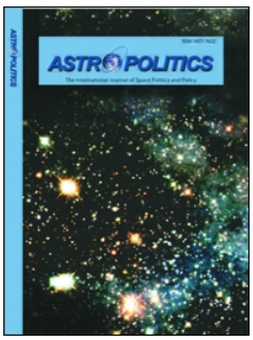

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Joan Johnson-Freese, Space Warfare in the 21st Century: Arming the Heavens

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BOOK REVIEW

Joan Johnson-Freese, *Space Warfare in the 21st Century: Arming the Heavens* (New York, NY: Routledge, 2017).

For as long as humans have pursued access to space, military interest has followed close behind. The early history of humankind's quest of space dominance is littered with instances where military and idealistic goals have run parallel: Germany's V-2 program, intercontinental ballistic missiles (ICBMs), and the U.S. Air Force's Manned Orbiting Laboratory (MOL), among many others. In fact, much of what concerned U.S. President Dwight D. Eisenhower at the dawn of the space age was the idea of freedom of access to space. Therefore, it should not be surprising that, as technology has developed along with our uses of and access to space, concerns about militarization and weaponization of space persist.

Joan Johnson-Freese's *Space Warfare in the 21st Century: Arming the Heavens* is a timely examination of these trends in military space. The broad argument is that the aggressive postures the United States has taken in recent years could result not only in a security dilemma, but outright weaponization of space. Implicit in this is the position that such an outcome is detrimental to the United States, and thus, should be avoided through rational, reasoned, and considered diplomatic action. Throughout, Johnson-Freese considers not just the increasingly aggressive posture the U.S. defense and national security establishments have taken regarding military space, but also the factors that have led to such a posture. These influences include the dual-use nature of space technology, the evolving nature of the space environment, and the military-industrial complex.

Well-researched and detailed, Johnson-Freese paints a picture of a national security establishment already well down the road to conflict in space. Such a warning should indeed be heeded; even though the history of space is intertwined with military uses, military history also provides numerous examples of where Thucydides' trap has been avoided. However, Thucydides' trap, or the theory presented by the Greek historian Thucydides that the rise of new powers often inspires conflict,[1] can only be circumvented with the willing cooperation of a nation's elected officials, not just the unelected bureaucrats driving policymaking. This important consideration is largely absent in *Space Warfare in the 21st Century*. There are, of course, significant reasons for focusing on the national security establishment; the civilian employees who are involved in devising strategy and policy positions largely determine the eventual choices that elected officials make. But at the end of the day, when it comes to making the ultimate decision of whether to engage in a conflict in outer space, the U.S. Congress and the president are the most important players.

To this end, this review does not offer so much a critique of Johnson-Freese's argument as an evaluation of the role that both the Congress and the president play in military space. Embedded in this is an analysis of the feasibility of Johnson-Freese's argument in today's political environment, given a president who is anything but analytical and is uninterested in the minutiae of policymaking. First, a summary of Johnson-Freese's book and the critiques she offers is provided. Following this, I focus on Congress and their role in determining the course of policy, and then the role of the president.

Avoiding a perilous outcome

The main concern animating *Space Warfare in the 21st Century* is that the United States is moving towards a security dilemma, which will be impossible to win and lead to increased conflict in space. As such, Johnson-Freese argues, "it is imperative that leadership periodically pauses to assess whether state policy goals (ends) are correct and whether the strategies (means) being pursued to achieve those goals are appropriate."[2] Presenting the picture of a country at the crossroads, Johnson-Freese begins the book with a review of recent U.S. strategies in regard to space, including the National Security Strategy (NSS) of 2010, the National Space Policy (NSP) 2010, the Quadrennial Defense Review (QDR) 2010, and the National Security Space Strategy (NSSS) 2011.[3] The theme throughout most of these policy statements is that "the focus is increasingly being put on military options, and even more specifically, deterrence by punishment."[4]

Reflecting on these strategies, Chapter One highlights the tension between space stability and dominance; stability is requisite not only for American operations in space, but for the operations of allies and private entities. The question, however, is how this stability is achieved. Increasingly, according to Johnson-Freese, space dominance and offensive counterspace have come to frame the major paradigm through which stability is found. As the rhetoric of the Obama Administration moved from strategic restraint to more militaristic overtones, Johnson-Freese argues that the likelihood for strategic miscalculation and even miscommunication increases the likelihood not only for warfare in space, but terrestrial and nuclear warfare.

