Wars With Heaven: Can Celestial Securitisation Produce Effective Planetary Defence?

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“Who knows whether, when a comet shall approach this globe to destroy it, as it often has been and will be destroyed, men will not tear rocks from their foundations by means of steam, and hurl mountains, as the giants are said to have done, against the flaming mass? - and then we shall have traditions of Titans again, and of wars with Heaven”

Lord Byron: 1824

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Introduction

65 million years ago the reign of the dinosaurs unceremoniously came to its conclusion. There is little in common with the dominion of Tyrannosaurus Rex and his successor Homo Sapiens - the former being ferocious and tyrannical, the latter innovative and cooperative. Humankind may however have more in common with the king of the lizards than his simple ascendancy of the food chain; we may also have a shared fate. Since the discovery by palaeontologists in the early 1980's about the celestial origin of the sudden, cataclysmic extinction of the dinosaurs along with 75% of all plant and animal species (Morrison: 2019, p.17) the threat emanating from Near Earth Objects (NEOs) has warranted serious concern. Despite an increasingly detailed understanding of the threat from these objects, and the extant technical means of averting them (at least in theory), we remain acutely vulnerable to this type of cosmic hazard. In 1908 a small meteor exploded above Tunguska, releasing the energy of a hydrogen bomb, and flattening thousands of square kilometres of forest (Napier and Asher: 2009). A similar sized impactor exploded high in the atmosphere near the Russian city of Chelyabinsk in 2013, fortunately high enough that the shock wave had largely dissipated by the time it reached any population centre (Borovička et al: 2013). Most recently, residents in Kamchatka had a close call as one the 'most energetic bolide events in recent decades' was detected by US government satellites – an asteroid similar in size to the Chelyabinsk impactor briefly tore through the atmosphere before delivering several hundred kilotons of explosive energy (Borovička et al: 2018). All of these events occurred with no warning. However, in a recent simulation of a NEO encounter, NASA found that even with 6 months warning no effective countermeasures could have been fielded. The Earth was, at least in this simulation, consigned to its fate (Bartels: 2021).

Why is it that we have not developed defences against NEOs? Of all the natural disasters that humankind may be subject to, this is the only one where we may have the technical means of averting it and yet we remain defenceless. There are no doubt many plausible and convincing arguments that could comfortably answer this question; there is a lack of political will, the statistical ambiguity disables civic action, there are too many budgetary constraints, or, most simply, people are distracted with relatively more pressing issues. There are many interesting avenues of exploration suggested here and many more that have not been suggested. This project is not so much interested in the question above as it is with its logical descendant: *whatever* the reason (or reasons) for why we currently have no planetary defence, how do we assemble one now *as quickly as possible?* Focusing on this question, on the urgent rather than the academic, eschews the need to comprehensively answer why we have been bereft of planetary defences for the last forty years, and skips, rather, to the more proactive and productive question of what we're doing with the next forty years. It could reasonably be argued that unless we properly understand past mistakes, we are likely to repeat them, that the second question cannot be answered before the first. However, this methodical approach is unnecessary if the answer to the second question involves securitisation. It is not essential that an issue be fully understood for it to become securitised. Should the issue of potentially threatening Near Earth Objects become successfully securitised it would cut through the failures, cognisant of their intricacies or not, of the last four decades and quickly result in the assembly of a planetary defence. The exceptional logic associated with securitised issues would elevate it to the highest point of a government's agenda, remove cumbersome political constraints and unlock the vast sums of money required to pay for the project of planetary defence. The premise might be acceptable, but it is obviously no trivial task to simply

'securitise NEOs'. The question that begs an answer now is, how exactly does one securitise NEOs?

Given that NEOs never have been subject to an attempted securitisation it's not possible to offer an answer that goes far beyond conjecture – there may be an unlimited number of ways to do it, or there may only be one. Plenty of other topics obviously have been successfully securitised but it would seem absurd to label as applicable to this issue the lessons from terrorism, migration, or health security for example. There have been cases, however, when issues similar to planetary defence have undergone a securitisation process to greater or lesser levels of success. For example, the 1957 launch of Sputnik inarguably caused mass panic within the United States which led to the securitisation of space and kicked off the Space Race, one of the most ambitious and expensive competitions in history. The 1980's witnessed President Ronald Reagan attempt to securitise his Strategic Defence Initiative (SDI), more commonly, and usually pejoratively, known as 'Star Wars'. This effort ultimately floundered but was not unaccompanied by some successes. Both instances offer useful lessons for future attempts to securitise any issue pertaining to space security. The lesson from Sputnik could simply be that it is entirely possible to securitise an issue related to threats involving space, and to do so with blistering rapidity, but you might first require a rival superpower to field a potentially destabilising technology. The lessons from Reagan's SDI project are multitudinous but could be summed up thusly: how *not* to securitise a space threat. For the purposes of this project, it is Reagan's endeavours that are most interesting. By closely studying his partially successful attempt at securitisation this project aims to provide data useful to any future attempt at the securitisation of NEOs. The project generally aims to investigate issues of space security using the precepts of Securitisation Theory, and specifically aims to use the analysis to better inform an argument in favour of the securitisation of NEOs. This argument will coalesce around the radical proposition that NEOs should be weaponized. Thus, the research questions are: 1) To what extent are the lessons from President Ronald Reagan's SDI securitisation applicable to Planetary Defence? and 2) Can the securitisation of NEOs lead to effective planetary defence?

A literature review will first be offered in order to place the issue within the general context of space security, before addressing matters specific to planetary defence. This will be followed by an elaboration of Securitisation Theory, and a detailed explanation of how the methodology will employ the theory. The analysis of Reagan's SDI will constitute the bulk of the project. The decision to avail of such an historical example is necessary due to the innovative nature of the argument. This analysis will deal with the content of Reagan's securitisation effort in detail and explore the results in the discussion section. Finally, having absorbed the lessons of Reagan's SDI, the argument in favour of NEO securitisation and how it can be done will be assembled.

Literature Review

This literature review will first address the concept of security as it pertains to space, before looking at the specifics of the asteroid threat, and will conclude with a treatment of the solutions that have thus far been proffered to deal with the threat, both technical and political. Space security discourse today is governed by paradigms that began to form prior to the onset of the Cold War. Although optimistic, egalitarian futures were imagined by scientists, authors, and policymakers, it was generals and admirals that ultimately determined the trajectory of space developments. As such the first section will address the militarism that so strongly defined the Space Race and find that this militarisation of space continues to be a defining feature in our approach towards celestial activity. The next section will give some detail about the nature of the threat, our changing and growing understanding of it, and the difficulty scholars and policymakers have had attempting to quantify and communicate it. The most salient point of this section should be that no matter how well the consequences might be understood, humankind is generally poor at thinking about very low probability events. The final section will deal with the technical and political measures that have thus far been suggested. It will be displayed that, while our technical knowledge of the threat has grown healthily, our ability to intervene has remained moribund. A single NASA mission holds good prospects as a technology demonstrator but this mission, and all other propositions, have virtually no chance of inspiring enough action to actually assemble an effective planetary defence system.

I. Space Security

On the morning of October 5th, 1957, the Western World awoke to a new reality. The Soviet Union had for the first time put a human-made object in orbit around the planet. By the time the American public had read the morning headlines the tiny Sputnik satellite had already overpassed the United States four times (Jorden: 1957). The eminent historian of America, Daniel J. Boorstin said of the occasion that 'never before had so small and so harmless an object created such consternation' (Dickson: 2001, p. 1). It is generally considered that Sputnik heralded the onset of 'practical space activity' (Babintsev: 2010, p.17), that prior to this event space had 'hitherto been pristine in relation to mankind's warlike history' (Boorman and Sheehan: 2009, p.1). However, such accounts run contrary to a more complete reading of history. The V2 rockets of the Third Reich had since 1944 terrorised targets in Belgium, The United Kingdom, France, and The Netherlands with over 3000 being launched (Becklake: 1995). The *Vergeltungswaffen* or 'Vengeance Weapon' was the first guided military ballistic missile to leave the atmosphere before striking its target, thus constituting the first time space had been engaged in a military context (Cleaver: 1966). Two curiosities are immediately apparent. The first is that this simple fact seems to go largely ignored by many scholars. And the second is that the contemporaneous public response to both developments seems to have been disordered. The harmless Soviet ball emitting only intermittent radio waves caused mass panic whereas the deadly Nazi superweapon did not. An exploration of the latter curiosity is revelatory of the former.

Jones et al (2004) argue that the absence of public hysteria over the V2 rocket was due to a 'fatalistic attitude' that lessened its psychological impact. The British government initially attempted to censor information about the V2 attacks precisely to prevent mass panic, but their efforts proved futile and 'largely unnecessary' as the attacks did not engender defeatism in the population (Hall: 2022). Once the Nazi regime had collapsed there followed no mass consternation about the Soviet Union and its rocket program even though it had sequestered a

comparable amount of German rocket technology and associated personnel as the United States had. It was widely known that the Soviet Union and the United States had engaged in a frantic dash to secure as much German technology before the war ended. Indeed, the details of Operation Paperclip - the effort to gather up as much German wartime technology and expertise - 'was exposed almost immediately in the American press' (Pilon: 2019). The United States government, having integrated over 1600 former Nazi scientists into various military projects of its own, was driven to launder the reputations and history of men like Werner von Braun, General Walter Dornberger and Arthur Rudolph. Each formerly indispensable, and sometimes zealous, functionary of the German war machine found himself instrumental in America's own nascent rocket program (Neufeld: 2002). US policy makers, fearful of a public backlash against former Nazis now working in the heart of important government projects, 'were compelled to provide a sanitised history of Nazi rocket activities palatable to Western audiences' (Neufeld: 2008, p. 73). Complaisant historiographies of rocketry were penned (McCurdy: 2011, p. 38), uncritical journalism was propagated (Wright: 1993) and even Hollywood was co-opted to help expunge the lingering scent of Nazism from American rocket science (Schneider: 2006). Given the significant efforts from officialdom to manage public discourse it was not simultaneously possible to openly criticise the Soviet Union for its own dubious incorporation of Nazi technology and expertise. Thus, the budding Soviet rocket program was not framed as existentially threatening in the decade following the war. Rather, rocketry and space exploration in general was swallowed up in the greater 'astrofuturism' paradigm that defined the early 1950's (de Witt: 1997). Of course, this paradigm disintegrated soon after Sputnik was placed into orbit.

The event took the United States by surprise and quickly escalated into a domestic and international crisis of confidence (Tranter: 2002). This 'terror' was also ideological in nature; the 'flurry of statements and investigations and improvised responses' could not mask the unsettling possibility that Communism had trumped Capitalism (Wohlstetter: 1959). The crisis 'swept through the country like a windblown forest fire' as fear grew that 'the country lay at the mercy of the Russian military machine and that (the) government and its military arm had abruptly lost the power to defend the homeland' (Killian: 1977). It would be a gross understatement to say that Sputnik galvanised the US administration into taking space more seriously. Lyndon B. Johnson instigated a congressional investigation into the administration's failure and successfully pushed for a massive increase in spending on space which he called the 'key' to world power (Young et al: 1969, p.98). Congress and the public demanded that the United States be the leader in space. These demands and 'the military-political pressures that surrounded them put down the roots of what would soon become a hostile US-Soviet space relationship' (Moltz: 2011, p.92). Though the Cold War was well underway by this point, the definitive starting pistol of the Space Race had been fired. This race continued for decades with the majority of early victories accumulated by the Soviet Union (Banks and Ride: 1989). However, the perceived primacy of the Soviet Union was to dramatically expire. Included in President Nixon's daily briefing of July 5th, 1969, was news that the massive Soviet N1 rocket had exploded on the launch pad at Baikonur Cosmodrome. Later that month, aboard the USS Hornet, the President welcomed back to Earth the first men to have walked on the Moon (Day: 2016). The United States was never again to lose its lead in the Space Race.

It is important to stress the military nature of this race. Familiar calls to prevent the militarisation of space (Sheehan: 2009, Sheldon: 2008, Lee: 2021) tend to miss the point that the domain has always been almost exclusively the preserve of militaries. Aside from the obvious annihilatory purpose of Intercontinental Ballistic Missiles (ICBMs), armed forces 'naturally conceived of satellites in terms of pursuing military goals, and first used them for

conducting photographic and radio reconnaissance, as well as for communications and navigation' (Babintsev: 2010, p. 22). Certainly, many civilian and scientific achievements have been amassed but they would scarcely have been possible without military involvement, at least in the early decades. For example, the first commercial satellite was launched atop a minimally modified ICBM - the Thor missile (Morgan: 1979, p. 456), and it would take an expert to spot the difference between the Hubble Space Telescope and a KH-11 spy satellite of the National Reconnaissance Office (NRO) (Thomson: 1995). The increase in the civilian share of space activity, especially in the last two decades, has not led to an amelioration of its militarisation. Today, militaries are 'crucially reliant upon satellite technologies' and it is 'accurate to say that outer space is becoming ever more securitised' (Peoples: 2011). It is not now uncommon for policy makers of all space powers to seek the 'acquisition of space-based capabilities to defend one's own satellites and attack those of adversaries' and it will not be surprising in the longer term should those same advocates seek 'to place weapons in space that could attack targets on Earth' (Bormann and Sheehan: 2011, p.2). Popular reporting and indeed much scholarship would refer to this as utilising 'The Ultimate High ground' (Anderson: 1995, Lambeth: 2003, Posey: 2014) but such a paradigm obscures the relative vulnerability of space-based assets in Low Earth Orbit (LEO), weaponized or not. More nuanced scholarship draws heavily on 'blue-water' models, with the most appropriate comparison of LEO space, where the vast majority of activity takes place, being that of the littoral coastal zone. Our 'cosmic coastline' is host to machinery and habitats that are akin to 'coastal vessels in range of landward weapons and political-economic influence' (Bowen: 2022, p.105). It is into this political/military milieu that the issue of planetary defence must struggle for attention.

II. Asteroid Threat

Although it is taken as accepted wisdom today, by 1980 there was no consensus that an asteroid had indeed pushed the dinosaurs into extinction (Alvaraez: 1983). The astronomical community, though, did not wait for consensus to materialise before attempting to quantify the threat. Initially the odds seemed stark. Eugene Shoemaker ominously calculated a 12 to 40 percent chance of a Tunguska type impact occurring within 75 years (Mallove: 1984). A number of prophesied 'doomsday rocks' in the years that followed seemed to vindicate Shoemaker's prognosis with names like 'Bennu', 'Eros' and 'Apophis' occasionally causing disquiet in public discourse (Broad: 1991, Browne: 1998, McKie: 2000). Fortunately, a good deal of this initial consternation has been rightly allayed as our Space Situational Awareness (SSA) has matured. The Chicxulub impactor of 65 million years ago is estimated to have been about 10km wide (Alvarez and Asaro: 1990) but no known NEO of this magnitude has been deemed threatening to Earth even into the far future. Indeed over 95% of NEOs above 1km in diameter have been both mapped and reassuringly discharged as a pressing concern (Bartels: 2021). However, such massive bodies are relatively sparse. Vastly more numerous are the tiny micrometeorites and dust particles that strike the earth every moment. About 4700 metric tons of this space detritus is deposited each year across the surface of the Earth (Rojas et al: 2021). The great majority of this material either burns up in our atmosphere or loses enough of its velocity on its way to the ground that it poses little threat - but not *no* threat. The 2009 Grimsby meteorite for example, weighing less than 300 grams, claimed as its casualty an Ontario resident's car windscreen (Brown et al: 2011). Much more consequential was the Chelyabinsk event of 2013. That asteroid, while still on the smaller side at only 20 meters diameter, injured over 1500 hundred people when its shock wave swept through the central Russian city (Mathewson: 2016).

