

# 1AC – India

## 1AC – Plan

**Plan: The Republic of India should ban the appropriation of outer space by private entities.**

**The plan is enforced both internationally with UNCOPUOS and domestically through enforcement and liability regimes – solves best**

- UNCOPUS is given power over private entities – 3 separate branches formed
- Cost allocation is proportional to countries' space impact
- Domestic policies are passed uniformly
- Enforced with a variety of sanctions
- States with more defined space policies can diplomatically pressure others for uniformity

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A. **Empower UNCOPUOS or a New International Enforcement Body with Increased Authority over Private Actors** The space industry will likely benefit from a centralized enforcement authority that has actual regulatory, adjudicative, and arbitral powers.<sup>196</sup> In fact, Article XI of the Moon Agreement arguably calls for such an organization to create and enforce laws related to commercial activity.<sup>197</sup> Additionally, several countries have already advocated for a permanent specialized United Nations agency to oversee outer space activities, which some have deemed the "World Space Organization" ("WSO").<sup>198</sup> However, UNCOPUOS has yet to seriously consider a new overseeing body.<sup>199</sup>

**Nonetheless, UNCOPUOS and the international space law community should** either (1) create a separate U.N. body that enforces international space law on public and private actors, or (2) **enhance the authority of UNCOPUOS to do the same. One particular structure that the WSO can follow is that which is already established by other U.N. specialized agencies: it may hold an Assembly, a Council, and a Secretariat.**<sup>200</sup> The **Assembly may create policy, adopt amendments to international agreements, and ratify regulations and standards for commercial space activities. The Council may serve as an executive body that promotes cooperation among member states and international organizations.**<sup>201</sup> **Commercial space interests may be adequately represented on this Council by allowing representation for all space-faring state members.**<sup>202</sup> Also, representation from state members that are not the primary producers of commercial space activity, but serve as geographic hotspots for launching space activities, should be adequately represented on this board as well.<sup>203</sup> Finally, the Secretariat may facilitate administrative support for WSO's undertakings.<sup>204</sup> **Additionally, the WSO should incorporate a dispute resolution organ that can hold accountable the actions of private actors through their respective member states.** It should have the maximum enforcement capacity, such as by **requiring that all state members adhere to the tribunal's rulings. It should grant itself jurisdiction over private actors and allow these actors to bring a claim before the judicial organ as well, so long as the member states recognize the competence of the tribunal to consider the matter. Allowing cases concerning individual and private actors has already been established by many international courts and tribunals, such as the Permanent Court of Arbitration and various international human rights courts.**<sup>205</sup> As commercial space activity only continues to grow, the WSO should provide an adequate means for adjudicating claims resulting from these activities. Problems will undoubtedly arise from creating the WSO. Developing countries or states without a strong presence in outer space may contend that this framework will be inconsistent with the object and purpose of the Outer Space Treaty, which declares that outer space is to be the "province of all mankind."<sup>206</sup> Therefore, assurances must be made that developing countries or non-space faring nations will benefit from this organization.<sup>207</sup> For instance, the organization may help facilitate commercial space activities that would benefit these countries by providing greater technology and services. Technological advances in satellite imagery may help these countries mitigate environmental damage and warn them of impending natural disasters.<sup>208</sup>

**Another issue to address is how to establish an equitable cost allocation plan for this new organization. One idea is to allocate contributions based on the amount of tonnage launched per year by U.N. Member States.**<sup>209</sup> Another idea is to emulate the cost allocation structure already established by the U.N. General Budget.<sup>210</sup> **Regardless of the cost allocation structure provided, it should**

**equitably reflect the contributions that space-faring nations make and ensure that they front the bulk of the costs**

<sup>211</sup> As an alternative to going through the process of creating a new legal entity, UNCOPUOS could use its own established regulatory framework and expand its own powers to create a similar regulatory framework as described above. This seems like an intuitive step for a U.N. Committee that is already among the largest committees of the United Nations<sup>212</sup> and is currently the “only intergovernmental platform for fostering global governance of outer space activities.”<sup>213</sup> However, problems associated with expanding UNCOPUOS’s role would undoubtedly arise. In particular, there is actually no natural progression in transforming a U.N. General Assembly committee into an enforcement body since the General Assembly does not have enforcement authority under the U.N. Charter. The U.N. Charter may need to be amended to provide the General Assembly with such enforcement authority if expanding UNCOPUOS’s role were to actually be realized. Nonetheless, these barriers to greater enforcement are surmountable, assuming that the member states can defy the complex political tensions that exist within the U.N.<sup>214</sup>

**Creating the WSO or increasing UNCOPUOS’s powers will provide a forum for member states and private actors alike to facilitate space programs and should be reconsidered by UNCOPUOS.**

**B. Promote Firmer and More Uniform Standards Among Domestic Laws To some extent, all five international space treaties rely on states to implement their own domestic laws to fulfill the treaties’ obligations. The strength of enforcement lies strongly with the strength of domestic space law to enforce itself upon private actors. National space law should particularly focus on (1) creating firmer and more uniform standards for the national registration requirements of space objects and (2) broadening avenues of recourse when private space activity causes harm.**

However, individual states may lack the incentive to increase regulation, as it may reduce space activity launching from that particular state.<sup>215</sup> Time will tell whether these space-faring nations will overcome this collective action problem by placing the need for the safe use of outer space before individual state interests. While the Outer Space Treaty and the Registration Convention imparted an obligation on States Parties to implement registration requirements for space objects within their domestic law, they failed to “identify the contours of any particular licensing regime.”<sup>216</sup> This has caused an unevenness in registration requirements that have led to confusion and the failure to report space objects in outer space, as described infra.

**Additionally, this lack of conformity in national law has allowed private actors to travel to more lenient states to launch their objects into space, also as described infra. For states to authorize space activities and provide greater supervision over them, all space-faring nations should establish a uniform licensing and regulatory regime with adequate enforcement measures within them.**<sup>217</sup> To create uniformity among domestic registration requirements for space objects, the International Law Association (“ILA”) issued a model law for national space legislation.

<sup>218</sup> Notably, ILA’s model national law suggests that all national registrations should include certain information, such as the registration number of the space object, date and location of the launch, orbital parameters, and the function of the space object.<sup>219</sup> ILA’s model national law also lists extensive requirements for authorizing the space activity, including that the space activity be compatible with public safety standards, foreign policy, national security, and other standards.<sup>220</sup> This would prevent the situation created by Swarm, where it took advantage of India’s lenient safety standards to launch its hard-to-detect satellites.<sup>221</sup>

**Creating uniform standards for registration, including safety standards, would mitigate the risk of private actors forum shopping for the most lenient states from which to launch their space objects. States should also implement stronger enforcement mechanisms to motivate compliance with their respective national space laws and to harmonize their laws with other states. States’ enforcement mechanism schemes vary from sanctions such as license suspension or revocation, to fines and imprisonment. As for license suspension and revocation, the reasons for license suspension or revocation vary significantly.**

For instance, in the United Kingdom, the Netherlands, South Korea, China, and many other major space-faring nations, a license may be revoked if the licensee conducts actions that endanger national security.<sup>222</sup> Meanwhile, South Korea’s additional rule, that a license may be suspended if a launch has been delayed for greater than one year without cause, is not as widely adopted.<sup>223</sup> South Korea also imposes heavy fines (up to ₩50 million , or approximately U.S. \$44,387) and long sentences (up to five years in prison) for an individual who launches without a license. In contrast, France does not impose any sentence for launching a space object without authorization, but does impose a fine of up to €200,000 (or approximately U.S. \$257,000).<sup>224</sup>

**Some states (such as India and Switzerland)<sup>225</sup> have failed to enact any legislation concerning compliance to any safety and registration standards. In these cases, perhaps states with comprehensive compliance schemes (such as the United States and Australia)<sup>226</sup> may diplomatically pressure less regulated states to impose basic safety and registration regulations. At a minimum, all states should institute a regulatory agency that holds the jurisdiction to license space activities and enforce licensing and safety protocols.**<sup>227</sup> In addition to standardizing registration requirements and compliance mechanisms, more states should **provide adequate liability mechanisms** for private actors when the private actors’ space activity causes harm.

