

INTERNATIONAL LEGAL STANDARDS AND THE WEAPONIZATION OF OUTER SPACE

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I would like to broaden our discussion of the mechanisms through which international law may contribute to the effort to restrict the impending weaponization of outer space. So far, most of our analysis has focused on overt written international agreements, either formal, legally binding treaties, designed to complement the 1967 Outer Space Treaty (OST) and its progeny, or less formal, politically binding commitments embodying “rules of the road” or codes of conduct as transparency and security-building measures for outer space. Documents of either sort, if carefully drafted and meticulously implemented, can provide tangible support to the ongoing international campaign to forestall an expensive, unnecessary and destabilizing arms race in outer space, and I applaud the efforts to think creatively about the political, legal, and physical realities that can enable them.

For my contribution to this conference, however, I would like to turn our attention, at least briefly, in another direction: customary international law (CIL). As some participants will doubtless already appreciate, CIL is a leading, well-respected source of international law, fully on a par with treaties, explicitly specified in the statute of the International Court of Justice (ICJ), and routinely applied by the ICJ and by the national courts in countries around the world. Although customary international law is often less definite than treaty law—it can be somewhat harder to ascertain the content of an unwritten CIL rule or to be confident that it has, in fact, attained the status of a binding legal obligation—it is a prominent, dynamic component of international jurisprudence, regularly applied and enforced in other contexts, and perhaps having some novel, salutary effects in the realm of outer space as well.

In pursuit of that possibility, I would like to explore here three distinct flavours of CIL, which may be suggestive for applications to anti-satellite weapon (ASAT) activities. First, I will describe “general” CIL, noting how

it is formed, what power it has to compel states to conform and how it might apply to exoatmospheric activities. Second, I will turn to a particular, specialized subset of CIL, the international law rules applicable to situations of armed conflict, especially to consider how the well-accepted norms of “discrimination” and “proportionality” might find expression in our topic. Finally, another emerging area of *lex specialis*, customary international environmental law, may also make a contribution to preserving the security of outer space.

CONSTRUCTING CUSTOMARY INTERNATIONAL LAW

CIL arises from “a general and consistent practice of states followed by them from a sense of legal obligation”. Two factors are therefore required to constitute a binding rule: an “objective” element, relying upon an empirical finding of wide-spread, long-standing concordant state practice, and a “subjective” element, attributing that pattern of practice to a sense of obligation, rather than to mere habit, courtesy or political convenience.

The objective element need not require proof of absolute unanimity in behaviour among all states on the planet, but the more, the better—and the actions of the “leading” states (those which are most regularly engaged in the particular field or most affected by it) will count extra. Moreover, the traditional requirement that the observed pattern be “long standing” can be tempered; if the consensus among states is genuinely deep and wide-spread, its short duration may be forgiven.

In assessing the relevant “behaviour” of states, we look to words as well as deeds, and to silences as well as inactions—and especially to the deliberate reactions of other states who respond to any initial behaviours. In most countries, the lion’s share of the relevant international behaviours is typically generated by the state’s executive branch, but in appropriate settings, legislative and judicial actors, too, may contribute. These days, there is often a flood of state behaviours on a wide range of topics, promulgated by the most internationally active countries, and other states must be diligently attentive to that flood, lest their silence or inaction be construed as acceptance or acquiescence.

The subjective element for creating CIL poses something of a conundrum: it seems that a pattern of behaviour counts toward articulation of a new

norm only if the countries who act in the concordant fashion do so out of a sense that they are already obligated to do so. If they instead perceive themselves to be engaged in merely voluntary behaviour, from which they feel free to depart at any time without incurring any international legal liability, then the *opinio juris sive necessitatis* is absent.

In many CIL instances, the evolution from “voluntary” to “obligatory” is incremental and opaque: a state behaviour that may start as an entirely optional choice could become accepted and reciprocally followed by others; over time, the increasingly recognized pattern of behaviour induces other countries to conform to it, to expect others to act similarly and to rely upon its continuation. Eventually, perhaps, the pattern generates a sense that it is “legitimate” to behave in that way, and “improper” to deviate. And at some point, the conformity reaches a depth of consensus that it is deemed to have “hardened” or “crystallized” into a binding norm of CIL.