Fortunately, a specific delimitation has been established that defines NEOs worth worrying about. It is accepted that NEOs 140 meters in diameter and larger are most worthy of attention. This is the lower bound for space objects that NASA has been tasked by the United States Congress to study and monitor. It is a threshold shared by most international monitoring bodies and space agencies (Tonry: 2011). This minimum is accepted not because NEOs smaller than 140m are innocuous - indeed both the Chelyabinsk and Tunguska events fell far below this threshold - but because objects greater than 140m across would cause damage on regional or continental scales. The energy released by a 140m NEO, in terms of equivalent explosive megatonnage, far exceeds the largest nuclear weapons ever tested (Resnick and Sukumar: 2018). As the objects scale towards 1000m in size, comparisons to any destructive invention of human design quickly become inadequate. Though much is known about the devastating effects should a NEO within this cohort of 140m-1000m strike the Earth, far less is known about the population itself. Despite great advances in astronomical tools, and the exuberance of professional and amateur asteroid hunters it remains exceedingly difficult to monitor and track objects within this cohort. These objects are so dark, distant, cold and (relatively) small that only the most sensitive and dedicated instruments have some hope of spotting them. Frustratingly, due to the usually limited telemetry available, it is also possible to lose track of such NEOs after they have been spotted (Mainzer: 2017). Over 10'000 NEOs between 140m and 1000m have so far been registered but this number is estimated to represent less than one third of the full population (Bartels: 2021).

Compounding the difficulty of having incomplete information is the problem of not knowing how to properly react to the data that we do have. Risk management scholars of the 1970's provided the vocabulary that continues to structure conversations about these kinds of societal threats. A catastrophic NEO impact would be considered a 'high-impact low-probability' event (Starr et al: 1976). Wohlpert (1980) put it succinctly:

> "The rare event which is catastrophic in magnitude has either never occurred historically or occurs with such low probability that its next occurrence cannot be predicted. Rare events do not lend themselves generally, as do highly probable hazards, to rigorous estimation, assessment, management and control. Instead, the rare event is treated with what one hopes is over-precaution" (Wolpert: 1980).

Of course, excessive precaution can accrue unpalatable costs. A government can devote vast resources to, for example, flood defences when it is known that floods are likely to occur. That government will likely be considered wise for doing so. However, spending the same resources on a threat that may not materialise within either the election cycle of that government or within even the lifetime of a citizen may be considered unforgivably wasteful. Recourse to data, in attempting to support a decision, is not always helpful. Every argument in favour of action that draws on the dire consequences of an impact (Silver and Schultz: 1982) is countered by arguments of the unlikelihood of such an event occurring (Reinhardt et al: 2015). Renn and Klinke (2004) argued that for these kinds of problems a 'more holistic and systemic concept of risk' is needed, one which expands beyond the classical components of 'extent of damage and probability of occurrence'. They address the issues of 'complexity, uncertainty and ambiguity' and create risk classes based on well-known Greek mythological figures - Medusa, Pandora, Cyclops etc. - in the hopes that the familiar motifs can better structure conversations about policy responses. The NEO threat would be considered a 'Damocles' on this scale, reminiscent of the sword hanging by a thread above Dionysus' throne. The international scientific community has not quite onboarded this holistic approach. Since 1999 the 'Torino Scale' has incorporated the traditional 'damage versus probability' approach. It assigns a number from

‘0’ to ‘10’, where the lower number indicates little concern and the higher constitutes a guaranteed civilizational threat (Binzel: 2000). Reassuringly, there are no non-zero items listed on the Torino Scale (CNEOS: 2022). Of course, this situation will not last. It is prosaic in the extreme but nonetheless true that the question of a serious NEO impact is not ‘if’ but ‘when’.

III. Response

It is obvious that improving Space Situational Awareness (SSA) must form the basis of any potential mitigation strategy. We cannot begin to protect ourselves if we don’t know what’s out there. There are many agencies and bodies that contribute to SSA and, in terms of data sharing, they generally cooperate well. NASA is home to the Planetary Defence Coordination Office (PDCO) which supervises all aspects of the United States NEO science endeavours (Vereš and Schmidt: 2019, p.54). The European Space Agency (ESA) concurrently operates tracking and spotting systems in addition to developing advanced algorithmic orbital prediction systems. ESA and NASA closely cooperate on developing new tools and on future NEO redirect mission planning (Koschny and Drolshagen: 2015). At international level, there exists the International Asteroid Warning Network (IAWN) and the Space Mission Planning Advisory Group (SMPAG) both established in 2014 under the supervision of the Committee on the Peaceful Uses of Outer Space (COPUOS). This Committee is itself couched within the United Nations Office for Outer Space Affairs (UNOOSA) (Van der Hucht: 2019). The private and non-profit sectors also play a role with organisations like the B612 Foundation and amateur networks contributing to SSA (Lu et al: 2013). There are many gaps to be filled in terms of our SSA. However, the issue is garnering more attention and the institutions that are tasked with addressing it enjoy almost unrestricted cooperation. The only notable exception is NASA’s congressional prohibition from cooperating with China (Reddy: 2017). Thus far international SSA undertakings have not indicated a need for intervention in the near future but *when* they do, proactivity will be desperately more urgent than observation.

Once a sufficiently hazardous NEO has been identified its trajectory will need to be physically altered to avoid a collision with Earth. Unlike our improvements in SSA, advances over the last forty years in redirection technology have been lethargic. The question was first seriously addressed only in 1992 at the Near-Earth-Object Interception Workshop at Los Alamos National Laboratory. Much of the technologies that we continue to consider today were first theorised at this workshop. Laser ablation, kinetic impactors, crack outgassing, solar sails, etc. were all subject to rigorous engineering and scientific consideration but the only option that was considered feasible and effective in the near term were nuclear devices (Canavan et al: 1993, p.15). This conclusion has persisted. A handful of innovations have more recently been theorised, such as gravity tugs (Lu and Love: 2005) and robotic systems (Brack and McMahon: 2020), but the assessment remains the same. The best candidate for altering the trajectory of a NEO, especially for ‘short notice, larger impact’ events is a nuclear weapon (Doboš et al: 2020). Of course, testing a nuclear device would certainly be prohibited by even a lenient interpretation of Article IV of the Outer Space Treaty (1967). The next most promising option is arguably the kinetic impactor - slamming an object at terrific speeds into a NEO to change its trajectory. As of writing, NASA’s Double Asteroid Redirection Test (DART), launched in November 2021, is headed for a high-speed encounter with Dimorphous, a moonlet measuring 160m across that orbits the much larger Didymous asteroid. Should the mission yield results sometime in September 2022, it will have for the first time demonstrated the feasibility of this technology (Roulette: 2021). China has also announced its intention to conduct a similar

mission before 2025 as part of its own planetary defence initiative but specific details remain elusive (Howell: 2022).

The DART mission is a promising first step, but effective planetary defence is nowhere near realisation. The lack of urgency around this issue is perhaps unsurprising due to the timing of its arrival on the political agenda. Almost all discourse on planetary defence amid the 1980's was subsumed into more general debates about space security. The public, when they did think of threats from space, were solely 'focused on the question of defensive weapons to counter strategic ballistic missiles' (Jasani: 1987, p.3). The renewed attentiveness to space security inspired by United States President Ronald Reagan never extended to questions of NEOs as this interest was 'concentrated on antisatellite and space antiballistic missile warfare rather than on the across-the-board use of outer space' (Everett and Katz: 1985, p. 9). As the Soviet Union had nothing to do with NEOs, there was little point devoting much attention to it. Some effort was mounted to assemble a solution that comported with the bipolar world order. A 1984 conference of planetary scientists at Lawrence Livermore National Laboratory called for a 'collaboration between the superpowers to provide protection to the whole planet' (Knox and Smith: 1984), a position that was echoed by the American Institute of Aeronautics and Astronautics (AIAA: 1990). Both superpowers neglected to engage with such exhortations.

With the apparent dissipation of Cold War hostilities there ensued an opportunity to think about the problem outside the confines of a bipolar world order. International cooperation on planetary defence was championed by liberal internationalists: Tedeschi and Teller, highlighting the primary merit of the United Nations being that 'it exists', argued that a 'Special Branch of the United Nations' should be tasked with preventing asteroid encounters (1994). This proposal garnered few advocates. Despite the somewhat increased attention on this topic, especially since 2014 with the establishment of the IAWN and SMPAG, the United Nations will not soon be granted such powers, if ever. Alternative forms of organisation have been proffered. Growing 'regionalisation as well as increasingly dynamic private sector involvement' in the space sector has inculcated a more polycentric approach to addressing planetary defence (Shakelford: 2014). The folly of relying on private capital though seems obvious; investors are not interested in charity but profit. Others have sought to reproduce the success of previous unprecedentedly large science projects in the same vein as ITER (International Experimental Thermonuclear Reactor) or CERN (European Organisation for Nuclear Research). Such projects involve the assembly of 'large technical systems or *scientific machines'* that pool resources from participating states into a single bureaucratic 'machine', in this case one that would field an orbital laser system that could nudge hazardous NEOs onto safer trajectories (Schmidt and Deitrych: 2019). Such a proposition could potentially be successful, but its primary shortcoming is time. These 'scientific machines' require decades of sustained negotiation and diplomacy before an even longer construction process can begin (Harding et al: 2012). Such a protracted approach may be rendered, suddenly, futile should a NEO threaten us prior to its completion. Indeed, this is true for all of the approaches thus far tendered. It is also true that each proposal has accumulated such paltry political will that any hope one of them would soon become a reality is risible. The planet remains defenceless.

Analytical Framework

Methodology I: Securitisation

Securitisation is the process of a political issue being raised to that of a security issue, usually by state actors and in the name of a state, thus hobbling regular political discourse and enabling extraordinary measures to counter the threat. A security actor attempts to convince an audience (usually the body politic) that something vital to the continued functioning of the state is existentially threatened. The threat may be a grave, materially tangible one or it may have little objective footing. The theory has chiefly been used as a way to criticise the disproportionate amount of resources and attention successfully securitised issues receive but in recent years its applications have diversified.

> "Securitisation theory seeks to explain the politics through which (1) the security character of public problems is established, (2) the social commitments resulting from the collective acceptance that a phenomenon is a threat are fixed and (3) the possibility of a particular policy is created" (Balzacq et al: 2015).

This section will provide context about the theory's origin, give more detail about its functioning, and address some of the developments and critiques that have emerged about the theory in the last two decades or so.

Securitisation was first inaugurated by Ole Wæver in 1995. Wæver took issue both at the traditional assumption 'that security is a reality prior to language' and the response of critical security scholars from the 1980's who, in an attempt to break the monopoly of traditional security actors over the application of the concept, broadened it beyond usefulness - 'the concept of security becomes all-inclusive and is thereby emptied of content' (Wæver: 1995). Motivated to address these shortcomings, Wæver introduced the concept of 'security as a speech act'. It was not until 1998 that the idea found full expression as a more comprehensive theory with the publication of *Security: A New Framework for Analysis.* This work, assembled by Wæver, Barry Buzan, and Jaap de Wilde, amalgamated some of the insights gained from earlier work on regional security complex theory (Buzan: 1983) and continued with the core areas of concern outlined in *People States and Fear: An Agenda for International Security Studies in the Post-Cold War Era* of political, economic, military, societal and environmental landscapes (Buzan: 1991, p.78). Thus, a core text of the Copenhagen School was added to the lexicon of security studies. The work takes seriously the traditionalist 'complaint about (the) intellectual incoherence' of the 'wideners' but opposes the 'retreat into a military core' of the analysis of security (Buzan et al: 1998, p.4). By focusing on the 'speech act' securitisation theory eschews the perennial debate over the objective versus subjective nature of security threats and places a spotlight on 'the way in which issues do or do not end up on the political agenda' (Knudsen: 2001).

Constructivists generally contend that speech regulates the organisation and interpretation of society, that 'actors over time can modify or even eliminate rules by performing speech acts that challenge them' (Duffy and Frederking: 2009). Buzan et al ingeminate that 'by saying the words, something is done, like betting, giving a promise, naming a ship' (1998, p. 26). It is this constitutive element of the speech act that is most interesting; the understanding that a speech act can not only describe but *make* reality. From this point to the securitisation scholar, some obvious questions arise: what is the nature of the speaker and why are they attempting to draw an exceptional amount of attention towards a particular issue? What is the nature of the

audience and how receptive are they to the securitising speech act? There are also obvious and familiar questions about the nature of the threat and the body being threatened however, as there is no requirement for either of these elements to be objectively extant (Balzacq: 2005), they are not often as highly scrutinised. Thus, the four core elements of securitisation can be inferred: the securitising actor, the existential threat, the referent object in need of protection, and the audience in need of persuasion (Buzan et al: 1998, p.32). A securitising actor is motivated to persuade the audience that a particular threat is worth raising above the level of normal politics because the exceptional logic permits extraordinary action, indeed it is only through extraordinary action that the valued referent object can be saved (Buzan and Wæver: 2003, p. 491). A successful act of securitisation will result in greater resources being made available to protect the referent object with fewer concomitant political restraints.

The structure given above remains central to any treatment of securitisation, but some scholars have seen fit to add interpretations. For example, the conventional theory describes a binary state of affairs - either a securitising act succeeds or fails, an issue has become securitised, or it has not. Some prefer instead to place issues on a spectrum of Securitisation, arguing that the practice should 'best be understood as a continuum rather than a binary condition' (McInnes and Rushton: 2011). Further, it is not obvious to what extent the audience should be treated as homogenous within the theory. Some securitisation scholars transparently delineate between different types of audiences - the public at large, technical academia, policy professionals, business class, etc. - and some believe that even within those delineations there can be variance, that 'different members of an audience may place an issue at varying points along' a scale (McInnes and Rushton: 2011). The role of emotion has also been expounded. Questions of security are quite naturally linked with fear - fear of threat, of change, of the unknown - and other emotions, but usually such sentimental factors remain under theorised. Securitisation theorists have 'a tendency to discuss emotion but deny it ontological status' (Van Rythoven: 2015). Some have therefore sought to complement the original theory with contributions from psychology to better theorise some of the unspoken assumptions it holds about the role of emotion (Van Rythoven: 2015). Yet more scholars have taken the bones of the theory and modified it slightly to fit their research needs in various ways. While most can agree that securitisation constitutes 'one of the relatively few recent genuine advances in security theory' (Ciuta: 2009) there is less agreement about how exactly one should *do* securitisation research. There is some debate on this question, and it is arguable that this discourse 'has only just begun to transform the new idea into a more comprehensive security theory' (Stritzel: 2007). Such malleability is not necessarily indicative of conceptual ambiguity. Indeed, the original authors, rather than policing the proper deployment of their theory, encourage flexible and innovative approaches. Wæver himself is chief among those arguing for further debate about how the theory can further develop, highlighting especially 'three emerging debates (about) ethics, transformations, and post-Western analyses' (Wæver: 2011). Whatever the application or interpretation, there is little doubt about the value of the theory as a scholarly regime of analysis and its ability to produce both critique and insight. Most familiar is its application in analysing the exceptional responses to terrorism (Kaunert and Léonard: 2018) and migration (Bello: 2020). Its utilisation in health security is no surprise due to the Covid-19 pandemic (Kirk: 2021), but even prior to the pandemic securitisation had been used to scrutinise the responses to other health issues, such as HIV/AIDS (McInnes and Rushton: 2011) and Ebola (Enemark: 2017). Although, its employment is not limited to obvious security concerns. The theory has been used to investigate the exceptional security responses to water (Fischhendler: 2015), the internet (Gorr and Schünemann: 2015), and poverty (Lorenzo-Dus and Marsh: 2012) among many other issues. "Notably thanks to empirical studies, securitisation theory has significantly developed beyond its initial focus on the speech act" (Balzacq et al: 2015).

However, no theory is perfect. The limitations and weaknesses of Securitisation Theory should be acknowledged. Critique has unsurprisingly flowed from both poles that Wæver and Busan originally sought to engage with; the traditional security establishment and the security 'wideners'. The latter usually admits that 'the securitisation framework makes significant contributions as an analytical tool' but predictably argues that the project is 'too narrow in focus' (Jackson: 2006). The former, aside from its anemic engagement with the ontological differences between all materialist and constructivist paradigms, often charges securitisation theorists with the politicisation of true security issues (Eriksson: 1999), a complaint that is not uniquely charged against securitisation (Walt: 1991, Ayoob: 1997, p.122). Perhaps surprisingly, some of the sharpest criticisms have emanated from scholars who are broadly aligned with the emancipatory objectives of the Copenhagen School. Securitisation scholars have contended with accusations that the theory is inherently negative (Aradau: 2004), that it is 'methodologically and epistemologically contradictory' (Ciuta: 2009), and (somewhat controversially) that it is irredeemably racist (Howell et al: 2020). Some of the more relevant critiques will be addressed here.

