Governance Beyond the Global: Who Controls the Extraterrestrial?

First draft!

Lindy M. Newlove-Eriksson

Royal Institute of Technology, and Swedish National Defence College, Stockholm

lindy.newlove-eriksson@fhs.se

www.crismart.org

&

Johan Eriksson

Swedish Institute of International Affairs, and

Södertörn University, Stockholm

johan.eriksson@sh.se

www.ui.se

www.sh.se/politicalscience

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ABSTRACT. How is space governed? The increasingly popular notion of "global governance" implies the development of collaborative transnational and multi-actor networks transcending sovereign boundaries, particularly emphasizing the growth of private authority. The politics of outer space on the other hand – "the final frontier" – has often been depicted as a domain of state-centrism, whether competitive or collaborative. By contrast, this paper discusses how transnational corporate networks, quasi-governmental agencies, and public-private partnerships play crucial roles in governing the extraterrestrial. These developments do not merely concern the commercialization of space, but notably also the military and security dimensions of space programs. Our study shows that the recent framing of space as "critical infrastructure" has been pertinent to the emergence of private authority in space politics. This paper expands the applicability of the global governance literature, which has hitherto paid scant attention to "high politics" in general, and space politics in particular.

Key words: Commercialization; Critical Infrastructure; Governance; Public-Private Partnerships; Space

Introduction

The rise of private authority, transnational networks, and "time-space compression" are examples of features emphasized in the burgeoning literature on globalization and global governance (Cutler, Haufler, and Porter 1999). Recent contributions tend to have gone beyond the early stalemated debate on the obsolescence or obstinacy of the state (Hoffmann 1966), and the notion of "governance without government" (Rosenau and Czempiel 1992; Rhodes 1996). The "second generation" of studies on globalization and global governance tend to emphasize complexity and variety, that globalization is not uniformly manifested, and that not every perforation of the external and internal is of a global nature. Such analyses typically emphasize the involvement of both governmental and nongovernmental "actors" (cabinets, ministries, agencies, corporations, political parties, pressure groups etc.) – "actors" which are often internally fragmented, and which operate in complex transnational networks. States are commonly considered to be crucial and often, though not always or everywhere, the most powerful players. Yet it is also emphasized that states have lost their absolute power – if they ever had it – and that they are, with variable proficiency, changing and adapting to a global world (Barnett and Duvall 2005; Scholte 2005; Sassen 1996).

Space politics however, has traditionally been viewed as a strongly state-centric domain. Whereas space in the first decades of the "space age" was the exclusive playing field of the two superpowers of the Cold War, recent literature on space politics has observed an increasing number of states and intergovernmental organizations involved in this policy field

(Sadeh 2011a; Harvey, Smid and Pirard 2010). This widening of participation in space politics strengthened rather than challenged the state-centric perspective, however. As observed by Sheehan (2007: 9), the evolution from bipolarity in the early "space age" to a more complex multipolarity is fully consistent with the realist paradigm.

It is noteworthy that key features of globalization, such as deterritorialization and the emergence of corporate transnational power, are hardly mentioned in the literature on space politics. This may seem surprising, given the fact that space politics does not only concerns satellite systems and other essential elements of globalization, but by definition goes beyond the terrestrial realm. If there is a domain that is not defined by territorially organized jurisdictions, that domain is outer space.

At the same time, the global governance literature, which emphasizes deterritorialization and private authority[1], has largely ignored "high politics" in general, and space politics in particular. This literature has rather focused on environmental politics, human rights, political economy, and European integration (Cutler, Haufler, and Porter 1999; Hall and Biersteker 2002; Barnett and Duvall 2005; Scholte 2005; Bexell and Mörth 2010). Thus, this paper seeks to clarify if and how the notion of global governance[2] is applicable to contemporary space politics. Does space remain a state-centric domain, as it was during the early "space race" between the US and the USSR, or is contemporary space politics better described in terms of global governance, particularly concerning private authority?