In one sense, CIL dramatically possesses even more jurisprudential power than does treaty law: once a norm is established as CIL, it becomes binding on all states, even those that did not participate in the evolving pattern, that may not be fully aware of its occurrence and that might not be entirely supportive of the norm, if they thought more deeply about it. Moreover, states that were not even in existence at the time the norm evolved (for example, colonies), and that therefore never had an independent opportunity to express themselves about it as it emerged, are nonetheless generally deemed to be bound by the entire corpus of CIL existing upon the date they become sovereign states. Only states that publicly and consistently dissent from the norm are exempted from it—and there are precious few examples of states that have overtly preserved their autonomy as dissenters in this way as a rule of CIL advances.

In contrast, of course, any state may absent itself from any treaty simply by declining to sign or ratify it. Ordinarily, treaties do not implicate the rights and responsibilities of non-parties, and a country’s inaction (that is, failure to take the affirmative steps necessary to affiliate with the treaty regime) results in an exemption from the legal rules—but with CIL, that “default position” may be reversed.

The relationship between treaty law and CIL is complex in yet another respect that must also be noted here: what leads to what? That is, sometimes, the global evolution of a growing sense that a particular kind of state behaviour

ought to be illegal (or, ought to be compulsory or voluntary—depending on the shape of the particular norm) can lead to its emergence as a rule of CIL. Perhaps later, the same inter-state pressures can also motivate countries to undertake to negotiate a treaty that would then cover the same issues in the same way, but with the greater clarity that can be generated by reducing the inchoate behaviours to agreed-upon text. So a rule of CIL can prompt the articulation of a treaty.

Conversely, sometimes the treaty comes first. Perhaps the negotiation and conclusion of a multilateral instrument, especially one that is intended to attract, and does, in fact, attain, very broad participation by all kinds of countries around the world, can also stimulate the concordant behaviours and the sense of legal obligation, even among states not joining the treaty, that would simultaneously identify that norm as being a new rule of CIL. In that instance, the treaty can prompt the articulation of a new customary international law rule, and the CIL can become binding even upon countries that have deliberately absented themselves from the treaty regime.

Finally, a note about the role of the United Nations in developing CIL. Ordinarily, of course, resolutions of the UN General Assembly are not legally binding—they constitute politically weighty recommendations, observations or exhortations. Unlike the Security Council (whose decisions states have pledged themselves to accept and carry out), the General Assembly has little direct power to bind Member States. Nonetheless, the General Assembly can sometimes play a leading role in helping to midwife the development of new norms of CIL. The General Assembly has often served as the most convenient venue through which states have expressed their views about potential emerging norms—it has provided the forum in which they have declared their preferences, stated their expectations and defined their sense of what is legitimate for civilized states. A General Assembly resolution, therefore—depending on how it is worded, what the intentions of its drafters have been and how widely it is supported—can provide persuasive evidence of the existence and content of a putative CIL rule and its acceptance from a sense of legal obligation.

In arms control matters, it need hardly be stressed, the Conference on Disarmament (CD) can play a similarly leading role—it can be the world's most authoritative instrument for collecting the relevant behaviours of states and their attitudes about each other's actions. Where participating states opt to use the CD as the "bully pulpit" for declaring their sense of

what is now legally obligatory in the realm of outer space weaponry, those articulations can carry great weight in measuring CIL.

THE CUSTOMARY INTERNATIONAL LAW OF OUTER SPACE

Outer space has proven to be an especially illustrative region for the development of CIL. Here, the nominal requirement that the pattern of observed state behaviour be “long standing” has been particularly observed in the breach—within only a decade or so after the first Sputnik orbits, the basic framework of the CIL of outer space was already largely in place as “instant” CIL.

The early activities of the first spacefaring nations, eliciting near-uniform endorsement from other countries, initiated a remarkably rapid period of CIL generation in the new realm of outer space. Prominent precedent-setting resolutions of the General Assembly, underwritten by the leading states, quickly defined many of the applicable rules of conduct for extraterrestrial human operations. Even before the conclusion of the 1967 Outer Space Treaty, many of its key principles had already been instituted as binding rules, accepted by the sometimes elusive, but here quite emphatic, consensus process of CIL.

For example, the notions that states cannot validly assert sovereign claims to outer space, that the exploration and use of outer space must be carried out for the benefit and in the interests of all countries, and that activities in outer space must be conducted in accordance with international law were probably all embedded as accepted propositions of CIL even before they were written into the OST. These principles, asserted as solemn pronouncements by the international community, had attained sufficiently widespread acceptance, from a sense of legal obligation, even before the act of codification. The treaty became a more-definite, easier-to-cite expression of those rules, but they were promulgated in the first instance by CIL, not by the OST.