Currently, the Liability Convention puts total fault on a State Party for all harm caused by objects launched from that state. **To hold private actors accountable for their actions, and to mitigate**

**the risks of a “tremendous public payout” for private actions in space,228 governments should implement comprehensive domestic regulations of “safety and financial responsibility for private activities in space.”229**

Some states have already done so, but this liability framework is not universal.230 All states should place liability on the operator of the spacecraft, as is suggested by ILA's model national law.231 In relation to imposing liability on the operator of the spacecraft, all states should require a certain level of insurance and indemnification to allow victims to be adequately compensated. While imposing insurance and indemnification standards may seem like a natural progression in imposing liability standards, this requirement is currently missing from many state's domestic space law.232 In crafting insurance and indemnification laws on private space-faring actors, however, states should be careful not to create such a high liability risk to these actors that it would threaten the development of space innovation in this relatively nascent era of space commercialization.233 Thus, liability arising out of space activities should be limited.234

**While domestic laws are not “the perfect solution” for fixing gaps in enforcement, “they are easier to enact and more enforceable than any comparable international space law.”235**

**Increasing the strength of national space law as well as the uniformity among different states' national space legal regimes would undoubtedly result in greater enforcement upon private actors. Additionally, increased domestic regulation may in turn inspire the further development of customary and conventional international space law.**236

## **1AC – Adv-- Space Militarization**

**India space privatizing now – government development has been too slow; but that causes militarization– the government believes it needs to defend its private assets**

**Nanda 10/13** (Prakash Nanda has been commenting on politics, foreign policy on strategic affairs for nearly three decades. A former National Fellow of the Indian Council for Historical Research and recipient of the Seoul Peace Prize Scholarship, he is also a Distinguished Fellow at the Institute of Peace and Conflict Studies. October 13, 2021, As India Opens Up Space, How ISRO Could Help Indian Air Force Become An Aerospace Superpower, Eurasian Times, Prime Minister Narendra Modi on October 11 launched the Indian Space Association (ISpA) – the premier industry association of space and satellite companies.

<https://eurasiantimes.com/as-india-opens-up-space-how-isro-could-help-indian-air-force-become-an-aerospace-superpower/>)/ww pbj

He said: “Today is the day the Indian space sector receives new wings. **For 75 years since independence, Indian space has been dominated by a single umbrella of Indian government and government institutions.** Scientists of India have made huge achievements in these decades, but the need of the hour is that there should be **no restrictions on Indian talent, whether it is in the public sector or in the private sector.**

“In a way, the country has given a new gift to the **talent of India's entrepreneurs by opening up India's space sector in its 75th year of independence.** Let this collective power of India's population take the space sector forward in an organized manner. The Indian Space Association (ISpA) will play a huge role in this.” ISpA aims at contributing to the government's vision of making India “Atmanirbhar” (self-reliant) and a global leader in the space arena, which is fast emerging as the next growth frontier for mankind. **The association is supposed to engage with stakeholders across the ecosystem for the formulation of an enabling policy framework that will also work towards building global linkages for the Indian space industry to bring in critical technology and investments.**

Its founding members include Bharti Airtel, Larson & Toubro, Nelco (Tata Group), OneWeb, MapmyIndia, Walchandnagar Industries, and Alpha Design Technologies. Other core members include Godrej, Hughes India, Ananth Technology Limited, Azista-BST Aerospace Private Limited, BEL, Centum Electronics, and Maxar India. India Lagging Behind According to ISRO, the current size of the global space economy stands at about \$360 billion. **However, India accounts for only about 2% of the space economy with a potential to capture 9% of the global market share by 2030.** This needs to change. Despite Rafale Boost, Why Indian Air Force Remains 'Ill-Equipped'

To Battle Chinese PLAAF Over The LAC? And here comes the **role of the IAF in safeguarding the space economy**, among other reasons. With the **increasing private sector activities in space, such as the launching of commercial satellites, the introduction of ‘space tourism’, asteroid mining of minerals, and a range of other fascinating stuff, these space assets of the country need**

**protection from the enemy forces. This explains why many countries have been creating their respective “space forces”.** The US created one in 2019, with the space force becoming a new military branch to protect the nation's satellites and other space assets, which are vital to everything from national security to day-to-day communications. The United Kingdom, France, Canada, and Japan are said to be following suit. Last month, Germany announced the development of a military space command. China's “Strategic Support Force”, established in 2015, takes care of its space assets. And Russia since 2015 has had dedicated “Russian Aerospace Forces”. India's Defence Space Agency It is against this background that Prime Minister Modi had in 2018 **announced the government's intention to create the Defence Space Agency (DSA)** by integrating space assets from the army, navy, and air force. It was formally set up in 2019 with a staff of some 200 officers drawn from the three services, commanded by an air force officer. It took over the Defence Imagery Processing and Analysis Centre and the Defence Satellite Control Centre. Pioneer In Indian Aviation – Can Tatas Again ‘Rule The Roost’ After Acquiring National Carrier – Air India? In fact, the DSA conducted its first integrated space warfare exercise in July 2019, bringing together personnel from across the services. It “focused on using communications and reconnaissance satellites to integrate intelligence and fires across the range of Indian military assets, indicating a firm understanding of the necessity of access to space.” However, the **DSA is still a work in progress. It is yet to become fully operational.** It is to be located in Delhi and supposed to work closely with the Defence Research Development Organisation (DRDO) and ISRO to **integrate military assets, surveillance platforms such as the AWACS and AEW&C, and commercial and military satellites for intelligence sharing across all three services.** It may be noted that satellites are vitally important to modern warfare as they are a key communication link for ground, sea, and airborne assets, which require sufficient data for voice and data communication. The **DSA, therefore, is also expected to play a greater role in enunciating the planned policies for space-based assets, allowing Indian agencies and companies to work towards meeting these requirements.** A 2016 report on ‘Exploiting Indian Military Capacity in Outer Space’ by the Centre for Joint Warfare Studies (CENJOWS), states that while indigenous satellites provide an adequate capability, “but despite these, India does not get uninterrupted observation of the interested area which is possible only if India launches constellation of satellites for observation which is an emerging trend.” However, it did not mean that India never had dedicated satellites for military purposes before. India had created an “Integrated Space Cell” in June 2008 under the command of the Integrated Defence Services Headquarters with the responsibility to coordinate activities of ISRO and the Indian Armed forces. Integrating Space Assets By 2017, India had reportedly some 14 satellites that were being used for surveillance purposes. This number must have gone up by now, with the country developing ASAT (Anti-satellite) capability, though it is said to be in a nascent stage. Besides, India's National Technical Research Organization (NTRO), which is controlled by the Research and Analysis Wing, India's premier intelligence agency, makes extensive use of IRS (Indian Remote Satellites), RISAT (Radar Imaging Satellites), and CARTOSAT (optical earth observation satellites) data to aid in building a comprehensive intelligence picture. All this makes it clear why the Indian government has now realized the need for integrating space assets and capabilities. But, the IAF had realized this very well by publishing in 2012 “Basic Doctrine of the Indian Air Force, 2012”. In it, the IAF repeatedly mentioned “air and space power”. The doctrine was not talking of “air power” in isolation of “space power”; it talked of “aerospace power”. However, the problem has been that while the IAF has been very clear that it has an aerospace role and in this task, it needs the help of the ISRO, the latter has not been that enthusiastic to join hands, at least publicly. As India is a signatory to the international treaty that outlaws military activities (Outer Space Treaty) in space, a common property of mankind, the ISRO seems to have taken a too legalistic view of abhorring the IAF. But then the fact is that the Outer Space Treaty has been the subject of diplomatic wrangles over the precise definition of space weapons, other than nuclear weapons. Besides, there has been no transparency on the part of major world powers in keeping the outer space free from military activities, with the result that one hears concepts like “Star Wars” (Strategic Defence Initiative) by the US and anti satellites (ASAT) by Russia. In any case, it is a fact that the US and its allies have used space resources extensively in fighting recent wars in Iraq and Afghanistan. All told, contrary to the conventional wisdom, the **aerospace power of the IAF will protect the space tools like satellites that are used by the ISRO to augment the country's economic and scientific power. And this will be possible when there is the capacity to destroy the adversary's space weapons, based in space, air, land, and water.** Secondly, developing aerospace power does not necessarily mean that there will be war. In most cases, augmented power or strength will ensure that the enemy will not dare to attack you. Instead of being a frontier now, **space complements airpower in numerous missions as an enabler.** That is why analysts say that air and space should be complementary components of defense so that they compensate for each other's inadequacies in maintaining surveillance of the vertical dimension and in **countering threats from systems like ballistic missiles that transit and maneuver through both air and space. They must be integrated so that the diverse and yet potent elements of air and space are networked adequately. Now that the space sector is being opened up by the Modi government, it is hoped that such a network will be a reality, sooner rather than later.**

