THE RĪGA CONFERENCE

Latvian Transatlantic Organisation

2023

POLICY BRIEF

CONSEQUENCES OF ARCTIC MILITARIZATION IN THE BALTIC REGION

Tim Reilly

THE RĪGA CONFERENCE

POLICY BRIEF

2023

CONSEQUENCES OF ARCTIC MILITARIZATION IN THE BALTIC REGION

Tim Reilly

ABSTRACT

The ongoing events in Ukraine will entirely change the strategic and political dynamics in the Baltic nations. Neighbouring Sweden and Finland's solution to Russian aggression has been to apply for NATO membership; this single move has meant that for Russia, the Baltics can no longer be viewed as a separate, and regionally confined consideration. Moscow now includes the Baltics as part of their Arctic territorial area of responsibility (TAOR), as will NATO planners. This means that any European Arctic event will now impinge upon the decision-making process of the Baltic's own regional governance.

Concurrently the emerging threat to the Arctic region may well be more geoeconomic in nature than military/strategic, which is in line with the post-cold war Unipolar world order (Acharya, 2007) being challenged in the broader Eurasian Arctic not by the emergence of multilateral political institutions (i.e. multipolarity), but rather a *geo-economic* process of Multiregionalism. The rising great power ambitions of Russia and China – with substantial economic spheres of overlapping regional interests in their territories, has led to their adoption of a geo-economic strategy to steadily alter the present international system. It is taking advantage in the Arctic of significant alterations in the International Political Economy (IPE), including the steady downturn in globalization – and with that an associated loss in US-led influence. Two new geopolitically crucial regional geoeconomic "spaces" are being created in line with this (alternative) regionalization framework: a broader *Eurasian* Arctic space and via the geo-economic instrumentalization of dual-use technologies, the *non-terrestrial* cislunar domain over the Arctic.

The Baltic States in the Arctic

This strategic re-categorization of Baltic territory as Arctic, is now profoundly important for Riga, Vilnius, and Tallin as NATO nations, because in addition and prior to recent Ukraine events, the U.S. had already identified the Arctic as one of the three key global geopolitical hot spots in the 21st Century. Concurrently, a further consideration for the Baltic NATO states now is China's entry into the European Arctic which is via Space and land/Sea, and its growing geo-economic influence in neighbouring Scandinavia NATO nations; moreover, China's regional presence is in effect being "sponsored" by Russia, as the indispensable actor, in the Arctic. Finally, as noted, there is some evidence of a Sino-Russian geoeconomic-driven regionalization policy unfolding in the Arctic, accelerated further by the effects of COVID on international supply chains, and increasingly facilitated by advanced dual-use technologies. These global economic developments appear to be the harbinger of a gradual process of de-globalization. This is significant because globalization itself and its attendant financing, institutionalization, and market dominance, under-pins both the U.S. Dollar and the Western-led unipolar, rules-based international order, and has facilitated U.S. global governance since the break-up of the Cold War.

"There is some evidence of a Sino-Russian geoeconomic-driven regionalization policy unfolding in the Arctic, accelerated further by the effects of COVID on international supply chains, and increasingly facilitated by advanced dual-use technologies.

So, whilst the Baltics have gained neighbourhood partners in terms of a military alliance at home, it is also now considered part of an Arctic region where Russia is already powerful militarily and has its own new *regional geo-economic* partnership too – with China. As noted above, this is showing some signs of 17/18th Century Great Powers' activities – including geo-economic spheres of (advanced technology) interests under the banner of regionalisation. The U.S. considers this a possible first step in progressing toward a more geo-strategic Sino-Russian *alliance* in both the Circumpolar North, and in/from the celestial domain above it as well. This means that the S-R

threat to the region (directly including the Baltic states now), is as much about non-kinetic challenges to regional sovereignty and terrestrial/non-terrestrial governance, as it is about the Russian deployment of Kinzal hypersonic missiles on Russia's Franz Josef Island and/or Chinese dual-use technology enabled military activities in Space.

THE PROBLEM OUTLINED

This paper summarises three geoeconomic/regionalization instruments that are enacting S-R multi-regional/multi-spatial vision: Novatek LNG in the Yamal Peninsula; the S-R Technology and Innovation Partnership (TIP); and Space / technology activities. The overall conclusion of the paper is that China and Russia consider the Arctic as an arena in which they can experiment with the idea of a new World order that is not multipolar in nature (as commonly predicted in the West), but initially anyway, *Multiregional*. The theory supporting this process is called Polycentric Regionalism.

By way of illustration, in the case of Russian Arctic LNG deliveries to NE Asia (Japan, China, and RoK) for instance, its geo-economic purpose is the S-R *regionalization-by-gasification* of their identified NE Asian/Eurasian Arctic sphere of interest (SPRI, 2017). With a new, regional gas/LNG trading hub in place this will lead the way for subsequent *geopolitical* influence too over the NE Asian region (Brutschin and Schubert, 2016), as this resource-poor region is dependent on prodigious volumes of foreign LNG, delivered at a competitive price and geographically accessible, for their respective industries.

THE GLOBAL SETTING OF THE ARCTIC IN C21

U.S. hegemony is under attack globally, and this coincides with deteriorating U.S./PRC relations and worsening RF/U.S. relations too which has (partly) led to closer Sino-Russian relations, especially in the emerging Eurasian Arctic. Concurrently (Bekkevold and Lo, 2018) the U.S. is re-classifying the 21st Century world as comprising of three key geo-political regions: *Eurasia; the Arctic;* and the *Indo-Pacific*, and it is anticipated that intensifying U.S./PRC rivalry will be most contentious in the Indo-Pacific region.

Even so, as the geographical Arctic spans virtually the entire northern Eurasian continent it is vital to gauge whether the Arctic will become a region of future Sino-U.S. rivalry too (Qiao, 2002) and if so, how China – as a great power rival, will project its power into the High/Circumpolar North, and Eurasian Arctic. Crucially, Russia and the U.S. are established and powerful Arctic states, but China is not at present; this means that an examination of the Sino-Russian relationship (Bolt, 2014) and Russia's role in "sponsoring" China's now heavy presence in the region, is fundamental to understanding China's future aim(s) and activities in the Arctic and the overhead Space domain, in the C21.

Thus, S-R geo-economic relations (Christoffersen, 2018) which include cooperation in strategic Arctic industries such as energy, alongside sensitive national security collaboration in the cislunar domain – *accessed most easily from the Arctic's high latitude location* (and vice versa), are exactly the type of S-R arrangements that shed light on China and Russia's *vision* of the Arctic region in C21 (Bennett, 2014). A more comprehensive understanding of S-R relations in the Arctic (Bolt, 2014) is increasingly crucial for the Baltic region, not least because of neighbouring Sweden and Finland's recent membership of NATO and status as Arctic states.

For China too, Sweden and Finland's membership may mean that its strategy to date of establishing steady terrestrial governance *capability* in those countries may now be superseded by non-terrestrial (i.e., Space-based) means of asserting Arctic governance, such as use of satellite-controlled AI, Robotics, IoT and Social media platforms, all up-linked to largely unnoticed (Erokhin et al., 2021) Chinese-owned/built Arctic *offshore* infrastructure (UAVs, submersibles, drones, optic fibre cables, etc.).

In addition, intensifying Russian sanctions, and the explicit linkage now of the Baltic region to Sweden and Finland's NATO membership, have also had the unintended effect in the Arctic of a) deepening Sino-Russian relations (Cohen, 2001) – including joint Space cooperation b), moving Russia's position (Presidential Decree, 2008) from one of Securitisation to Militarization of the region and c), in no way restricting Russia's freedom of movement in the Arctic; if anything the geo-economic creation of the broader European Arctic region – partly with the aid of Chinese money and infrastructure (e.g. the Polar Silk Road funding part of the Novatek LNG

project, and refurbishment of some of the NSR's port facilities), has led to the accelerated formation of a broader *Eurasian Arctic* space (Daily, 2020), as an emerging S-R sphere of interest(s), alongside a steady step-change in vision, that now includes the Space domain. That latter aspect is a probable signifier of the S-R formation, in time, of a more *multi-spatial strategic alliance*, covering the entire Eurasian Arctic (Englehart, 2008), and which sees Space as an *additional, extra-terrestrial* operating environment from where to exert Arctic governance.