GENERAL CIL AND ASATS

To assess whether general customary international law can now make further contributions to the security of outer space, we need to consider

two specific ASAT activities: testing in outer space and use in combat. (A comprehensive ASAT treaty might well seek to regulate other aspects of the weapons-development cycle, too, such as the research, development, possession and deployment of ASATs, but for present purposes, it will be sufficient to focus on testing and use.)

What do we observe about the actual pattern of state behaviour in this area? First, regarding space testing of ASAT devices, we have a reasonably public history to scrutinize. The United States tested two main types of interceptor vehicles approximately 30 times from the late 1950s through the early 1970s, and the Soviet Union tested its interceptor anti-satellite vehicle a total of approximately 20 times from 1968 to 1971 and from 1976 to 1982. The United States also conducted two tests of a rather different sort of interceptor in 1984 against unoccupied points in outer space, and one test against a target satellite in 1985. China became the third state to destroy a satellite in orbit, with a couple of exercises that did not involve collisions, and one, on 11 January 2007, that did impact and destroy its target. Most recently, on 20 February 2008, the United States employed a modified ballistic missile interceptor to destroy a failing reconnaissance satellite as it re-entered the Earth's atmosphere.

In addition, these three have also explored systems based on high-energy lasers or other directed-energy technologies, rather than on physical interceptors. The most conspicuous illustration of such was the 1997 US experiment with the MIRACL (Mid-InfraRed Advanced Chemical Laser), based in New Mexico. That test, intended to assess the extent to which a powerful ground-based energy beam system could locate, track, illuminate, and damage, disrupt, or destroy an orbiting satellite, has still not been fully described to the public. The possible laser systems of other countries have been even more shrouded from public view. The Soviet Union allegedly developed a capability of this sort at Sary Shagan in Kazakhstan in the 1980s, and furtive press reports indicate that China may have tested a directed energy system to illuminate, temporarily blind or otherwise affect the operations of satellites in the fall of 2006.

Totalling up all that activity, we find (depending upon how one counts the ambiguous reports) fewer than 60 genuine tests in outer space, conducted by only three states, with only about a half dozen of those incidents occurring in the past 25 years.

Regarding “use in combat”, the story is even shorter—there have been no such uses. That is, in the half century since the space age began, a period ravaged by countless international armed conflicts, there have been zero incidents in which one combatant has actually employed any sort of ASAT against its enemy.

If the “objective” evidence of state practice shows so few exercises of ASAT capabilities, what about the subjective side of the CIL calculation: have countries generally refrained from testing or using their ASATs out of a sense that they are already legally obligated to do so? Here, frankly, the evidence is less persuasive about the existence of any CIL norm.

ASAT-testing space actors have certainly never said anything that suggests that they consider space weapons to be already illegal. Even when they refrain from aggressively pursuing interceptors or energy beams, they act as if that self-restraint were a matter of national policy, not one of international law. More pointedly, when they criticize each other’s space activities (which they sometimes do), they do not employ the vocabulary of CIL obligations. Instead, they complain that the other nations’ space weapons programmes are ill advised, provocative, unwelcome or adverse for global peace and stability, but they do not express the notion that international law already constrains those programmes.

Similarly, other countries, whether expressing themselves in the context of the United Nations, the CD or otherwise, generally adopt similar rhetorical stances. They criticize such testing; they call for countries to exercise restraint; and in particular, they advocate the initiation of negotiations on a new treaty that would establish a more protective regime for securing space assets. But—with precious few exceptions—they do not generally assert that such exercises are already improper, illegitimate or contrary to the justified expectations of the world community.

THE *LEX SPECIALIS* OF ARMED CONFLICT

If general CIL currently gets us only half-way toward a ban on ASAT testing or use (because while the observed pattern of behaviour might be sufficient to establish the objective criteria, the subjective sense of obligation is missing or weak), what can we learn from the first specialized area of international law, concerning the use of military force in combat?

CIL has always been an important component of the law of armed conflict (LoAC). Widely accepted treaties have codified many of the relevant principles but, as noted above, codification does not deprive those principles of their concurrent status as CIL, and as CIL they remain legally binding even upon states that have shunned the written instruments. Two-century-old principles, in particular, stand out in this context.

First, “discrimination” (or distinction) requires that a combatant direct its force exclusively against military targets, not against civilians, neutral states or other protected persons or objects. Some “collateral damage” to non-combatants and their property is probably inevitable (see below), but the first fundamental legal mandate is that weaponry must be aimed at legitimate targets. A weapon that cannot be so directed (or one that is capable of adequate directionality, but that is, in fact, used in an indiscriminate way) is illegal.

