹⁷The Non-Aligned Movement (NAM) is a grouping of states formed during the Cold War. The aim of the NAM was to maintain its neutral position and not to ally itself with any of the two superpowers, the US and the Soviet Union.

specific issues also takes place among Global South countries, notably the campaign for compensation and restitution for countries in the South Pacific, Africa and Central Asia where nuclear tests were conducted by NWS, and demands for equal access to nuclear materials and technologies in Latin America and the Middle East, although this advocacy does not necessarily take place in a coordinated manner.

Against this backdrop, this Special Issue explores the factors that determine such divergences and commonalities among these countries with respect to the non-proliferation regime, namely: the specific regional contexts and how they relate to international political dynamics; the specific historical experiences of some of these countries *vis-à-vis* their colonisers that have influenced their relationship with the non-proliferation regime; and the demand for greater accountability on the part of the NNWS and NWS with respect to their obligations under the NPT. These patterns will allow us to understand different regional and national perspectives and to uncover broader trends associated with the acceptance or rejection of the norms of the nuclear non-proliferation regime.

Overall, the comparative studies in this Special Issue aim to show the diversity of approaches to the current international non-proliferation regime by countries in the Global South. These approaches could also be applied to other regions or countries not included in this Special Issue – but with similar characteristics, regardless of their geographical location – thus opening the door to an emerging field of comparative studies on how the countries of the Global South relate to each other within the non-proliferation regime – a highly relevant dynamic given the current state of contestation and criticism of the regime by many of these countries.

Overview of content

The case studies included in this Special Issue provide evidence of Global South perspectives on nuclear non-proliferation from different regions: the Middle East; South Pacific, Central Asia and Africa; South Asia; and Latin America.

Middle East

Of the eight cases of non-compliance with the NPT identified by the IAEA, five belong to the Global South and all are from the Middle East and North Africa region (Egypt, Iran, Iraq, Libya and Syria). This demonstrates that certain regional factors, whether driven by norms or security concerns, increase the probability of countries acting in a manner that contradicts international law. In this Special Issue, the article by Ferdinand Arslanian (2023, this Special Issue) specifically examines the case of Iran, shedding light on some of the motives that prompt countries in the Middle East to contest the norms of the non-proliferation regime. Following the US's withdrawal from the JCPOA in May 2018, accompanied by the imposition of fresh unilateral sanctions against Iran, Tehran has recommenced its uranium enrichment programme, resumed research and development of advanced centrifuges, and increased its inventory of nuclear fuel. As a result, the time required for Iran to generate a sufficient amount of weapons-grade uranium for constructing a nuclear weapon has been reduced by half (Dunn 2017). In his article, focusing on the period 2005-15 years, Arslanian provides an original perspective on sanctions as instruments of non-proliferation, developing new theoretical tools to integrate

the causal mechanisms of economic sanctions to the demand and supply side of nuclear proliferation.

In this sense, the question with respect to this relationship is whether Iran is an exception that proves the rule, as Nicholas L. Miller (2014) points out. In other words, whether Iran's nuclear programme really suffers from the imposition of sanctions or not. In order to answer this question, Arslanian studies the impact of economic sanctions on the country's ability to obtain the materials and technologies needed to develop a nuclear programme; how economic sanctions affect the economy and domestic politics of the targeted country; and the relationship and effects of these interactions, so that his framework and approach can be applied to other cases.

South Pacific, Central Asia and Africa

The demands for compensation or restitution from countries and regions where the NWS tested their nuclear weapons is an issue that the current non-proliferation regime is not fit to address, leading to further contestation. Two papers in this Special Issue make an important contribution to the burgeoning literature on this particular topic. First Leila Hennaoui and Marzhan Nurzhan address nuclear testing and its effects in Algeria and Kazakhstan (Hennaoui and Nurzhan [2023], this Special Issue). The theoretical approach employed is framed within postcolonial international relations, introducing innovative terms such as nuclear imperialism and nuclear decolonisation, which are part of a new and emerging literature and theoretical approach to nuclear disarmament. In this sense, they study the demands for compensation by the communities affected by nuclear testing, which is a new and incipient field of study within non-proliferation linked to the Humanitarian Initiative (HI)¹⁸ and the TPNW, which makes explicit mention of these damages. They also address the impact of anti-nuclear movements in the Global South on the nuclear test-ban movement. In a complementary vein, Exequiel Lacovsky (2023, this Special Issue) studies the response to the nuclear tests carried out in the South Pacific, Africa and Central Asia by NWS (specifically France, the US, the UK and the Soviet Union) and their effects on the anti-nuclear testing movement from a local agency point of view.