This paper is structured as follows. First we discuss the traditional state-centric perspective of space politics. Despite its overarching focus on states and intergovernmental organizations, the state-centric perspective contains competing Realist and Liberal views, and observations of important developments since the launching of space programs in the 1950s. Subsequently, we address the global governance literature, from which we distill a number of propositions which, mainly by emphasizing the growth of private authority, contrast the traditional view of space politics. The ensuing empirical section discusses contemporary space politics with specific attention to the US and Europe, focusing particularly on the rise of private authority and public-private partnerships in the space sector. Finally, concluding remarks are made with regard to both the nature of space politics, and the applicability of global governance theory.

[1] "Private authority" conceives of private actors and their influence in a broad and encompassing sense, exerting influence through for example expertise and representation. In cases of private-public-partnership and de-regulation, theorists see indications of conflation with the public realm of decision-making (Cutler, Haufler and Porter, 1999:17-18). This concept will be elaborated on in this paper in relation to space politics.

[2] It might be wise to ponder whether the notion of global governance is indeed too limited for an analysis of space governance. By definition, the extraterrestrial goes beyond the global, even if space politics largely reflects relations on earth rather than in the heavens. Whereas offering an alternative conceptualization is beyond the scope of this paper, we wish to nonetheless raise this question for reflection and further inquiry.

The traditional view: space as a state-centric domain

Although there are of course more balanced and intermediate conceptions, the politics of space can effectively be described in terms of two contending narratives, one essentially optimistic, and the other more pessimistic. The optimistic extreme is as old as humanity itself. Since time immemorial, people have envisioned space as the "Heavens", as the home of Gods. Space is seen as a sacred place, a sanctuary which is – or should be – exempt from the tragedy of terrestrial tyranny, power politics, and violent conflict. In 1952 the International Congress on Astronautics officially condemned astronautic research for military purposes (Manno 1984: 23; Sheehan 2007: 6). The notion of space as a demilitarized sanctuary, established in the 1967 Outer Space Treaty, embodies the same Liberal idea that lies behind the demilitarization of the Antarctic, and the idea of keeping the Nordic countries as a denuclearized zone. A thread in this narrative includes the manner in which astronauts and cosmonauts greeted each other upon successful docking of their space vessels in 1975 – symbolic gestures that epitomized peace, friendship and collaboration, rather than hostility and Cold War. The notion of a "hand-shake in space", which was suggested by Henry Kissinger, was to symbolize the new *détente* (Sheehan 2007: 65). With a similar symbolic purpose, a joint American-Russian crew was sent to the Mir space station in 1994.

This optimistic interpretation is also a tale of modernity, of how rationality and science will continue to produce more advanced technology, enabling greater exploration of space. From this perspective, not only will more knowledge about what lies beyond our own planet be gained but we will also be able to improve life on earth. Space is the "new frontier", as President Kennedy repeatedly phrased it, inspiring hope for a better future, not only for a particular nation, but for humanity in its entirety. Akin to this are Neil Armstrong's famous words as he took his first steps on the moon on July 21, 1969: "That's one small step for man, one giant leap for mankind."

There is however an alternative conception of space politics which is much more pessimistic and younger than the optimistic narrative. It has also been more influential in space politics. When the USSR launched Sputnik I in 1957, this not only symbolized the start of the "space age", but also the "space race". The Cold War that had just erupted between the two superpowers immediately moved into space. In the words of Sheehan:

> The motivating driver of both [the US and the Soviet space] programmes was the acquisition of military capability, both in terms of missiles able to deliver nuclear weapons, and satellites capable of securely performing reconnaissance missions over adversaries' territory. […] [The] space programmes […] were simply part of the global competition for international leadership in an era when direct military confrontation was unthinkable. The civilian and military programmes were linked to the extent that the former diverted attention from the latter, and in some cases, such as the US Explorer/Corona satellite, was used as a deliberate cover for military activities. (Sheehan 2007: 8)

From this perspective, the military use of space was essential from the outset – it was the "new high ground" (Sheehan 2007: 3). From the very beginning it was both a techno-strategic and techno-symbolic goal to develop intelligence and weapons systems with a global reach; achieving symbolic leadership by being "first" and reaching "farthest" was an important status indicator alongside technical superiority. Not surprisingly, US-USSR space collaboration deepened during the *détente* of the 1970s, while there was a set-back during the new cold war of the 1980s – the Star Wars decade.