Firstly, shortly after its debut the most salient establishment critique was that securitisation suffered from 'unfocused conceptual wandering' (Skidmore: 1999). In a global academic marketplace where other theories offered more elegant, more systemic explanations, where claims about causality and predictability could plausibly be made, the unconventional tenets of securitisation theory appeared unconvincing. The theory endures the allegation that its scheme of analysis involves so many variables that no meaningful causal analysis can be attempted, leaving us with 'little understanding of why certain issues evoke security concerns' (Skidmore: 1999). Furthermore, it could be considered a curiosity that language is privileged over action within securitisation. Traditional security scholars may not normally raise grave objections about the importance of language but the 'preoccupation with what political actors say to the near exclusion of what they actually do (or have the potential to do) leaves out much of what we want to know of international relations' (Skidmore: 1999). The constructivist roots of securitisation would hold that language, and therefore the construction of persuasive paradigms, *leads* to action but this proviso is usually insufficient for traditional security scholars.

A separate and distinct privileging is purported to occur between the prioritisation of analysis over normative politics. The critique here stems not from the security establishment but from more emancipatory and critical scholars. Claudia Aradau (2004) laments the attempts of some securitisation scholars to remain a-political, to offer only objective analysis without acknowledging the normative agendas that should, to her mind, motivate such analysis. In the absence of a normative foundation Aradau's chief concern is that securitisation becomes an inherently negative concept, in the pejorative sense. Its ingrained hasty decision-making process and its tendency to produce classes of adversarial 'others' constitutes a 'non-democratic, exceptional and exclusionary logic' (Aradau: 2004).

> "As both a performative speech act and a series of extraordinary practices which break the rules of normal politics, securitisation brings together a benign mobilisation of attention and funds on one hand and, on the other, an exceptionalism that is unsettling for democratic politics" (Aradau: 2004).

Aradau highlights a certain naiveté of some securitisation scholars in their being unable to recognise the potential threat to democratic norms. The Paris School, however, is at pains to

highlight the naiveté of securitisation theorists in their flawed understanding of the motivations of securitising actors. Didier Bigo, in particular, has scrutinised so-called 'security-professionals' - officers, bureaucrats, politicians, etc. - in an effort to understand why some issues are elevated as existential security threats and not others. He argues that such individuals with privileged access to information abuse and misuse their positions not to counter threats that genuinely endanger the societies they are nominally assigned to protect, but to fabricate or exaggerate security issues in an effort to shore up their own personal and institutional ambitions (Bigo: 2002). The heart of the critique is that securitisation scholars, skeptical as they may be of how certain issues become securitised, have not baked into their theory the possibility (indeed likelihood) that their securitising actors are influenced by private designs independent of, and unaccountable to, the discourse in which they operate.

Of course, there are obvious ripostes to such rejoinders. The abandonment of democratic norms (at least when speaking about democracies) may often be overstated. Although the 'extraordinary politics' of securitisation certainly accelerates any legislative process, nonetheless 'a certain degree of scrutiny and oversight remains' (Roe: 2012). Further, the constrained timeframes and scrutiny available to a securitised issue should not be considered inherently negative. Indeed, they may be desirable:

> "Having issues settled by 'ordinary' politics is a nice idea: who would prefer it to the threat of political violence? But 'ordinary' politics might not help in extraordinary circumstances; indeed, treating extraordinary issues as ordinary politics is a problem not a solution"
> (Booth: 2007, p.168)

The perceived democratic deficit within securitisation is considered undesirable especially by those who argue that security should be an emancipatory project. However, as a standard for measuring various concrete policies and actions, Wæver contends that security as emancipation 'reduces politics to outcomes' (2011). This is not to say that emancipatory objectives and securitisation are antithetical, simply that 'policies are always relational, their effects and implications contingent on other actors ... and therefore (are) not amenable to such types of assessment'. In other words, particular acts of securitisation should not be considered positive or negative *per se,* rather, that their quality depends on a number of other factors (Wæver: 2011).

This frame of analysis is neatly typified within the securitisation of space, with the discourse surrounding the Sputnik launch offering an interesting case study of a wildly successful act of securitisation. That act occurred so quickly that most scholars today think of space as having been securitised 'from the dawn of humanity's entry into space' (Sariak: 2017). Of course, this 'dawn' is almost exclusively considered to have been heralded by Sputnik and not, as has been noted in the literature review, by the rocket activities of the Third Reich. The chief securitising actors in 1957 were not members of the presidential administration or its chief executive. Rather, Democratic Party leaders sought to turn the issue into a crisis and 'gave several speeches painting the Soviet satellite launch as a dangerous development for US security'. Chief among the construction of an 'alarmist narrative' was then Senator Lyndon B. Johnson (Cross: 2019). Johnson's rise to power as Vice President to John F. Kennedy was not insignificantly buoyed by the securitising narrative he had helped to create and by promises of remedying the threat caused by advancing Soviet technology. This case will be used to animate some of the technicalities in the methodology below.

Methodology II: Operationalisation

Wæver outlines three core elements of security problems; *urgency, exceptionalism,* and *existential threat* (1995: p.49). Although their meanings may be apparent, it is worth outlining specifically the author's sense in each case as it is necessary to understand how the content of speech acts are delineated. This schema will be operationalised using a Qualitative Content Analysis (QCA). When content is embedded in context and communication Mayring (2000) identifies QCA as an appropriate method that allows for the methodical, empirical, and controlled analysis of texts. QCA can both contribute to describing the meaning of qualitative data while simultaneously parsing its constitutive elements to material relevant to the research question (Schreier: 2014a). QCA itself is not a homogenous, immutable methodology and comes in many forms. This project will use the content-structuring technique that conceives of the material in question within developed categories (Schreier: 2014a). According to Schreier, the initial steps in this methodology are settling on a research question and then selecting the material. The research question has been described above. The material consists of 23 public communications from President Ronald Reagan from March 1983 to October 1988. These communications take the form of radio or television addresses to the nation, congressional addresses, public speeches or remarks, press releases, and statements from the White House. Except in one instance, all of the material was gathered from the digitally available archives of the Ronald Reagan Presidential Library & Museum (reaganlibrary.gov). Many other news and reporting outlets held snippets and extracts or the President's communications but only the Presidential Library itself held full text versions of the President's words, thus making their store amenable to content analysis. The following step within QCA is the assembly of a coding frame. It is posited that a 'concept-driven', deductive approach is possible (Schreier: 2014b, p.176). Fortunately, securitisation theory imbues the coding frame with the readily accessible categories of *urgency, exceptionalism,* and *existential threat.* Into these categories will fall the units of the coding frame. Buzan himself supports the deductive approach. He argued that 'securitisation can be studied directly, it does not need indicators' (1998, p.25).

President John F. Kennedy's 'Urgent National Needs' will prove useful in animating an otherwise dry and technical explanation of the three categories. Firstly, the notion of *urgency* may seem unambiguous but to be specific about how it relates to the coding frame; this refers to any conception of or allusion to time. It can be present in calls for accelerated activity or shortened deadlines. It can be conjured in images of closing windows of opportunities or losing races. Generally, urgency is used to stress the temporal sensitivity of the issue and it can be done with plain analogies to ticking clocks or it can be done metaphorically or obliquely; the effect is the same. President Kennedy, aside from the fact that his address included 'Urgent' in its title, activated this sense of hastiness by declaring; 'Now it is time to take longer strides', 'this is a most serious time in the life of our country' (1961). He also committed the United States to the goal of 'beating' the USSR in landing a man on the Moon (Kay: 2003) thus conjuring the race metaphor. Securitisation scholars also specifically relate *urgency* to a prioritisation of one issue above others, but these other issues will usually go unacknowledged. Kennedy, in this example, elevated the Space Race to an 'urgent national need' but ignored a plethora of other potential candidates; tensions in Vietnam, domestic race relations, or decolonisation of Africa, for example. Scholars also acknowledge that urgency may seem absent in a given situation simply because the 'drama' is already so absolute that it can go unspoken (Buzan et al: 1998, p. 28). This 'drama' was indubitably apparent immediately following the launch of Sputnik but, years later, Kennedy may have needed to remind his audience.

Secondly, *exceptionalism* or 'claiming the legitimate use of extraordinary means (Wæver: 1995, p. 49) means both that an issue cannot be resolved within the confines of normal procedures and that any measures undertaken in pursuit of a resolution that lie outside established practice are justified. Kennedy acknowledged the exceptional nature of his ambitions - 'These are extraordinary times. And we face an extraordinary challenge' - but did not necessarily call for an exceptional suspension of normal politics. This is where an element of subjectivity resides. To one reader an allusion to a securitised response may be enough to identify exceptionalism, to another there must be a distinctly stated argument in favour of supernormal politics before exceptionalism can be confirmed. The analysis below is more accommodating of ambiguity. In democratic systems it would likely be seen as a negative should a leader openly advocate the suspension or denigration of normal democratic functions. A leader may still seek to achieve this outcome but may try to convince his audience using coded language, oblique references, or cryptic messaging. As such, there may be some art to identifying this kind of language with the researcher's own subjectivities most apparent within this category, especially if partisan issues are under examination. For this analysis, the reader may decide; each instance of exceptionalism noted in the coding frame will be accompanied by the associated text within the full table in the appendix.

Finally, *existential threat* refers to the survival of the referent object and the purportedly grave issue which puts this status quo at risk. Securitisation Theory does not limit the referent object to the physical realm, it may not even make reference to physical wellbeing. The constitution of the threat may be vague and depends mostly on the interpretation of the securitising actor. Buzan et al (1988, p.22) argue that a referent object, depending on how it's defined and understood, could be threatened by events or articles that have no corporeal form. Kennedy implied in his speech that he sought to protect 'freedom' and used the Sputnik launch as a lightning rod to gather the threat of 'tyranny'. 'Freedom' here could be understood as a placeholder for the American way of life, or simply America itself. Tyranny could be considered the direct military threat emanating from the Soviet Union. A single instance can be interpreted many ways, especially when the securitising actor is vague or uses flowery language. This is why it's important to place the speech acts in context and to examine ideally a large number of them related to the same topic. Over time a much more accurate sense of the actor's understanding of both the referent object and the threat can be gleaned. This is the approach taken with the QCA of Reagan's Strategic Defence Initiative below.

Analysis - The Strategic Defence Initiative

The threat from Near Earth Objects has never been subject to a serious attempt at securitisation. As such it's not possible to analyse any speech act surrounding the issue because they don't exist. It is possible, of course, to find official documents that deal with the subject of NEOs – national security directives, internal publications of NASA or the US Air Force, press releases from bodies such as UNOOSA, etc. – and the content of these documents can be quite forceful and convincing in their beseeching a solution to potentially threatening NEOs. However, the authoritativeness of these actors is inadequate for the purposes of securitisation. Though publications from the Planetary Defence Coordination Office, the Air Force, or the Centre for Near Earth Object Studies may be adorned with the potent imprimatur of government, they do not constitute the words of the President, and, as such, are unaccompanied by the authority required to securitise. No matter how prescient, informative, or actionable their words they have very little influence beyond specific scientific or policymaking circles. Fortunately, the Strategic Defence Initiative provides a readily comparable historical example to draw lessons from, many of which will be applicable to the problem of NEOs. These lessons can serve dual purposes; they can be used by critics of efforts to securitise issues to sharpen their critiques against the latest attempt to circumvent the usual political restraints, or they can be used by advocates of securitisation to help avoid some of the pitfalls that have been observed, be they conceptual, practical, or political. It is firmly in the latter sense where the motivations of this project lie. The Strategic Defence Initiative was a partially successful securitisation effort but, overall, it could be considered a failure. It is through examining the flotsam and jetsam left in its wake that future similar efforts could succeed where SDI failed.

This section will feature the Qualitative Content Analysis of President Ronald Reagan's Strategic Defence Initiative. Prior to the QCA a brief introduction and description of SDI will be provided along with a discussion of the main contentions that were associated with it. Those contentions being of nomenclature, legality, and fact. The QCA will be accompanied by a breakdown of the three categorisations within the coding frame as described in the methodology: *urgency, exceptionalism,* and *existential threat.* The section on existential threats will be the most substantial as it introduces several complicated narrative threads. These threads will be picked up soon after in the discussion section. It is here where the main lessons from Reagan's endeavours will be unpacked. It is worth noting here that, despite it being a prominent, if not defining, factor in strategic thinking, deterrence theory will not be addressed in detail. Much more than a simple slogan of 'Mutually Assured Destruction', deterrence theory is a body of scholarship unto itself and would require inordinate space to adequately elaborate here. The work *Nuclear Deterrence and Moral Restraint,* edited by Henry Shue (1989) offers a comprehensive treatment with contributions from philosophers, policymakers, defence officials and scholars. It is not vitally important to understand deterrence theory to conduct an analysis of SDI however, with a good understanding of the theory, some incontrovertible critiques of Reagan's aspirations become glaringly obvious. Suffice it to say that Reagan's SDI could be considered altruistic, even noble, absent an understanding of deterrence theory. Given such an appreciation, SDI could be considered, at best, folly. In any case, this analysis is less concerned with the product as with the process.

Introduction to SDI

The 'Strategic Defence Initiative' (SDI) was conceived to be a system of ground-based and orbital defensive weapons that would neutralise the threat of strategic ballistic missiles. It would involve both the deployment of cutting-edge machinery and the development of technologies that had previously only existed within the realm of science fiction. Such devices would then be fielded at such scale that it would have dwarfed even the most ambitious of space projects (Duric: 2003). President Ronald Reagan first announced the venture to the public on March 23, 1983, and couched its ambitious goals in moral terms, arguing against the logic of Mutually Assured Destruction (MAD). In his televised address he suggested that 'free people could live secure in the knowledge that their security did not rest upon the threat of instant US retaliation' instead raising the prospect that 'we could intercept and destroy strategic ballistic missiles before they reached our own soil or that of our allies' (Reagan: 1983a). The address was bereft of technical detail and its lofty tone was not in the least bit unfamiliar to an audience that knew Reagan as a long-time critic of MAD policy (Jervis: 2002). As such, it was not until February 1984 when requests for extraordinary and 'unprecedented sums for research and development' reached Congress that the immense scale of the project was truly appreciated (Lichtenberg: 1989). The debate that erupted over SDI 'evolved into a three-decade feud over missile defence', one that continues to cause ripples in modern strategic thinking (Boyd and Scouras: 2013). Its legacy, not unlike its beleaguered inception, is contested. Schweizer (1994), among others, argues that the endeavour forced the Soviet Union to bankrupt itself in an effort to keep pace with America's spending.

> "According to this view, the SDI program made the Soviet Union realise that its economic and social system could not sustain this new technological arms race with the United States, forcing the Soviet leadership to seek concessions and eventually accept defeat" (Povdig: 2016)

This is not a widely accepted logic. Its primary fault is to leave unacknowledged the fact that the Soviet Union 'was already in hopeless shape by the 1980s' (Greenberg: 2000). The converse position is that the entire SDI system was technically infeasible from its initial conception (Broad: 1982), that its pursuit was destabilising to the 'delicate balance of mutual assured destruction that had deterred nuclear strikes for 40 years' (Greenberg: 2000), and that anyway it had virtually no effect on the Soviet Union other than to make arms reduction treaty negotiations more complicated (Povdig: 2016). Between the extreme theses of 'SDI ended the Cold War', and 'SDI was a fanciful waste of time' there probably lies some truth. Although most of the orbital technologies envisioned by Reagan turned out to be unrealisable, much of the ground-based systems were carried forward by the George H.W. Bush and Clinton administrations (FitzGerald: 2000, p. 479). Indeed, when the George W. Bush administration, inspired by noisome Iranian and North Korean overtures, considered assembling a National Missile Defence (NMD) system in 2005 the proposals set out an essentially slimmed down, less exotic version of what President Reagan had first described almost three decades prior (Pifer: 2015). It must be granted though that despite there being an extant but 'very limited version of what Reagan had planned … the vision at the core of SDI' has not been achieved (Stimmer: 2019).