Both studies tackle a significant aspect of the global nuclear landscape that has often been overlooked in scholarly discussions concerning the nuclear non-proliferation regime. They shed light on the challenges, still prevalent today, of obtaining reliable information regarding the impact of nuclear testing on communities within these regions. Additionally, they examine the rise of transnational alliances against nuclear tests and the constraints faced by local communities when confronting NWS and their policies on nuclear testing.

South Asia

In the South Asian region, both Pakistan and India persist in manufacturing materials associated with nuclear weapons and deploying such weapons amid their ongoing

¹⁸The Humanitarian Initiative is an informal group of states formed within the framework of the NPT and nuclear weapons diplomacy in general. Since 2013, this group has met regularly in a series of conferences exploring the Humanitarian Impact of Nuclear Weapons, which culminated in the Humanitarian Pledge, issued by the Austrian government in 2015. The Humanitarian Initiative is seen as a direct response to the lack of progress on nuclear disarmament.

bilateral rivalry (Dunn 2017). At the same time, however, both countries have since the late 20th century sought *de facto* or *de jure* acceptance into the nuclear non-proliferation regime on an equal footing with the other NWS recognised by the NPT. To this end, both have argued that they have been responsible nuclear powers that comply with all Treaty obligations and whose main objective under the regime today is primarily to promote peaceful uses of nuclear energy and nuclear disarmament (Mustafa 2017; Tellis 2022). A series of bilateral nuclear confidence measures negotiated by India and Pakistan over the last 25 years since their last nuclear tests have also been put forward as testimony to their efforts at nuclear risk reduction and responsible nuclear behaviours. However, the fact that India and Pakistan remain outside the formal non-proliferation regime by preserving and expanding their nuclear arsenals, while at the same time pervasively promoting nuclear disarmament, shows a palpable tension in the rapprochement of these two countries (more specifically India) with respect to the regime itself. This tension is explored by Shivani Singh (2023, this Special Issue) in her article, where she performs a cross-regional comparison of India's case with Brazil in relation to their roles in the international nuclear order from a rising powers literature and accommodation point of view. Singh specifically approaches the issue from an English School of International Relations perspective and reviews the imbalances in the whole nuclear non-proliferation regime including the NPT. In sum, the article deals with a distinctive aspect of India's nuclear diplomacy: New Delhi's defence of the preservation of its arsenal, its recognition as a responsible nuclear power on an equal footing with other nuclear weapon states, and the tension in India's parallel diplomatic approaches to nuclear non-proliferation and disarmament.

Latin America

While Latin America has gained recognition for its exemplary adherence to non-proliferation and disarmament norms (with all Latin American states being party to the NPT and the first NWFZ having been established in this region), it is important to note that the nuclear competition between Argentina and Brazil has been extensively documented, as both countries pursued nuclear weapons programmes during the 1970s and 1980s (Cirincione *et al.* 2005). Given this precedent, it is relevant to address the possibility of proliferation in both countries as a possible result of a relaxation of controls on imports of nuclear technology and materials, while also paying attention to the sense of fairness/unfairness in these countries *vis-a-vis* the existing regime

Alexander Thew's article on Argentina discusses the instrumentalisation of the rivalry between the US and the PRC in the nuclear energy market in order to obtain more lenient conditions to access nuclear power, with all the potential proliferation consequences this could entail (Thew [2023], this Special Issue). According to Thew, new market entrants, such as the PRC, have the potential to challenge non-proliferation norms by fulfilling the demands of Global South countries that are denied by other, predominately Western, states. On the other hand, in his article on Brazil, João Paulo Nicolini Gabriel focuses on the relationship between foreign aid and the difficulties of countries in the Global South in achieving nuclear autonomy. Specifically, he illuminates the conditions that caused foreign aid to transform into mechanisms detrimental to the development of national nuclear programmes (Nicolini Gabriel [2023], this Special Issue).