**Indian Space Militarization incentivizes Chinese space race destabilizing the space order, increases tensions with Pakistan, and shreds NFU. Reject internal link defense – it doesn't take into account Modi's lash out strategies for political gain**



**Gettleman and Kumar 19** [Jeffrey Gettleman, a winner of the Pulitzer Prize in 2012 for international reporting, is The Times's South Asia bureau chief; and Hari Kumar, reporter in the New Delhi bureau of The New York Times. 3-27-2019. India Shot Down a Satellite, Modi Says, Shifting Balance of Power in Asia. No Publication.  
<https://www.nytimes.com/2019/03/27/world/asia/india-weather-satellite-missile.html?auth=login-email&login=email.>] //aaditg

NEW DELHI — Prime Minister Narendra Modi announced on Wednesday that India had test-fired a rocket that shot down one of its own satellites, escalating the country's rivalry with China and Pakistan, and demonstrating a strategic capability in space that few countries possess. This technological leap, which was confirmed by the Pentagon, puts India in an exclusive club of nations, along with the United States, Russia and China, that have proved their ability to destroy targets in space. But it has potentially ominous repercussions, accelerating the space race with China and destabilizing the uneasy balance of power between India and Pakistan, which are both armed with nuclear weapons. It could allow India essentially to blind an enemy by taking out its space-based communication and surveillance satellites. Shooting down a satellite is no easy feat. In this case, scientists estimate that the satellite that India blasted apart was moving around the Earth at 17,000 miles per hour. Mr. Modi made the announcement to a rapt nation just weeks before the country heads into a hotly contested election. "India stands tall as a space power!" Mr. Modi tweeted after his announcement. He added that the entire effort had been "indigenous," accomplished entirely by Indians. When China first successfully tested such an antisatellite missile in 2007, it set off global concern over the growing weaponization of space. Many analysts now worry that the regional rivalry between India and China, the two most populated countries in the world, has moved into space. India's test was a "demonstration against China," said Kazuto Suzuki, an international relations professor at Hokkaido University in Japan and an expert on space security. "The proliferation of this technology and capability would make the space order very unstable," he said. In Washington, Air Force Lt. Gen. David D. Thompson told a Senate hearing on Wednesday that India's test did occur, and that the Pentagon was aware beforehand because India had announced flight bans. General Thompson, the vice commander of the Air Force Space Command, said the launch occurred at 1:39 a.m. Eastern Time, and that the explosion was detected at Buckley Air Force Base in Colorado. He said the test "struck the target vehicle" and created 270 pieces of debris that will likely increase as the debris field expands. He added that, "At this point in time, the International Space Station is not at risk." Mr. Modi broke the news in a rare televised address to the nation, and many Indians immediately suspected that his primary objective was more political than technological. Editors' Picks An Overlooked Cure for Loneliness Boba Fett, Intergalactic Man of Mystery He Paid \$30 for a Drawing. It Could Be a Renaissance Work Worth Millions. Image The launching of a ballistic missile on Wednesday in Odisha, India. The launching of a ballistic missile on Wednesday in Odisha, India.Credit...Indian Space Research Organization In a little more than two weeks, India will begin holding an election — the biggest in history, with nearly 900 million registered voters — and Mr. Modi is up for re-election. Leaders in his political party have recently been heckled in public and attendance has been poor at rallies for some of his party's candidates. Though Mr. Modi enjoyed a burst of popular support after India conducted airstrikes last month in Balakot, Pakistan, in retaliation for a deadly suicide bombing by militants against Indian forces, that news has mostly subsided. The announcement "shows a poll-eve desperation we hadn't yet detected/suspected," tweeted Shekhar Gupta, one of India's best known political commentators. "It's just a frantic new national security headline as Balakot has faded in a month." On Wednesday morning, Mr. Modi posted a message on Twitter, which he uses frequently, telling Indians to tune in because he was about to make a major announcement. Many people believed the speech would be related to Pakistan; tensions had risen fast and high last month after Indian warplanes dropped several bombs on the site in Balakot where Indian authorities said anti-India militants were hiding. It is not clear what, if anything, the Indian Air Force hit. But the next day Pakistan shot down an Indian fighter jet and captured the pilot, pushing the two nuclear-equipped nations dangerously close to a major conflict. Pakistan quickly defused the situation by releasing the pilot. The whole episode brought Mr. Modi a crest of support. The old, thorny issues that had been dogging him — such as rising unemployment, poor drinking water and widespread distress among farmers — disappeared for a moment. Flags came out across the country. Even Indians who disagreed with the Hindu nationalist flavor of Mr. Modi's party