Chapter Two undertakes an exploration of the current nature of the space environment, something that strategists have termed congested, contested, and competitive. Johnson-Freese attempts to conceptualize exactly what each of these terms mean and therefore the implications suggested by those definitions. For example, the fact that space is congested is clear; there are simply more and more satellites and debris in low Earth and geostationary orbits. As a result, greater space situational awareness (SSA) is called for, along with a focus on the means of debris mitigation. Likewise, the term *competitive* is also easily defined with more space actors competing for orbital slots and bandwidths. For Johnson-Freese, the more complicated aspect of congested, contested, and competitive is the idea of contestation. While the book details some of the elements involved, there is little connection between this chapter and the overarching argument of the book. A greater emphasis on the implications of each element would have been helpful in emphasizing what policymakers should take from this analysis.

At various times, space has been likened to both the high ground and the open seas. The purpose of these comparisons is often to try to get a handle on the complicated issues surrounding competing space actors. Other elements from both history and international relations theory are perhaps just as applicable as either the high ground or open seas analogies have been, despite their limitations. Chapter Three builds on the idea of Thucydides' trap; the country to which the trap most relates is China as a rising power, although Russia's continued aggressive foreign policy actions are also consequential.

Johnson-Freese begins this chapter laying out four schools of thought over the question of whether space war is inevitable: (1) that "US reliance on space… makes space dominance essential"; (2) "that weaponization is simply inevitable and therefore the United States would be remiss not to prepare"; (3) the limits should be placed on the militarization of space; and (4) that space should be seen as a sanctuary and therefore all militarization should be out of the question.[5] Although these theoretical positions are well-explored, what is truly interesting in Chapter Three is Johnson-Freese's description

of the Air Force Space Command's Schriever Wargames and the lessons learned from these events. One such lesson is that the "risk of escalation has not abated but, instead, potentially increased with the advent of technology that increasingly cuts into decision-making time and kill chains as well as the increased potential for mistakes and miscalculation due to congestion and more actors."[6] Johnson-Freese takes many of these cautionary tales and applies them to the rising power itself, China, emphasizing that there is no clear consensus on what Chinese intentions are and that confusion over such intentions can lead to conflict.

Like Chapter Two, Chapter Four seeks to define another alliteration: deter, defend, and defeat. Under the heading of deterrence, Johnson-Freese highlights the need to rely on the Department of State's diplomatic efforts to signal both what the United States would like other countries to do and the benefits of acting thusly. Johnson-Freese takes special exception to the so-called Wolf amendment, named after Republican Representative Frank Wolf from Virginia, who "inserted a clause into the NASA Appropriations Bill prohibiting any joint scientific activity between the United States and China involving NASA or coordinated by the White House Office of Science and Technology Policy (OSTP)."[7] Johnson-Freese argues that the United States could stand to learn much from cooperating with China, as well as increase communications and the diplomatic pathways essential to avoiding conflict. Tellingly, she writes, "The United States has been hamstrung by this ill-conceived congressional power play long enough."[8] This is but one example where an enhanced focus on the role of elected officials is important to understanding the feasibility of Johnson-Freese's recommendations. Although the national security establishment is important and influential, military space does not simply get to do what it wants; the Wolf amendment had to be passed by the entire U.S. Congress, so there was ample opportunity for change.