Space politics have been characterized by conflict and cooperation as well as both military and civilian objectives since the start-up of space programs in the 1950s. The overall assessment is however, that the Realist logic of militarization, arms race and power leveraging has been particularly dominant in the international relations of space (Manno 1984; Sheehan 2007; McDougall 1985; Goldsen 1963). In addition, more recent space powers, especially Europe and Japan, have explicitly integrated military and security-oriented dimensions in their space programs, programs which originally were oriented to civilian and environmental purposes.

The literature on space politics also emphasizes how the number of space powers has increased far beyond the original two superpowers. Today, not only Europe, China and India (Sheehan 2007; Sadeh 2011a) count as space powers, but also states in the Middle East and in South America (Harvey, Smid and Pirard 2010).

An alternative view: global governance, and beyond

Given the very strong image of state-centric dominance in space politics, this sector could be seen as a "hard" case for testing the notion of global governance, particularly with respect to propositions on the significance of private authority. As noted, past studies have observed the growing number of states and intergovernmental actors involved in space politics, an area no longer the sole domain of a few superpowers. These observations however strengthen rather than challenge a state-centric view of space politics. Moreover, scant attention has been paid to the emergence and significance of transnational relations and private actors in space politics, even within the global governance literature.[3]

As students of International Relations, we are familiar with the range of liberal and critical perspectives which have challenged the traditional state-centric perspectives on world

[3] An exception is the 2011 volume *The Politics of Space*, edited by Eligar Sadeh. This book observes and discusses not only states, but also corporate actors, international organizations, and even NGOs in space. As such, it is a very useful and updated "handbook" of contemporary space policy. However, it is heavily focused on empirical description, with little or no attention given to any theoretical concepts. See also Handberger's 1995 book *The Future of the Space Industry*, which obviously does not cover important developments that have taken place during the last 15 years.

politics. Many of these alternative perspectives could be loosely grouped under the label of "global governance", emphasizing how world politics is shaped through complex networks of public and private actors, cutting across the domestic-international divide (Barnett and Duvall 2005; Scholte 2005; Rosenau and Czempiel 1992; Bexell and Mörth 2010). The majority of the global governance literature deals with global environmental politics, international political economy, development issues, international law, and European Union governance. Global governance has also been hailed in various political contexts, notably in the United Nations (Commission on Global Governance, 1995). It is noteworthy however, that the burgeoning literature on global governance has not focused on traditional "high politics"[4], and that it has been virtually silent on the issue of space politics.

While perspectives on global politics are increasing in number and variety, there is a clear tendency to emphasize complexity rather than simplicity. Notions such as "the end of history", "the end of sovereignty", "governance without government", and "post-westphalianism" do not capture the complexity of the contemporary world. One theme that stands out among the otherwise varying approaches to global governance is the rise of private authority (Cutler, Haufler and Porter 1999).

The rise of private authority is about how both the number and significance of private (non-state) actors are growing, and what effects this may have on sovereignty, on democratic accountability, and on the effectiveness and organization of policy networks (Bexell and Mörth 2010; Hall and Biersteker 2003; Cutler, Haufer and Porter 1999). It is argued that increasingly, private actors are becoming "authors" of policies, practices, rules, and norms as well as engaging in agenda-setting, guaranteeing contracts, and even providing order and security (Hall and Biersteker 2003: 4-5; Ferguson 2003; Rosenau and Czempiel 1992). Many major corporations, including Exxon Mobil, General Motors (GM), and Walmart are today richer than many countries (UNDP, 1999:32). The rise of private authority goes beyond corporations and NGOs, also including grassroots movements, criminal and terrorist organizations, and more loosely organized social movements. Of particular interest is how private authority tends to be disconnected from public accountability and responsibility – what Rosenau calls the power of the "sovereignty-free" (Rosenau 1990).