**still cheered him.** But in the past few days, the electoral mood seems to have changed once again. Complaints about jobs, health care and farm subsidies have been rising. The Indian National Congress, the leading opposition party, scored some points after its leader, Rahul Gandhi, the scion of a longstanding political dynasty, promised that Congress would give the equivalent of \$1,000 to India's poorest families. Around noon, when Mr. Modi was set to address the nation, the streets of New Delhi, the capital, grew uncharacteristically quiet. Many people ducked inside shops to watch TV. Saurav Jha, the editor in chief of "Delhi Defence Review," an online defense related magazine, said that successfully shooting down a satellite was a major achievement. "It's as significant as India's first nuclear blast," he said. **India has been steadily advancing its space program since its first satellite launch in 1975. It joined a manned space mission with Russia in 1984 and launched a Mars orbiter in 2013. This December, India sent its heaviest communication satellite so far, weighing nearly 5,000 pounds, into space. A big motivation clearly is China. As China has stepped up its satellite launches and space probes, India has been trying to catch up.** The test, Mr. Jha said, was "very much the part of the India-China rivalry." Another factor may have been archrival Pakistan. **Last year, China helped Pakistan launch a remote sensing satellite. India's test showed it could blast apart the Pakistani eye in the sky, turning it into space garbage. This could make the bitter regional contest between India and Pakistan even more dangerous. Before this test, the two militaries were widely viewed as comparable.** Each side has been reluctant to start a major conflict, fearing that the other could stage a devastating counterattack. But some analysts said that **India might now be able to stage a pre-emptive attack on Pakistan's satellites. That could unsettle the longstanding doctrine of mutually assured destruction that both countries have followed, and put Pakistan even more on edge.** It also could presage a change in Indian nuclear strategy. The **country has always promised** it would make **no first use** of nuclear weapons — a limitation that means it might lose one or more major cities in a nuclear exchange before striking back. **But if it can leverage its new antisatellite technology to move ahead with basic antimissile defenses, which require hitting an incoming warhead in space, it could change the strategic balance.** "The militarization of space is underway, whether anybody likes it or not," Mr. Jha added. Part of the reason, he said, was that satellite technology had become "the backbone of global communication."

## Two scenarios:

### [1] Indo-China

#### **Space Militization and Chinese Space Race causes extinction – destruction of satellites, diminished future use of near space, and terrestrial war**

**Gilliard 19** [(Alexandra, a Senior Editor and interviewer of international relations experts for the International Affairs Forum. She holds an M.S. in Global Studies and International Relations from Northeastern University, and a B.A. in International Relations from Boston University, with expertise in conflict resolution, arms control, human rights issues, and the MENA region.) "What Are The Consequences Of Militarizing Outer Space?" Global Security Review, 6/10/2019. <https://globalsecurityreview.com/consequences-militarization-space/>] BC

#### **Consequences of Armament and Aggression in Space**

The consequences of weapons testing and aggression in space could span generations, and current technological advances only increase the urgency for policymakers to pursue a limitations treaty. As it stands, there are **three major ramifications** of a potential arms race in space:

##### **The destruction of satellites**

As both financial and technological barriers to the space services industry have decreased, the number of governmental and private investors with assets in space has inevitably increased. There is now an abundance of satellites in space owned by multiple states and corporations. These satellites are **used to** not only **coordinate military actions**, but to perform more mundane tasks, like obtaining weather reports, or managing on-ground **communications and navigation**.

Should states begin weapons testing in space, debris could cloud the orbit and make positioning new satellites impossible, disrupting our current way of life. More pressing, however, is that if a country's satellites are successfully destroyed by an enemy state, military capabilities can be severely hindered or destroyed, leaving the country vulnerable to attack and unable to coordinate its military forces on the ground.

### Diminished future use of near space

Whether caused by weapons testing or actual aggression, the subsequent proliferation of debris around the planet would damage our future ability to access space. Not only would debris act as shrapnel to preexisting assets in space, but it would also become much more difficult to launch satellites or rockets, hindering scientific research, space exploration, and commercial operations.

From the past fifty-odd years of activity in space alone, the debris left behind in Earth's orbital field has already become hazardous to spacecraft — a main reason why the U.S. and the Soviet Union did not continue with ASAT testing during the Cold War. If greater pollution were to occur, space itself could become unusable, resulting in the collapse of the global economic system, air travel, and various communications.

### Power imbalances and proliferation on the ground

Only so many states currently have access to space—which means any militarization be by the few, while other states would be left to fend for themselves. This would establish a clear power imbalance that could breed distrust among nations, resulting in a more insecure world and a veritable power keg primed for war. Additionally, deterrence measures taken by states with access to space would escalate, attempting to build up weapons caches not dissimilar to the nuclear weapons stockpiling activities of the Cold War.

In any arms race, it is inevitable that more advanced weaponry is created. Yet, this does not only pose a risk to assets in space. Should a terrestrial war break out, this weaponry may eventually be deployed on the ground, and space-faring states would be able to capitalize on the power imbalance by using these new developments against states that have not yet broken into the space industry or developed equally-advanced weaponry.

## [2] Indo-Pak

India Pakistan tensions are high – any attempt at reform is one step forward, three steps back

**PTI 12/24** [ The Press Trust of India Ltd., commonly known as PTI, is the largest news agency in India. It is headquartered in New Delhi and is a nonprofit cooperative among more than 500 Indian newspapers 12-24-2021 East Mojo "India-Pakistan ties: Too near yet far apart" <https://www.eastmojo.com/national/2021/12/24/india-pakistan-ties-too-near-yet-far-apart/> ]  
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Islamabad: When Pakistan and India agreed to restore peace along the highly volatile Line of Control (LoC) in February 2021, it appeared that they were again ready to take a turn on the bumpy road of animosity and mistrust. The ensuing months, however, showed that it was yet another mirage. The story of Pakistan-India relations is a tale of the proverbial 'one step forward, two steps backward'. So far, almost every positive development in terms of the bilateral ties has been overtaken by innate hostility that is often driven by popular sentiments. In a surprise announcement on February 25, India and Pakistan said that they have agreed to strictly observe all agreements on ceasefire along the LoC. India and Pakistan signed a ceasefire agreement in 2003, but it has hardly been followed in letter and spirit over the past several years with more violations than observance of the pact.