Intensifying Russian sanctions, and the explicit linkage now of the Baltic region to Sweden and Finland's NATO membership, have also had the unintended effect in the Arctic.

Why China looks to Russia in the Arctic Region

China is already an Eurasian power, but to be a truly international/global power it must now be involved in Arctic/Polar matters too, and by achieving its Sea power (along the NSR) and *linked* Space status in the Arctic region – and achieving their inherent geo-economic objectives (Beeson, 2018), it is then recognized as a great power, precisely because of its presence. This then allows it to begin to set *the governance agenda* in the northern Eurasian region (Lee and Lukin, 2016). Such a strategic agenda will not necessarily be framed in accordance with an AC or NATO perception of sovereignty/governance, but rather a governance view of the Arctic (perhaps now including the Baltic region) as the "heritage of all mankind". This view is deliberately linked to the idea of the Global Commons, of which the Arctic's own status as a Polar region, consisting too of Deep Seas, Deep Earth and Deep Outer Space are all relevant and linked, in terms of Chinese Arctic infrastructure being constructed in these Commons' areas, in and above the Arctic.

Russia is the irreplaceable power in the Arctic and Arctic Council (AC), and why therefore China works closest with it (Roseth and Hsiung, 2019); but its continuing Licence to Operate (LTO) in the region still somewhat depends on continued Russian "sponsorship". Russia's broad *quid pro quo* for such Arctic and other institutional knowledge transfer and its continued regional sponsorship of China is fourfold: playing the role of "interlocutor" along the

NSR in any future Sino-EU trade arrangement; the geo-economic partner (and regional security guarantor) in the Greater Eurasian Partnership (Diesen, 2017), of which the monetization of the Arctic is a factor; *sharing* ascendency vis-a-vis the U.S./West, over the cislunar domain, and finally; financially reaping some of the global economic reward(s) to China, in exchange for not inconsiderable Russian institutional STEM and technology R&D/inputs, as well as sharing deep, historical, institutional knowledge of Space, military science and the Arctic environment.

SINO-RUSSIAN STRATEGY AND THEORY IN THE EURASIAN ARCTIC

The post-cold war Unipolar world order is being challenged (Layne, 2006) in both northeast Asia and the broader Eurasian Arctic regions by this S-R sponsored geo-economic framework (Arctic Institute, 2020), based on multi-regionalism, and its associated regionalization processes. The theory which explains this concept of multiregionalism is termed Polycentric Regionalism (PR). It is in regional theory terms, a subset of established neo-Realism.

a) Polycentric Regionalism

PR's critical contribution here is that it reveals – *and is constituent of* the centrality of geographical and evolving global economic factors in multi-regionalism; that is *how* (non)-contiguous regions and Spheres of Interests informing geo-economics, and the *form and processes* by which a more *multiregional* (not multipolar) Great Powers-led order (Hurrell, 2007) may emerge, can be seen to be creating three possible *geopolitical* outcomes seen in the creation of two new regional economic spaces, the Eurasian Arctic and the cislunar domain. These are identified as: A structural change in the *distribution of power*; an emerging regional *grand strategy*; and the frontier/agency of a *de-globalization process* across the Arctic region's IPE.

PR theory as a starting point (Mansfield and Milner, 1997), encompasses the concept of a reordering of world governance, the possible replacement of increasing de-globalization (Klare, 2020) with Asian oriented regionalization, and a consequent global order emergence based on multi-regionalism (via regionalization) rather than multipolarity (via globalization). This is partly occurring

because of the altering nature/use of C21 power (Baldwin, 2012), and the significant impact of technology (e.g. 3-D printing) on the IPE, which is somewhat devaluing both the utility of existing U.S. instruments of power (Luttwak, 1990) including its military and US-led globalization, and challenging its leadership in technology which in concert, are undermining its unipolar leadership position in global affairs. To some extent S-R activities in Outer Space also seem to accord with aspects of PR theory too (as a non-contiguous, but "virtually" linked region with the Arctic), especially in regard to questions of legal regulation, institutionalization, sovereignty, and the future international governance of Outer Space.

Polycentric Regionalism theory has also identified the discernible *processes* by which geo-economics' multi-regionalism instrument is actioned. These three major processes supporting multi-regionalism are measurable and identifiable in the Sino-Russian gas/LNG projects in the Pacific Arctic *and* apply to S-R technology and Space /cyberspace activities as well and include:

Scale-ability and therefore *sustainable* economic growth at the regional level of IPE analysis (Livesey, 2018), partly because of altering Global Value Chains (GVC) and technological changes in the IPE (e.g. 3-D printing and altering GVCs' physical extent and relevance), leading to the accelerated development of new, accessible, *local* markets in previously uneconomic *regions* in both Russia's Arctic and north-easterly Eurasian economies. Crucially, technology-underpinned products are *now sold in the same region that they are produced in*; thus, undermining the raison d'etre of globalization, and concurrently creating new (and often non-contiguous) regional, economic spaces and markets. This will have geopolitical consequences for the U.S. and its maintenance of a unipolar World.

The formation of new *geostrategic expanding spaces* via regionalization (not globalization) – is a new international relations activity in the Arctic region – and in line with the concept of spheres of interests, it is associated with the grand strategy of Great Powers (Charap et al, 2017). This includes economic spaces such as the Arctic Gas & LNG /energy lattice/spatial idea (i.e., Arctic energy spaces including communications' hubs, ports, rail links and new LNG markets) along the NSR, and dual use technology used in the Russian Arctic's Novatek LNG project(s), but which can now be equally applied to S-R Space-based infrastructure spaces, and their subsequent operations (partly) by means of the NSR as a platform into Space.

Finally, the process of rolling-out of *networked technology applications*; the use of geo-economic instruments such as quantum finance, trade digitization, Artificial Intelligence, manufacturing techniques, etc, leading to the build-out of region-linking institutions and infrastructure (e.g., via the Belt and Road Initiative), centred around regionalization (not globalizing) dynamics.

The "Polycentric" aspect of the title refers to the *additional* characteristic of multi-regionalism to integrate *multiple* and geographically *non-contiguous* regions in northern Eurasia by *technology's virtual* means. This characteristic, and the three mentioned processes of PR (spaces, scale, and networks), are all exhibited in the Arctic's multi-national Novatek LNG project, and which includes for instance the NSR as a major emerging geoeconomic space, of considerable regional scale, and part of the emerging Novatek international energy/Space/technology platform network. The ability of Novatek LNG to offer non-contiguous regions such as the Middle East, LNG swap deals, enabled by distance-overcoming virtual technologies' financial and trading linkages and connectivity, is a further example of this network processing factor now operationally manifest in Novatek LNG's global operations. Space is of course another – but virtual linked region. This geographical fact and China's and the US' increasing interests in deploying satellites and associated dual-use technologies there, partly explains both countries growing presence in the Arctic, the cockpit at the World's most northerly latitude.