Conclusion: the Global South and the nuclear non-proliferation regime

For over six decades, the NPT has been a fundamental and powerful instrument for preventing the further spread of nuclear weapons, but it is now facing growing criticism and contestation from many countries, most prominently from the Global South. The rising discontent with the NPT in the Global South comes mainly from a realisation that the Treaty is no longer committed to its original purpose of promoting change within the nuclear non-proliferation regime and has instead shifted its purpose towards maintaining the nuclear *status quo* and prioritising the interests of the P-5 – the five original NWS as recognised by the NPT. Global South NNWS also complain that the NPT has given disproportionately greater emphasis to non-proliferation efforts rather than the other two pillars – disarmament measures and equal access to peaceful uses of nuclear energy (Mutimer 2000).

Furthermore, the imbalanced structure of the NPT, with its distinction between NWS and NNWS, has prolonged conflicts within the non-proliferation framework. Many have pointed out that the NPT, just like the United Nations Security Council (UNSC), no longer reflects the realities of the contemporary nuclear order. Although this inequality was initially meant to be temporary, the failure of the NWS to pursue nuclear disarmament has entrenched this disparity (Tannenwald 2013, 314). Moreover, the Global South has gained increasing political and economic significance because of geopolitical shifts in the international system since the late 2000s. However, due to the current structure of the regime, the Global South lacks the ability to exert influence over the NPT or the NWS. As a result, many NNWS in the Global South have blocked any progress on non-proliferation that might impose additional obligations on their access to nuclear technologies, unless substantial steps are taken towards nuclear disarmament and peaceful uses of nuclear energy (Müller 2019). It is important to note, however, that the Global South is not a monolithic group, as their positions and approaches to the NPT and non-proliferation regime vary significantly among countries and regions. These positions are subject to change based on the strategic, political and economic considerations of each country and region.

As the world continues to face serious nuclear threats from the progressive modernisation and expansion of most nuclear arsenals, the NPT remains the singular mechanism for preventing the further spread of nuclear weapons. It is therefore important that the non-proliferation regime is saved from stalemate and potential demise. The international community should make serious, concerted and timely efforts to maintain and strengthen the global non-proliferation norm. This endeavour is, however, easier said than done: in the absence of clear leadership within the NPT community, reaching a consensus between the states parties to the Treaty is becoming increasingly complicated. Of the various themes raised in this Special Issue, the most pressing matter is resolving the tension between the obligations imposed by the NPT and the demands from countries of the Global South, especially with regard to access to the peaceful uses of nuclear energy (which also should include debates on export controls and sanctions), restitutions for countries where nuclear tests took place in the past, and the legitimisation and/or inclusion within the regime of non-NPT nuclear states.

In summary, the fundamental issue within the non-proliferation regime stems from the significantly varying interpretations of the original agreement. While most states

maintain their support for the regime due to pragmatic and security considerations, NNWS widely perceive an imbalanced implementation of the agreement, which has resulted in negative consequences for their interests. An in-depth review of the NPT, and the regime as a whole, that seeks to make it more inclusive and acceptable to this group of countries is necessary for its survival (Dhanapala and Rauf 2010), as an international regime that is incapable of reform is doomed to its demise.

The most effective approach to addressing this issue is an integrated one, as attempting to independently resolve each aspect is challenging to implement and coordinate, especially since they are not mutually exclusive (Ibid). As a consequence, the main element of a future non-proliferation regime should be the strengthening of the NPT-based nuclear non-proliferation regime, while reducing the equity gap and unfairness perceived by most of the NNWS and particularly those from the Global South. This could be achieved through a comprehensive review of the modalities for the implementation of Article IV of the NPT; further and continued nuclear reductions by the NWS; the entry into force of the CTBT and the inclusion of a protocol on restitutions; and the negotiation of a framework that would allow non-NPT States to continue to participate in the institutional architecture of the regime under certain restrictions and controls. All these are measures that would help build greater trust and confidence in the Global South *vis-à-vis* the non-proliferation regime.

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