ADVERTISEMENT CONTINUE READING BELOW The restoration of the ceasefire agreement of 2003 on the LoC was not an exception. Soon it was followed by reports, insinuating that the two sides were engaged in a secret diplomacy in some shady haunt of the Arabian deserts (the so-called talks reportedly being held in the UAE). No official statement was issued about the status of talks but ties remain frozen. Weeks later in March, Army chief Gen Qamar Javed Bajwa said that it was time for India and Pakistan to bury the past and move forward. In his address to first-ever Islamabad Security Dialogue, participated by Who's Who' of Pakistan's security establishment, Gen Bajwa said that stable Indo-Pak relation is a key to unlock the untapped potential of South and Central Asia by ensuring connectivity between East and West Asia but also mentioned that Kashmir was the main stumbling block in normalisation of bilateral ties. Previously Pakistan had conditioned the start of talks with India if it reversed the August, 2019 steps in Kashmir, but Gen Bajwa lowered the bar by saying that India should create a conducive environment. The powerful army, which has ruled Pakistan for more than half of its 70 plus years of existence, has hitherto wielded considerable power in the matters of security and foreign policy. ADVERTISEMENT CONTINUE READING BELOW Prime Minister Imran Khan, who had taken a hardline stance since India abolished the special status of Jammu and Kashmir in 2019, also reduced his rhetoric by saying that good relations with neighbours were paramount for national security. "We will not be able to take full advantage of our geo-strategic location until we have regional peace, until our relations with our neighbours and our trade ties do not improve," he said in the address to the same event. On March 31, Pakistan almost surprised India when its Economic Coordination Committee (ECC), a top decision-making body, lifted a ban on the import of sugar and cotton from India. Finance Minister Hammad Azhar had announced the big decision. Apparently, the permission for import was given without taking all stakeholders on board, including the Ministry of Foreign Affairs. Sources in the ministry said that foreign minister Shah Mahmood Qureshi was unhappy with the decision. Consequently, it was withdrawn as quickly as it was announced. Months later in November, Pakistan silently allowed India to use its airspace for direct flights between Kashmir and the UAE, but its fate was not different from the previous positive steps. The move was scuttled after a week when Islamabad withdrew the permission. No reason was given why the flights were allowed, and why they were discontinued. ADVERTISEMENT CONTINUE READING BELOW The event in Afghanistan served as a major diversion as the Taliban took over Kabul in August, giving a big boost to Pakistan vis-a-vis India's stakes in Afghanistan. In the wake of the change in regime in Afghanistan, Islamabad's entire attention has been riveted on Kabul and it has been pulling all strings to give time to the Taliban to adjust to the new situation to earn global recognition of its interim government, which includes at least 14 Cabinet members blacklisted by the UN. The Afghan situation stirred a positive development in the context of Pak-India ties. In December, Pakistan allowed India to send a humanitarian shipment of 50,000 tonnes of wheat and life-saving drugs to Afghanistan through the Wagah border crossing. Unlike the short-lived optimism after the permission for direct flights between Srinagar and Sharjah and allowing import of sugar and cotton from India, the decision to let India send wheat on its condition of using only the Afghan trucks for transit has not been reversed. But it is difficult to interpret it as a breakthrough in bilateral relations. In November, India reopened the Kartarpur Corridor that links Gurdwara Darbar Sahib in Pakistan, the final resting place of Guru Nanak Dev, to Dera Baba Nanak shrine in Punjab's Gurdaspur district. ADVERTISEMENT CONTINUE READING BELOW Punjab Chief Minister Charanjit Singh Channi, along with about 30 persons, including his Cabinet ministers, visited the revered Gurdwara Darbar Sahib in Pakistan using the visa-free Kartarpur corridor on the second day of the reopening of the route which was suspended for some 20 months following the COVID-19 outbreak. Towards the end of the year, Prime Minister Khan, while addressing a seminar on December 9 in Islamabad, said peace with India is not possible until the resolution of the Kashmir dispute. But he also added another hurdle this time: the RSS ideology. For ties between India and Pakistan, things are back to square one as another year nears its end. The two sides also failed to agree how Indian prisoner Kulbhushan Jadhav on death row in Pakistan should be represented in his review appeal in Islamabad High Court against his conviction by a Pakistani military court.

**NFU uniquely likely to shred since Pakistan has no space militarization goals**



**Bano 20** [ Sher Bano is working as a Research Affiliate at the Strategic Vision Institute (SVI), a non-partisan think-tank based out of Islamabad, Pakistan. "Modern Diplomacy Indian Militarization of Outer Space: Security Implications For Pakistan" Aug 29, 2020 <https://moderndiplomacy.eu/2020/08/29/indian-militarization-of-outer-space-security-implications-for-pakistan/> ] //aaditg

In March 2019, India had successfully tested an anti-satellite weapon by destroying one of its own satellites in outer space. By doing so, India has become the fourth country in the world after the US, Russia, and China that possess the ASAT capability. Similarly, with this capability, the likelihood of India's space weaponization is more evident as India would be in a strong position to kinetically destroy any incoming satellite. This would be a significant military advantage, especially in a crisis, as India would be in a position to use its ASAT capability to disturb the satellite communications and intelligence gathering of its opponent states. Along with this, India would be able to destroy the targets of its adversary's missiles. India has also enhanced the observation, reconnaissance, and surveillance capabilities of its GSAT series with 0.35m resolution, and RISAT/Cartosat series with 1-meter resolution. Moreover, India aspires to integrate its BMD systems (Ballistic Missile Defenses) with its satellites. This expected integration would further strengthen India's BMD as satellite networks in space would provide early information regarding the incoming missiles. In the same vein, India's overall BMD capabilities would also enhance with the incorporation of space-based detection along with the S-400 missile system. India's enhanced space capabilities have further enhanced the security concerns of Pakistan. Since Pakistan does not aspire to militarize the space, there exists a visible qualitative gap between Pakistan's and India's space programs. To penetrate the space-based precision targeting capability of India, at the least Pakistan can use the high energy lasers. These lasers are ground-based ASAT weapons that can damage and disturb the other satellites with its sensors. Furthermore, the MIRV (Multiple Independently Targetable Reentry Vehicle) capability of Pakistan can easily infiltrate India's enhanced Missile Defence shield integrated with satellites. Pakistan's premier space agency SUPARCO needs to further counter the emerging Indian space threat by developing indigenous observation and surveillance capability that could detect Indian space assets.

## **Even limited Indo-pak war triggers nuclear winter, famine, ozone depletion, and additional conflicts, making the planet uninhabitable—prefer our ev—latest climate models and volcanoes prove**

**Baum 15** [Seth D. Baum, Ph.D. in Geography @ Pennsylvania State University, did his doctoral work on the concept of space-time discounting within the context of climate change decisions, co-founder and Executive Director of the think tank *Global Catastrophic Risk Institute*, and has a Post-Doctoral Fellowship with the Columbia University Center for Research on Environmental Decisions. "Winter-safe Deterrence: The Risk of Nuclear Winter and Its Challenge to Deterrence," 23 February 2015, <http://www.tandfonline.com/doi/full/10.1080/13523260.2015.1012346>]//recut anop

The concept of nuclear winter was first developed in the early 1980s by scientists including Paul Crutzen, who later won a Nobel Prize in Chemistry for his work on the ozone hole, and legendary astronomer Carl Sagan.<sup>3</sup> Sagan went to great lengths to raise awareness about nuclear winter in the 1980s and early 1990s.<sup>4</sup> This episode apparently had some influence on policy, with Mikhail Gorbachev citing it as a factor in his desire to cool that era's nuclear tensions and reverse the arms race.<sup>5</sup> After fading from the spotlight, nuclear winter began a bit of a comeback in 2007 with the publication of new research examining nuclear winter with the latest scientific models.<sup>6</sup> Several follow-up studies and commentaries have been published since, and research is ongoing.<sup>7</sup> In technical terms, 'nuclear winter' refers specifically to a cooling of Earth's surface such that winter-like temperatures occur during summer, as caused by a sufficiently large nuclear war. Cooling to warmer-than-winter temperatures can be called 'nuclear autumn'. As per this definition, nuclear winter/autumn is part of a broader suite of environmental consequences of nuclear war. However, all of the environmental consequences can have profound consequences for the planet and for human civilization, and likewise are important for policy. No separate term has been coined for the full suite of environmental consequences of nuclear war, so this paper will use 'nuclear winter' as shorthand for the full suite. This use of 'nuclear winter' may be interpreted metaphorically: a time of cold, darkness, and death. Nuclear winter is

