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Why go to Space? Justifications, Motivations and Contributions to the Contemporary Debate on Space Power

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Pourquoi aller dans l'espace ? Justifications, motivations et contributions au débat contemporain sur la puissance spatiale

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TEXT

- 1 After decades of neglect, the central question of the motivations and drivers behind space exploration has made a remarkable return. The first reason for this is bound up with what some authors have called the "crisis" of space policy to designate the existential malaise about the path taken by the space industry since the end of the Cold War.¹ The timing is indeed revealing, both of a loss of substance caused by space becoming something banal, certainly useful but invisible and unambitious, and second by the loss of identity in a context marked, in Europe, by increasing Europeanization, companies restructuring, and the dilution of the historical equilibrium in favour of demands that had hitherto been a minority, such as "financial logic."² This shift marks the transition to a new era (the "second space age" as described by William Burrows³). Above all, it illustrates the normalization that has taken away the glorious and heroic character of space, and in particular, the specificity and identity of some activities related to human spaceflight, which has become obsolete if not ana-

chronistic and moreover, very expensive. This crisis can be seen in a new search for meaning. If space exploration should not and cannot be justified as an end in itself, as the expert commission set up by President Obama in 2009 pointed out, then the question of "why" remains open.⁴ "Where there is no vision, people suffer," said two French members of parliament in a 2007 report.⁵

2 A second explanation is provided by the arrival of emerging countries and other new space programs flourishing in China, India, Brazil, South Korea, Turkey, South Africa and Pakistan. These countries reproduce more or less faithfully the path followed by established space powers, albeit in their own way with their own priorities and national methods. Yet, they follow a series of steps known in advance since they have already been done, and this in a gradual and familiar process of mastery. By following in the footsteps of their elders, the image that these new developing "space nations" grant to their predecessors is at first positive, although it is ultimately synonymous of increased competition. It is both a confirmation of the value of investments made when the benefits were far from certain, and proof of the wisdom of the new direction space has taken towards more commercial applications. The spectacle is much less flattering when it comes to projects of prestige, such as human flight, for which China is the archetype.⁶ The fact that emerging countries adopt a path of emulation as much as one of departing from the beaten path and social creativity is a worrying sign. Their persistence, which no one believes to be unthinking, in engaging on a path that the judgment of history has rejected raises questions about motives, which incumbent space powers have lost the habit of answering.⁷

3 Although this question of "why" may well be increasingly important, its assimilation is imperfect and still very partial. A careful and broad review of the relevant literature shows that research on the goals of space can be classified into three major approaches: justification, compelling rationales, and connection. No doubt it is important to distinguish studies focused on preliminary documentation from those inspired by a more academic approach, but it is not my intention to discuss this dichotomy here. The contributions to the debate, other than those than the fact that arguments are often muddled, are equal on both sides and have both strengths and weaknesses. Although prolific and of varying quality, the writings by space actors

themselves have some excellent forums that merit existence, such as the English language publications *Space Policy*, *Astropolitics* and *Acta Astronautica*. Similarly, the proliferation of studies in history, sociology and public policy has contributed its share of responses and stimulating ideas, but these sometimes fail to have enough perspective given the magnitude of the task. It is good to seek assistance where we can, to promote discussion, stimulate questioning across disciplines, and initiate comparative work. Therefore, the contribution of theories of international relations (IR) is briefly discussed in the last section, based on the example of space in France.