A large number of analyses – mainly inspired by liberal and critical theory – hold that states are still to be reckoned with, even though sovereignty is challenged by the emergence of non-state actors in world politics, the increasing interconnectedness of domestic and international politics, or even the dissolution of politico-legal boundaries between the external and the internal (Ferguson and Mansbach 2008; Scholte 2005; Hall and Biersteker 2003). States have lost *absolute* power – if they ever had it – and they are today exercising and sharing power through complex cross-boundary networks comprised of governmental

[4] In for example Keohane and Nye's theory of power and interdependence (1977/1988), they make a distinction between, on the one hand trade and other "low political" issues characterized by "complex interdependence" and, on the other hand, national security and other "high political" issues characterized by state-centric power politics.

as well as non-governmental actors. Notwithstanding, states are changing and adapting to the global world – and some are better at this than others.

One particularly noteworthy feature of how states are changing in the age of globalization is evidenced in the emergence of transgovernmental relations - i.e. international relations between subunits of governments (Keohane and Nye 1974). This notion implies relaxing the assumption of the state as a unitary actor, acknowledging bureaucratic politics and conflicting as well as converging agendas and activities among subunits of governments. In particular, transgovernmental relations highlight how subunits of governments behave across the domestic-international divide without necessarily being coordinated or controlled by the top level of their respective national governments. This implies increasing governmental heterogeneity and dispersion of authority, as almost every policy domain – be it industry, infrastructure, environment, education, culture, health or defence – has developed its own transgovernmental relations specialization. "Foreign affairs" is no longer the exclusive realm of ministries of foreign affairs.

Moreover, given the rise of private authority and the tenacity and adaptability of governmental systems in a globalized world, public-private partnerships (PPPs) are particularly interesting. "Partnerships on public policy matters are cooperative initiatives that expand the political authority of nonstate actors, whether profit-oriented businesses or nonprofit foundations and civil society organizations" (Bexell and Mörth 2010: 6). Analyses of partnerships typically focus on questions of participation, goals, and how risks and responsibilities are shared (Schäferhof et al.: 453; Bexell and Mörth 2010: 6). The shape, role and political significance of partnerships can only be empirically determined. Partnerships can be more or less formalized, transnational or limited to a particular country, and they may be focused on a single policy domain or cut across a vast range of issues. Transnational PPPs, however, seem to be a relatively recent and growing phenomenon (Mörth 2008; Bexell and Mörth 2010).

The rise of private authority in general and the expansion of transnational PPPs in particular imply that policies are shaped through overlapping and often rather diffuse governance systems. The literature on transnational PPPs emphasizes problems of legitimacy and accountability, whilst acknowledging potential benefits in terms of expediency and availability of expertise (Schäferhof et al. 2009; Bexell and Mörth 2010). Similar problems are observed in the literature on "corporate responsibility" where companies engage (or not) in voluntary self-regulation schemes (Mayer and Gereffi, 2010). Such questions are however beyond the scope of this paper. Our concern herein is primarily whether transnational private authority is growing in space politics, or if this is remains an exclusive domain of states. The task is then to determine if corporate interests and PPPs in space politics can be identified, what goals such actors may have, and if and how they exercise influence on space policies. We do so by scrutinizing initiatives and policy developments in contemporary space policy.

The Rise of Private Authority in Space Governance

Governmental actors play an essential and often dominating role in space politics (Sadeh 2011a; Handberg 1995). Such has been the case from the outset of the space age, and this development has continued. Nevertheless, conceiving states as *unitary* and *solitary* actors in space politics is misleading. The bureaucratic politics of for example the National Aeronautics and Space Administration (NASA) and the European Space Agency (ESA), and of the transgovernmental relations between these and other governmental agencies, makes it clear that the assumption of states-as-unitary-actors in space politics must be relaxed. Furthermore, business actors and public-private partnerships have increased in number and arguably have increased in significance in the last few years. Let us take a closer look at these developments which, we argue, are better conceptualized from the perspective of global governance rather than from any state-centric perspective.