PR theory is a significant departure from 20th Century theories of regionalism (Rosecrance, 1919) in which each terrestrial region was usually *only* sponsored by that region's respective state, and as a matter of technical limitation a region could *only* be connected by physical means to a geographically *contiguous* region. PR theory attempts to explain the capacity of geo-economics' regionalization process (in which technology is key) to create additional regional, *geopolitical spaces* in the future *beyond* the immediate confines of the Eurasian Arctic (i.e. make linkages between *non-contiguous* regions). One such additional non-contiguous "region" within the Arctic context, as noted above, is Space.

b) Polycentric Regionalism in Action: Multiregionalism

As previously noted the creation of a S-R multiregional order emanating out of the Arctic region(s), is formulated not within a globalized, geopolitical framework, but instead within a regionalized, geo-economic one (e.g., the S-R

Gas/LNG partnership); this appears less threatening and thus avoids an U.S. aggressive response, but the critical factor that is not yet obvious to the West, is that the multi-regionalism's strategic *output* is exclusively *geopolitical*, but with a minimal *twentieth century* militarization *input*, not vice versa. This must have an impact on western planning for the region, over time.

> **the multi-regionalism's strategic output is exclusively geopolitical, but with a minimal twentieth century militarization input, not vice versa.**

In the Arctic it is the creation of new techno-economic underpinned regional spaces (Evans, 2004), out of which geopolitical opportunities may emerge, such as the formation of the Eurasian Arctic region and quiet S-R cooperation over the future "ownership" of the cislunar domain, that is already well underway. The strategic Space link to the Arctic is increasingly by means of China's connectivity with European Arctic region's offshore infrastructure (the NSR, submersibles, UAVs, Seafloor-positioned optic cables, drone technologies, etc), and enabled by overhead satellites, as discussed previously. This displays a direct link between the Global Commons and Chinese infrastructure being created within (some of) it. In the C21, PR theory suggests that China and Russia are linking up a virtual and technology-enabled borderland between two *non-contiguous* regions: one terrestrial, and the other celestial. This is the complex nature of future developments (and threats) in the Arctic region, for the West.

From a PR theory point of view, both activities *de facto,* also strategically link China/Asia with Europe (Stronski and Ng, 2018) and reflect their compelling reason for this *preliminary institutional re-classification* of the European Arctic as the *Eurasian* Arctic. PR theory allows for this subtle, initial *institutional development* occurring *before* activities begin in earnest (seen for instance, by China's formation of their Asian Infrastructure Investment Bank ((AIIB). Traditional Regional theories, however, have always dictated that supporting regional institutions are created only *after* regional formations are created / underway (e.g., the EU – as an institution, was only created after Europe's original economic/political bloc was already manifest).

To summarise, PR theory's utility is that it accommodates major structural changes in the IPE, notes the changing nature and definition of (*acceptable*) power in C21, which together impact the modern concept of regionalism. In addition, it identifies both the *processes* and *geopolitical outputs* of the S-R multi-regional strategy, which is creating it seems both terrestrial and non-terrestrial spaces/spheres of common interests, that China and Russia can geo-economically influence and subsequently govern (Lukin, 2014). One means is via a process of technology enabled regional governance from Space, and the other, partly by means of a terrestrial Russian regionalization-by-gasification policy (regarding Gas/LNG deliveries into the huge Arctic-accessed NE Asian energy market) across expanding Eurasian Arctic land and Sea territories.

TEST CASE ONE: SINO-RUSSIAN STEM COLLABORATION AND THE TECHNOLOGY AND INNOVATION PARTNERSHIP (TIP)

These two inter-connected S-R collaborative endeavours (LNG and Space) noted just now are the structural basis of their underlying geo-economic relationship (Blackwill and Harris, 2016) in the Circumpolar North, and in Space, above; but their unseen strategic importance is that they *also* serve *de facto* as strategic Sino-Russian *trust-building* Confidence Building Measures (CBMs), signalling steady progress in the relationship from a geo-economic partnership in the terrestrial Arctic, towards a (limited) non-terrestrial strategic alliance in the cislunar/Space domain. In essence they support the PR theory suggestion that a possible *geopolitical outcome* of multiregionalism is a form of grand strategy policy emerging, as a result of a change in the distribution of power, itself accelerated by significant advances in technology that is altering the IPE environment in the Eurasian Arctic.

This is the suspected *geopolitical output* of this SR geo-economic strategy. The Chinese framework (especially) in the Arctic is not first and foremost military/ strategic *per se*; but rather the steady, oblique creation of new regional techno-economic spaces (but supported by military means), leading to a new world order *system*, starting in northern Eurasia (*Macaes 2018*), and which along with Russia, is purposefully restricted at present, to a regional level of engagement and experimentation. Nonetheless, the Arctic's

future as a key geopolitical region – is clearly seen by China and to a lesser extent Russia as well, as largely determined by C21 technology-underpinned governance developments directed in/from Space (MacKinnon, 2020), legitimized by future (China influenced) international regulatory and sovereign rights' Space treaties, and forums; and all ensconced in an (attempted) unifying Global Commons creed; and not/no longer exclusively by (just) military confrontation over C20 questions of *territorial* sovereignty.

Geoeconomically, technology is the key underpinning of much of the global Service sector and the supreme source of global GDP in the 21st Century and a major component of Sino-U.S. rivalry (Zhang, 2019). To date, Moscow is betting that China will win this technology race – with the help of their STEM, research, and technology inputs (such as AI, Robotics, IoT, social media products, Institutional Space knowledge, etc), that underpin the global Services products/sector, and which are transmitted by Space-based *satellite means*.

Such potential *economic* benefits accruing to China and Russia (the latter's contribution is via Russian technologies, S-R dual-use technological convergence and its underpinning of the global service sector) also partly explain the race for ownership of the Arctic's cislunar domain, the ongoing tussle for governance of the region, as well as the importance of the region's unique latitudinal position for linking offshore Arctic infrastructure with Space-directed technologies (ie Low-Earth Orbiting ((LEO) satellites), delivering Sino-Russian driven political and social global influence (social media, IoT, etc) over the region, with the aim of steadily creating a multiregional, political order, governed from Space.

> **Technology's ability to physically link the vast Arctic territories and virtually link the cislunar dimension to the Arctic region as well, is *the* instrumentalizing factor in Sino-Russian geo-economic activities in the Arctic.**

Technology's ability to physically link the vast Arctic territories and virtually link the cislunar dimension to *the* Arctic region as well, is the instrumentalizing factor in Sino-Russian geo-economic activities in the Arctic. This crucial technological underpinning of the Sino-Russian multiregionalism process in the Arctic region is now apparent in both Russian LNG projects and cislunar activities.

However, much of this technology is dual-use; thus, to some extent the Sino-Russian position in the Arctic promotes (un/wittingly) deliberate strategic ambiguity too. This may well suit China and Russia's multipolar vision, as they watch the West interpret this capability as attempted S-R *militarization* and spend billions on defence accordingly. Meanwhile China is making quiet geo-strategic investments, building commercial alliances, contributing to climate science R&D, etc (i.e. using more usable /subtle geoeconomic power), and by doing so inching inexorably toward its strategic aim of *political* governance / influence over the region, and geostrategic presence in the contiguous overhead sphere of interest – Space.

The S-R Technology & Innovation Partnership (T&IP)

The quite recent intensification of Sino-Russian technological and STEM R&D collaboration (Simes, 2020), along with Russia's more recent decision to leave the International Space Station (ISS) and join the China Space programme instead, are both significant and sobering developments in terms of their signalling of this deepening technology R&D collaboration, benefiting both S-R Earth and Space-based Arctic projects, as discussed above.

One major Sino-Russian initiative associated with this geo-economic integrated framework approach and the apparent strategy to eventually govern the Arctic *from* Space (especially by China), is to accelerate, broaden, and significantly finance a joint, state-wide Technology and Innovation Partnership (TIP) between Russia and China (Bendett and Kania, 2019). This R&D programme formalised in 2019, can be thought of as the underpinning of major S-R military *and* commercial technologies in the C21, and has already produced dual-use products (e.g. Big Data applications, AI products, Robotics, Beidou navigation, Kinzhal missiles, anti-satellite satellites, etc), alongside the roll out of 5G infrastructure across Russia's Eurasian landmass.

