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SATELLITE ARMIES: THE RACE IN SPACE

— Theresa Hitchens

The world is at the cusp of a "New Space Age." Led by dynamic private sector entrepreneurs pioneering new technologies and pursuing exciting new opportunities, the number of satellites has increased over the past five years by almost 50 percent. This growth trend is expected to accelerate over the next decade.

While many of the most active "New Space" companies are based in the United States, other countries too are in this amazing race. Space start-ups are booming in India. Singapore and Luxembourg are investing in future space capabilities such as orbital debris removal and space resource extraction. Australia, for the first time, is standing up a national space agency. Canada's 2017 national budget included 80.9 million CAD in investment over the next five years for space projects, including quantum encryption of communications. In the near future, the world is looking at a jump from about 1,500 satellites to tens of thousands, providing services such as low-cost Earth imagery, global Internet connectivity, asteroid mining, and even Moon and Mars exploration.

But we are in danger of strangling this revolution in its cradle, because war in space is no longer unthinkable. Indeed, for the past few years, the United States Air Force has been waging a vocal campaign to convince policymakers, Congress, and the public that US satellites are under imminent threat. General John Hyten, head of United States Strategic Command, stated on August 8, 2017: "The No. 1 problem we face is being outpaced by our adversaries. The actions we take today will assure continued American dominance, especially in the critical domain of space." Thus, the argument goes, the US military must pour resources into preparing to fight in this domain, including building offensive weaponry based on the ground and in space.

Sadly, there is a kernel of truth in this rhetoric. The same advances that are driving commercial and civil interest in new space missions have also enabled improved satellite attack capabilities. Almost all space technology is dual-use, capable of being employed for civil/commercial benefit or for offensive military purposes. For example, satellites that can autonomously maneuver to dock with another satellite could provide re-fueling and repair services and prolong the on-orbit life of expensive space hardware. Such satellites – which have been demonstrated and/or deployed by the United States, Russia, and China – could also be used to disable or destroy an enemy satellite.

Russia and China for decades expressed fears about the United States leading the world toward the weaponization of space, while at the same time diligently working to be able not only to "keep up with the Joneses," but also to hold US space assets at risk. This, from the perspective of Moscow and Beijing, makes sense. Many US satellites critical to national security are vulnerable, and losing them would make US victory in a war more difficult. So now, the Big Three space powers are engaged in a not-so-clandestine game of chicken. Washington, Moscow, and Beijing are using rhetoric to send signals — that are often misinterpreted, as one country's "deterrence" is another country's "threat" — while "poking" at each other's space assets to judge capabilities and responses.

This is no way to run a civilized Space Race. The increasing potential for satellite warfare will serve only to stifle the beneficial revolution in commercial and civil space activities. In most of the world, militaries actually rely on civil and commercial satellites for necessary services such as communications. When satellites become targets, these dual-use systems will not be exempted. Worse, if destructive anti-satellite systems are used, the quantity of dangerous space debris — already a serious problem — will skyrocket, putting all spacecraft at risk.

Investors, looking at increased risks, are likely to become more leery of sinking valuable capital into space systems. National security secrecy, already a barrier, will grow with concerns about "keeping a military edge," making necessary cooperation in space exploration and exploitation all the more difficult.

There may not be ways out of more serious military competition in space. But, there are ways to dampen risks of conflict and to constrain damaging wartime actions. In 2013, the United Nations approved a set of voluntary transparency and confidence-building measures designed to lay a foundation for establishing the trust required for the world to develop "rules of the road" to protect the safety, sustainability, and security of space. There are ongoing discussions in the Committee on the Peaceful Uses of Outer Space in Vienna toward the same goal. These diplomatic efforts have stalled in recent years due to heightened geopolitical tensions. Yet, diplomacy has never been more needed. In space, where the actions of any one player can affect all others, mutually agreed rules of the game are critical. And the only way to get there is through serious dialogue among not only the Big Three potential adversaries, but among all space actors.

The security of space is now central to human security for providing and improving the welfare of everyone on Earth, and even the planet itself. We need to be running in the same direction to maximize the benefits of space, not running at each other with pointy sticks.

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