Business interests in space concern a lot more than the "space tourism" of Sir Richard Branson's Virgin Galactic, and other such ventures. Private enterprise is also involved in the military and more broadly security-oriented dimensions of space politics. This development has not gained the same level of media attention as space tourism, and appears to be less known in academic studies as well. Thus there is good reason to scrutinize the shape and significance of business power in the space security sector. In the words of Handberg, a political scientist writing about space politics:

> Commercial space is no longer merely the dream of visionaries or the province and playground for earthbound government bureaucrats. As the pieces of the tragic Space Shuttle Challenger rained down on the Florida coast in January 1986, private space enterprise rose phoenix-like from the wreckage. (Handberg 1995: 1)

Handberg is explicitly normative, even prescriptive, advocating a neo-liberal view on how private business tends to be more conscious about costs than public administration is. Whether one agrees with Handberg's 1995 neo-liberal prescriptions or not, his observation that private authority in space governance is growing has been corroborated. Importantly, while the early space industry was exclusively contracted by governments to provide equipment, since the 1980s it has branched into independent system providers. This was the result of several converging developments: political demands for cost reductions and efficiency particularly following NASA disasters; the neo-liberal trend of deregulation during the 1980s; and internal "maturation" of the space industry (Hertzfeld 2007: 215).

The Reagan administration of the early 1980s emphasized that the US should "obtain economic and scientific benefits through the exploitation of space, and expand United States private-sector involvement in the civil space and space-related activities". In 2010, President

Obama stressed that because of the recently experienced global financial crisis, "the US would need more partnerships, with other countries and with the private sector" (Smith 2010: 20; cf. Chen and Macauley 2011). The US has clearly de-emphasized its ambitions for superpower "leadership" in space politics, highlighting instead that America cannot "go it alone" (Logsdon 1992). Importantly, the Obama administration has made clear that future manned spaceflights – perhaps the most controversial issue of all in contemporary space policy – should be based on a *partnership* between NASA and the private sector (Smith 2010: 22).

Developments are similar in Europe, both on the national and on the international level. The UK government for instance, launched a public-private partnerships policy in 2000 for the defence and security industry. Transnational PPPs for European space policy have also been advocated (Sadeh et al 2005). This does not only imply greater reliance on private funding (including from transnational giants such as Boeing, BAE systems, and Thales), which is significant on its own. This also explicitly opens the opportunity for private enterprise to take on *responsibilities* for providing public services, including satellite systems and other space "infrastructures" (EMCC 2011). In 1995, Handberger wrote that the role of private enterprise in military space activity "remains that of vendor and contractor" (Handberger 1995: 8). This is no longer an accurate description. The new trend of endowing or endeavoring private enterprise with public responsibilities not only strengthens private authority, but also blurs the distinction between "public" and "private" at large, in effect putting accountability at stake (cf. Ferguson 2003; Bexell and Mörth 2010).

European space policy has from the beginning of the space age emphasized industrial involvement and development, and this approach has been reinforced over time. The creation of the ESA in 1975, which replaced previous coordinating organizations, reflected a "bottom-up" approach, initiated and strongly influenced by scientists and industrial lobbies rather than statesmen (Sheehan 2007:85). The ESA also gave contracts to transnational consortia rather than to individual firms, which spurred the development not only towards industrial cross-boundary mergers, but also towards broader transnational networks involving national space agencies, ESA, the European (EU), Euratom, NATO, and the multinational space industry (Sheehan 2007:85). Perhaps the most noteworthy achievement of ESA was the development of the Ariane launcher, symbolizing not only an independent European space capacity, but also European integration more generally. While initially more passive, the European Union has over time carved out an increasingly salient position in European space policy, particularly with the Lisbon Treaty. EU space policy has developed partly in cooperation with the ESA and other agencies and consortia, but has also emphasized independence, symbolized by the Galileo satellite system – "the flagship" of EU space policy (European Council 2008). Much as the ESA did already in the 1970s, the EU has more recently emphasized the significance of private enterprise in space and the significance of space programs for the economic development of the EU more generally (European Commission, DG Enterprise and Industry 2010).