If the national space security establishment is so disposed towards militaristic and aggressive actions in space, from where do these ideas derive? What are the motivations driving the action? Johnson-Freese rightly lays blame at the feet of the military-industrial complex in Chapter Five. Without specifying the term directly, what Johnson-Freese describes is the classic iron triangle of the bureaucratic literature: a codependent relationship between Congressional oversight committees, bureaucracies, and commercial contractors. Both the bureaucrats and contractors have "a vested interest in maintaining threats to the United States that justify a significant defense budget," and members of Congress, in turn, seek to bring home economic benefits and jobs to their constituents. These overlapping needs and desires then "play into the definition of threats."[9] Using the example of missile defense, Johnson-Freese highlights the nature of these unseen players driving military space policy to places we may not actually wish it to go.

Chapter Six returns us to the idea of space stability highlighted in Chapter One; Johnson-Freese argues that stability is even more important today, with new actors, including private space actors, entering the space environment. This has led to a concern over space governance and the development of norms and guidelines regarding behavior in space. Johnson-Freese describes the types of activities that NewSpace actors (organizations owned and largely financed by individuals) are pursuing beyond human spaceflight. Ironically, NewSpace actors, Johnson-Freese notes, have been more willing to voluntarily work together in terms of space governance than governments have on issues of traffic management and situational awareness. These rather successful efforts are contrasted with the unsatisfactory efforts made through the United Nations. Although at times both the United States and Russia have sought to scuttle efforts to develop voluntary guidelines, Johnson-Freese writes that the "work at the United Nations is important as it allows for dialogue and, potentially, solutions to inherently global issues."[10]

The larger theme of the need for space diplomacy is brought home in the final chapter. Chapter Seven represents a holistic assessment of where space policy should go next, including an emphasis on greater cooperation with China to avoid a security dilemma. Johnson-Freese calls for a "grand bargain" of sorts with China that would find China and the United States cooperating on a wide variety of fronts, including the International Space Station and NASA's future mission plans to Mars. Although such cooperation could co-opt Chinese intentions and give the United States better access to Chinese intentions, China may also be hesitant to work on projects, such as a human journey to Mars, because of U.S. budgetary politics. Additionally, "proactive policy-making takes commitment, manpower, and money," particularly at the Department of State; unfortunately, none of those elements seem to be present at the current time.[11] Thus, two of the main recommendations that Johnson-Freese makes in this final chapter depend on politics propagated at the elected, not unelected, level, underscoring the need for an extended analysis.

National security state versus Congress

Citing Michael Glennon, Johnson-Freese explains that, "within the United States, there are actually two parallel governments operating. The first includes the three branches of government: executive, legislative and judicial branches. The second, the one that actually holds power, consists of a network of officials that makes up the nation's security apparatus."[12] While there are certainly strong arguments to suggest this, including normative preferences for experts to make policy, there is still quite a large and significant role for the elected branches of government. In this section, I argue that Johnson-Freese's recommendations need to be heeded not only by the national security apparatus, but also by members of the U.S. Congress.

Bureaucracies, whether they be the National Security Agency, the Department of Defense, the Department of State, or NASA, are undeniably important in policymaking. In my own work based on NASA, I argue that, in times of normal policymaking, sometime after a policy first becomes significant and absent some sort of crisis, the bureaucracy is one of two important actors, with the other being the House of Representatives.[13] What Johnson-Freese is arguing against is the idea of bureaucratic inertia or the sense that, without stopping to clearly think about where we are heading, the national space security organizations will continue down the road to militarization. We have seen the impact of bureaucratic inertia in space policy quite clearly in the experiences of NASA and human spaceflight. Tied to an idea of government-sponsored human exploration of space, NASA for years protected its dominance in this area, making Faustian bargains with presidents and the Department of Defense to protect and nurture the space shuttle, for example. The result has been an agency wedded to human spaceflight in its current incarnation, with little regard for future programs.[14]