The SDI is obviously interesting from the perspective of securitisation. Here we had an authoritative actor (arguably the world's *most* authoritative actor at the time) who defined an issue in terms of an urgent existential threat and attempted to convince an audience that extraordinary measures were needed to counter this threat. It cannot be said that Reagan's securitisation act was wholly successful, simply, because its primary objective was not

achieved. To even measure its success might always have been a difficult task though, because the broader issue of nuclear deterrence and annihilation from which Reagan was attempting to elevate his own project, had inarguably been 'successfully socially constructed as a threat' (Buzan: 2008, p.553). Reagan was not so much attempting to securitise the existential threat of nuclear annihilation, which already 'loomed heavily in the American consciousness' (Boyd and Scouras: 2013), as he was trying to securitise a particular aspect of it, and to advocate a new way of dealing with the threat. That particular aspect being the logic of Mutually Assured Destruction itself, at least initially. However, it also cannot be stated that his attempt was wholly unsuccessful. The funds alone that were unlocked serve as a rough indicator of Reagan's ascendancy. By the time his administration ended, Congress had been convinced to spend some $70 billion on various SDI projects (Tirman: 1993). It seems appropriate here to pay heed to the 'continuum' of securitisation as set out by McInnes and Rushton (2011) in the literature review. Reagan's SDI initiative exists somewhere along this continuum and to accurately situate it will require a careful study of the context within which it occurred and of the discourse that took place. Thus, the next section will attempt to map the contours of the discourse around SDI, particularly highlighting the most relevant points of contention.

I. Contested Nomenclature

The first contention that ought to be acknowledged is the unfortunate sobriquet the Strategic Defence Initiative was almost immediately burdened with: 'Star Wars'. Fans of the worldwide pop-culture phenomenon imagined by director George Lucas were, in 1983, breathlessly anticipating the third instalment of the beloved cultural touchstone. As such, the only surprise about a system involving space-based lasers and particle beams becoming associated with the Star Wars film franchise is that anyone would find such a connection surprising at all. When Senator Ted Kennedy (D-Mass.), the day after Reagan's address, criticised the President's vision as 'misleading Red Scare tactics and reckless 'Star Wars' schemes', the name stuck (Correll: 2012). Today, few outside of policy and academic circles would be familiar with the 'Strategic Defence Initiative' but a great cohort of the public would recognise Reagan's 'Star Wars' project (Stimmer: 2019). The battle over appellation was definitively lost. Indeed, it was lost before it had even properly begun; Time Magazine had placed on its April 4, 1983, issue cover an austere President in the foreground with a raging space battle behind him under the title 'Defending Defence: Budget Battles and Star Wars'. Though Reagan's March 23 speech is considered the formal introduction of the program, he never actually used the words 'Strategic Defence Initiative' in that address. In fact, the first reference to SDI outside of then classified documents was with the establishment of the Strategic Defence Initiative Organisation (SDIO), a full 6 months after Time Magazine had consolidated Senator Kennedy's christening in the public consciousness (Skillings: 2017). The importance of naming should not be underestimated, especially within the context of securitisation. Bhatia (2005) argues:

> "By naming, the subject becomes known in a manner which may permit certain forms of inquiry and engagement, while forbidding or excluding others. However, the need for simplicity can be rapidly appropriated and taken advantage of by those with their own political agenda"

Reagan was frequently frustrated by the political agenda of opponents to SDI and grumbled that he wished he 'could catch the person that first gave it that name because it's more about peace than it is about wars' (Reagan: 1986). More than just a personal annoyance to the President, the success of the 'Star Wars' label encouraged certain forms of engagement and

hobbled efforts to convince the public of the Administration's point of view. Stimmer (2019) reasons that the Star Wars connotations were key to critics of SDI in their effort to delegitimise and criticise the President's plans. By drawing links between the movie franchise, they were able to 'science-fictionalise … the sociopolitical context surrounding Reagan's missile defence initiative' (Stimmer: 2019). The issue became the most 'partisan foreign policy issue in the 100th Congress' with one's preferred designation for the program becoming highly correlated with party affiliation (Souva and Rohde: 2007). Unfortunately for its advocates, even non-partisan outlets would almost always make reference to the fact that the scheme was 'often referred to as a "Star Wars" plan' (King and Weaver: 1986). Thus, almost every exposure to the public Star Wars/SDI debate involved at least an association, if not an outright analogy, to the fantastical (and therefore ridiculous) space opera franchise. This contest of names had a 'disabling effect as it cast doubt on the viability and desirability of SDI' (Stimmer: 2019).

II. Contested Legality

President Reagan also had to contend with legal objections to his plans. Although it would be better to describe this struggle as a politico/legal one as it was played out not in front of judges but on the Senate floor. The contention was over the observance of obligations owed under the Anti-Ballistic Missile Treaty (1972), hereafter 'the ABM Treaty', and the extent to which the President had the power to interpret these obligations. The ABM Treaty was an international agreement concluded between the superpowers ostensibly in an effort to reduce nuclear tensions, being 'both premised on and designed to promote the strategy of mutually assured destruction' (Yoo: 2001). Specifically, the Treaty sought to *inter alia*: limit interceptor sites to one each (Article III), permit fixed land-based ABM testing (Article IV) but prohibit advanced development and testing of mobile ABM systems (Article V), and provide for verification mechanisms of national technical capabilities (Article XII) (Rhinelander: 2001). The Treaty itself, absent any consideration of SDI, was not free of its own contentions. Some believed that its fashioning was a sign of 'mutual cooperation' that 'created strategies designed to create common knowledge' - a positive accomplishment in reducing ambiguity and suspicion in a tense nuclear age (Grynaviski: 2010). Whereas others believed that the offer extended to the Soviet Union to open negotiations around strategic nuclear forces was a 'Marxsend' that allowed the Kremlin to place unreasonable constraints on the United States, catch up on missile gaps, and continue to develop its own ABM technologies (Lee: 1996). Such was the charged milieu that 'loom(ed) over the missile defence controversy' when President Reagan somewhat inelegantly launched an argument about the interpretative powers of the president (Yoo: 2001). The chief legal concern was over the observation of Article V:

> I. Each Party undertakes not to develop, test, or deploy ABM systems or components which are sea based, air-based, space-based, or mobile land-based.
>
> II. Each Party undertakes not to develop, test or deploy ABM launchers for launching more than one ABM interceptor missile at a time from each launcher, not to modify deployed launchers to provide them with such a capacity, not to develop, test, or deploy automatic or semi-automatic or other similar systems for rapid reload of ABM launchers.

The majority of plans forwarded within SDI seemed, to any reasonable observer, to flatly contradict Article V of the ABM Treaty. Each of the three proposed orbital kinetic interceptors eventually posited - Smart Rocks, Brilliant Pebbles, and Genius Sand - featured elements that would contravene both paragraphs of Article V; the systems would be space-based, and they

would involve multiple interceptors being launched from a single launcher (Wright and Gronlund: 1991, Canavan: 2001). The proposed laser and charged particle interceptors (O'Dean: 1990, Fischetti: 1985) would similarly have been prohibited for being space-based but the extent to which paragraph II would apply was a matter of debate. The President, clothed in a 'plenary and exclusive power in the realm of foreign affairs', generally has the right to settle such debates by interpreting treaty obligations as he sees fit, with the Senate's interpretative role usually being limited to the ratification process (Jaffer: 2003). However, Reagan's SDI proposals seemed to violate the object, purpose and letter of the ABM so egregiously that lawmakers were compelled to intervene. In part this intervention was an attempt to rectify a lapse in diligence; upon ratification the Senate had made the mistake of not formally 'specifying in greater detail what it was consenting to', allowing the President to depart from what was assumed to be a shared understanding between the executive and legislative branches (Koh: 1990). Reagan's confidence in the legality of SDI rested on the belief that the ABM Treaty did not prohibit 'research or laboratory work on anything', which technically was true (Rhinelander: 2001). However, given Reagan's determination to secure funding, his public beseeching over the need for such a protective system, and his willingness to spend a great deal of political capital to bring SDI to life, it would have been naive and unreasonable to think that his plans were intended to remain within the confines of laboratories. Moreover, the President himself would often explicitly opine that SDI was never simply a science project: 'Once again; when the time has come and the research is complete, yes, we're going to deploy' (Reagan: 1986b). People did not seriously believe that Reagan was speaking abstractly about SDI. Therefore, most legal scholars held that a violation of the ABM Treaty was, at the very least, 'imminent' (Drell et al: 1984). The one notable exception to this consensus was the legal adviser to the State Department, Justice Abraham Sofaer. After conducting a study that included an examination of the classified negotiation records of the ABM treaty, he concluded that a 'broad' interpretation allowed for much of what the President had proposed (Sofaer: 1986). Specifically, he argued that the 'exotic' technologies proposed by SDI, not being in existence at the time of negotiations, were not now prohibited, nor could it be assumed that the treaty negotiators ever intended for them to be so (Yoo: 2001). The Reagan administration never formally adopted this position, preferring instead to muddle through arguments with the Senate with the somewhat flimsy defence that SDI would remain a research project until stated otherwise. The accusation of SDI being fundamentally incompatible with obligations owed under the ABM Treaty was never comprehensively parried by the administration (LeSueur: 1991).

III. Contested Matters of Fact

Perhaps the most pertinent contention of SDI was related to Reagan's spasmodic altercations with reality. When Reagan came to office the American public had already spent over two decades acclimatising to the possibility of nuclear war. Though such a scenario was concerning, it was no longer a source of intense panic. To convince both the public and Congress that the extraordinary measures of SDI were necessary would require a significant elevation in tensions. The Soviet Union was not immediately forthcoming with a suddenly obvious threat, so Regan sought recourse in fabrication.

The very first fabrication was that SDI was even technically possible. The Nixon administration, first to be confronted with the tantalising prospect of strategic missile defence, deemed the venture to be out of the question, opting instead for a system that would ensure a second-strike capability and defend against accidental launches or attacks from minor powers.

Nixon concluded: 'Although every instinct motivates me to provide the American people with complete protection against a major nuclear attack, it is not now within our power to do so' (US Arms Control and Disarmament Agency: 1970, p.103). Incidentally this strategic posture was shared by almost every administration - Reagan's being the only exception - and continues to govern US national missile defence today (Korda: 2019). Ignoring his predecessors' judgements, Reagan urged the American scientific community 'to turn their great talents' (1983a) towards a set of technologies that ranged from the plausible but ruinously expensive to the patently unachievable. Motivated by technical and moral objections the same community responded to Reagan's call to arms with a 'remarkable, and largely unprecedented boycott' (Weinberg: 1987). Presidents of universities and research institutions across the country came out in public opposition to the plans, thousands of scientists attached their names to letters of protest, and even some 1,700 hundred government employees scattered throughout federal agencies and institutions voiced their objections (Bridger: 2016). Reagan even inspired John Bardeen - the only man to have twice been awarded the Nobel Prize in physics and a member of the President's own White House Science Council - to resign in protest (Hoddeson and Daitch, 2002, pg. 269). Most technical specialists agreed that Reagan's plans were impossible to realise, and they were also sceptical that such schemes would *ever* become feasible (Lakoff and York: 1989, p.84). Broad (1982) demonstrated that even if such a system could be fielded it would be rendered useless by the intense electromagnetic field emitted from even a single nuclear blast in the upper atmosphere. The only high-profile voice from the scientific community arguing in favour of the feasibility of SDI was Edward Teller, famous both for his role in developing the thermonuclear weapon and for his estrangement from much of the professional physics corpus (Lee: 1986).

Unable to rely on the technical community to support the case for SDI, Reagan's administration resorted to falsification and fabrication. A 1984 test 'purporting to show that a US missile had brought down a target missile over the Pacific' was rigged by the Pentagon. Both the target and interceptor missiles had interlinked transponders sequestered in their viscera which guaranteed a mid-air dalliance (Tirman: 1993). Further data sets were surreptitiously altered and supplied to Congress in an attempt to make kinetic missile interception seem more attainable (Weiner: 1993). The scale of the deception was such that in 1991, once lawmakers became cognisant of the subterfuge, Congress mandated a 'comprehensive investigation into all major Strategic Defence Initiative tests taken in recent years' (Watkins: 1991). Aside from this investigation the General Accounting Office conducted its own assessments of the Pentagon's reporting and concluded in eight classified reports that the Reagan administration and Pentagon officials 'had deliberately misled Congress about the cost, performance, and necessity of' SDI (Sommer: 1993). It was evident at the outset to the technical and scientific communities that Reagan's SDI vision was unworkable. However, such expert diatribes had to contend with fanciful thinking and outright fabrications throughout the entire history of the SDI debate.

The other great fiction forwarded by Reagan - and one central to the construction of his threat - pertained to the sophistication and scale of Soviet ABM technology. The Cold War abounded with exaggerations, misrepresentations, and half truths about Soviet capabilities. Defence contractors, the Pentagon, government officials and politicians each understood the relationship between alarming a few key constituencies and unlocking federal funding for pet projects (Krepon and Peck: 1985). As mentioned in the literature review, Didier Bigo could well recognise the 'creation of a continuum of threats and general unease' in how various administrations and security bureaucracies treated the Soviet Union. However, Reagan, in his attempt to justify SDI, sharply escalated the usual governmentality of unease, relying heavily upon potentially frightening but often outright false portrayals of the Soviet threat. For

example, the office of the Secretary of State George Schultz first contrived the claim that the Soviet Union had already set 10'000 individuals to the problem of ABM defence and had committed to spend another $26 billion on their systems by 1989 (Richelson: 1986). A not insignificant furore was also generated about new Soviet radar arrays contravening the ABM treaty (Pincus: 1984). It was claimed that 'intelligence information' indicated a Soviet desire to complete a countrywide National Missile Defence (NMD) system by rapidly improving already promising ground-based ABM systems and fielding them at huge scale (Furniss: 1984). These assessments contributed to the so-called 'break-out' threat; the fear that the Soviet Union would rapidly assemble an effective ABM system, perhaps giving them enough confidence to commit to a nuclear first strike (Longstreth and Pike: 1985). The problem with all these examples, of course, is that such assessments relied on gross exaggerations, purposeful misinterpretation and often lies. It was true that the Kremlin had spent much of the 1970's upgrading its ABM systems around Moscow however such measures did, for the most part, comport with obligations under the ABM treaty and in any case only provided a more effective defence 'against very limited or accidental strikes' (Drell et al: 1984). The inland phased radar array constructed by Moscow that was the source of much uproar possibly did violate ABM obligations, but this single array was highly vulnerable and only ever 'of marginal importance in relation to any large scale break-out from the ABM treaty' (Bundy: 1984). The contention that the Soviet Union was preparing technologies that would allow it to shoot first and win a nuclear war by knocking an American second strike out of the sky was unfounded. The United States was always 'far ahead of the Soviet Union in the necessary computing and sensing technologies' for ABM battle management, without which a successful first strike that relied upon the ability to neutralise the enemy's retaliatory strike would be out of the question (Krepon and Peck: 1985). The United States, though far ahead of the USSR, was itself nowhere near being able to field such capabilities. One particular address by President Reagan to the Institute of Foreign Policy Analysis is emblematic of his administration's mendacity. It features a healthy agglomeration of falsehoods and exaggerations employed by the administration and is worth quoting and debunking in full:

> "Congress should realise that it's no longer a question of whether there will be an SDI program or not. The only question will be whether the Soviets are the only ones who have strategic defences, while the United States remains entirely defenceless. It seems to me that it was a watershed event when General Secretary Gorbachev, after years of concerted Soviet efforts to kill our SDI program and deny their own efforts in this area, stated publicly on TV to Tom Brokaw and the American people that when it comes to SDI "the Soviet Union is doing all that the United States is doing".
>
> Well, everything, one might add, and more. The Soviet defence effort, which some call Red Shield, is now over 15 years old, and they have spent over $200 billion on it. That's 15 times the amount that we have spent on SDI. The Soviets already have the world's only deployed ABM defences. Congress, in effect, killed our ASAT program. The Soviets already have an operational antisatellite system. While the United States Congress cuts back on our SDI, 10,000 top Soviet scientists and engineers work on their military laser program, alone"
> (Reagan: 1988)

Firstly, Reagan's claim that Premier Gorbachev indicated the Soviet Union's intention to field its own SDI was disingenuous. The President quoted his Soviet counterpart correctly but by removing the context delivered a meaning that was antithetical to Gorbachev's own. The Soviet Premier had, during this interview, argued that the pursuit of SDI by either superpower 'would certainly lead to a destabilisation with unforeseeable consequences'. Gorbachev was open that Soviet scientists were 'engaged in research, basic research, which relates to these aspects which

are covered by the SDI of the United States' but he was adamant that such activity would never contribute to a Soviet strategic defence system: 'we will not build an SDI, we will not deploy SDI, and we will call upon the United States to act likewise' (Shales: 1987). President Reagan used a speech where Premier Gorbachev unequivocally renounced and condemned the pursuit of SDI as evidence that he was in fact pursuing SDI. It was common and probably wise to exercise scepticism about various proclamations from Soviet officials, but Reagan was peculiar in his ability to evince from a straightforward statement its antithesis.