This rationale is largely responsible for the legal antipathy toward chemical weapons, biological weapons and the like—in many applications, these armaments are incapable of being sufficiently precisely targeted upon an enemy’s military. Once the gas is unleashed, it is uncontrollable, apt to waft randomly with the winds, perhaps drifting far from the battlefield and into urban areas. Where the user cannot control, or even reliably predict, where the lethal effects may be felt, the weapon is unacceptably indiscriminate under robust LoAC standards.

ASAT systems—at least the kinetic-energy variety of space interceptors—are vulnerable under this analysis. The cloud of lethal debris generated by ASAT use is typically large, persistent and hazardous to the space activities of civilians and non-belligerent nations. Other presentations at this conference document very well the insistent perils posed by space junk: travelling at enormous speeds, even small shards can prove fatal to any satellite that wanders into their path. Moreover, depending on the altitude at which an ASAT test or use occurs, the capricious threat could endure for decades or even centuries—far longer than the danger posed by wandering chemical or biological agents.

Even if an ASAT attack might initially seem lawful under LoAC principles, because the user sought to inflict damage specifically upon an avowedly military satellite that its enemy was employing for hostile purposes, this discrimination problem could invalidate the operation. Even if the ASAT

user were successful in hitting precisely the target it was aiming at, the residual effects—the inevitable random scatter of lethal debris—could inflict significant, unacceptably indiscriminate secondary harm upon others.

A similar result is reached via consideration of a companion fundamental LoAC principle, “proportionality”. Here, the traditional analysis commands that a legitimate armed attack must seek to balance the military gain to be expected from a particular use of force versus the unintended collateral losses to civilians, other non-belligerents and their objects. If the spin-off losses to protected persons and places outweigh the projected military advantage (admittedly, this judgment can be ineffably complex, requiring a comparison of wholly incommensurable variables), then the attack must be modified or aborted. The law does not require that a military force preclude all collateral damage—that would likely prove impossible in any realistic operation. But there must be a conscious act of balancing; proportionality does legally require the force not to inflict “too much” accidental harm—and even long-term, second-order adverse effects must be included in the calculation.

ASAT attacks that generate clouds of space debris are, once again, subject to challenge under this CIL principle. The evaluation would weigh the direct military advantage to be gained from destroying an enemy satellite (which could be substantial, depending upon how the enemy used the satellite, and how adequate the enemy’s fallback alternatives would be to respond to the elimination or interruption of this particular asset) versus the foreseeable harm to civilians, neutrals and other non-belligerents from the long-term pollution of this sector of outer space. Depending on where the satellite was operating, how far the debris might spread, how long it would remain in orbit, how many and how large the debris pieces would be, and how feasible it would be to track them and manoeuvre to avoid them in the future, the collateral damage might well outweigh the military benefit. Especially when one considers that the debris could create a hazardous “keep out” zone persisting for many decades after the immediate war was finished, and could jeopardize the future peaceful space operations of neutral countries that played no role whatsoever in the current fighting, the proportionality judgment could well come out negative.

The specialized CIL applicable to armed conflict, therefore, may already provide some meaningful legal constraints upon the military operation of ASATs. Discrimination and proportionality require respect for civilian and

neutral space assets, even if the ASAT user were motivated by legitimate military objectives. If the ASAT mechanism generates an indiscriminate cloud of long-lasting hazardous debris, and if it thereby inflicts too much collateral damage on protected assets, then its use would already be illegal.

Notably, these considerations apply only to debris-creating ASAT weapons; the directed-energy variants, which disrupt, damage or destroy without causing fragmentation, would be largely beyond this analysis. Moreover, LoAC applies only during moments of armed conflict; it is essentially irrelevant, therefore, to peacetime testing of ASATs, even those which spawn volumes of debris.

INTERNATIONAL ENVIRONMENTAL LAW

We turn next to a second area of specialized CIL, the restraints intended to preserve the natural environment. Here, too, emerging CIL can already make something of a contribution to the preservation of space security.

International environmental law is still a relatively new discipline. But it is already sufficiently well accepted to assert certain guiding principles that apply to the exoatmospheric environment, especially relating to debris-creating ASATs. Foremost among the general proscriptions is the notion that a state is barred from undertaking activities that inflict significant injury upon the environment of another state or upon areas beyond the limits of national jurisdiction. This proposition has been authoritatively asserted by numerous General Assembly resolutions and by solemn pronouncements of important international conferences over a period of decades; it has been well embedded in the international legal consciousness.