While bureaucratic inertia has clearly affected NASA, so has Congress. Congress, along with the president, shaped the way NASA operates, particularly regarding budgetary concerns. While budgets are not the number-one concern of the national security space state, Congress creates and passes both the budget and legislation, like the Wolf amendment. To ignore this institution is to do so at our own peril. Often, Congress works hand in hand with the bureaucracy to craft policy, as detailed at numerous points in *Space Warfare in the 21st Century*. In addition to the iron triangle and the Wolf amendment cases, Johnson-Freese discusses efforts at an international code of conduct for space and notes that the "European Union lacked the persuasive powers and especially the diplomatic finesse to incentivize other

countries to partake…. And the United States showed little staying power, or leadership, to take the initiative forward, especially given domestic forces pushing for a more muscular, military-centered policy."[15] To understand why this is the case, we must understand those very domestic forces that Johnson-Freese cites.

Further, in proposing a grand bargain with China, Johnson-Freese expresses concern over the possible hesitancy of China to work with the United States on large programs that are subject to annual budgetary appropriations. No doubt, this has happened in the past, when the United States failed to fulfill legal commitments with European and other space allies when NASA has had to cancel or significantly rework international programs. The concern over budgets and space policy is not a new one; W. D. Kay took up this very question in his 1995 book, *Can Democracies Fly in Space?* Democratic politics, Kay argues, absolutely makes the pursuit of large, expensive projects fraught with danger and difficulty.[16] And while he suggests that longer-term budgeting would be helpful in cases like the U.S. space program, this is a problem inherent with democracy. If we want democracy and democratic politics, we take the good with the bad, the involvement of elected officials with the inconsistent budgetary terms. And it is this fundamental conflict that goes to the heart of the question of feasibility of Johnson-Freese's recommendations. If the United States wants to invest more in the Department of State, something the new administration is obviously unwilling to do,[17] and cut deals with China, the United States will ultimately need the backing and budgetary support of Congress.

President Donald Trump and military space

For decades, NASA has struggled to get the attention of various presidents, believing that if only they had a firm commitment from one, they could get the money and resources needed for another Apollo-like program. Unfortunately, human spaceflight and space policy in general are usually a third-tier, ancillary policy issue, rarely becoming important enough to grab the attention of a time-limited president.[18] On the other hand, national security and foreign policy are usually at the top of a president's agenda; in fact, NASA seized President Bill Clinton's attention in the 1990s as the International Space Station became a foreign policy tool for cooperation with Russia. However, national security regarding space rarely rises to the level of presidential involvement; in the strategies and papers cited by Johnson-Freese, Presidents George W. Bush and Barack Obama rarely make an appearance. This does not mean that presidents are not important actors. How feasible, then, are Johnson-Freese's recommendations in the new Trump Administration? Many commentators note that President Donald Trump is not thoughtful and deliberative. For example, concern arose during the transition period that the then-president-elect did not want to receive the Presidential Daily Briefing every day and that he preferred short, bullet-pointed, written memos.[19] Even so, the president does have the ability to affect two factors critical to Johnson-Freese's argument: the budget and those presidential nominees in the national security space state.

As the first mover in the annual budget negotiation, the president's budget sets not only the president's priorities and overall desires, but sets the agenda that Congress will debate; the first mover advantage is widely recognized as important in both economics and politics. On 16 March 2017, President Trump released his first budget proposal for fiscal year 2018, a proposal that could have significant ramifications for military space. In the first place, the president and many of his advisors call the proposal a "hard power budget" with significant increases to the Department of Defense. These increases demonstrate that the president is interested in strengthening the military, which could accelerate the militaristic tone that