At the same time commercial benefits are accruing from technology-enabled geo-economic developments including specific-to-Arctic Novatek LNG operating infrastructure such as Gravity Based Structures and Arctic Cascade Liquefaction technologies (Kryukov, 2017), and the speeding up of subsequent digitised regional hub formations (such as a fledgling LNG trading hub in NE Asia) as well as *non-contiguous* regional maritime linkages (Paul, 2019).

The Phasing of the TIP Programme

In Phase One, technology, and physical sciences – joint STEM R&D and technology incubation and testing has been occurring for some time – something that Russia has been doing on its own in any case, since 1990; Phase Two has been a Chinese emphasis on commercial technology applications (Hu, 2007), and commercial regulation and governance of global technologies with *mainly economic applications*, to make them internationally competitive and thus marketable (for China) on the world stage. Geopolitically, the S-R vision of regional influence over the Eurasian Arctic, afforded by such Space and maritime presence is central.

Finally, in Phase Three technologies will be developed for military and space activities. Arguably this latter phase has already – but only partially arrived, as witnessed (Goldstein, 2019) by some weapon systems deployed in the Russian Arctic, such as the Kinzhal ballistic hypersonic missile system (Nilsen, 2019), and China's anti-satellite and targeting systems (ASAT) in Space, and its own (recent) hypersonic missile testing (Nilsen, 2020). The Sino-Russian development of China's Space station is partially an outcome (Laskai, 2018) of the TIP project.

It is perfectly feasible therefore to consider a scenario in which at this stage of technological and commercial parity – *and in some respects actual superiority*, with the U.S., (but not military parity) at Phase Two, that America may start to view China an *existential threat and thus consider the US/PRC (and US/RF) relationship at a tipping point*. It is at that point too that China (*not* the U.S.) may also consider de-coupling as it is now economically "equal" with the US, and its technology (for those economic purposes) is as good or better than the U.S.' Moreover, China has been steadily inculcating into international technology regulation agreements (especially Space-located) their own norms, values, and ideology, world-wide, and which impact Western markets and institutions as well. Timing is all, however: Within such a scenario it would seem very unlikely that China would undertake such a move before its own, and the S-R technology R&D cooperation (Casassus, 2020), are producing significant GDP-earning and internationally competitive commercial products, its technologies' standards are internationally acknowledged as legally acceptable, and any agreed commercial/strategic activities from/in the Arctic's Outer Space domain are well under way.

The TIP Summary

The Sino-Russian TIP's contribution is physical connectivity and virtual/digitized linkage across the Eurasian Arctic, and the means to undermine the U.S. military capability/technology complex in Space, and by doing so challenging established governance of the Arctic region via Space-based satellites transmitting an array of social media and IoT technologies across northern Eurasia, leading to a probable, subtle, step in indirectly challenging the superpower *status (not* military power) of the U.S. in northern Eurasia.

Geo-strategically speaking, S-R partnerships such as the TIP illustrate and reinforce China and Russia's broader determination to develop and monetize critical technology breakthroughs and applications, that underpin the major provider of future *global GDP* – the Service sector, which is entirely undergirded by advanced operating technologies. The real battle between China and the U.S. is not trade *per se*, but rather the question of who will dominate technology in the C21, including the use of satellites and to some extent Outer Space as well. Russia's knowledge and expertise in STEM, technology, military science, and Space is critical to China's competition with the U.S. for technology ascendency, and thus global economic power.

TEST CASE TWO: THE RUSSIAN ARCTIC'S NOVATEK LNG PROJECT

Post Ukraine's invasion and with Putin's resulting economic isolation, China is for the moment Moscow's only remaining major trade partner. The single most strategic weathervane of continued Chinese support for Russia and the broader Sino-Russian (S-R) relationship is Russia's Novatek LNG's multi-billion-dollar Arctic gas project on the Yamal/Gyda Peninsulas, in which China has significant – and increasing, equity participation and is its only major BRI investment – (De Maria, 2019) the "Polar Silk Road" fund project in Russia. This is of critical regional energy security interest to China (Paik, 2015), and is entirely dependent upon access to Russia's NSR, for subsequent LNG evacuation to China and other northeast Asian nations. This is the largest LNG operation in the World at present and delivers LNG to the three biggest LNG consumers of it in the World too, in NE Asia; Japan, China, and RoK.

Sino-Russian Geopolitical Outcomes of Novatek LNG's Projects in the Arctic Region

However, as this paper argues, Beijing's presence along the NSR (a developing SLOC linking northern Eurasia), a crucial part of Novatek LNG's operation (Cao & Bluth, 2013; Rainwater, 2013), together with the building of BRI funded Arctic infrastructure in support of Novatek LNG's operations, *also* offers it a critical terrestrial platform across the entire, emerging *Eurasian Arctic* (as an equity partner in the Novatek Arctic energy project) for monitoring and managing operations into the cislunar domain. As mentioned, the Arctic's uniquely high latitude positioning on Earth, offers China (Brady, 2017), geostrategic positioning (and control) over two Oceans and three continents, via Space-based satellite links to (some of this) Arctic LNG industry-related, digitized *offshore* infrastructure. This structural infrastructure framework provided by offshore energy operations and noted by Bennett and Eiterjord (2022) may subsequently facilitate control/influence over the region by means of promoting social media applications and services such as IoT, AI, Robotics, and Big Data, projected from the geographical, digitised NSR platform spanning the Arctic, and via uplinks, from hubs (ports) along it, to satellite networks – effectively asserting influence *from* Space.

To that end, China's regional Polar Silk Road fund (Hossain, 2019), Novatek LNG, the NSR, *and* Sino-Russian technology R&D collaboration are the key facilitators connecting Sino-Russian energy projects *and* Space operations in and over the emerging Eurasian Arctic region – and their subsequent, strategic exploitation as *de facto* geo-economic instruments of potential Chinese / Sino-Russian terrestrial (e.g. Arctic LNG and associated NSR) and extra-terrestrial (i.e., Space/technology) *governance* over the Eurasian Arctic, an increasing S-R sphere of interest.

The following section provides a brief overview of these BRI-funded Energy/LNG activities in the Arctic and their strategic basis for doing so. Polycentric Regionalism's three processes of space, scale, and networks are very apparent in the Novatek LNG project, as it expands operationally and (subsequently) geographically across the Eurasian Arctic region(s).

THE NOVATEK LNG CONSORTIUM: DUAL-USE IMPLICATIONS

Novatek's present and future LNG projects – "Yamal LNG", based on the Yamal Peninsula, at the mouth of the Ob River in the Arctic's Kara Sea, and "Arctic LNG-2" on the Ob River's eastern Gyda Peninsula are both largely oriented toward Europe and the northeast Asian gas markets, (though not exclusively). Both projects are Russian-led, independent, private consortium projects. As of 7 April 2014, the Yamal LNG OJSC consisted of: Novatek (50.1%), foreign partners, including: Total (with a 20% interest in 2011); and CNPC with 20% too (in 2013); along with China's Silk Road Fund (9.9%).

The Yamal LNG project (Yulong et al 2016) is the only Russian project in which China has a BRI involvement (in the form of the Polar Silk Road Fund@9.9%) as well as an industry equity position (CNPC@20%), and which uses the NSR to transport Yamal LNG to China and the northeast Asian market, mainly in the Summer months. This was vital for the RF government as Weidacher (2016) relates, when U.S./EU sanctions in 2014, forbade the financing of (future) Novatek projects; the addition of China's Polar Silk Road fund (BRI) buying in with a 9.9% stake also sent a message worldwide at that time, underlining Xi and Putin's desire to make this a very determinedly Sino-Russian (with international operators and service companies and customers) energy operation in the Arctic.