His remarks in the second paragraph are refutable to varying degrees. The $200 billion figure is likely a conflation of much Soviet space and rocketry activity not directly related to defence because the actual spending on technologies specific to a Soviet SDI was not even one tenth what Reagan described (Yusof: 1999, p.18). It was true the Soviets had the world's only deployed ABM system but Reagan would always fail to acknowledge that the United States had beaten them to it with the 'Safeguard System'. An American ABM system could have been reassembled but for the main argument for having gotten rid of it in the first place: cost (Spinardi: 2010). The 'ASAT program' about which Reagan grumbled was cancelled by Congress was actually only a single air launched missile system that was successfully tested but deemed unsavoury (Stares: 1987). The United States had several other promising options to disable or destroy satellites that were not prohibited by Congress. The claim that the Soviets already had an operational anti-satellite system is specious. The Kremlin certainly had some success in testing a number of systems but equally experienced a great deal of failures, sometimes catastrophically so. If the Soviet Union could be said in 1988 to possess an 'operational anti-satellite system' then by the same rubric so too could it have been said about the United States (Westwick: 2008). The final claim about 10'000 scientists working on military lasers alone is an interesting one. Reagan here actually *underestimated* the number of personnel dedicated to High Energy Laser (HEL) systems. In 1970 a factory town was established east of Moscow and christened *'Raduga'* meaning 'rainbow'. There some 20'000 people set about consolidating and developing Soviet HEL technology which comfortably rivalled and sometimes exceeded that of the United States (Cook: 2012). Reagan was right that the Soviets were interested in these systems (not only for missile defence) but wrong to imply that Soviet activity was at all indicative of an imminent HEL system that could shoot down American ICBMs. Despite their successes Soviet scientists never came close to being able to build the weapons Reagan had envisioned.

Summary

Obviously, President Ronald Reagan's attempt at elevating his Strategic Defence Initiative above the level of normal discourse was not straightforward, and not completely successful. His early mistakes were twofold. First, he allowed his opponents to shape the public narrative by leaving a conceptual vacuum where details about SDI should have been provided. Second, a proper legal argument should have been devised that would have assuaged predictable concerns about running afoul of the ABM treaty. As it were, these were quagmires from which the Reagan administration could never fully extricate itself. Impeded on these fronts the administration sought to gain ground elsewhere. Unfortunately for Reagan, 'elsewhere' also proved highly contentious. Reagan was forced to exaggerate both the feasibility of SDI and the threat which would justify its existence. Certainly, the Pentagon was caught out in a disreputable affair when it demonstrably faked tests and data. But even aside from this obvious dereliction, physicists involved in SDI projects from early on had felt the program was characterised by 'secrecy, greed, self-deception, deception of the Congress, and actually even

of the president' (Sommer: 1993). Reagan's policy shift led his officials to participate in and perpetuate this deception, to 'distort seriously the Soviet military capabilities for public and congressional consumption' (Daggett and English: 1988). The technical and political deceptions worked to a certain extent; Congress was 'persuaded' to spend tens of billions of dollars on SDI projects (Tirman: 1993), while Reagan could consistently boast that SDI enjoyed a majority of popular support among the American public (Payne: 1989). It is pertinent now to more closely examine Reagan's stymied attempt at securitisation using the precepts of the theory itself.

Qualitative Content Analysis

The following analysis will apply the precepts of securitisation theory within a qualitative content analysis as described in the methodology. The material examined will begin with Reagan's seminal speech on March 23, 1983, when he first laid down the challenge to the nation's scientists and engineers, and it will end with a speech at a Republican campaign rally over five years later. It is possible to find public remarks about strategic civil defence and improved ABM capabilities prior to the 1983 speech because the Republican party had adopted a more hawkish platform for the 1980 presidential election (Lakoff and York: p.7). However, Reagan never publicly indicated his desire to bring about an SDI system until his March 23 speech. He had previously been vocal about his opposition to the logic of MAD and he had criticised administrations for underfunding what he considered strategically important military projects but the vision for SDI as laid out in March 1983 was its first full public iteration. Thus, and despite the words 'Strategic Defence Initiative' not actually appearing in this speech, March 1983 offers an appropriate starting date for the analysis. The end date is equally appropriate; Reagan had less than three months left in office and, after the October 1988 campaign rally, made no more public statements about SDI for the remainder of his time as President of the United States. It is also worth mentioning that Reagan and many of his officials had a great deal more to say about SDI than what is contained in the analysis below. However, almost all of these debates, policy memos, directives, etc. were classified or confidential at the time, only becoming declassified decades later. Securitisation theory is uninterested with such classified documents as they would have had no influence on shaping the opinion of an audience that was not privy to their contents. As such the analysis is concerned solely with public speeches, formal remarks, radio and television addresses, addresses to Congress etc. - content that was not just publicly available but widely broadcast. However, some of these classified documents will be examined later to compare Reagan's public and private discourse. Below is an overview of the QCA, followed by an exploration of the findings broken down into the categories of urgency, exceptionalism, and existential threat. A full table detailing the text that contributed to the identification of these categories can be found in the appendix.

Analysis Overview

No.	Date	Title	Urgency	Exceptionalism	Existential Threat
1.	Mar 23 1983	Presidential Address to the Nation	x		x
2.	Nov 27 1984	Statement on the Strategic Defence Initiative	x		x
3.	Jan 3 1985	Foreword Written for a Report on the Strategic Defence Initiative	x		x
4.	Mar 29 1985	Remarks at the National Space Club Luncheon		x	x
5.	Jul 13 1985	Radio Address to the Nation on the Strategic Defence Initiative	x	x	x
6.	Oct 12 1985	Radio Address to the Nation on Soviet Strategic Defence Programs	x	x	x
7.	Jun 3 1986	Message to the Congress on the Strategic Modernization Program	x	x	x
8.	Jun 3 1986	Statement by Deputy Press Secretary on the Strategic Modernization Program	x	x	
9.	Jul 12 1986	Radio Address to the Nation on the Strategic Defence Initiative	x	x	x
10.	Aug 6 1986	Remarks at a White House Briefing for Supporters of the SDI	x	x	x
11.	Aug 16 1986	Radio Address to the Nation on House of Representatives Defence Authorization Bill		x	x
12.	Oct 16 1986	Remarks to Representatives of the Young Astronauts Council			x
13.	Mar 10 1987	Message to the Congress Transmitting a Report on Soviet Noncompliance with Arms Control Agreements	x		x
14.	Mar 23 1987	Statement on the Strategic Defence Initiative	x	x	x
15.	May 4 1987	Statement on the Soviet-United States Nuclear and Space Arms Negotiations		x	x
16.	Nov 24 1987	Remarks on the Strategic Defence Initiative to Martin Marietta Denver Astronautics Employees in Waterton, Colorado	x	x	x
17.	Jan 25 1988	Address Before a Joint Session of Congress on the State of the Union		x	x

18.	Mar 14 1988	Remarks to the Institute for Foreign Policy Analysis at a Conference on the Strategic Defence Initiative	x	x	x
19.	Mar 19 1988	Radio Address to the Nation on the Deployment of United States Forces to Honduras and the SDI	x	x	x
20.	Mar 23 1988	Statement on the Fifth Anniversary of the Strategic Defence Initiative	x	x	x
21.	Aug 3 1988	Message to the House of Representatives Returning Without Approval the National Defence Authorization Act, Fiscal Year 1989	x	x	x
22.	Aug 3 1988	Remarks on the Veto of the National Defence Authorization Act, Fiscal Year 1989, and a Question-and-Answer Session With Reporters		x	x
23.	Oct 21 1988	Remarks at a Republican Campaign Rally in Raleigh, North Carolina			x
	TOTAL		16/23	17/23	22/23

Table 1. - Analysis Overview.

Note: the following sections on urgency, exceptionalism and existential threat will quote extensively from the content categorised above. For the sake of readability each quote will be referenced by its number as it appears in the table, not with the usual style. For example, the March 23 speech will be referenced as '(1.)' and not '(Reagan: 1983a)'.

I. Urgency

Although it is the category least in attendance of the three, urgency is present in the majority of Reagan's treatment of SDI. His seminal address set the tone; 'We had to move immediately' (1.), and his appeals to the time sensitive nature of SDI often echoed this initial declaration: 'it would be most unwise to delay' (7.), 'we have no more urgent task in preserving peace' (8.), 'to proceed as quickly and efficiently as possible through the Strategic Defence Initiative' (8.), 'never was a purely defensive system so sorely needed' (9.). On occasion, Reagan directly alluded to the temporal nature of the urgency: 'isn't it time to put our survival back under our control?' (9.), 'there can be no better time than today' (10.), 'Every extra minute that we leave the population of the West defenceless is one minute too long' (18.). Intrinsic to his construction of a sense of urgency, however, was the notion that the United States and Soviet Union were locked into a race over SDI technologies, one in which the US was at risk of losing. This 'race' was directly alluded to on two occasions; 'the Soviets have continued to race for superiority' (5.), and 'Since the early 1970's the Soviet Union has been racing forward in a vast and continuing military buildup including … an intense effort to develop their own strategic defence' (9.). Reagan did not need to directly conjure the image of a race to stress the urgency of the competition though. In 12 out of the 16 instances where Reagan prayed urgency, the Soviet Union and its advanced state of deployed technology or its research and development programs were highlighted to stress how much time had already been lost by the US, how much

had yet to be regained. For example, 'the Soviets not only continue to build up their offensive nuclear forces at an unprecedented rate, they're also spending almost as much on strategic defence' (6.), 'the Soviets have long been heavily engaged in their own strategic defence efforts' (7.), and 'This and other ABM-related Soviet activities suggest that the USSR may be preparing an ABM defence of its national territory' (13.).

The logic of this argument is obvious and was stated plainly and early by Reagan himself; 'the United States not only has the right to go forward with research for a strategic missile defence, but in light of the scale of their program we'd be the greatest fools on Earth not to do so' (5.) - the stronger the suggestion that the USSR was pursuing strategic defences, the more urgently needed Reagan's SDI became. There is, however, a distinct contradiction that emerges upon close examination. More often than not Reagan stressed the urgency of the issue but sometimes his message directly contravened this purpose; he stressed rather the success of SDI, its attainability, the triumph of American science and engineering, etc. For example, neither at the 1985 National Space Club Luncheon (4.), nor at the 1986 meeting with the Young Astronauts Council (12.), nor during the 1988 address to a joint session of Congress (16.) did Reagan once strike a chord of urgency. Rather, he sought to portray SDI as already a great success, either to paint an uplifting picture or to justify his administration's policy or both. This rationale was perhaps most vociferously maintained by Reagan's Secretary of Defence Caspar Weinberger who claimed: 'There is no doubt the SDI research effort is achieving dramatic results. We are rapidly validating a number of technologies and technical concepts' (Smith: 1987). The disconnect here is apparent; either SDI development was urgently needed, or SDI had already been a huge success and the urgency was far less acute. Certainly, Reagan more often espoused the former position but to the extent that he championed the latter he was at risk of contradicting his primary argument.

II. Exceptionalism

The first interesting element about Reagan's appeal to exceptionalism is its absence, at least initially. His March 23 address certainly portrayed a grave threat that demanded an urgent response, but Reagan sought, at this stage, to place such a response firmly *within* the confines of normal political discourse. He asked the American people to accept his argument and to then tell their 'Senators and Congressmen that you know we must continue to restore our military strength' (1.) among other things. Reagan acknowledged the fact that the public would need to be convinced about his SDI plans, that their representatives, hopefully then aligned with the President's vision, would then need to reflect their constituents' convictions: 'Free people must voluntarily, through open debate and democratic means, meet the challenge' (1.). The first arguable foray into exceptionalism was done rather gently. Instead of constructing a strong argument in favour of elevating the debate above normal politics, Reagan encouraged a change of course that 'would enable us to fundamentally change our strategic assumptions' (4.). He here argued against the balance of nuclear deterrence that had existed for 40 years. Reagan's position was certainly exceptional and flew in the face of what had been bipartisan consensus since its conception. It would require exceptional politics to overcome such consensus, something he tangentially hinted at here but wholeheartedly embraced later.

Reagan's first linkage with his SDI efforts and a securitised politics occurred in his 1985 Radio Address where he claimed that 'our SDI research program is crucial to maintain the military balance and to protect the liberty and freedom of the West' (6.). Although it was always implied that the SDI was inherently a security issue, it had not yet been made an issue subject to the

purview of the security forces. From this point Reagan acted more vigorously to attenuate the influence of civilian political oversight on his project. His 1986 address to Congress chided them for their interference, and warned that any attempt to stymie his plans was tantamount to working in tandem with the interests of the Soviet Union: 'To stretch or disrupt these programs now would not only endanger deterrence but would be a wasteful and costly misuse of our scarce defence resources' (7.), 'Some people will argue that strategic forces must take cuts along with everything else when budgets are tight. Those "spread-the-pain" theories are not only false, they are dangerous. Every dollar taken from our strategic programs is a victory for potential aggressors' (7.). A radio address later that year offered a clearer picture of Reagan's disdain for Congress' meddling; 'In the weeks ahead, it would be a tragedy to permit the budget pressures of today to destroy this vital research program and undercut our chances for a safer and more secure tomorrow' (9.). 'Budget pressures' here could easily be understood as 'political oversight'. Aside from public refutation and condemnation one of the few powers available to the opposition at the time was to try to reign in Reagan's massive spending demands. It was exactly this budgetary/political oversight that Reagan took issue with.

Perhaps the most quintessential example of his attempts to elevate SDI above normal politics was given during a 1986 White House briefing to supporters of SDI. The President said, 'Well, one sometimes has to live with opposition to proposals such as changing the tax code, but when the same kind of scepticism stands in the way of the national security of our country, it can be perilous' (10.). Reagan here briefly but clearly set out two categories. Into the first fell things like 'changing the tax code' which could be subjected to the normal political wrangling. Into the second fell matters of national security, such as SDI, which should not. So irate was the President with Congressional interference that he eventually accused them of taking 'dangerous risks with America's national security' (19.). It is perhaps surprising that appeals to exceptionalism were not at first present. Reagan's recourse to exceptionalism was borne out of frustration. He initially sought to advance SDI through normal political means but as this avenue became more restricted, he leaned more heavily into securitising language. Ultimately, of course, it was too little too late; Reagan failed to totally convince his audience of the supernormal nature of the threat.

III. Existential Threat

There are two components that need to be anatomised with regard to the existential threat; the first is the referent object and the second is the threat itself. The former is often nebulously defined but generally not difficult to grasp, whereas the latter is clothed in multiple overlapping, sometimes contradictory, and surprisingly inconstant ideas.

Reagan's 1983 exordium rather unhelpfully expressed his desire to 'preserve our free way of life' (1.). Soon after he warned that 'the quality of our future is at stake' (3.). These made for largely agreeable statements - who would desire *not* to preserve our way of life or the quality of our future? - but offered little specificity regarding a referent object. Eventually Reagan's messaging grew sharper, and he made specific reference to the United States of America, its people and its children (11, 12, 16, 18, 22, 23.). Although some references were specific, they were not always exclusive; Reagan also drew into his referent object most often 'the West', and, somewhat philanthropically, the whole world. He warned that the Soviet Union was 'threatening the security of the West' (6.), urged that the US military should 'protect our country and our friends' (12.), and finally argued for 'pushing ahead in our efforts to protect the United States and the free world' (23.). An obvious explanation for why Reagan

occasionally included the West/the Free World in his referent object is not immediately apparent. Securitisation theory would hold that the only audience Reagan needed to be concerned with would be the domestic American electorate. It may be that the President felt obligated, given formal security arrangements with allies such as the North Atlantic Treaty Organisation (NATO), to pay lip service to the idea of including allies under the defence umbrella that SDI offered. Or Reagan may genuinely have felt some kinship with the peoples of allied countries. Any explanation probably lies outside the confines of securitisation theory.