1. Literature of "Justifications"

- 4 This first current of research, and by far the largest, covers what we may term the literature of "justifications". The choice of this negatively connoted label is naturally debatable. The primary objective of these studies, as they claim, is not so much to sell a program as to show its merits, that is to say, to demonstrate the correctness and seriousness of the political or commercial rationale behind the program and the technical feasibility of its implementation, without, at least initially, any ulterior motives. The term "strategic issue" is repeatedly used here when dealing with space, without examining the meaning of that term.⁸ Similarly, the persistent difficulty in measuring accurately and comprehensively the socio-economic impacts of space activity, which is financed largely through public funds, does not mean that such effects do not exist.⁹
- 5 Nevertheless, this body of literature can and should be treated with caution, if not with suspicion. Even beyond the opportunist argument circumstantial arguments that people may make for a particular project, justifications are normative and prescriptive by definition. While they do not necessarily imply a dishonest or misleading approach, they reflect a defensive attitude and therefore convey a distorted view of reality: their goal is to present an action in a way that avoids possible criticism or challenges. The only thing that matters for these justifications is expert, problem-driven analysis, trying to have an effect and influence the decision, to the detriment of an approach primarily motivated by theory-driven understanding. This approach lacks critical distance, and no distinction is thus made between the

official reason given for doing something and the real reason driving it; both are simply mixed together. The mistakes of the European Galileo program are a good example.¹⁰

- 6 Despite its apparent clarification efforts, this varied literature, by definition, cannot refrain from a relatively vague portrait of space activities. Behind the economic arguments often hides a political argument such as using space technology to remain relevant in the broader area of high-tech. Similarly, the narrowness of the space sector, as it is, encourages us to see only the tip of the iceberg—its impact goes far beyond the sector. The National Centre for Space Studies (CNES) calculated that, for every € 1 invested, € 20 in economic benefits are generated. The issues or benefits that are commonly cited illustrate this permanent back-and-forth: the consequences that must be taken into account to justify continued public investment might thus be both direct and indirect, tangible and intangible, material and immaterial, and short term and long term.

2. Literature of "Compelling Rationales"

- 7 Although it is never explicitly stated, the objective of this second literature is, in a certain way, to go beyond the famous triptych which all classical political philosophers have referred to since Thucydides spoke of the "most compelling reasons," which were "honour, fear and interest."¹¹ This body of work uses an inductive approach, as a result of observing the preferences of policy makers during the past six decades. Studies availing themselves of this logic thus have in common the production of a detailed narrative of motivations, indicating why a given society (generally the United States) has embarked on such and such space activity at this or that time, under these constraints, and hoping for those benefits. The first-ever study on the subject, the most comprehensive to my knowledge, was written by political scientist Vernon van Dyke in 1964. He distinguishes various objectives that claim to be in the national interest: national security requirements (immediate and potential military applications - today we would say passive and active), the continuation of peaceful activities, the pursuit of prestige, international recognition and national

pride (self-esteem), the progress of scientific and technological knowledge, and economic and social development.¹²

8 Space exploration, particularly human flight, have naturally been the subjects of sustained attention from American authors claiming this heritage. John Logsdon explicitly follows in the wake of van Dyke when he identifies "power and glory" - what he elsewhere calls leadership - as the fundamental factors underlying the US civil space program.¹³ The historian Roger Launius, meanwhile, finds that as many as five themes recur regularly, albeit to varying degrees, in the range of motivations that US policymakers have used to allocate budgetary resources to human spaceflight programs since 1958. This inventory includes the desire of humankind to constantly expand its scientific knowledge, national security and military applications, economic competitiveness and commercial applications, human destiny and the need to ensure the survival of the species, and geopolitical factors such as prestige.¹⁴

9 This literature falls somewhat between two poles; although it is no longer done only by space actors or enthusiasts but academics who follow more rigorous methodologies, it still has a vision of space as an end in itself and evolving nearly in a vacuum. In so doing, the tendency is great to fall into reductionism, and this is especially the case when it comes to prestige. Too often, in fact, these authors see prestige as a trap, and the nation that succumbs to it to the detriment of a "useful" space, would be by definition guilty of "irrationality."¹⁵ The most cited example is of course that of NASA, whose *raison d'être* - immoderation - is for the worse rather than for better in general opinion, and was long embodied by the Apollo program. A less biased and one-dimensional contextualisation is lacking here, which is needed if the study of motivations is to recover all its richness.