Global Production Network (GPN) Analysis

Global Production Network (GPN) analysis (Bridge and Bradshaw, 2017) is an established methodological tool (Coe and Henry, 2015) widely used internationally in the manufacturing sector and applied here to describe how Novatek LNG's project is functionally organized and integrated, and how it then manifests itself in the *form, scale, and network* shape of the territorial space that it subsequently occupies (i.e. developing the NE Asian LNG trading hub/market). This is a useful exposition of *how* the Sino-Russian Arctic Novatek LNG partnership (network) operates and its network(s) are expanding into northeast Asia and *creating a* new regional sphere of interest (the Pacific aspect of the Eurasian Arctic) and a major, new regional LNG hub/market within it.

It is not coincidental that these three commercial GPN processes closely mirror the three processes comprising Polycentric Regionalism theory (space, scale, and networks), illustrating the commercial *mechanism* of regionalization. Methodologically, using GPN analysis it is demonstrated that the innate gas/LNG industry's geo-economic scale and power – transmitted through its industrial capital, infrastructure build-out capabilities, and economic influence over institutions – is a key determinant in facilitating the physical connectivity and virtual linkage processes noted in Polycentric Regionalism (scale, space and networks), leading toward its political manifestation – multiregionalism.

GPN ANALYSIS OF NOVATEK LNG'S PROJECT IN THE ARCTIC; MULTI-REGIONALISM AT WORK?

By applying GPN analysis' tools (Materiality, Territoriality, and Network Practices), it is now possible to see *how* Sino-Russian economic, political, and geo-strategic plans are manifesting themselves (Steinberg, 1994) through the Novatek LNG relationship in the Arctic. One aspect for instance is intensifying *organizational and network integration* amongst Novatek LNG's international participants (regionalization and integration, via gasification) across the developing Eurasian Arctic region. These three GPN processes identified in the operation of the Novatek LNG project, *structurally align* with Polycentric Regionalism theory's own processes of geoeconomic *space creation, scalability,* and technological assisted *network /institutional* infrastructure. This manifests itself as multi-regionalism – in the form of a new regional space, a major LNG/gas trading hub in NE Asia (Cheng, 2015), of geo-economic significance that delivers LNG not only to Asia, but NW Europe as well (Stern, 2006) via its Murmansk transhipment port. As a result of this emerging space, LNG pricing policy arising out of the Network re-organization of the LNG model, means Russia is now able to plan and eventually create an LNG market hub price in northeast Asia/ the Pacific Arctic for instance (Musikhin and Balakireva, 2019), to support this *regionalization/ region-building* capability of LNG. This has profound implications for international global LNG trading and *geo-economic leverage* and Sino-Russian relations in – and beyond the Eurasian/Pacific Arctic region. This potential Russian LNG hub, represents a shift in regional economic power, as predicted in PR theory.

Moscow and Beijing the instrumentalization of LNG for multi-regionalism purposes – is critical for the geopolitical manifestation of their geopolitical intent, the building of a new space in the Eurasian Arctic region, and in neighbouring northeast Asia

In Polycentric Regionalism theory terms, for Moscow and Beijing the instrumentalization of LNG for multi-regionalism purposes – is critical for the geopolitical manifestation of their geopolitical intent, the building of a new space in the Eurasian Arctic region, and in neighbouring northeast Asia. The forming up of an LNG networked institutional structure (equity holders, operators, service providers and financing instruments such as the Silk Road Fund) under the banner of the Novatek partnership, constitutes a fledgling *institutional component* of industrial Polycentric Regionalism in Northeast Asia. Bridge and Bradshaw (2017, p.217) continue with this GPN Territoriality theme by saying:

"By paying attention to the spatial configuration of LNG production networks, we are able to show how, in the case of natural gas, GPNs are constitutive of markets – market making, rather than merely responsive to them".

This a key conclusion from the Novatek analysis (creating spaces, scalability), as it is in line with PR theory which also predicts that unlike established theories of regionalism, *institution building* (Jensen, 2004), in the Pacific Arctic *precedes* the creation of new structures of overt power (LNG market /trading hubs, commercial networks, economic power, etc). This is supported by Polycentric Regionalism's assertion that Eurasian Arctic institution/network building, occurs *very early on, or concurrently* with, the process of regionalization This is critical in terms of eventually creating the S-R geopolitical space – the Eurasian Arctic.

The Findings from the Sino-Russian Novatek LNG project

Novatek LNG activities are having several geo-economic effects: the creation of regional LNG trading hubs in the eastern Eurasian Arctic (Kamchatka) and in Europe (Murmansk). The three IR outcomes of Polycentric Regionalism, noted, Structural change in power distribution, Great Powers emergence with spheres of interests, and/or regional changes in the IPE, all seem plausible within this Arctic LNG context, as per GPN analysis.

Secondly, the NSR for China represents a conduit for Novatek LNG deliveries, but also an infrastructure opportunity via Beijing's Polar Silk Road fund (BRI), to link the Eurasian Arctic (a platform for technology activities into the European Arctic) with Space, and thus via a locus in Space (effectively using Space to *enter the Arctic*), the establishment of a governance position over the Arctic, publicly undermining U.S. power and techno-governance *status* – and possibly the region's Arctic Council – and its role as well.

The NSR is becoming a SLOC, and it is likely therefore that China and Russia will become (regional) Sea powers linking the Arctic Ocean and western Pacific, as part of ensuring their LNG deliveries to Northeast Asia (Mitrova, 2013). This will *de facto* insulate – and thus gain incubation time for the successful creation of an Northeast Asian/Pacific Arctic LNG trading hub (Cohen 2007), no doubt denominated in time, in Yuan, not the U.S.$. Furthermore, with international LNG swap deals between regions now possible (i.e., a Gas/LNG OPEC concept) and already being considered, this is the manifestation of GPN's Territoriality and PR theory's process of spatial scalability. It is also a manifestation of Putin's 2019 Valdai speech and his drive toward commercial triangulation of the Arctic, Indian and (western) Pacific Oceans (via these non-contiguous, regional LNG swap deals), partly for these geopolitical reasons. These geoeconomic ties across the Eurasian Arctic are also making *military* containment of Russia and China in the region very challenging for still European-oriented, NATO.

Along with the economic aspects of Sino-Russian Arctic relations, "virtual" connectivity, use of the NSR, and strategic deliveries into the massive northeast Asian LNG markets – and its Sea power implications (Zhang, 2006), it is credible to envision the Sino-Russian geo-economic partnership in the Arctic (e.g. partly by use of the Novatek LNG project) moving toward a more geostrategic alliance in the Eurasian Arctic (a structural change in the distribution of regional power). Moreover, these regionally-based geo-economic developments seen in this Arctic LNG project should be considered within the evolving – and worldwide context of the technology-driven IPE; the associated shift of the global centre of economic gravity from mid-Atlantic to Asia, shortening/*altering* global value chains (e.g., the NSR), and their regional manifestation in creeping *de-globalization*, and growing *regionalization in* emerging

markets. This is further facilitated by technologies such as 3-D printing – which partly undermines globalization's major *raison d'etre* (the need for overseas labour centres), and its international market/labour/value chains; fundamentals that are characteristic of U.S.- led globalization.

TEST CASE THREE: SPACE AND SINO-RUSSIAN STRATEGY IN THE CIRCUMPOLAR NORTH

The S-R relationship is geo-strategically and unambiguously taking on the U.S. and its military in the cislunar domain /Space dimension over the Arctic (Point, 2021), by means of BRI funding (e.g. China's Digital Silk Road), dual-use technology developments, and overt quasi-military capabilities. To date most of this activity is occurring in the European sector of the Arctic. The geostrategic aim is to undermine the U.S.' superpower status (Gray, 1988), and thus its right/ability to govern (via the AC) the region, terrestrially.