Both in academic and in policy circles, the rise of private enterprise in space is often referred to as the "commercialization" of space (Chen and Macauley 2011; Kosmo 1988; Peeters 2003). For two reasons however, we argue that the notion of "commercialization" of space is misleading. First, it gives the impression of purely private activities, whereas a large number of space programs are in fact public-private partnerships. Space policy – like other global issues – is increasingly developed through global governance structures – complex, multilevel and multinational endeavors involving national governments and agencies, intergovernmental and supranational bodies, transgovernmental coalitions, industrial consortia, individual corporations, and the science community.

A second reason why the term "commercialization" is misleading is that it may give the impression that programs concern purely civilian applications and activities. This conceals the increasingly blurred distinction between civilian and military applications, through so-called "dual-use" technologies and systems such as the Global Positioning System (GPS), Global Monitoring for the Environment and Security (GMES), and GLObal NAvigation Satellite System (GLONASS). Perhaps less well-known, this also conceals the development of private enterprise in military and security-oriented activities – a clearly expanding domain of space policy.

In his 1994 book on private enterprise and space policy Handberg claimed that the distinction between military and civilian space policy had grown. This was a controversial observation already then, and current developments have clearly gone in the opposite direction – military and civilian dimensions of space policy are increasingly interconnected. The space policy literature typically relates this development to the employment of dual-use technology, particularly satellite surveillance technology, and to a general trend of engaging private enterprise in public policy programs (Sadeh 2011).

We suggest an additional explanation for the increasing interconnectedness of civilian and military space policy, which has not been observed in space policy studies: the tremendous growth and broadening of the "security" industry, which incorporates but also goes beyond what previously was termed "military" or "defence". With the end of the Cold War and the ensuing downsizing of defence budgets, the defence industry began looking for new markets and opportunities. Industrial intelligence, environmental monitoring, counter-insurgency, crime fighting - and above all counterterrorism - have become booming new market sectors, particularly after the events of September 11, 2001. The security market has attracted both the old defence industry as well as the industries of information and communication technology, aerospace, computers, and nanotechnology, to name but a few. Expanding and diversifying corporate profiles of flourishing giants such as Finmeccanica, EADS, Lockheed Martin, Thales and Raytheon to name but a few now include sector specializations offering diverse "security solutions" "homeland security" and "crisis management" services to respond to the "new" or "changing" security climate. The European Organisation for Security

(EOS), the most powerful defence and security lobby within Europe[5] makes clear their wishes of a broadening of the traditional defence industry concept to a security defence concept with a specific industrial policy. EOS argues that "security is a relatively new market sector which needs stronger support through the definition and development of a comprehensive and sustainable model for security with a specific industrial policy which will help to make security a strategic sector for Europe" (EOS 2009: 4). In their own words, this EOS-proposed "security industrial policy" would differ from a "defence industrial policy" by expanding the domain for dual-use technologies, as well as for products and services which do not have any clear military applicability (EOS 2009:4).

An example of how space policy is simultaneously blurring the military-civilian distinction and increasingly involving private enterprise is found in the recent framing by the European Union of space as a "critical infrastructure". The notion of "critical infrastructure protection" (CIP) originated in the American context (Dunn 2005; Mueller 2006) and is now an established concept in western industrialized nations. CIP can be viewed as a rhetorical device in which certain infrastructures (and in the case of the US, "key resources" as well) are prioritized, for example financial systems, energy, information and communications technologies – as being of particular value for national or international security. It is noteworthy and generally observed that most infrastructures deemed "critical" are largely owned and operated by private actors (Dunn 2005).