The phrase “areas beyond the limits of national jurisdiction” has been applied most vigorously to the high seas, Antarctica and the atmosphere. Clearly, serious pollution or other long-lasting harm to those global resources would be a matter of common concern for all people, regardless of whose national territory was most closely implicated. By the same analysis, significant, enduring damage to the outer space environment would likewise be illegal under extant CIL, and would be a subject of concern for all states, even those which did not currently attempt or plan to occupy or exploit the particular region of outer space that was despoiled.

The specific type of harm envisioned by debris-creating ASATs could be much more substantial than that occasioned by illegal ocean dumping, air pollution and the like. Space debris, we have seen, may be nearly permanent, and it is so hazardous that it creates a virtual “dead zone”, totally precluding activities in that region, rather than inflicting merely a temporary diminution in other states’ abilities to enjoy the area and exploit the resources.

Notably, this branch of CIL applies to peacetime activities (some aspects of international environmental law would apply, *ceteris paribus*, to wartime situations too, but many would be suspended during active hostilities). It thereby neatly complements the LoAC principles surveyed above, which constrain ASAT activities only during combat. Like LoAC, however, the international environmental law principles are focused on the catastrophic effects of space debris, and would seem to have little to say about directed-energy ASAT systems.

THE PRECEDENT: CHEMICAL WEAPONS

Some members of the audience, doubtless, will be thinking at this point that the analysis of CIL, however interesting and novel it might be in this application, remains largely an abstract or theoretical point, far removed from the reality of national security decision-making and from the practicalities of global political interaction. In fact, however, my interest in this inquiry, and my affinity for the hypothesis derive from intensely practical experience: it has happened before.

That is, in another realm of arms control—in fact, in a sector of special interest to the CD—the world has once before confronted a weapon that was deemed indiscriminate and disproportionate in its effects, and the world found it convenient to deal with that provocation first through CIL, and only later through a comprehensive treaty.

The precedent is chemical weapons (CW), a widely reviled tool of warfare, which have been both wielded by military forces and abhorred by civilians throughout the centuries. International law has resolutely attempted to negate this avenue of combat, through a long series of agreements stretching back to antiquity and including the partially successful 1925 Geneva Protocol.

Despite that fistful of treaties, however, the pattern of manufacturing, testing, occasionally using and perpetually preparing to use chemical weapons persisted through the twentieth century. Each of the major participants in the Second World War voluntarily and unilaterally declared that it would not be the first to introduce chemical weapons into combat, but each zealously manufactured thousands of tons of the stuff (including new generations of nerve agents that were immensely more lethal than the relatively simple toxins that had inflamed the central battlefields of the First World War). Even after 1945, massive stockpiles were assiduously retained, tested and improved, and there were repeated incidents of the use of CW (or at least allegations about use—it has typically been very difficult to prove conclusively that lethal chemicals were, in fact, employed). Deadly CW polluted the battlefields in conflicts as diverse as that between Egypt and Yemen in the 1960s, Chad and Libya in the 1980s and Iran and Iraq in the 1980s.

Only in 1993 did the world conclude, through the good offices of the CD, a comprehensive treaty absolutely forbidding this nasty form of conflict, the Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and on Their Destruction (the Chemical Weapons Convention, or CWC). This instrument has proven to be remarkably successful, already attracting the adherence of some 184 participating states and leading to the internationally supervised destruction of almost 30,000 tons of lethal agent.

Still, equally remarkable is one crucial CIL-related aspect of this story: even before the CWC came onto the scene, CIL had already instituted a legal prohibition on CW. That is, most experts would concur that at some point during the twentieth century (after 1925 but before 1993), the use of CW (or at least the first use of CW in international armed conflict) had been rendered illegal. The prohibition was instituted by the now-familiar combination of the objective criteria (long-standing, wide-spread concordant state practice) and the subjective *opinio juris* (the sense that CW combat was no longer acceptable, and that states were already under a legal obligation to refrain from initiating its use).

This CIL barrier against chemical weapons, based upon the entrenched sense within the international community that it was no longer tolerable as a method of warfare, even in pursuit of legitimate objectives, predated the CWC and is not superseded by it. The CIL rule thus remains obligatory

even for states that have not yet joined the CWC (and there are eleven such states, some of which are of considerable concern to treaty supporters). And it would likewise retain its validity even for a country that elected, at some future date, to exercise its right to withdraw from the treaty regime.