Even more puzzling, though, is Reagan's inclusion of the whole planet as part of his referent object. At various times he claimed SDI would rid 'this planet of the threat of nuclear annihilation' (9.), that it would be 'put to good use in protecting your country, the free world, and perhaps all mankind' (16.), and that it 'may someday free the world of the nightmare of nuclear terror' (22.). It is not necessary to judge whether such aspirations were profoundly altruistic or cynically shrewd. It is enough to acknowledge the potential contradiction in including within the referent object the threat itself (the Soviet Union at that time residing within and upon the world). More important is the hierarchy that can be gleaned between these three distinct elements that Reagan sought to secure. The United States, her people, children, way of life, etc. is mentioned more often than the West, and certainly more often than the world, so it can safely be considered Reagan's top priority. The West or 'the Free World' is referenced in similar terms to the United States itself but less frequently, so it can be considered a secondary concern of Reagan's. The President's treatment of 'the world' was markedly different; 'perhaps' mankind could be saved (16.), it 'may someday' be possible to save the world (22.), etc. Should SDI have actually saved the world as Reagan imagined, it might have been considered only a fortunate consolation prize, as this goal was certainly not high on the President's list of priorities, to the extent that it occupied that list at all.

The threat described by Reagan, like many of the other elements of his attempted securitisation, cannot be considered uncomplicated. Ostensibly the threat was simple, the Soviet Union imperilled America with the possibility of nuclear annihilation. Indeed 95% of Reagan's speech acts alluded to or directly referenced this specific threat. The only occasion when the Soviet nuclear threat was not articulated was when Congress itself was made out to be the main threat to national security (8.). In fact, on two other occasions, late into the President's SDI debate, did he cast Congress in more negative terms than the Soviet Union (11, 21.). Curiously though when the President did refer to nuclear holocaust it was consistently in limited terms. Only one flavour of nuclear annihilation seemed to occupy his thoughts; the fate delivered via ICBMs. He repeatedly referred to 'the threat posed by nuclear armed ballistic missiles' (2.), the need 'to eliminate one day the threat of nuclear ballistic missiles' (7.), and the need to build a 'system that can protect this nation from nuclear missile attack' (22.) etc. Reagan was resolute in his conviction that ICBMs should be considered 'the most dangerous weapons in the history of mankind' (9.), 'the fastest, most destructive weapons man has ever created' (10.). Granted, ballistic missiles are not to be taken lightly but it is scarcely pedantic to point out that what makes them so dangerous is not the medium but the message: nuclear explosives. Such devices are not limited to a single mode of delivery. The United States had long since established its nuclear triad of conventional bombers, submarine launched missiles and silo-based ICBMs, and the Soviet Union maintained a similar nuclear doctrine (Green: 1984). Even if the Soviet Union's ICBMs could be neutralised by SDI, this did not preclude nuclear annihilation. The Kremlin still had conventional strategic bombers, submarines, cruise missiles, clandestine forces, and a host of other secretive methods of conveying a nuclear salutation should they have desired, but the President was ostensibly unconcerned about these. He was not, therefore, attempting to securitise nuclear annihilation *in toto* but the specific threat of nuclear tipped

ballistic missiles. Thus, we are left wondering whether Reagan's singular obsession with ICBMs was simply fatuous and naive, poorly informed, or if it hinted at some other motivation. It is no surprise though, that a close examination would elicit some discomfiting narratives.

The most disorientating narrative shift came quite early, after Reagan modified his initial effort to securitise the logic of Mutually Assured Destruction itself. Most clearly stated at the National Space Club Luncheon, the President promised 'to render obsolete the balance or terror – or mutual assured destruction as it's called – and replace it with (SDI)' (4.). More than the Soviet Union, more than nuclear tipped ICBMs (and even more than Congress), the greatest threat Reagan sought to neutralise was the logic of mutual destruction. To his credit, aside from the aforementioned problem of alternative forms of nuclear weapon delivery, SDI would have neatly addressed this threat, were it possible or affordable or reliable. The issue for Reagan and his audience was that he also implausibly portrayed SDI as a solution to a plethora of other concerns. SDI, on top of neutralising the logic and need for MAD, would:

1) Prevent a rapid deployment of Soviet anti-ballistic missile systems. Reagan argued that SDI 'provides a powerful deterrent to a Soviet breakout of the ABM treaty' (2.), and he soon after reiterated that is 'provides a powerful deterrent to any Soviet decision to expand its ballistic missile defence capability beyond that permitted by the ABM Treaty' (3.). This was a familiar argument throughout, but it became especially acute when the Soviets were discovered to be constructing their phased array radar station at Krasnoyarsk. Reagan presented it as evidence that 'they may be preparing to break out of the ABM treaty' and argued again that 'without SDI, we would be dangerously unprepared' (18.).

2) Contribute to arms reduction efforts by forcing the Soviets to the negotiating table. Reagan was candid about this aspect, positing that 'our research efforts under the SDI complement these arms reduction efforts and help to pave the way to a more stable and secure world' (2.) and that SDI 'complements our arms reduction efforts' (3.). He quite early made the snappy point that 'by making missiles less effective, we make these weapons more negotiable' (4.), later emphasising how useful SDI had been in such talks; 'it is an idea that helped bring the Soviets back to the negotiating table at Geneva' (11.), 'SDI, in fact, provided a valuable incentive for the Soviets to return to the bargaining table and to negotiate seriously over strategic arms reductions' (20.).

3) Help to verify arms agreements and prevent cheating. The President claimed that the requisite technologies for bringing SDI to fruition would assist in 'enabling us to verify arms agreements' (4.) and used this spectre to try to motivate 'the Soviets to join us now in agreeing to equitable and verifiable reductions' (6.) He later referred to SDI as an 'insurance policy' that helped prevent Soviet cheating (9.), an idea he returned to towards the end of his second term: 'SDI can play a key role in solving this paradox of nuclear arms reductions. We may build an edifice of peace and arms reductions, but just like your homes, it needs an insurance policy against fire and theft. SDI is it: vital insurance against Soviet cheating' (18.).

4) Boost the American economy. Regan admitted to being a fan of space and often waxed lyrical about its potential and he was not averse to conflating the benefits of SDI within this context. He claimed SDI 'can give America the edge. And this is true not only for high-tech industries like computers and biotechnology but for mature ones as well. Innovation … is vital to the modernisation of our steel, automobile, and textile

industries' (4.). He believed SDI would 'open new opportunities by building on today's and tomorrow's technologies' (10.), and spoke optimistically about 'the future, a future of innovations that we cannot now imagine' (12.). Towards the end of his tenure, he began to claim credit for SDI's technological achievements; 'our research has produced useful spinoffs for conventional defences and for medicine, air traffic control, and high-speed computing' (20.).

5) Complement general deterrence. Reagan had many mixed messages on this point. SDI initially had the 'aim of finding ways to provide a better basis for deterring aggression' (3.). But soon SDI became not an alternative but an addition to conventional deterrence. This detail will be examined more closely in the discussion as it stands as one of the greatest conceptual failures of Reagan's securitisation efforts.

In short, the Strategic Defence Initiative was offered as a direly needed solution to a great many issues to a diverse cohort of audiences. It could be seen as a way for allied Western powers to help verify arms control agreements, or considered a boon to the American people and their economy, or thought of as a powerful motivator for world powers to come to the negotiating table, among many other things. It is not unreasonable to depart with the impression that, rather than having a single unified argument aimed at convincing a single coherent audience, President Reagan offered a small menagerie of petitions in the hopes that at least one of them would convince at least one portion of his audience. The extent to which Reagan believed each of these points is debatable but may be beside the point. The challenge of navigating the President's discourse to accurately map his understanding of the existential threat and of his referent object is not a simple one. Though there are threads of consistency and ideas that are not always incongruent, there are also irrelevant and inconsistent ideas. The level of conceptual meandering done by Reagan could, not thoughtlessly, be labelled confused.

Discussion

When President Reagan first introduced the idea of creating a ballistic missile shield, it came as a surprise addendum at the end of an otherwise unexciting speech about strategic defences. It could almost have been forgotten about or chalked up as another political gaffe from 'the Gipper' as, over the next 6 months, there was very little public activity from the White House on the issue. Confidentiality though, Reagan was clear with his administration that he was serious. Two days after his seminal SDI address in National Security Decision Directive (NSDD) 85, he directed his staff towards 'the development of an intensive effort to define a long-term research and development program aimed at an ultimate goal of eliminating the threat posed by nuclear ballistic missiles' (Reagan: 1983b) and placed the effort under the remit of the Assistant to the President for National Security Affairs. In December of that year, NSDD 116 rather hastily directed the Department for Defence, the Department of State and the Director of Central Intelligence to prepare a 'coordinated presentation' for members of Congress which would essentially formally support the President's position on SDI (Reagan: 1983c). The Department of Defence obviously impressed because in January the next year NSDD 119 placed responsibility for strategic defence directly under the DoD (Reagan: 1984). All three of these classified documents were highly reminiscent of Reagan's public remarks. In fact, a closer look at records that have since been declassified reveals a striking resemblance between what Reagan was saying in private to his officials and staff and what he was telling the American people. Which means, of course, that his private comments were as replete as his public ones with contradictions, inconsistencies and competing narratives. For example, NSDD

165 demands that America's offensive nuclear retaliatory forces be modernised in line with conventional thinking on deterrence. However, three paragraphs later Reagan states his desire to remove America's reliance on deterrence through SDI by 'radically altering the dangerous military trends' (Reagan: 1985b), trends that he had endorsed in the very same document. The President obviously became aware that his messaging on SDI was not quite landing how he desired because later that year he issued NSDD 172 which was specifically intended 'to insure clarity and precision in our public and diplomatic presentation of the Strategic Defence Initiative' (Reagan: 1985c). This directive certainly elaborated on many of Reagan's arguments, but it failed to unpick some of the inconsistencies and couched much of the justifications for SDI in fanciful notions of the feasibility of the technology and exaggerated notions of the Soviet threat and its own technological advancement, much like his public discourse. Support for SDI was predicated on a belief either that there were no inconsistencies, or at least if there were, such inconsistencies would be imminently resolved. Directives 232, 233, and 238 again are variations of the main theme, sometimes offering minor clarifications at the edges of the debate but ultimately failing to rally a single coherent narrative (Reagan: 1986d, 1986e, 1986f). It's important to consider these classified documents when we try to untangle what it was exactly Reagan was trying to achieve with SDI. Had there existed a significant divergence between what Reagan was saying publicly versus what went on behind closed doors, it could be possible to concede that he was playing a clever game with the Soviet Union, goading them into believing the United States would soon develop fantastical weapons. If there was such a game afoot, it was one that Reagan was also playing on his own officials and staff. Much more likely is that the President genuinely believed in the necessity of SDI, and that his belief was strong enough that he could comfortably ignore counterarguments, logical inconsistencies, and internal contradictions. Frances FitzGerald, in her masterful work on the subject *Way Out There in the Blue: Reagan, Star Wars and the End of the Cold War* (2000), comes to a similar yet more excoriating conclusion: facts held little sway over the President because he lived in a 'celluloid dream-world'.

> "He had long been enchanted with the notion of a protective shield, despite the devastating scientific and strategic arguments against it, because he had seen it work in the movies - specifically, in Alfred Hitchcock's 1966 Torn Curtain, in which Paul Newman's character speaks of an antimissile device that "will make all nuclear weapons obsolete and thereby abolish the terror of nuclear warfare." A variation of that very sentence, FitzGerald notes, appeared in the 1983 speech in which Reagan first floated the idea of Star Wars - another instance of a president hopelessly in thrall to his fantasies" (Greenberg: 2000).

It's important to stress this point because the lessons we can draw from the President's attempted securitisation will vary depending on what it was Reagan was actually trying to achieve. If it were the case, as some proponents of Reagan's foreign policy have claimed, that he simply wanted to spook the Kremlin with a technological doodad – one that he knew wouldn't work – then we could probably call the enterprise a success. The Soviets were greatly unnerved by Reagan's ambitions both because of the strategic imbalance that would undoubtedly arise and because of the capabilities the Americans might be able to field. They certainly exhibited a great deal more faith in American ingenuity than the scientists and engineers tasked with bringing SDI to life, being especially worried about 'space-strike weapons' that could possibly destroy targets anywhere within the Soviet Union (Westwick: 2008). The accolade of having bankrupted the Soviet Union by tricking them into a race to develop an impossible technology could, in this case, less onerously be collected. Unfortunately, aside from several *post hoc* arguments to the contrary, there exists little to nothing in the public or confidential records that would support such a theory. If instead, Reagan's ambitions were, as he sometimes claimed, to give a future president and a future

Congress 'the option' of fielding some SDI technologies, should they have proved feasible, then we could draw different lessons. Few of the more esoteric systems envisioned under SDI ever made it much further than designs on engineering paper but there were some notable exceptions. The money spent developing laser weapons never produced anything powerful enough to destroy ballistic missiles, but one project proved quite fruitful. The Chemical Oxygen-Iodine Laser (COIL), first developed in 1977, was refined and improved with SDI funding until a new generation of high energy laser was born (Truesdell et al: 1995). The MIRACL system (Mid Infrared Advanced Chemical Laser) spawned a number of subsequent directed energy projects for the military and even found use in the private sector (Graves and O'Brien: 1998). Less exotically, the Aegis Ballistic Missile Defence System was a tangible product of SDI and continues to be employed by the United States military and several NATO allies (Hicks et al: 2012). Bureaucratically, although the Strategic Defence Initiative Organisation (SDIO) did not long outlast the president that established it, many of the SDIO's functions and goals were revitalised and incorporated into the newly formed Missile Defence Agency in 2002 (Graham: 2008). Probably the most peculiar of continuities was associated with President Clinton – he of the party that most castigated Reagan's plans:

> "While acronyms have been changed, many of the programs continued by the Clinton administration date from the Reagan or Bush eras. And most strikingly, the Clinton administrations` ambitions for a virtually perfect defence against theatre ballistic missiles harken to the unattainable goals for strategic defence initially set by President Reagan over a decade ago" (Pike: 1994).

As a direct result of Reagan's push for the 'development of improved theatre missile defences' subsequent administrations benefited from more varied and proven options (Boyd and Scouras: 2013). In this regard, Reagan can claim a small victory. At best though, this victory involves an objective somewhat extraneous to the main mission. It would make for an impoverished reading of history, having closely examined Reagan's public discourse and compared it with largely consistent declassified documents, to identify as his primary goal within SDI the enrichment of future presidencies with 'options'. No, President Reagan was transparent; he wished to rid the world (and thus the threat posed to the United States) of the logic of Mutually Assured Destruction. It is by this goal that his actions should be judged, and through this lens that lessons should be gleaned.

Of course, the problem with taking the President at face value is that the values were malleable. It took Reagan less than two years after first announcing his idea to modify its original purpose. His primary goal of 'supplanting nuclear deterrence was discarded for a wholly antithetical objective—strengthening deterrence' by way of introducing uncertainty in the success of any first strike by the Soviet Union (Boyd and Scouras: 2013). Without acknowledging the change, Reagan altered the purpose of SDI from population defence to missile defence. The distinction is paramount. A population defence, as first envisioned, would need to be 100% effective or 'leak-proof' against incoming Soviet ballistic missiles, whereas missile defence can be far less effective, needing only to swat down enough missiles to comfortably ensure America's second-strike capabilities remained reasonably intact (Schiappa: 1989). Both visions of SDI are 'dramatically different', with the former intended to 'eliminate the doctrine of mutually assured destruction' and the latter a method of 'augmenting' it (Schiappa: 1989). Doctrinally, this augmentation constituted a return to the strategy described by Nixon and followed by every other administration – that of guaranteeing a second-strike option. Reagan's addition to this doctrine was then, simply, a hugely expensive, unproven, and highly vulnerable system which added a capability that already existed but was cheaper, tested, and reliable, namely, silo hardening. Indeed, the reason why America's own ABM system was scrapped was because it

was considered a far more prudent investment to simply make ICBM silos tougher than to try protecting them with complicated and expensive gadgetry (Spinardi: 2010). The authors above (Boyd and Scouras, and Schiappa) are entirely correct to note this shift in the purpose of SDI from population to missile defence. It was reflected in the funding and development models of the SDIO from 1985 onwards and in Defence Department publications on nuclear strategic posture (Guertner: 1985). However, while the distinction might have been obvious to the SDIO, the Defence Department, the Director of Central Intelligence and maybe even a sizeable cohort of Reagan's own staff, such lucidity of purpose was not forthcoming from the president himself. The QCA above demonstrates that both the population defence and missile defence justifications existed alongside one another until the end of Reagan's tenure. He was promising that SDI would both remove the need for deterrence based on MAD and that it would complement existing deterrence based on MAD. Often he would make such contradictory promises within the same speech. In his address to Congress in January 1988 he claimed that:

1. "SDI's goal is to create a stronger, safer, and morally preferable basis … by making ballistic missiles obsolete", and,
2. "Strategic Defences that threaten no one could offer the world a safer, more stable basis for deterrence" (Reagan: 1988).