caused by the burning of cities, industrial facilities, trees, and other flammable materials, sending smoke into the atmosphere. The main effects of the smoke derive from the fact that the smoke rises high up into the atmosphere, past the clouds, into the stratosphere where it will not quickly fall back out in rain. At this altitude, the smoke spreads across the planet and gradually falls back out over the next 10–20 years. While it is aloft, the smoke absorbs incoming sunlight and blocks it from reaching the surface. As the smoke absorbs sunlight, the stratosphere warms, causing ozone depletion at a potentially massive scale.<sup>8</sup> The ozone depletion causes more ultraviolet radiation to reach Earth's surface. Increased UV radiation can harm living organisms, including humans. Harmful effects include skin cancer and eye damage to animals and the inhibition of photosynthesis in plants.<sup>9</sup> Meanwhile, the smoke blocking sunlight from reaching the surface causes colder surface temperatures and less precipitation. Precipitation declines because there is less heat to power the hydrological cycle. The main harmful effect that has been identified is a decline in plant growth, including agricultural production. Secondary effects could include disease outbreaks and additional conflicts.<sup>10</sup> The effects occur worldwide, regardless of where the detonations occur, though detonation location can affect the spatial distribution of impacts. For both UV radiation and cooling, the magnitude of the disruption is proportionate to the amount of smoke put into the atmosphere, which in turn depends on the number of nuclear detonations, the bombs' yields, the detonation locations, and other factors. Regarding detonation location, a key variable is whether the detonation occurs in a city, and if it does, the population density of the city. Other locations such as industrial zones can also produce significant quantities of smoke. This is why nuclear weapons testing has not caused nuclear winter: the tests were conducted in remote locations or at high altitude, and thus did not have much to burn. The location of a city on the globe can also make a difference, given Earth's topography and atmospheric circulation patterns, but this effect is smaller. The most heavily studied nuclear winter scenario involves war between India and Pakistan in which each country uses 50 nuclear weapons, each with a 15 kiloton yield, comparable to the Little Boy weapon dropped on Hiroshima. The studies assume that the weapons are dropped on each country's major cities, and not on, for example, remote military targets, producing 5 teragrams of smoke.<sup>11</sup> In this scenario, ozone loss would range from 20 per cent to 70 per cent from low to high latitudes.<sup>12</sup> Temperatures would fall about 1.25°C within the first year. Even ten years after, temperatures would still be about 0.5°C below normal.<sup>13</sup> Crop yields in China and the Midwestern United States are projected to decline by around 10–30 per cent.<sup>14</sup> One analysis estimates that at least two billion people would be at risk of starvation.<sup>15</sup> A core point is that even a 'limited' regional nuclear war could have catastrophic global consequences. It should be emphasized that what drives nuclear winter is the quantity of smoke entering the stratosphere, not where the nuclear war occurs. Thus, a comparably large nuclear war between other countries would have similar global climatic and humanitarian effects. The India–Pakistan scenario offers an illustrative and relatively probable case, but any nuclear weapon state except North Korea could produce similar effects. A larger nuclear exchange involving American and Russian arsenals would cause further disruption. An exchange of about 1,200 weapons could produce about 50 teragrams of smoke, causing temperatures to fall by about 4°C. For 4,000 weapons – around what New START prescribes – there could be 150 teragrams of smoke, with a temperature fall of about 8°C. Agriculture failure would be so severe and widespread that it becomes easier to count the survivors than the fatalities.<sup>16</sup> Climate scientist Alan Robock, who has led many of the recent nuclear winter studies, expects some survivors 'especially in Australia and New Zealand'.<sup>17</sup> While this is hardly a cheerful evaluation, even this may be too optimistic. Hopefully some people somewhere would find some way to survive. But the conditions would be harsh enough that survival is no guarantee.<sup>18</sup> Finally, it should be acknowledged that, over the years, there has been some scepticism of whether nuclear winter would actually occur, or would occur with enough severity to be worth factoring into security policy.<sup>19</sup> To an extent, one cannot be sure what would happen, because a large exchange of nuclear weapons has fortunately never occurred. However, there are at least two reasons to believe that the current round of nuclear winter science is yielding results that are at least in the general vicinity of what would actually happen. One reason is that the science uses modern climate models developed for the study of global warming. Global warming has its own sceptics and controversies, which has led to the climate models being heavily scrutinized.<sup>20</sup> Climate science may well be the most carefully vetted of all the sciences. The nuclear winter researchers are themselves distinguished climate scientists and are using state-of-the-art climate models. And two distinct nuclear winter research groups

from two different countries using two different sets of models both report approximately the same results.<sup>21</sup> While some uncertainties in the science of nuclear winter remain and additional research could provide additional confidence, it should be expected that the current research results are basically sound. The second reason for believing that nuclear winter would occur is that it has a historical precedent in volcano eruptions. Volcano eruptions, like nuclear weapon detonations, cause large amounts of smoke to rise into the atmosphere. An insightful example is the 1815 Mount Tambora eruption. The Tambora eruption caused temperatures to fall by about 0.5°C, resulting in major food shortages and other disruptions, such that 1816 is now known as the 'Year Without Summer'.<sup>22</sup> While humanity ultimately survived Tambora, nuclear war could put even more smoke into the atmosphere and cause more severe disruption. It, thus, is important to factor into nuclear security policy

## **1AC – Framing – Util**

**The standard is minimizing material violence.**

**Prefer:**

**[1] Pleasure and pain are intrinsic value and disvalue**

**Blum et al. 18**

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Pleasure is not only one of the three primary reward functions but it also defines reward. As homeostasis explains the functions of only a limited number of rewards, the principal reason why particular stimuli, objects, events, situations, and activities are rewarding may be due to pleasure. This applies first of all to sex and to the primary homeostatic rewards of food and liquid and extends to money, taste, beauty, social encounters and nonmaterial, internally set, and intrinsic rewards. Pleasure, as the primary effect of rewards, drives the prime reward functions of learning, approach behavior, and decision making and provides the basis for hedonic theories of reward function. We are attracted by most rewards and exert intense efforts to obtain them, just because they are enjoyable [10]. Pleasure is a passive reaction that derives from the experience or prediction of reward and may lead to a long-lasting state of happiness. The word happiness is difficult to define. In fact, just obtaining physical pleasure may not be enough. One key to happiness involves a network of good friends. However, it is not obvious how the higher forms of satisfaction and pleasure are related to an ice cream cone, or to your team winning a sporting event. Recent multidisciplinary research, using both humans and detailed invasive brain analysis of animals has discovered some critical ways that the brain processes pleasure [14]. Pleasure as a hallmark of reward is sufficient for defining a reward, but it may not be necessary. A reward may generate positive learning and approach behavior simply because it contains substances that are essential for body function. When we are hungry, we may eat bad and unpleasant meals. A monkey who receives hundreds of small drops of water every morning in the laboratory is unlikely to feel a rush of pleasure every time it gets the 0.1 ml. Nevertheless, with these precautions in mind, we may define any stimulus, object, event, activity, or situation that has the potential to produce pleasure as a reward. In the context of reward deficiency or for disorders of addiction, homeostasis pursues pharmacological treatments: drugs to treat drug addiction,

obesity, and other compulsive behaviors. The theory of allostasis suggests broader approaches - such as re-expanding the range of possible pleasures and providing opportunities to expend effort in their pursuit. [15]. It is noteworthy, the first animal studies eliciting approach behavior by electrical brain stimulation interpreted their findings as a discovery of the brain's pleasure centers [16] which were later partly associated with midbrain dopamine neurons [17–19] despite the notorious difficulties of identifying emotions in animals. Evolutionary theories of pleasure: The love connection BO:D Charles Darwin and other biological scientists that have examined the biological evolution and its basic principles found various mechanisms that steer behavior and biological development. Besides their theory on natural selection, it was particularly the sexual selection process that gained significance in the latter context over the last century, especially when it comes to the question of what makes us “what we are,” i.e., human.