3. Literature of "Connection"

10 The third current in this review of the space literature differs from the previous two in that it only addresses the question of "why" to be able to better answer the next logical question of "how". How does technology serve a political purpose that goes beyond the technology? More specifically, how is space used as a vector of meaning? This literature, which for this reason I suggest calling "of connection,"

can be usefully broken down into three levels of analysis that, in international relations, constitute three ways of addressing a question: the international level, that is to say, the international system that uniformly imposes its reasoning on the units that compose it; the internal structure of States; and finally the individual level.¹⁶

- 11 According to the American Walter McDougall - to whom we owe *The Heavens and the Earth* (1985), a seminal although already old work on the birth of Soviet and American space programs - the space age was born of a triple connection: 1) it was the result of the bipolar structure of the international system that characterized the competitive relationships between the United States and the Soviet Union; 2) then from the new relationship called "technocracy" that rapidly emerged after World War II between the States and technological progress; and 3) the product of the imagination of individuals and key people, including engineers and chief designers as well as policy makers and "opinion leaders."¹⁷ While McDougall navigates easily from one to another of these, most authors generally tend to choose one from these levels as their preference and priority.
- 12 Three examples rich with lessons can be cited. One of the most comprehensive analyses to date on the influence of popular conceptions of space exploration is political scientist Howard McCurdy's *Space and the American Imagination* (1997).¹⁸ For McCurdy, if certain individuals who had been won over to the cause of space exploration such as Wernher von Braun were able influence the United States' space policy, including Kennedy's historic decision to go to the Moon 1961, it was because they managed to convince the general public of their ideas, by playing both on cultural representations (e.g. the "frontier" myth) and the spectre of the Soviet threat (the Cold War).¹⁹
- 13 Xavier Pasco's *La politique spatiale des États-Unis* [Space Policy of the United States] (1997) is one of the few scholarly books published in French on the subject. It explores the second level of analysis, focusing on the stakes of power within the American political system.²⁰ His purpose is to show how US space policy was developed and specifically, how political debate brought it to life as a concept and framed its evolution over time.²¹
- 14 The first scholarly study ever written on space and the military worthy of the name, *The Militarization of Space* (1985) by Paul Stares,

uses the framework of the bipolarity of the Cold War to analyze the development of the military space program of the United States through the various administrations following Truman.²² The main merit of this work is to explain convincingly why the militarization of space was so limited and selective.²³

4. Research opportunities: the internationalist perspective

15 Let us now turn to look at the theories of international relations. The positivist as well as post-positivist approaches traditionally associated with this field have already been applied successfully to space activities, as attested by works such as *The International Politics of Space* (2007) by Michael Sheehan and *Arms Control in Space* (2013) by Max Mutschler.²⁴ Although these theories are part of a continuity of historical philosophical thought, I will simply note here that they are mostly rooted in three traditions that can be distinguished by the point of view they adopt on international relations: realist, liberal and globalist.²⁵ All these approaches offer a fresh look at the question under study here. To evaluate their usefulness, I will focus on a challenging case of a search for status and recognition – incorporating an instrumental and strategic, even military, logic – in the hope that by being able to explain it, we can then apply it to other, more probable cases of space activity and better take it into account.

16 It has often been said that France's continued interest in space since General de Gaulle's decision to create the French Space Agency (CNES) in 1961 was due largely to the France's desire for autonomy.²⁶ Autonomy is important for France because it is related to its great power status. Yet this status, without which France would no longer quite be France, implies responsibilities.²⁷ Space power allows the country to assume these responsibilities and therefore to define itself less in a material way, as is conventional (access to space is equivalent to access to an exclusive club), than in a normative way (missions). Thus, we can distinguish a national responsibility based on the realistic approach, an international responsibility centred on a liberal approach, and a humanitarian and environmental responsibility defined by the globalist approach.