Johnson-Freese takes issue with throughout *Space Warfare in the 21st Century*. On the other hand, the Department of State faces deep cuts to both budget and personnel. Shortchanging the Department of State and specific offices within it cuts short space diplomacy. Even the Secretary of Defense, James Mattis, opposed deep cuts to State and, in 2013, stated, "If you don't fund the State Department fully, then I need to buy more ammunition."[20] Secretary Mattis' comments coincide well with Johnson-Freese's argument: if we don't stop to consider where we are going along with what our end goals are, we are likely to end up in a situation that is far worse than anticipated. At least as far as NASA goes, Congress rarely allocates funding above what is recommended by the president. While this is not necessarily the case for military space, it does demonstrate the influence of presidential budget proposals.[21] Of course, as discussed earlier, Congress does have the final word, and both Republicans and Democrats have expressed deep concern and skepticism over the president's proposal, including Republican senators John McCain (Arizona) and Pat Roberts (Kansas), and Republican representative Mike Conway (Texas).[22]

A second area where President Trump is likely to have a major impact is in who he appoints to head the various national security organizations throughout government. Research in political science repeatedly shows that executive appointments are one of the most effective means of controlling the federal bureaucracy.[23] Further, since Nixon, presidents have increasingly focused on executive appointments further down the bureaucratic ladder. In President Trump's case, this has resulted in disagreements between the White House and Secretary of State Rex Tillerson and Secretary of Defense Mattis over who will fill these positions; several months into the administration (over 100 days), most of these positions remain unfilled, leaving both departments shorthanded.[24] Whoever the president ultimately appoints, in addition to the principals, will have a significant impact on the shaping of space strategies of the kind Johnson-Freese discusses. In fact, his major cabinet nominations do signal a more militaristic, hard-power-type policy position: Secretary of Defense James Mattis is a former general and the current National Security Advisor, H. R. McMaster, remains an active-duty, three-star general. Although it is unlikely that the president will have a direct impact on the substance of future strategies and policy positions, the people he decides to put in charge will.

While the budget and executive appointments are the two major ways that presidents can impact military space, at the end of the day, the president is ultimately the one who can take interest in an issue and change its inevitable course. Trump does not appear to be interested in space, beyond familiar platitudes regarding human spaceflight. Perhaps the prospect of a major negotiation with China or even Russia will gain his interest, though, short of a major crisis, Johnson-Freese's calls for greater space diplomacy are likely to go unheeded.

Prospects for change

Change is difficult and even more so for the world's largest government. Quick shifts in policy are challenging, being likened to turning an aircraft carrier. The beginning of a new administration is certainly an excellent time for Johnson-Freese's work, as new principals begin their work. But bureaucratic inertia is hard to overcome and new positions can be controversial. To change our heading, the perfect combination of timing, circumstances, resources, and personnel is necessary. Focus on the national space establishment is an excellent place to start, but without a concurrent analysis of the political conditions fostering bureaucratic deliberations, we are likely to miss forces shaping policy outcomes. Johnson-Freese's *Space Warfare in the 21st Century* is a timely and excellent read, even though bureaucrats would do well to remember their democratically elected bosses. While this combination of expert staff and

political bosses may not always result in coherent and rational policy outcomes, as Kay reminds us, this is all part of the democratic ideals under which we live. Surely, to paraphrase Shakespeare, the course of space policy never did run smooth.

Notes

1. Joan Johnson-Freese, *Space Warfare in the 21st Century: Arming the Heavens* (New York, NY: Routledge, 2017), 56.
2. Ibid., xi.
3. Ibid., 1.
4. Ibid., 3.
5. Ibid., 57.
6. Ibid., 64.
7. Ibid., 84.
8. Ibid., 87.
9. Ibid., 106–107.
10. Ibid., 157.
11. Ibid., 173.
12. Ibid., 16.
13. Wendy N. Whitman Cobb, *Unbroken Government: Success and the Illusion of Failure in Policymaking* (New York, NY: Palgrave Macmillan, 2013).
14. Roger Handberg, *Reinventing NASA: Human Spaceflight, Bureaucracy, and Politics* (Westport, CT: Praeger, 2003).
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16. W.D. Kay, *Can Democracies Fly in Space? The Challenge of Revitalizing the US Space Program* (Denver, CO: Praeger, 1995).
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