The distinction is not subtle once it's pointed out. He first promises to make ballistic missiles obsolete, and carry MAD along with it into obsolescence – a renewal of his 1983 vows. He next promises to strengthen deterrence, the foundation of which is a retaliatory ballistic missile strike according to the precepts of MAD. The other justifications for SDI – that it would force the Soviets to negotiate, boost the American economy, help verify arms agreements, etc. – although possibly distracting, at least were not mutually incompatible. Aside from these, only one of Reagan's promises was ever logically possible; remove MAD or strengthen MAD. The president correctly identified that his messaging required clarification but failed to recognise that the chief architect of contradiction was himself. Even NSDD 172, the presidential directive designed to muster 'a coherent and accurate picture of the program's nature and objectives' (Reagan: 1985c), was bedevilled with antinomy. It both endorsed and sought to dissolve the logic of mutually assured destruction.

Thus, having examined some of the pertinent contentions and objections to SDI, having mapped in detail using the tenets of securitisation theory the content of Reagan's discourse, and having then parsed some overlapping and sometimes discordant threads, it is possible to identify major pitfalls that should be avoided were the venture of securitising a comparable issue to be reattempted. Firstly, the Regan administration was not in control of the narrative from the outset. The discursive vacuum left by the administration in 1983 was filled with doubt and suspicion by opponents of SDI. Rather than proactively steering the debate, Reagan and his staff were forced to react to each new denigration as it arose. When the president finally attempted in 1985 to consolidate a coherent argument in favour of SDI, and to convey a clear picture of what it was supposed to do, it was a futile waste of ink. The issue had long since become partisan and the administration had categorically lost the war of names. Reagan was able to boast that throughout his tenure a majority of Americans supported his strategic defence measures, and perhaps rested too easily in this assumption. It was true that when polled on whether they would prefer a thermonuclear warhead to explode above their head or whether the federal government should arrange some physical intervention to prevent such an event from occurring, most respondents indicated their preference for the latter (Brooks: 1986). That Reagan took this astonishingly unsurprising sentiment as general support for the specific details of SDI was a mistake.

Secondly, the heavy reliance on fabrication and exaggeration both of the Soviet threat and of the feasibility of SDI itself was a glaring weakness. Securitisation theory does not require 'empirical reality' to form part of the existential threat however, 'where doubts subsequently arise over the evidence for this 'reality', securitisation can be undermined' (McInnes and Rushton: 2011). The Soviet nuclear threat certainly constituted an empirical reality, but it was nothing new. It was not in and of itself amenable to securitisation because people had the benefit of some thirty years to acclimatise to this reality. Something drastic would have to change with this arrangement for it to be newly securitised. Reagan tried to make people believe that something drastic had changed, that the Soviets were planning, with the help of technology that exceeded that of the United States, to conduct a sudden break out that would allow them to fight and win a nuclear war. The argument, however, was unconvincing. The White House was occasionally correct to point out that the Kremlin had likely violated certain obligations owed under the ABM treaty or other arms reductions treaties. But these violations were relatively minor and could never convince a reasonable observer that the Soviet Union was planning a sudden break out. Much political strife was confected over the Krasnoyarsk radar array, but the Reagan Administration was at odds with elements of its own intelligence community over its purpose. One thing was obvious though, a component of an ABM battle management system it was not (Savelyev and Detinov: 2007). Further alarming prognoses from Reagan about the advanced state particularly of Soviet HEL and ASAT technologies were not completely detached from reality – the Soviet Union had historically invested more than the United States in HEL technologies and they had demonstrated on several occasions their ability to physically intercept an orbiting satellite – but his denouements were unsound. Soviet laser technologies were as useless at destroying targets as American designs were and their ASAT systems contributed not one modicum to the strategic balance one way or another. In short, Reagan's assessment that the Soviet Union of the mid 1980's had revitalised its high-tech industries to such an extent that it had overtaken the United States in some areas and would soon field its own SDI system was flatly at odds with the prevailing wisdom; that the USSR was afflicted with an economy and industry that 'chronically underfulfilled' (Davis: 1990). It was too much to ask the American people to believe that an 'economic basket case' (Schroeder: 1985) was capable of producing a system that America's own scientific community had warned could never be done.

Finally, and perhaps most fatally for Reagan's attempted securitisation, was the confusion he was incapable of dispelling over his existential threat. Had the Soviet Union actually been in pursuit of SDI technologies to the extent that Reagan made out, and had they then intended to use these technologies to break out of treaty obligations under ABM, SALT etc. then the case could *possibly* have been made, due to the strategic instability hypothetically introduced by the Soviet Union, that there would soon be ruination brought about by the logic of MAD. Under these circumstances Reagan's securitisation of MAD itself as the threat could have made sense and his SDI could have made for a reasonable response to this threat (given the proviso that it was cost effective, 100% reliable, and possible). As pointed out above though, little that the USSR did during Reagan's presidency could reasonably be construed as upsetting the strategic nuclear balance. The threat, therefore, was the same as it had always been. Reagan, perhaps recognising the weakness of his argument, changed course not two years into his campaign and, rather than removing the need for MAD, argued instead that SDI would strengthen deterrence, strengthen the logic of mutually assured destruction. Worse still, Reagan did not even make it a clean break. Right up until the end of his Presidency, he continued to present SDI as a way of achieving two mutually exclusive goals, removing reliance on MAD and improving the reliability of MAD.

Securitisation of NEOs

It is now, at last, appropriate to return to the question of planetary defence. This final section will tie together the questions raised in the introduction about the applicability of lessons learned from Reagan's SDI efforts and the possibility of the securitisation of NEOs resulting in planetary defence. It is the position of this thesis that securitisation can indeed lead to planetary defence, but a convincing argument will obviously be required. This section will assemble such an argument. Greatly informed by the lessons from Reagan, the argument will first interrogate the morality of the proposition before looking at questions of practicality. That is; *why* should securitisation of NEOs be considered, and *how* could it be done?

The securitisation of any topic is not to be suggested lightly. The suspension or attenuation of normal political processes may be damaging to democratic norms. The construction of an existential threat may feed into harmful conceptions of an 'other', granting official sanction to prejudice and discrimination against that group. The resources directed towards the newly securitised issue could otherwise have been spent on projects beneficial to society; education, health, or infrastructure. As such any argument in favour of an issue becoming securitised should be met with healthy scepticism. It should be balanced against these consequences and, if unable to justify them, promptly be discarded. Should the justification for a securitising move fail to assuage the concerns raised above and still be pursued, then reasonable questions could be asked about the motivations of the securitising actors. Bigo (2002) rightly warned of the bureaucrats, military officials, and politicians who would, rather than attempt to protect any referent object, securitise an issue to shore up their own personal or institutional power. Fortunately, the case in favour of NEO securitisation quenches all these misgivings. At its most dire, an untimely NEO encounter could spell the end of organised life on Earth, indeed even the end of our species. However, as identified in the literature review, this kind of cataclysmic threat can be ignored at least for the next couple of thousand years or so. Most pressing are the 140-meter wide and larger NEOs, the kinds that could flatten cities and rearrange coastlines. The argument in favour of securitisation based on consequences alone is compelling when placed in context: damage to democratic norms is a minor concern compared to the survival of the democratic polity itself, potential harm to an 'other' is of little note if the other is destroyed along with everyone else, and the budgetary drain from housing, hospitals, or schools will be inconsequentially miniscule compared to the cost of rebuilding cities. Simply, no harm from the securitisation of this issue could be greater than a NEO impact itself. It is also important to consider that a sizeable NEO does not even need to strike near a city to lead to horrifying consequences. It is possible that a nation could mistake either the explosion caused by a NEO impact, or the infrared signature generated as it cuts through our atmosphere, for a nuclear attack. Should such a misinterpretation occur on the territory of a nuclear armed state the NEO impact 'could trigger a devastating nuclear war' (Dunham et al: 2013).

It is obvious that something should be done. This much has been true since we first came to understand the nature of the threat. Many may feel more comfortable with solutions that do not require the potentially drastic measures involved in securitisation – cosmopolitan collaboration, scientific partnerships, or broad multinational coalitions. The fact that none of these solutions have thus far produced planetary defence does not imply that they cannot do so in the future. But the critical factor here is time. In the forty years since first becoming aware of the issue, humankind has thus far assembled a single proof of concept science experiment,

one that has yet to field results. Given the absence of political will, none of the solutions highlighted in the literature review will produce a planetary defence system even with another forty years. Political will might quickly be found should a NEO impact a populated area, but the point, in that moment, will be tragically moot. Paradoxically, if a devastating (but not quite catastrophic) NEO impact were to occur, it could result in a diminished inclination towards fielding a solution, as decision makers gamble that such a 'one-in-a-million' event is hardly likely to occur again soon. What is required is a solution that matches the urgency of the problem, and overcomes the dearth of political will. Securitisation of NEOs offers the fastest and most assured way of procuring a planetary defence system. Of course, this is easier said than done. It is not often that an issue lends itself easily to securitisation. Many conditions will need to be met before an issue could be successfully securitised. The following paragraphs will outline just how such conditions could be met. The argument will be informed by many of the lessons gleaned from the analysis above about President Reagan's Strategic Defence Initiative. It will be centred around the suggestion that Near Earth Objects should be weaponized.

The core idea behind this suggestion is that, given a reality where NEOs have been weaponized, a planetary defence system against non-weaponized, or 'naturally occurring', NEOS, would emerge as a by-product of defences against human influenced NEOs, or 'Anthropogenic NEOs' (hereafter A-NEOs). And, because A-NEO defences would be fielded on a far quicker timescale than vanilla NEO defences, it is prudent and desirable to pursue NEO weaponization. Planetary defence from naturally occurring NEOs will emerge as a 'by-product' because countries, fearing an A-NEO attack, will first, drastically improve their SSA and second, field technologies at such scale to be confident of their ability to redirect a NEO of malicious origin. This method of ensuring planetary defence will avoid many of the mistakes accrued by Reagan with SDI. At the outset, most of the technologies required to weaponize NEOs and to defend against them, unlike the majority of SDI technologies, are not questions of science fiction. The laser ablation method is the exception as it requires a great deal of development, suffering many of the same limitations as SDI's laser systems. However, beyond this no new technologies need to be developed. Gravity tugs, kinetic impactors, robotic manipulators, etc. – all are questions of engineering rather than scientific development. More detail will be provided below but it is sufficient to say that no recourse to fabrication will be required. A-NEO weaponization could also plausibly be procured for less than what was spent on SDI, and certainly far less than what Reagan had intended to spend. Chiefly though, a securitisation via NEO weaponization will be a vastly simpler project because the threat is tangible and not at all convoluted. Rather than attempting to securitise a point of doctrine, or elevate some facet of an already securitised subject, defence from A-NEOs offers a simple narrative, that being; an 'other' has acquired a potentially devastating weapon that existentially threatens 'us' and we must urgently muster a defence against it. The beauty of the process is that the 'other' and the 'us' are of little consequence. Should China, for example, be the first to weaponize a NEO, the United States and China's other rivals will feel an urgent need to procure defences. And, as NEO defences would incorporate similar technologies to NEO weaponization (albeit without some of the finesse – it's a much more delicate task to make sure a NEO strikes a target than misses it) even fielding a defence will move other powers to field their own. It will not be an easy task to determine if a space power's latest piece of hardware is intended for offensive or defensive purposes. Thus, from the moment the first plausible A-NEO is fielded, a plethora of A-NEO defences, from powers who are nervous and wealthy enough, are likely to emerge. The benefit

for Earthlings is that all these defences could potentially be used to deflect naturally occurring NEOs as they arise.

'Plausible' here is the operative word. The weaponization scheme would quickly attract many of the same criticisms that plagued SDI were it not demonstrably plausible. Fortunately, some thought has already gone into this issue. Kecskes (2002) produced a rigorous mathematical analysis on the issue of 'military asteroids', clarifying some technical issues and arriving at useful conclusions. Namely, there are strict orbital requirements for potentially weaponizable asteroids. Their orbital period must be an exact multiple of Earth's (half a year, one year, 2 years etc.), the asteroid must pass within 1.5 million kilometres of Earth, and it must cross a nodal point of the Earth's orbit at the same time the planet does. If a NEO does not fill these criteria, then there are no available technical means of weaponizing it. Kecskes calculated in 2002 that that there are at least 35'000 known objects amenable to weaponization. However, his work assumed the NEOs to be weaponized would range between 200 and 2000 meters. Such a range is unnecessarily large. Given that a 140m NEO impact would deliver more energy than the most powerful thermonuclear device ever tested (Yeomans: 2013, p.115) it should not be necessary to look at objects much larger than this. Therefore, a more appropriate range would be 20 to 200m – smaller objects would risk breaking up in the upper atmosphere, reducing their utility, and larger objects would have reduced military use as it may be difficult to limit their effects to within the confines of a single country. The population of 20 to 200m NEOs is more numerous than the 200 to 2000m cohort. Additionally, work on discovering NEOs in the last two decades has further ballooned (Jones et al: 2018). It isn't necessary to find an exact number, but it is safe to assume that tens of thousands of NEOs are potentially weaponizable according to the criteria given by Kecskes. Further, Kecskes calculates that to have at least one asteroid in 'firing position' at any one time – ready to strike a target on Earth within three to four months – one should arrange between five and fifteen such bodies around Earth's interplanetary neighbourhood. To place an average sized NEO within the 20 to 200m cohort into such a 'firing position' would take between 1 – 3 years depending on the efficiency of the manipulator. Chemical engines will do it much faster at greater cost, gravity tugs will take longer but will be very cost effective. In short, an A-NEO weapons program is possible for states with patience and resources. The technology to do so is within reach as is a vast population of NEOs ready to be weaponized.

The issue of resources should also be addressed. A prospect may be technically possible but unpalatably expensive. Unfortunately, there exist no specific cost estimates for an A-NEO weapons program however there is enough information to form an educated guess. NASA spent just over $300 million on the DART mission (Ryan and Ravisetti: 2021). DART is a relatively simple craft though. Any spacecraft designed to carefully manipulate a NEO will be more complicated, much larger and will need to survive longer in space that DART. All of these factors will dramatically increase costs. A more readily comparable machine would be the Perseverance Rover which cost NASA some $2.4 billion to develop and land on Mars (Dreier: 2020). An A-NEO manipulator craft will be slightly less complicated than Perseverance and will enjoy a much less demanding flight profile, never having to land on Mars, pushing down costs. Thus, a reasonable estimate for an A-NEO program could be set at $2 billion per mission. If we are to assume the full complement of 15 'ready to fire' NEOs according to Kesckes then the entire weaponization program could cost $30 billion based on these assumptions. For reference, this estimate falls below the cost of the entire Northrop

Grumman B-2 *Spirit* stealth bomber program (Petrescu et al: 2017). While certainly not cheap, that an A-NEO weapons program compares closely with the cost of other strategic programs is far from discouraging. Much more encouraging is the consideration of 'bang per buck' (BPB) - the explosive megatonnage (MT) of the weapon versus its cost. The average yield of a warhead delivered by a Minuteman III ICBM is 230 kilotons (Norris and Kristensen: 2017). It can be difficult to find a good cost estimate of these systems that incorporates the development, procurement, maintenance, and manufacturing costs, not to mention the costs of constructing fields of massive, hardened silos to contain the missiles. However, it is known that of the $1.5 trillion the United States will spend over the next 30 years revitalizing its entire nuclear triad (Reif: 2017), $111 billion of that will be spent on replacing 400 ageing Minuteman III ICBMs (Capaccio: 2020). Thus, we have a unit cost of $280 million, and a BPB measure of 820 kilotons per billion dollars. If rounding generously in favour of ICBMs, a ratio of 1:1 could be given; every billion dollars spent on ICBMs buys 1 megaton of explosive force. This figure cannot compete with those of A-NEOs. A 50m A-NEO will deliver at least 10MT, a 100m A-NEO will yield at least 150MT (Aftosmis et al: 2019), giving BPB ratios of 5:1 and 75:1 respectively. The case is clear; a single ICBM may be cheaper than an A-NEO mission but if one A-NEO can do the job of dozens of ICBMs, their military utility hardly needs to be stated. In fact, weaponizing NEOs may represent an easier method of adding megaton yield weapons to a country's arsenal without having to pursue complicated and expensive nuclear technologies, which are subject to strict monitoring mechanisms and legal limitations.