4.1 National responsibility

- 17 With a realistic conception of responsibility, the role of decision makers - the servants of the State - is primarily to defend national interest and more specifically the security and prosperity of the State and its citizens. Defined simply, national interest means to preserve a country's freedom of action. However, freedom of action proceeds from freedom of decision, and the freedom to decide what constitutes the interests of the State derives from the freedom to decide what its responsibilities and duties are. This postulate explains why a State is generally reluctant to see its interests and duties depend on the will of another State, however laudable its intentions may be. Without the discrete and permanent capacity to non-intrusively access the entire world offered by satellites, France would have no choice but to subject its decision-making to others' means. Space is thus essential: in the words of the former defence minister, Michèle Alliot-Marie, "...mastery of space has...become a major factor of power and sovereignty. The stakes are comparable in nature to those of deterrence in the 1960s."²⁸
- 18 She says this with good reason, as space systems enable monitoring of nuclear and missile proliferation, enhance the credibility of deterrence, and verify the implementation of treaties. Similarly, only access to controlled (matched and recurring) information is able to provide an objective picture about situations in which France is required to take decisions that commit the country (go to war, vote at the UN Security Council, diplomatic posturing, etc.). But the autonomy of decision-making only truly makes sense if it is accompanied by the means for autonomy of action. Thus, space constitutes "one of the capacities that could make the difference in future conflicts."²⁹ While in the past, space had an essentially monopolistic function, it is now an "efficiency amplifier" helping the armed forces - a potential vividly revealed during the French intervention in Libya in 2011, and in Mali and in the Central African Republic in 2013.³⁰

4.2 International responsibility

- 19 According to a broader conception, policy makers also have external responsibilities arising from a State's membership in international so-

ciety, which imposes on them the rights and obligations of diplomatic practice, of international law, and the various treaties and agreements that they have established. In other words, the heads of the executive branch are not only accountable to the citizens of their country, but also to their foreign counterparts. This is particularly the case for the head of a great power whose actions have, by definition, a major impact on the course of international relations. However, as a potential factor for disorder, great powers are also individually and collectively the guardians of international security and stability. This status is double-edged: it is both a sign of recognition and status ("prestige is reputation for power"), and a burden that must be shouldered and, facing that responsibility, states have to live up to it ("with great power comes great responsibility").

- 20 Thus, although in its eyes, France must have high-performance space systems to enable it to influence world affairs, it is also to be consistent with its permanent membership in the UN Security Council and to be able to judge for itself what is and is not a threat to peace under Chapter VII. As stated by Michèle Alliot-Marie: "For a country that intends to be a key strategic player on the world stage, the status of space power is. . .as indispensable as that of nuclear power. Refusing to allow space to be the monopoly of one country, is to help create a balance between powers in the future and prevent the temptations of unilateralism."³¹ In this logic, as a responsible actor, France is opposed to space becoming a battleground and argues for negotiation of confidence-building and transparency measures at the international level that would be able to improve the safety of space activities for the benefit of all space actors.

4.3 Global responsibility

- 21 There is a third and final view according to which leaders are also invested with a dual responsibility with regard to the whole of humanity, with whom they share suffering and hopes as human beings, as well as the same habitat, this "spaceship Earth" that protects its passengers from the deadly turmoil shaking the rest of the cosmos. Not only do decision-makers have a duty to assist their fellow humans around the world, they also have the responsibility to protect this common heritage and pass it on intact to future generations, perhaps

in better conditions than they received it. Where realists focus on defending solely national interest, including recourse to war if necessary, the globalists start from the opposite premise of a community and a solidarity of interests; where liberals see an international society requiring States to act responsibly, globalists see a global society inciting all people to work together.