However, the capacity to sexually select and evolve is not at all a human accomplishment alone or a sign of our uniqueness; yet, we humans, as it seems, are ingenious in fooling ourselves and others—when we are in love or desperately search for it. It is well established that modern biological theory conjectures that organisms are the result of evolutionary

competition. In fact, Richard Dawkins stresses gene survival and propagation as the basic mechanism of life [20]. Only genes that lead to the fittest phenotype will make it. It is noteworthy that the phenotype is selected based on behavior that maximizes gene propagation. To do so, the phenotype must survive and generate offspring, and be better at it than its competitors. Thus, the ultimate, distal function of rewards is to increase evolutionary fitness by ensuring the survival of the organism and reproduction. It is agreed that learning, approach, economic decisions, and positive emotions are the proximal functions through which phenotypes obtain other necessary nutrients for survival, mating, and care for offspring. Behavioral reward functions have evolved to help individuals to survive and propagate their genes. Apparently, people need to live well and long enough to reproduce. Most

would agree that homo-sapiens do so by ingesting the substances that make their bodies function properly. For this reason, foods and drinks are rewards. Additional rewards, including those used for economic exchanges, ensure sufficient palatable food and drink supply. Mating and gene propagation is supported by powerful sexual attraction. Additional properties, like body form, augment the chance to mate and nourish and defend offspring and are therefore also rewards. Care for offspring until they can reproduce themselves helps gene propagation and is rewarding; otherwise, many believe mating is useless. According to David E Comings, as any small edge will ultimately result in evolutionary advantage [21], additional reward mechanisms like novelty seeking and exploration widen the spectrum of available rewards and thus enhance the chance for survival, reproduction, and ultimate gene propagation. These functions may help us to obtain the benefits of distant rewards that are determined by our own interests and not immediately available in the environment. Thus the distal reward function in gene propagation and evolutionary fitness defines the proximal reward functions that we see in everyday behavior. That is why foods, drinks, mates, and offspring are rewarding. There have been theories linking pleasure as a

required component of health benefits salutogenesis, (salugenesis). In essence, under these terms, pleasure is described as a state or feeling of happiness and satisfaction resulting from an experience that one enjoys.

Regarding pleasure, it is a double-edged sword, on the one hand, it promotes positive feelings (like mindfulness) and even better cognition, possibly through the release of dopamine [22]. But on the other hand, pleasure simultaneously encourages addiction and other negative behaviors, i.e., motivational toxicity. It is a complex neurobiological phenomenon, relying on reward circuitry or limbic activity. It is important to realize that through the “Brain Reward Cascade” (BRC) endorphin and endogenous morphinergic mechanisms may play a role [23]. While natural rewards are essential for survival and appetitive motivation leading to beneficial biological behaviors like eating, sex, and reproduction, crucial social interactions seem to further facilitate the positive effects exerted by pleasurable experiences. Indeed, experimentation with addictive drugs is capable of directly acting on reward pathways and causing deterioration of these systems promoting hypodopaminergia [24]. Most would agree that pleasurable activities can stimulate personal growth and may help to induce healthy behavioral changes, including stress management [25]. The work of Esch and Stefano [26] concerning the link between compassion and love implicate the brain reward system, and pleasure induction suggests that social contact in general, i.e., love, attachment, and compassion, can be highly effective in stress reduction, survival, and overall health. Understanding the role of neurotransmission and pleasurable states both positive and negative have been adequately studied over many decades [26–37], but comparative anatomical and neurobiological function between animals and homo sapiens appear to be required and seem to be in an infancy stage. Finding happiness is different between apes and humans As stated earlier in this expert opinion one key to happiness involves a network of good friends [38]. However, it is not entirely clear exactly how the higher forms of satisfaction and pleasure are related to a sugar rush, winning a sports event or even sky diving, all of which augment dopamine release at the reward brain site. Recent multidisciplinary research, using both humans and detailed invasive brain analysis of animals has discovered some critical ways that the brain processes pleasure. Remarkably, there are pathways for ordinary liking and pleasure, which are limited in scope as described above in this commentary. However,

there are many brain regions, often termed hot and cold spots, that significantly modulate (increase or decrease) our pleasure or even produce the opposite of pleasure—that is disgust and fear [39]. One specific region of the nucleus accumbens is organized like a computer keyboard, with particular stimulus triggers in rows—producing an increase and decrease of pleasure and disgust. Moreover, the cortex has unique roles in the cognitive evaluation of our feelings of pleasure [40]. Importantly, the interplay of these multiple triggers and the higher brain centers in the prefrontal cortex are very intricate and are just being uncovered. Desire and reward centers It is surprising that many different sources of pleasure activate the same circuits between the mesocorticolimbic regions (Figure 1). Reward and desire are two aspects pleasure induction and have a very widespread, large circuit. Some part of this circuit



distinguishes between desire and dread. The so-called pleasure circuitry called "REWARD" involves a well-known dopamine pathway in the mesolimbic system that can influence both pleasure and motivation. In simplest terms, the well-established mesolimbic system is a dopamine circuit for reward. It starts in the ventral tegmental area (VTA) of the midbrain and travels to the nucleus accumbens (Figure 2). It is the cornerstone target to all addictions. The VTA is encompassed with neurons using glutamate, GABA, and dopamine. The nucleus accumbens (NAc) is located within the ventral striatum and is divided into two sub-regions—the motor and limbic regions associated with its core and shell, respectively. The NAc has spiny neurons that receive dopamine from the VTA and glutamate (a dopamine driver) from the hippocampus, amygdala and medial prefrontal cortex. Subsequently, the NAc projects GABA signals to an area termed the ventral pallidum (VP). The region is a relay station in the limbic loop of the basal ganglia, critical for motivation, behavior, emotions and the "Feel Good" response. This defined system of the brain is involved in all addictions—substance, and non—substance related. In 1995, our laboratory coined the term "Reward Deficiency Syndrome" (RDS) to describe genetic and epigenetic induced hypodopaminergia in the "Brain Reward Cascade" that contribute to addiction and compulsive behaviors [3,6,41]. Furthermore, ordinary "liking" of something, or pure pleasure, is represented by small regions mainly in the limbic system (old reptilian part of the brain).