In the 2008 European Council Resolution "Taking Forward the European Space Policy", space is added to the list of "critical infrastructures". Moreover, the significance of private enterprise for space policy in general, and for space *security* policy in particular, is highlighted. The Resolution states that the aim is "achieving a substantial increase in the coordination of space, security and defence-related activities" (European Council 2008). The Resolution explicitly acknowledges military usage of the European space programs Gallileo and GMES (Global Monitoring of Environment and Security), emphasizing that these are "civilian systems under civil control". It is also noteworthy that the latter program, GMES, was originally limited to "Environmental Security". Soon however, this was changed to "Environment *and* Security", thus broadening the scope far beyond environmental issues, including also counter-terrorism and all sorts of national and international security issues (Pasco 2006: 16).

[5] EOS represents "about 2 million employees worldwide and more than 20% of the global security market. EOS Members, ranging from security solutions and service providers to users and technology providers, represent all the major sectors of the economy (ICT Information and Communication Technologies, defence, civil security, energy, transport, finance, services and research)." (EOS 2009). Members include "Amper, ASD, CORTE, ERTICO, Alcatel-Lucent, Altran, Atos Origin, Avio, BAE Systems, Bumar, CEA, Cotecna Inspection, D'Applonia, Dassault Aviation, Diehl, EADS, Edisoft, Engineering Ingegneria Informatica, Fincantieri, G4S-Group 4 Securicor, Hellenic Aerospace Industry, Kemea, IBM, Indra, Iveco, Saab, Sagem Sécurité, Selex Sistemi Integrati/Finmeccanica, Siemens, Smith Detection, Telectron Euroicerche, Telvent, Thales, TNO. (EOS 2009: 2).

Political and corporate actors alike are driving the pursuit of dual-use technologies and dual-use space technologies within the EU and EU security policy. A recent "EU Parliament Report on the European Security Strategy and ESDP" by the Committee on Foreign Affairs urged for among other things, dual-use applications. This motion included a critical minority opinion which was rejected with 57 against and 11 for. The parliamentary critics "condemn" the militarization of the EU in general and of space in particular, including the use of Galileo and GMES for security and defence (European Parliament 2008: 12).

Such critical voices have not thwarted the pursuit of dual-use technologies in EU security policy however, including space security policy. Several European agencies as well as the security industry lobby (EOS 2009:2) are advocating dual-use strategic development. At a 2008 Workshop on "Critical Space Technologies for European Strategic Non-Dependence" , Dick Zandee of the European Defence Agency (EDA) pointed out that the EDA is "working closely with the Commission on seeking civil-military synergies in R&T, such as for communications, reconnaissance in the air (UAVs) [Unmannned Aerial Vehicles] as well as observation from Space (GMES)" (Zandee, 2008:2).

As mentioned, the Global Monitoring for the Environment *and* Security (GMES) referred to above was originally conceived of as Global Monitoring *for Environmental Security* (Pasco, 2006:16). This reframing is a widening far beyond the original focus on environmental concerns and implies a clear window of opportunity for shaping the agenda and helping facilitate the prioritization of dual-use technologies.

Conclusion

Outer space is no longer the sole domain of governmental power. The rise of private authority and complex multilevel governance has been observed in many other policy domains, particularly concerning the environment, human rights, development, and political economy. Yet space, traditionally the domain of state-centric and realist power politics, has proven not immune to the emergence of features of global governance, particularly the rise of private authority. Importantly, this paper shows that while military and security issues are as significant as ever in space politics, private authority is also emerging in these "high political" domains. Several parallel developments have contributed to the rise of private authority in space: increasing costs of space exploration; a series of failed and in some cases disastrous governmental space programs; tightened budgets for governmental agencies; shifts in political ideology favoring private management models and initiatives for public purposes; and advancements in dual-use technology. The recent global financial crisis seems to have strengthened the push towards private authority and public-private partnerships.

The preceding observations imply a contribution to space policy studies, which generally has been strongly focused on states as unitary and solitary actors. These observations should also be considered a contribution to the literature on global governance, particularly that which focuses on private authority and public-private partnerships. This paper has made the case that private authority is rising in space politics, and argued that this subject is worthy of further study. Systematic investigation of how and under what circumstances features of global governance are emerging in space politics should be explored further. Case studies and comparative analyses of governance in and across particular space programs, countries and time periods are called for.

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