U.S. Space/nuclear-based Arctic activities and systems like NORAD / BMEWS, and SOSUS (O'Shaughnessy, 2020) are increasingly *being challenged – and sometimes defeated* by China (via amongst other things sophisticated anti-satellite, satellite capabilities ((ASATs). This represents a first – more aggressive step by Russia and China, in attempting to rebuild the international order in a more multi-regional (*not Multipolar)* and ambiguous fashion. Initially, this is from the domain of Space where international regulation, enforcement, and geopolitics are vague, and sovereignty still unclear and contested: However, a S-R declaration of multipolarity would be seen as an existential threat to the US, resulting in a massive, decisive, and devastating response, something which Russia and China are well aware of. Space therefore (the cislunar aspect), is the critical domain (Lye, 2020) from where the (less risky) *multi-regional* governance model over/of the Arctic region(s), can/may be asserted in C21 by China, supported to an (unknown) extent by Russia.

The latter element, the cislunar domain, is itself seen as the "new frontier" of S-R /U.S. competition over the emerging Global Commons. Already China is *linking* their terrestrial concept of the Arctic region as the "heritage of all mankind" with the idea of Space (as well as the Arctic itself – and surrounding Deep Seas), as part of the non-terrestrial Global Commons; this is a Sea-

change in thinking about challenging /controlling Arctic sovereignty and governance – from Space, because there is as yet, no agreed legal framework of regulation and legislation in place, nor any form of enforcement capability available either. This growing means of asserting governance and subsequent control from Earth as well as *from* Space (the latter via Satellite-based means), provides a powerful explanation for the raison d'etre of the S-R geoeconomic, technological, and Space partnership in the Arctic region today. In short multi-regionalism's stated output in this case is creating a new *non-terrestrial,* geo-economic sphere of interest (the multidimensional Global Commons' Arctic), but its strategic output here is more nakedly *geopolitical* and game changing in its global international order consequences.

The Dragon Enters: Space, Technology, and Governance

In terms of the increasing link between Chinese Arctic operations and Space, Beijing is now beginning to deploy digital, remote infrastructure (submersibles, satellites, optic fibre cables, drones/UAVs, etc) extraterritorially (offshore) of the Arctic landmass (Nilsen, 2020), as part of their climate change *adaptation* strategy, that makes maximum use of Space-based (and managed) technologies; Low Earth Satellites (LEOs) are being deployed for instance, to link-up/down with this extraterritorial/offshore Arctic infrastructure, and facilitate Space-directed technologies such as Big Data, AI, Cyber, Robotics, IoT, Social Media, etc.

This subtle Arctic development – from/connected to Space, deflects some Arctic Council members' resistance to perceived Chinese *territorial* incursion and potential challenge to Arctic (i.e., the AC's) governance and its sovereignty, inherent in already established *terrestrial/maritime based* Chinese infrastructure-building instruments (such as build-out of the NSR, the use of Remote Sensing systems, and infrastructure financing of say, ports, airports in Greenland through the BRI).

Concurrently, as already noted, as part of this Space-Arctic governance strategy China has begun to re-classify the Global Commons as the Deep Seas, Deep Earth, Outer Space and Cyberspace (and Polar regions), which are now being directly linked to these remote Arctic offshore (Deep Seas) infrastructures. These developing Global Commons' entities constitute what

Beijing describes as the "new strategic frontier" and are seen as critical spaces to be occupied as the new commanding heights of military strategy.

So, whilst Polycentric Regionalism – as already explained, is a neo-Realist theory accounting for great powers' (i.e. Sino-Russian) efforts to create new regional economic spaces/ spheres of interests in the Arctic (resulting in the ongoing creation of the Eurasian Arctic region) it is clear that such terrestrial spaces are also being considered for virtual-contiguous linkage to the cislunar domain/region as well, but already with a more geostrategic emphasis.

In essence, China is extending its *definition* of sovereignty and territoriality toward/to include the Global Commons, and in turn linking that shift to related concepts such as the "Heritage of all Mankind" and China as a now "near-Arctic" state. By acting in such an elliptical and supposedly benign fashion – via a climate change adaptation strategy (Martinot et al, 1997), that cynically sees *geopolitical (dis)advantages* regarding the *consequences* of climate change in the Arctic (e.g., ice-melt leading to access to and use of, the Eurasian-linking NSR), it is in fact establishing a sovereignty-oriented extraterritorial presence – and governance order over the Arctic region *from Space.* It fortifies this shift by suggesting that these same (Global Commons') spaces in the Arctic, where international governance and technology legislation and *regulatory oversight* is still only fledgling and/or contested, are *better considered* the Heritage of all Mankind - and part of the *expanding* Global Commons.

China is extending its definition of sovereignty and territoriality toward/to include the Global Commons, and in turn linking that shift to related concepts such as the "Heritage of all Mankind" and China as a now "near-Arctic" state.

The American response to these developments is stark and frank: In essence, the purpose of the Arctic BRI as far as the U.S. is concerned is as a distributor of these commercial and military (dual use) technologies (such as China's GPS (Beidou), and ASATs into Eurasia/the Eurasian Arctic. BRI is also perceived as *funding Arctic infrastructure* for Eurasia-wide connectivity platforms (primarily the Eurasia-spanning NSR), accommodating 5G

capability, and thus linking up and *facilitating the positioning and running* of Big Data/AI, IoT and other digital applications from Space, across the Eurasian Arctic; especially those Space-managed, poorly regulated technologies that have dual-use functions, including military applications (e.g. offshore fibre optic cables, reducing latency) prevalent in some Scandinavian countries. This latter BRI purpose has therefore massive (assumed) implications too for facilitating and progressing Chinese *Arctic economic governance ambitions*, including from Space, leading to political regional influence in time, as well.

However, as is pointed out (Goldsmith and Rees, 2022, p.138), the United Nation's (UN) Moon Treaty's statement that "the exploration and use of the moon shall be the province of all mankind …….and for the benefit and interests of all mankind", is the reason the U.S. has not signed up to this UN treaty. Furthermore, in Executive Order 13914 to the U.S.' own 2015 Space Act (Goldsmith and Rees, p.141), it states that "Outer space is a legally and physically unique domain of human activity, and the United States does not view it as a global commons". Such a strong U.S. statement of intent adds credence as to why the S-R partnership has applied a primarily geo-economic framework in the region (in which such "soft" subjects arise) and not a military framework which could be more destabilizing.

A SUMMARY

The Arctic's critical location / intersection with Space and the latter's poorly regulated regime operating there, suggests China sees (via remote technologies) the imposition of Chinese governance norms and subsequent control over the Arctic region (Englehart, 2008) from Space, worthy of attention and investment (Storey, 2014). This approach illustrates why China sees the threat of Polar climate change as providing *geopolitical opportunities* and has opted – with Russia to employ a climate *adaptation strategy* accordingly, whilst the U.S. has employed a *mitigation strategy* as it sees the threat as environmental damage, not geostrategic. A cynical view would be that Arctic environmental policies could now be seen very much as a geo-economic statecraft instrument, for determining geopolitical outcomes in the Arctic region, for both the RF/PRC, and the West.

The establishment of the NSR as a SLOC, Novatek's "internationalization" (western equity partnerships and key Asian customers), strategic technology partnerships, joint naval exercises, BRI initiatives, collaboration in Space – are all strategically significant, but they are also major Sino-Russian confidence-building measures (CBM) in and of themselves. This means that the widely-reported Western mantra of Sino-Russian mistrust, a so-called barrier to strategic cooperation, is being actively discounted by these economic plays – which are in effect major trust-building *political* CBM measures *as well*. This combination has led to steady, increasing Sino-Russian strategic-level trust and now increases the possibility of some economic, regional decoupling from the West in the future, and the spectre of a subsequent technology-enabled Sino-Russian geo-strategic, regional alliance – tenable in the Eurasian Arctic, alongside an emerging Chinese governance model for the region, increasingly directed from Space via digitised linkage with Arctic-based offshore Chinese infrastructure; of which the NSR is a critical component.