Notably, the uniformity and persistence of the world's conformity to the emerging CIL rules are demonstrably greater in the case of ASAT than in the case of CW. That is, during the middle of the twentieth century, many countries proceeded with vigorous CW development programmes, and there were several conspicuous deviations from the norm against using CW in combat. In contrast, as we have seen, over the more than 50 years of the space age, there have been only a few countries actively pursuing ASAT capabilities, there have been precious few tests in outer space and exactly zero uses in combat. If the observed pattern of states' words and deeds was sufficient, in the case of CW, to create a CIL rule against the use of the weapon, then *a fortiori* they could suffice in the ASAT context.

CONCLUSIONS

This short presentation cannot, of course, offer a thorough assessment of the possibly emerging CIL regarding the security of outer space; I have undertaken merely to surface this somewhat novel topic, raising questions about the concept, rather than providing comprehensive answers.

In particular, a more searching analysis of CIL in this context would have to evaluate the fact that, in contrast to CW, so few countries have affirmatively sought the capability to undertake ASAT development and testing activities. Moreover, in their respective wars to date, those few states have had relatively few occasions in which the actual use of ASATs in combat would have proven advantageous—they have so far been able to accomplish their various space-related military objectives via other means. As the states most active in the relevant areas, the actions and statements of China, Russia and the United States will inevitably carry extra weight in considering the emergence of any ASAT-related CIL rules.

We would also need to explore, with greater empirical data, exactly how profound the danger of debris has become, and what the marginal contribution to that hazard might be, if leading countries were to accelerate their destructive ASAT test programmes or to start employing those weapons

in combat. Outer space is, of course, a very big place, and the actual scope of the peril to civilian and neutral satellites would have to be assessed carefully—what is the probability that future peaceful space activities would be compromised by explosions or collisions today?

Still, the prospect that CIL might be able to make a contribution in this area is intriguing—if only because it has to date received no real attention. I would not see CIL and treaty law as “competitors”—they are, instead, complementary avenues, and the world community might well pursue both possible strategies as the opportunities arise. Treaty law, in general, offers the distinct benefits of greater clarity and precision in the articulation of the legal obligations. Treaties (as in the case of the CWC) can also establish verification rules to ensure effective compliance with the norms, and can create new international organizations to oversee and implement the new legal standards.

But CIL offers some advantages, too, including the ability to reach countries that for whatever reason stand aloof from treaties but that are not so zealous in opposition as to credential themselves as “persistent dissenters” from the CIL norm. Moreover, while we might tend to think of CIL as growing only slowly, in contrast to the more rapid articulation of treaties, the actual practice of the world community might sometimes suggest the reverse: CIL has on occasion evolved quite rapidly regarding outer space, and the decade-long paralysis of the CD deliberations on outer space indicates that sometimes the route to overt international agreement can be unduly constipated, too. In short, in the quest to achieve true “universality” in a disarmament commitment, both treaty and CIL can play a role.

It is noteworthy that most of the analysis here is concerned only with debris-creating ASATs; laser, particle beam, and other hypothetical directed-energy systems seem largely to escape both the LoAC and the international environmental law standards. I regret this; it would seem to me to be only an incomplete, modest gain for security in outer space if future ASAT competition were simply funnelled exclusively into directed-energy, instead of kinetic-energy, systems.

That leads to my final observation: this is an area in which the CD can already act. Even if the organization’s hands have, regrettably, been tied for too long by procedural wrangling that has precluded the effort to commence the negotiation of a formal treaty on the prevention of an arms race in outer

space, the incremental contributions to the development of a CIL norm require no such consensus. Individual countries could already begin to articulate their views about what ASAT-related behaviour is acceptable, and what is intolerable. They could sharpen their criticisms of debris-generating events. They could assert the view that directed-energy ASAT systems, too, even without the debris factor, are equally unwelcome as intrusions into the security of outer space. All states, regardless of their size and power, and regardless of the sophistication of their outer space programmes, can participate in this vocal behaviour today, not being unduly impeded by the preferences of China, Russia or the United States.

In particular, concerned states could emphatically assert, in the CD and elsewhere, that ASAT activity is not only unwelcome, not only counterproductive from the standpoint of security and stability, but also already “illegitimate”, already “contrary to the settled expectations of the world community”, and already “incompatible with the obligations incumbent upon states”. If the ambassadors do assert those forward-looking propositions, then the magic of CIL—a dynamic process of assertion and challenge—can help establish the “ought to be” as the “is”.