- 22 It is as a humanitarian that France is one of the founding countries of the international Cospas-Sarsat program of satellite search and rescue, alongside the United States, Canada and Russia, which in thirty years of existence has saved the lives of over 35,000 people. It is also for these reasons that France has created, with the help of the European Space Agency (ESA), the International "Space and Major Natural Disasters" Charter that offers free satellite images of devastated areas to those in need after a disaster. Satellites are also crucial for monitoring climate change and successfully implementing sustainable environment management policies: a strategic priority that France has set itself, both individually and in international (TOPEX-Poseidon) and European projects (EUMETSAT, Copernicus). "Space for the Earth," the French Space Agency's slogan since 2004, sums up its role of global stewardship that the agency takes to heart. This mission can also be extended to the Earth's orbit as reflected in the term "citizenship" behaviour, which is its mission regarding new space debris.³²

Conclusion

- 23 The growing interest of the European Union for space activities suggests the potential of this model, providing that it is developed in greater detail.³³ In fact, the role of European institutions in Brussels since 2009 in space is particularly significant, in that it testifies to an increased politicization of space at the European level. This trend has been enhanced by developments taking place at ESA itself. The shift to the economic and industrial benefits of space, in particular starting from the Ministerial Conference of Member States in 2012 during the economic slump in Europe, has shown the new role assigned to space in Europe. A second step in this direction was taken at the next Ministerial Conference in December 2014. The emphasis on access to space, a strategic issue *par excellence*, has somehow forced European

space actors to raise the question of their future, what they want to do in space, and why. These two questions are important because they go beyond the question of space itself, and touch the problem of how Europe sees itself not only as a space power but also as a power in general. Finally, the third building block, Europeans' reliance on space systems, is now such that it can be ignored. It is as much a sign of vulnerability, susceptible to harm but against which it is possible to protect oneself (space surveillance), as it is a sign of maturity that must be assumed, like other major countries (USA, Russia, China), if the European space sector wants to last over the long term. It is part of its responsibility and its status.

NOTES

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- 3 W. E. Burrows, *This New Ocean: The Story of the First Space Age* (New York: Random House, 1998).
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18 H. McCurdy, *Space and the American Imagination* (Baltimore: Johns Hopkins University Press, 2ndéd., 2011).

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31 M. Alliot-Marie, *Le chêne qu'on relève* (Paris: Odile Jacob, 2005), 183.

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ABSTRACTS

Français

La question des motivations et des ressorts de la conquête spatiale fait depuis quelques années un retour remarqué. Plusieurs raisons expliquent cela : de la normalisation de la technique spatiale qui, en ôtant à l'espace son caractère glorieux, a privé celui-ci d'une identité spécifique, à l'arrivée des émergents et autres nouveaux programmes spatiaux, qui cumulent logique d'émulation et logique de contournement, amènent les acteurs historiques à se poser des questions auxquelles ils avaient perdu l'habitude de répondre. Mais la question du « pourquoi » a beau être de plus en plus prégnante, son assimilation reste imparfaite. Cet article se donne pour objectif de faire un suivi aussi attentif que large de la littérature en montrant que les analyses sur le sujet peuvent être utilement classées en trois grandes approches : justifications, motifs impérieux et connexion. Cette revue révèle ce faisant une distinction plus large qui est l'opposition entre conquête de l'espace pour lui-même et pour autre chose. Cet article conclut sur l'apport des théories des relations internationales en lien avec l'exemple spatial français.

English

In recent years, the question of the motivations and drivers behind space exploration has made a remarkable return. There are a number of reasons for this: from the “normalization” of the space sector that has taken away the “glorious” character of space and with it a specific identity, to the arrival of emerging countries and other “new” space programs adopting paths of emulation as well as finding new ones, thus raising questions which incumbent space powers have lost the habit of answering. The question of the “why” may well be increasingly important, its assimilation is still imperfect however. This article aims at carefully investigating the relevant literature. It does so by showing that research on the topic can be classified into three major approaches: justification, compelling rationales, and connection. This presentation allows making a broader distinction between the conquest of space for itself and for another goal. The article concludes with the case of French space program to demonstrate the added value of international relations theories.

INDEX

Mots-clés

Politique spatiale, Motivations, Prestige, Responsabilités, Théories des relations internationales, Espace extra-atmosphérique, France

Keywords

Space policy, rationales, prestige, responsibilities, international relations theories, outer space, France

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