These may be part of larger neural circuits. In Latin, hedus is the term for "sweet"; and in Greek, hodone is the term for "pleasure." Thus, the word Hedonic is now referring to various subcomponents of pleasure: some associated with purely sensory and others with more complex emotions involving morals, aesthetics, and social interactions. The capacity to have pleasure is part of being healthy and may even extend life, especially if linked to optimism as a dopaminergic response [42]. Psychiatric illness often includes symptoms of an abnormal inability to experience pleasure, referred to as anhedonia. A negative feeling state is called dysphoria, which can consist of many emotions such as pain, depression, anxiety, fear, and disgust. Previously many scientists used animal research to uncover the complex mechanisms of pleasure, liking, motivation and even emotions like panic and fear, as discussed above [43]. However, as a significant amount of related research about the specific brain regions of pleasure/reward circuitry has been derived from invasive studies of animals, these cannot be directly compared with subjective states experienced by humans. In an attempt to resolve the controversy regarding the causal contributions of mesolimbic dopamine systems to reward, we have previously evaluated the three-main competing explanatory categories: "liking," "learning," and "wanting" [3]. That is, dopamine may mediate (a) liking: the hedonic impact of reward, (b) learning: learned predictions about rewarding effects, or (c) wanting: the pursuit of rewards by attributing incentive salience to reward-related stimuli [44]. We have evaluated these hypotheses, especially as they relate to the RDS, and we find that the incentive salience or "wanting" hypothesis of dopaminergic functioning is supported by a majority of the scientific evidence. Various neuroimaging studies have shown that anticipated behaviors such as sex and gaming, delicious foods and drugs of abuse all affect brain regions associated with reward networks, and may not be unidirectional. Drugs of abuse enhance dopamine signaling which sensitizes mesolimbic brain mechanisms that apparently evolved explicitly to attribute incentive salience to various rewards [45]. Addictive substances are voluntarily self-administered, and they enhance (directly or indirectly) dopaminergic synaptic function in the NAc. This activation of the brain reward networks (producing the ecstatic "high" that users seek). Although these circuits were initially thought to encode a set point of hedonic tone, it is now being considered to be far more complicated in function, also encoding attention, reward expectancy, disconfirmation of reward expectancy, and incentive motivation [46]. The argument about addiction as a disease may be confused with a predisposition to substance and nonsubstance rewards relative to the extreme effect of drugs of abuse on brain neurochemistry. The former sets up an individual to be at high risk through both genetic polymorphisms in reward genes as well as harmful epigenetic insult. Some Psychologists, even with all the data, still infer that addiction is not a disease [47]. Elevated stress levels, together with polymorphisms (genetic variations) of various dopaminergic genes and the genes related to other neurotransmitters (and their genetic variants), and may have an additive effect on vulnerability to various addictions [48]. In this regard, Vanyukov, et al. [48] suggested based on review that whereas the gateway hypothesis does not specify mechanistic connections between "stages," and does not extend to the risks for addictions the concept of common liability to addictions may be more parsimonious. The latter theory is grounded in genetic theory and supported by data identifying common sources of variation in the risk for specific addictions (e.g., RDS). This commonality has identifiable neurobiological substrate and plausible evolutionary explanations. Over many years the controversy of dopamine involvement in especially "pleasure" has led to confusion concerning separating motivation from actual pleasure (wanting versus liking) [49]. We take the position that animal studies cannot provide real clinical information as described by self-reports in humans. As mentioned earlier and in the abstract, on November 23rd, 2017, evidence for our concerns was discovered [50] In essence, although nonhuman primate brains are similar to our own, the disparity between other primates and those of human cognitive abilities tells us that surface similarity is not the whole story. Sousa et al. [50] small case found various differentially expressed genes, to associate with pleasure related systems.

Furthermore, the dopaminergic interneurons located in the human neocortex were absent from the neocortex of nonhuman African apes. Such differences in neuronal transcriptional programs may underlie a variety of neurodevelopmental disorders. In simpler terms, the system controls the production of dopamine, a chemical messenger that plays a significant role in pleasure and rewards. The senior author, Dr. Nenad Sestan from Yale, stated: "Humans have evolved a dopamine system that is different than the one in chimpanzees." This may explain why the behavior of humans is so unique from that of non-human primates, even though our brains are so surprisingly similar, Sestan said: "It might also shed light on why people are vulnerable to mental disorders such as autism (possibly even addiction)." Remarkably, this research finding emerged from an extensive, multicenter collaboration to compare the brains across several species. These researchers examined 247 specimens of neural tissue from six humans, five chimpanzees, and five macaque monkeys. Moreover, these investigators analyzed which genes were turned on or off in 16 regions of the brain. While the differences among species were subtle, there was a remarkable contrast in the neocortices, specifically in an area of the brain that is much more developed in humans than in chimpanzees. In fact, these researchers found that a gene called tyrosine hydroxylase (TH) for the enzyme, responsible for the production of dopamine, was expressed in the neocortex of humans, but not chimpanzees. As discussed earlier, dopamine is best known for its essential role within

the brain's reward system: the very system that responds to everything from sex, to gambling, to food, and to addictive drugs. However, dopamine also assists in regulating emotional responses, memory, and movement. Notably, abnormal dopamine levels have been linked to disorders including Parkinson's, schizophrenia and spectrum disorders such as autism and addiction or RDS. Nora Volkow, the director of NIDA, pointed out that one alluring possibility is that the neurotransmitter dopamine plays a substantial role in humans' ability to pursue various rewards that are perhaps months or even years away in the future. This same idea has been suggested by Dr. Robert Sapolsky, a professor of biology and neurology at Stanford University. Dr. Sapolsky cited evidence that dopamine levels rise dramatically in humans when we anticipate potential rewards that are uncertain and even far off in our futures, such as retirement or even the possible afterlife. This may explain what often motivates people to work for things that have no apparent short-term benefit [51]. In similar work, Volkow and Bale [52] proposed a model in which dopamine can favor NOW processes through phasic signaling in reward circuits or LATER processes through tonic signaling in control circuits. Specifically, they suggest that through its modulation of the orbitofrontal cortex, which processes salience attribution, dopamine also enables shifiting from NOW to LATER, while its modulation of the insula, which processes interoceptive information, influences the probability of selecting NOW versus LATER actions based on an individual's physiological state. This hypothesis further supports the concept that disruptions along these circuits contribute to diverse pathologies, including obesity and addiction or RDS.

## **[2] Actor Spec— States must use util. Any other standard dooms the moral theory**

**Goodin 90.** Robert Goodin 90, [professor of philosophy at the Australian National University college of arts and social sciences], "The Utilitarian Response," pgs 141-142 //RS

My larger argument turns on the proposition that there is something special about the situation of public officials that makes utilitarianism more probable for them than private individuals. Before proceeding with the large argument, I must therefore say what it is that makes it so special about public officials and their situations that make it both more necessary and more desirable for them to adopt a more credible form of utilitarianism. Consider, first, the argument from necessity. Public officials are obliged to make their choices under uncertainty, and uncertainty of a very special sort at that. All choices – public and private alike – are made under some degree of uncertainty, of course. But in the nature of things, private individuals will usually have more complete information on the peculiarities of their own circumstances and on the ramifications that alternative possible choices might have for them. Public officials, in contrast, are relatively poorly informed as to the effects that their choices will have on individuals, one by one. What they typically do know are generalities: averages and aggregates. They know what will happen most often to most people as a result of their various possible choices, but that is all. That is enough to allow public policy-makers to use the utilitarian calculus – assuming they want to use it at all – to choose general rules or conduct.

## **[3] Extinction First –**

**[a] Forecloses future improvement – we can never improve society because our impact is irreversible**

**[b] Turns suffering – mass death causes suffering because people can't get access to resources and basic necessities**

**[c] Moral uncertainty – if we're unsure about which interpretation of the world is true – we ought to preserve the world to keep debating about it**