Finally, Technology is the strategic link between Space and the Arctic (Byers, 2019) and in this generic sense both the investment in the infrastructure updating of the Russian NSR, and China's BRI (Polar Silk Road fund), along with initiatives such as the TIP arrangement, are altogether now serving as geo-economic instruments of terrestrial and (potential) *extra-territorial governance* (via Arctic-based up/down link infrastructure) in and over the Arctic region.

In conclusion, what may now be materializing in the Eurasian Arctic via the agency of geo-economic-driven Sino-Russian Arctic LNG operations and dual-use, virtual technologies, is a steady shift from this non-kinetic, terrestrially based S-R geo-economic partnership, towards a non-terrestrial (cislunar) geostrategic alliance, whose vision is ultimately Space-directed governance over the two Oceans and three continents that radiate out from the Arctic's unique latitudinal position. Both the good and the bad news is that it is presently unknown whether – and to what degree, Russia shares this regional vision in its entirety, with China.

References

Acharya, Amitav. 2007. "The emerging regional architecture of world politics." *World politics* 59 (4):629-652.

Arctic Institute. 2020. The Emergence of a Sino-Russian Economic Partnership in the Arctic? | The Arctic Institute. Washington, DC: @arcticinstitute.

Baldwin, David A. 2012. "Power and International." *Handbook of international relations* 273.

Baldwin, David A. 2016. *Power and international relations: A conceptual approach:* Princeton University Press.

Beeson, Mark. 2018. "Geoeconomics with Chinese characteristics: the BRI and China's evolving grand strategy." *Economic and Political Studies* 6 (3):240-256.

Bekkevold, Jo, Inge and Lo, Bobo, (Eds). 2018. "Sino-Russian Relations in the 21st Century". Springer

Bendett, Samuel, and Elsa B Kania. 2019. "A new Sino-Russian high-tech partnership."09.

Bennett, Mia M. 2014. "North by Northeast: toward an Asian-Arctic region." *Eurasian Geography and Economics* 55 (1):71-93. doi: 10.1080/15387216.2014.936480.

Bennett, Mia M, and Eiterjord, Trym. 2022. "Remote Control? Chinese infrastructure in and above the Arctic". *The Geographical Journal* (1).

Blackwill, Robert D, and Jennifer M Harris. 2016. *War by Other Means:* Harvard University Press.

Bolt, Paul J. 2014. "Sino-Russian relations in a changing world order." *Strategic studies quarterly* 8 (4):47-69.

Brady, Anne-Marie. 2017. *China as a polar great power:* Cambridge University Press.

Bridge, G., and M. Bradshaw. 2017. "Making a Global Gas Market: Territoriality and Production Networks in Liquefied Natural Gas." *Economic Geography* 93 (3):215-240.

Brutschin, Elina, and Samuel R Schubert. 2016. "Icy waters, hot tempers, and high stakes: Geopolitics and Geoeconomics of the Arctic." *Energy Research & Social Science* 16:147-159.

Byers, Michael. 2019. "Cold, dark, and dangerous: international cooperation in the arctic and space." *Polar Record* 55 (1):32-47.

Cao, Wensheng, and Christoph Bluth. 2013. "Challenges and countermeasures of China's energy security." *Energy Policy* 53:381-388.

Casassus, Barbara. 2020. "China predicted to outspend the US on science by 2020." *Nature News.* doi: doi:10.1038/nature.2014.16329.

Charap, Samuel, John Drennan, and Pierre Noël. 2017. "Russia and China: A New Model of Great-Power Relations." *Survival* 59 (1):25-42. doi: 10.1080/00396338.2017.1282670.

Cheng, Yang. 2015. "Do National Policies Contribute to Regional Cross-border Integration? The Case of the Program of Cooperation between Northeast China and Russia's Far East and Eastern Siberia (2009–2018)." In *International Cooperation in the Development of Russia's Far East and Siberia*, 202-228. Springer.

Christoffersen, Gaye. 2018. "Sino-Russian accommodation and adaptation in Eurasian regional order formation." *Asian Perspective* 42 (3):439-462.

Coe, Neil M, and Henry Wai-Chung Yeung. 2015. *Global production networks: Theorizing economic development in an interconnected world:* Oxford University Press.

Cohen, Ariel. 2001. "The Russia-China Friendship and Cooperation Treaty: A Strategic Shift in Eurasia?" *The Heritage Foundation* 18.

Cohen, Ariel. 2007. "Gas OPEC: A Stealthy Cartel Emerges." *Heritage Foundation WebMemo* (1423).

Daily, China. 2016. "China-Russia strategic partnership set to open new horizons." *China Daily, [online] 6 June. Available at:*, 06,. http://www.chinadaily.com.cn/world/2016liattendsSCOCCEEC/2016-11/06/content_27288768.htm [Accesssed 11 May 2020].

De Maria, Alessia. 2019. "The "Polar Silk Road" and Chinese interests in the Arctic." Università Ca'Foscari Venezia.

Decree, Presidential. 2008. The Fundamentals of State Policy of the Russian Federation in the Arctic in the Period up to 2020 and Beyond. September.

Diesen, Glenn. 2017. *Russia's Geoeconomic Strategy for a Greater Eurasia*: Routledge.

Englehart, Alex B. 2008. "Common ground in the sky: extending the 1967 Outer Space Treaty to reconcile US and Chinese security interests." *Pac. Rim L. & Pol'y J.* 17:133.

Erokhin, Vasilii, Gao Tianming, and Zhang Xiuhua. 2021. "Arctic Blue Economic Corridor: China's Role in the Development of a New Connectivity Paradigm in the North." *China's Arctic Engagement* 9:63.

Evans, Paul. 2004. "Between regionalization and regionalism: policy networks and the nascent East Asian institutional identity." *Remapping East Asia: The Construction of a Region*:195-215.

Goldsmith, Donald, and Martin Rees. 2022. *The End of Astronauts: Why Robots Are the Future of Exploration*: Harvard University Press.

Goldstein, Lyle J. 2019. "Hypersonics Are Speeding up Great Power Competition | The National Interest." *The National Interest*.

Gray, Colin S. 1988. *The geopolitics of superpower*: University Press of Kentucky.

Hossain, Kamrul. "China's BRI expansion and great power ambition: The Silk Road on the ice connecting the Arctic." *Cambridge Journal of Eurasian Studies* 3:F3OSGP. doi: 10.22261/CJES.F3OSGP.

Hu, Albert Guangzhou. 2007. "Technology parks and regional economic growth in China." *Research Policy* 36 (1):76-87.

Hurrell, Andrew. 2007. "One world? Many worlds? The place of regions in the study of international society." *International Affairs* 83 (1):127-146.

Jensen, James T. 2004. *The development of a global LNG market: is it likely? If so, when?* Oxford Institute for Energy Studies.

Klare, Michael T. 2020. "From Globalization to Regionalization?".

Kryukov, Iu V. 2017. "Import substitution of technology and equipment in the Russian energy sector." *Problems of Economic Transition* 59 (1-3):58-71.

Laskai, Lorand. 2018. "Civil-military fusion and the PLA's pursuit of dominance in emerging technologies." *China Brief* 18 (6):12-16.

Layne, Christopher. 2006. "The unipolar illusion revisited: The coming end of the United States' unipolar moment." *International security* 31 (2):7-41.

Lee, Rensselaer W, and Artyom Lukin. 2016. *Russia's Far East: New dynamics in Asia pacific and beyond*: Lynne Rienner Publishers.

Livesey, Finbarr. 2018. *From global to local: The making of things and the end of globalization*: Vintage.

Lukin, Artyom. 2014. "The Emerging Anti American Axis of Russia and China: Implications for A." 37.

Lukin, Artyom. 2015. "Why the Russian Far East is so important to China." *Huffington Post* 14.

Luttwak, Edward N. 1990. "From geopolitics to geo-economics: Logic of conflict, grammar of commerce." *The National Interest* (20):17-23.

Lye, Harry. 2020. "AI, data, space and hypersonics set to be 'strategic disruptors': NATO." *Army Technology*.

Maçães, Bruno. 2018. *The Dawn of Eurasia: On the Trail of the New World Order*: Penguin UK.

MacKinnon, D. 2020. "The looming threat from China in space. [online]." thehill.com Available at: https://thehill.com/opinion/national-security/492260-the-looming-threat-from-china-in-spac, accessed [16 May 2020].

Mansfield, Edward D, Milner, V, Helen 1997. *The political economy of regionalism*: Columbia University Press.

Martinot, Eric, Jonathan E Sinton, Haddad, and Brent M. 1997. "International technology transfer for climate change mitigation and the cases of Russia and China." *Annual review of energy and the environment* 22 (1):357-401.

Mitrova, Tatiana. 2013. "Russian LNG: The long road to export." *Paris: IFRI-Russia/NIS Center.*

Musikhin, Vladislav Igorevich, and Svetlana Mikhailovna Balakireva. 2019. "Russia on the global LNG market: trends and prospects." International Conference on Business Economics, Engineering Technology, Medical and Health Sciences.

Nilsen, T. 2019. "Russia's top General indirectly confirms Arctic deployment of the unstoppable Kinzhal missile." *The Barents Observer* [online], 19 December. Accessed 13 April 2020. https://thebarentsobserver.com/en/security/2019/12/russias-top-general-indirectly-confirms-arctic-deployment-unstoppable-missile.

Nilsen, Thomas. 2020. "Anti-satellite weapon tested from Plesetsk." *The Barents Observer*.

Nilsen, Thomas. 2020. "Trans-Arctic fiber cable can make Kirkenes to high-tech hub." *The Barents Observer*. https://thebarentsobserver.com/en/industry-and-energy/2016/12/trans-arctic-fiber-cable-can-make-kirkenes-high-tech-hub.

O'Shaughnessy, T. 2020. *Statement of General Terrence J. O'Shaughnessy, United States Air Force Commander United States Northern command and North American Aerospace Defense Command In United States Government*, edited by United States Government Senate Armed Services Committee.

Paik, Keun-Wook. 2015. *Sino-Russian gas and oil cooperation: entering into a new era of strategic partnership*? OIES Paper: WPM.

Paul, Michael. 2019. "Partnership on the high seas: China and Russia's joint naval manoeuvres."

Point, Modern war Institute West. 2021. "How Polar Security and Space Security are Linked—and Why the US Coast Guard Should Bridge the Gap - Modern War Institute."

Putin, Vladimir. 2017. "The Arctic: Territory of Dialogue International Forum." Speech at the Fourth International Forum, The Arctic: Territory of Dialogue. Retrieved from http://en. kremlin. ru/events/president/news/54149.

Qiao, Liang. 2002. *Unrestricted warfare : China's master plan to destroy America / Qiao Liang and Wang Xiangsui* [introduction by Al Santoli]. Edited by Al Santoli and Xiangsui Wang. Panama City, Panama: Panama City, Panama: Pan American Pub., c2002.

Reilly, T. 2019. "The US cannot rule the new global tech' order". *The Financial Times*. 16 December 2022. p.22

Rosecrance, Richard. 1991. "Regionalism and the Post: Cold War Era." *International Journal* 46 (3):373-393. doi: 10.2307/40202895.

Roseth, and Hsiung. 2019. "The Arctic Dimension in Sino-Russian Relations "In *Sino-Russian Relations in the 21st Century*, edited by ed. 2019 J.Bekkevold and B.Lo. Switzerland: palgrave macmillan. Ch.8.

SPRI Scott Polar Research Institute, University of Cambridge. 2017. "*The Russian Far East, Arctic and China: Reshaping Northeast Asia in the 21st Century?*", Cambridge, UK, May 25-26, 2017.

Simes, Dimitri. 2020. "Huawei plays star role in new China-Russia AI partnership." [online]. @NAR. https://asia.nikkei.com/Spotlight/Asia-Insight/Huawei-plays-star-role-in-new-China-Russia-AI-partnership.

Steinberg, Philip E. 1994. "Territory, territoriality and the new industrial geography." *Political Geography* 13 (1):3-5.

Stern, Jonathan. 2006. *The new security environment for European gas: worsening geopolitics and increasing global competition for LNG*.

Storey, D. 2012. Territories: *The claiming of space*. Vol. null, null.

Storey, D. 2012. Territories: *The claiming of space.* Vol. null, null.

Stronski, Paul, and Nicole Ng. 2018. Cooperation and Competition: Russia and China in Central Asia, the Russian Far East, and the Arctic. Washington.

Yulong, Li, Kong Linghao, and Liu Jia. 2016. "Yamal LNG project and Made-in-China equipment going globally." *CHINA OIL & GAS* 23 (3):13-17.

Zhang, Jingwei. 2019. "The West's insecurities in the Sino-US tech war." *Asia Times*, 2019-06-19. https://asiatimes.com/2019/06/the-wests-insecurities-in-the-sino-us-tech-war/.

Zhang, Keyun, and Zhibing Cai. 2015. "Globalization 4.0, Regional Coordinated Development 4.0, and Industry 4.0: the background to the 'One Belt, One Road'strategy and its intrinsic nature and critical power." *Erina Report* (127):37.

Zhang, Long, Benjamin K Sovacool, Jingzheng Ren, and Adrian Ely. 2017. "The Dragon awakens: Innovation, competition, and transition in the energy strategy of the People's Republic of China, 1949–2017." *Energy Policy* 108:634-644.

Zhang, Wenmu. 2006. "Sea power and China's strategic choices." *World Security Institute Summer* 2006:17-31

Editor: Žaneta Ozoliņa
Project manager: Sigita Struberga
Cover design: Laura Benga
Layout: Inese Siliniece

Publishing house: SIA GREEN PRINT
17 Andrejostas street 17, Riga, LV-1045

ISSN 2661-5789

ABOUT THE AUTHOR

Tim Reilly is based at the Scott Polar Research Institute at Cambridge and specialises in Sino-Russian Arctic relations and associated Space activities. He provides consultancy services through his business, Arctic Advisory Associates.

He initially served in the Parachute Regiment and was trained as an Arctic Warfare instructor in Norway. Later, he held various appointments in the oil industry including for Exxon, Chevron in Kazakhstan, and Government Affairs Adviser to Shell, in Russia. In the mid-noughties he was working for Kroll International as their VP for Oil & Gas.

Tim was called as an expert witness to both the House of Commons Environmental Audit Committee on the Arctic, and the House of Lords Select Committee on the Arctic. He is the author of papers for the Cabinet Office, the MoD's Strategic Net Assessment team, and Parliament's Defence Committee. He is also an adviser to the JEF's annual Exercise Joint Protector. He regularly writes in the papers on Russian/ Sino-Russian and Arctic matters, including The Times, Financial Times, Wall Street Journal, La Tribune, etc.

Tim has spent over 30 years living aboard, mainly across Eurasia; and he is a Russian speaker, and was educated at Cambridge, Durham, and the Moscow State Institute of International Relations.

Ministry of Foreign Affairs Republic of Latvia

Ministry of Defence Republic of Latvia

LATO LATVIAN TRANSATLANTIC ORGANISATION

NATO OTAN