'Legal limitations' is an issue that SDI and NEO weaponization will have in common. SDI encountered many objections based on obligations owed under the ABM treaty. Any state attempting to weaponize NEOs will face similar criticisms hedged within the 1967 Outer Space Treaty. States party to this treaty have undertaken 'not to not to place in orbit around the earth any objects carrying nuclear weapons or any other kinds of weapons of mass destruction, install such weapons on celestial bodies, or station such weapons in outer space in any other manner'. Further they are obliged to make use of all celestial bodies 'exclusively for peaceful purposes' (Article IV). It could be argued that the A-NEO manipulators are not actually weapons. They will be more capable than most spacecraft but are not themselves dangerous (assuming nuclear devices or laser ablation systems are not under consideration). There is no doubt though, that weaponizing an asteroid will run afoul of the obligation to treat celestial bodies with exclusively peaceful purposes in mind. Any attempt at securitising NEOs via weaponization should settle this debate. Muddling through without a clear legal argument, as Reagan did with SDI, is probably not a good strategy as the effort will be constantly bedevilled with unanswered critiques. Much better would be to recognise that an A-NEO weapons program would contravene Article IV of the Outer Space Treaty but argue that this aspect of the treaty is not fit for purpose and needs to be renegotiated. Such a legal position is not uncommon among legal scholars who believe that the 1967 treaty was drafted too rigidly (Pope: 2021, Doldirina: 2018, Mouat et al: 2021). Should the securitisation effort really take off though, legal quibbles will not be an obstacle. Such arguments beset SDI because it was a faltering securitisation effort. One can easily imagine, following a 'Sputnik moment' with A-NEOs, that such legal qualms would be disregarded.

Conclusion

Someday planet Earth will be struck by a rock of celestial origin (again). It is not known when and it is not known how destructive that strike will be. Unlike the millions of species who have previously been claimed by this doom though, Humankind possesses the technological dexterity to save itself. That we have not thus far ensured an escape from this fate is not due to the presence of material obstacles but the absence of political will. Securitisation via weaponization of NEOs has here been proposed as a solution that would overcome the problem of political will. It is perhaps regrettable to some that a non-militarised solution has not been advocated. A solution that is led by a civil society, or the scientific community, or one that involves intergovernmental cooperation may be preferable, but such efforts have not produced effective planetary defences over the last 40 years and there is little to indicate that they soon will. We may not have the luxury of another 40 years to truly test the efficacy of these alternatives. Given what is at stake - the destruction of cities, the escalation to nuclear warfare, even extinction – no argument that involves a lengthy delay can be countenanced. The securitisation of NEOs may be an inelegant solution, attended by such thorny problems as injury to democratic norms, the castigation of an 'other', the undue elevation and entrenchment of career security professionals to positions of power, but these consequences are worth bearing when compared to the alternative of having no planetary defences.

This project has successfully championed securitisation as a solution to an existential problem. President Ronald Reagan's Strategic Defence Initiative was selected as a foil because of the many contextual similarities between his efforts and any hypothetical effort to securitise NEOs. Aside from the obvious similarity of putting advanced technology in space, both issues are subject to the same political system, competing budgetary demands, and electorate. Thus, the lessons gleaned from one could transfer to the other. The weaknesses in Reagan's efforts to securitise were abundant but some were more obvious than others. Initiating the project without also providing the public with a name was short-sighted. Similarly, having prepared no legal rejoinders to obvious and predictable objections allowed space that Reagan's opponents were able to fill with mounting legal reservations and misgivings. On neither front was Reagan ever able to regain the momentum. There is often an element of exaggeration within any securitisation effort – a threat is made out to be worse than it really is, a solution is promised to be more effective – but Reagan required nothing less than a suspension of critical faculties in his portrayal of SDI as feasible. His depiction of a Soviet Union preparing to suddenly break out of arms reductions treaties, field their own SDI, and fight a nuclear war relied on mangled, poorly interpreted half-truths and often ran against the assessments of his own intelligence community. Both Reagan's problem and his solution were fanciful. Support for SDI became both partisan and a matter of faith; faith that the systems were technically possible (despite the objections of the country's science community), and faith that the President was not lying about the Soviet Union (despite the reservations of the intelligence community). Reagan's endeavours are interesting to study in their own right. Despite the vast sums he eventually spent on SDI his efforts are mostly considered a failure. However, should the lessons from Reagan's failures be used to better structure an attempt to securitise something that is truly worthwhile, then the President can claim an ultimate victory. If the lingering embers of the President's ambition could rekindle 'traditions of Titans', then the next round of wars with Heaven could be won.

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Appendix:

I. Full coding frame of Qualitative Context Analysis:

No.	Title/Date	Content	Y/N
1.	**Presidential Address to the Nation (23/03/83)**		
	Urgency	"We had to move immediately"	Y
	Exceptionalism	-	N
	Existential threat	"preserve our free way of life" ... " During the past decade and a half, the Soviets have built up a massive arsenal of new strategic nuclear weapons -- weapons that can strike directly at the United States " ... " The final fact is that the Soviet Union is acquiring what can only be considered an offensive military force. They have continued to build far more intercontinental ballistic missiles than they could possibly need simply to deter an attack. Their conventional forces are trained and equipped not so much to defend against an attack as they are to permit sudden, surprise offensives of their own."	Y
	Hyperlink	https://www.reaganlibrary.gov/archives/speech/address-nation-defence-and-national-security	
2.	**Statement by Principal Deputy Press Secretary on the Strategic Defence Initiative (27/11/84)**		
	Urgency	" In the near term, SDI research and development responds to the massive Soviet ABM effort, which includes actual deployments and thus provides a powerful deterrent to a Soviet breakout of the ABM treaty. "	Y
	Exceptionalism	-	N
	Existential threat	" the threat posed by nuclear armed ballistic missiles"	Y
	Hyperlink	https://www.reaganlibrary.gov/archives/speech/statement-principal-deputy-press-secretary-speakes-strategic-defence-initiative	
3.	**Foreword Written for a Report on the Strategic Defence Initiative (03/01/85)**		
	Urgency	"Today both of these basic assumptions are being called into question. The pace of the Soviet offensive and defensive buildup has upset the balance in the areas of greatest importance during crises." ... " consider the SDI research program in light of both the SovietUnion's extensive, ongoing efforts in this area and our own government's constitutional responsibility to provide for the common defence. "	Y
	Exceptionalism	-	N

	Existential threat	" the risk of nuclear destruction" ... "the quality of our future is at stake "	Y
	Hyperlink	https://www.reaganlibrary.gov/archives/speech/foreword-written-report-strategic-defence-initiative	
4.	**Remarks at the National Space Club Luncheon (29/03/85)**		
	Urgency	-	N
	Exceptionalism	" We seek to render obsolete the balance of terror -- or mutual assured destruction, as it's called -- and replace it with a system incapable of initiating armed conflict or causing mass destruction, yet effective in preventing war." ... "The means to intercept ballistic missiles during their early-on boost phase of trajectory would enable us to fundamentally change our strategic assumptions "	Y
	Existential threat	" Let history record that in our day America's best scientific minds sought to develop technology that helped mankind ease away from the nuclear parapet. "	Y
	Hyperlink	https://www.reaganlibrary.gov/archives/speech/remarks-national-space-club-luncheon	
5.	**Radio Address to the Nation on the Strategic Defence Initiative (13/07/85)**		
	Urgency	" the Soviets have continued to race for superiority." ... " the United States not only has the right to go forward with research for a strategic missile defence, but in light of the scale of their program we'd be the greatest fools on Earth not to do so "	Y
	Exceptionalism	" change the course of history by embarking on a research effort to counter Soviet threats" ... "The strategic challenges we face are far different from those in 1972, when the United States and the Soviet Union signed the SALT I and anti ballistic missile treaties. When those treaties were signed, certain assumptions about the Soviets were made that -- well, to put it charitably -- have not proven justified. "	Y
	Existential threat	" threats of mutual nuclear annihilation" ...	Y
	Hyperlink	https://www.reaganlibrary.gov/archives/speech/radio-address-nation-strategic-defence-initiative	
6.	**Radio Address to the Nation on Soviet Strategic Defence Programs (12/10/85)**		
	Urgency	" the Soviets not only continue to build up their offensive nuclear forces at an unprecedented rate, they're also spending almost as much on strategic defence. " ... " The Soviets have for a long time been doing advanced research on their version of SDI. " ... " The sooner the Soviet Union comes clean about its own strategic defence programs and joins with us in a real dialog to reduce the risk of war, the better it will be for the world. "	Y
	Exceptionalism	" We must respond ... by investigating the possibilities of nonnuclear defences to help protect the United States and our allies from attack." ... " Strategic Defence Initiative, or SDI, may, in fact, point the way to advanced defences that could protect millions of people. " ... " our SDI research program is crucial to maintain the military balance and protect the liberty and freedom of the West. "	Y

	Existential threat	" At this point, their buildup of offensive weapons combined with their very extensive strategic defence programs is threatening the security of the West "	Y
	Hyperlink	https://www.reaganlibrary.gov/archives/speech/radio-address-nation-soviet-strategic-defence-programs	
7.	**Message to the Congress on the Strategic Modernization Program (03/06/86)**		
	Urgency	" I believe it would be most unwise to delay and further restrict the program. " ... " it is important to have a vigorous research effort now because the Soviets have long been heavily engaged in their own strategic defence efforts, "	Y
	Exceptionalism	" To stretch or disrupt these programs now would not only endanger deterrence but would be a wasteful and costly misuse of our scarce defence resources. " ... " These members would constrain the growth in the SDI program to the same level of growth as the entire Department of Defence budget. This logic is fatally flawed. " ... "There is no free ride. Some people will argue that strategic forces must take cuts along with everything else when budgets are tight. Those ``spread-the-pain" theories are not only false, they are dangerous. Every dollar taken from our strategic programs is a victory for potential aggressors." ...	Y
	Existential threat	" to eliminate one day the threat of nuclear ballistic missiles "	Y
	Hyperlink	https://www.reaganlibrary.gov/archives/speech/message-congress-strategic-modernization-program	
8.	**Statement by Deputy Press Secretary for Foreign Affairs Djerejian on the Strategic Modernization Program (03/06/86)**		
	Urgency	" we have no more urgent task in preserving peace and freedom than the prevention of nuclear war. " ... " to proceed as quickly and efficiently as possible through the Strategic Defence Initiative to determine how we can create a safer world and ensure peace and stability for the long term. " ... " Congress can stretch programs, thereby delaying scientific results; postponing the deployment of capabilities, which we all agree are necessary" ...	Y
	Exceptionalism	" to restore and strengthen our traditional approach to deterrence while we explore through our Strategic Defence Initiative the feasibility of harnessing advanced technologies in order to usher in a safer world."	Y
	Existential threat	-	N
	Hyperlink	https://www.reaganlibrary.gov/archives/speech/statement-deputy-press-secretary-foreign-affairs-djerejian-strategic-modernization	
9.	**Radio Address to the Nation on the Strategic Defence Initiative (12/07/86)**		
	Urgency	" And never was a purely defensive system so sorely needed. " ... " Since the early 1970's the Soviet Union has been racing forward in a vast and continuing military buildup, including the expansion of their offensive	Y

		nuclear arsenal and an intense effort to develop their own strategic defence. " ... " Isn't it time to put our survival back under our own control? " ... "	
	Exceptionalism	" a research program to see if we could find a way to defend mankind against ballistic missiles, an antimissile shield, " ... " In the weeks ahead, it would be a tragedy to permit the budget pressures of today to destroy this vital research program and undercut our chances for a safer and more secure tomorrow. "	Y
	Existential threat	" the Strategic Defence Initiative, SDI, which is aimed at ridding this planet of the threat of nuclear annihilation. " ... " we are defenceless against the most dangerous weapons in the history of mankind. "	Y
	Hyperlink	https://www.reaganlibrary.gov/archives/speech/radio-address-nation-strategic-defence-initiative-july-12-1986	
10.	**Remarks at a White House Briefing for Supporters of the Strategic Defence Initiative (06/08/86)**		
	Urgency	" We're at a critical point now on national security issues, and we need your help. " ... " And there can be no better time than today, " ...	Y
	Exceptionalism	" Well, one sometimes has to live with opposition to proposals such as changing the tax code, but when the same kind of skepticism stands in the way of the national security of our country, it can be perilous. " ... " SDI is no bargaining chip; it is the path to a safer and more secure future. And the research is not, and never has been, negotiable. "	Y
	Existential threat	" today we are absolutely defenceless against the fastest, most destructive weapons man has ever created: ballistic missiles. "	Y
	Hyperlink	https://www.reaganlibrary.gov/archives/speech/remarks-white-house-briefing-supporters-strategic-defence-initiative	
11.	**Radio Address to the Nation on House of Representatives Defence Authorization Bill (16/08/86)**		
	Urgency	-	N
	Exceptionalism	" To gravely underfund SDI is to place in jeopardy all our hopes for arms reduction. It is to leave America indefinitely naked to missile attack, whether by accident or design. "	Y
	Existential threat	" the great hope of this country for finding a way out of the prison of mutual terror, "	Y
	Hyperlink	https://www.reaganlibrary.gov/archives/speech/radio-address-nation-house-representatives-defence-authorization-bill	
12.	**Remarks to Representatives of the Young Astronauts Council on Their Departure for the Soviet Union (16/10/86)**		
	Urgency	-	N
	Exceptionalism	-	N

	Existential threat	" Some of the best minds of the United States are trying to find out if it's possible to build a system that protects our country and our friends from a ballistic missile attack. We call it the Strategic Defence Initiative, or SDI. "... " develop technology that may someday protect you and your families from nuclear missiles. "	Y
	Hyperlink	https://www.reaganlibrary.gov/archives/speech/remarks-representatives-young-astronauts-council-their-departure-soviet-union	
13.	**Message to the Congress Transmitting a Report on Soviet Noncompliance With Arms Control Agreements (10/03/87)**		
	Urgency	" Soviet activities during the past year have contributed to our concerns. " ... "This and other ABM-related Soviet activities suggest that the USSR may be preparing an ABM defence of its national territory." ...	Y
	Exceptionalism	-	N
	Existential threat	" The U.S. Government reaffirms the judgment of the December 1985 report that the aggregate of the Soviet Union's ABM and ABM-related actions (e.g., radar construction, concurrent testing, SAM upgrade, ABM rapid reload and ABM mobility) suggests that the USSR may be preparing an ABM defence of its national territory. Our concern continues."	Y
	Hyperlink	https://www.reaganlibrary.gov/archives/speech/message-congress-transmitting-report-soviet-noncompliance-arms-control-agreements-0	
14.	**Statement on the Strategic Defence Initiative (23/03/87)**	**23/03/87**	
	Urgency	" They understood that the Soviet Union has been working for more than a decade on its own strategic defence systems, even while it has been deploying hundreds of new offensive nuclear weapons. They understood how dangerous it would be if the Soviet Union had a defence and we did not."	Y
	Exceptionalism	" journey toward achieving humanity's ancient dream: a world in which swords are beaten into plowshares and war is preached no more."	Y
	Existential threat	" the journey toward finding a defence against ballistic missiles. " ... " to look forward to a new era of security when the burden of nuclear terror is lifted from its shoulders. " ... " SDI can help us move toward a safer world."	Y
	Hyperlink	https://www.reaganlibrary.gov/archives/speech/statement-strategic-defence-initiative	
15.	**Statement on the Soviet-United States Nuclear and Space Arms Negotiations (04/05/87)**		
	Urgency	-	N
	Exceptionalism	" An effort has been made by some Members of the House of Representatives to attach to the defence authorization bill amendments on arms control which would pull the rug out from under our negotiators and undermine our most vital defence programs, such as our Strategic Defence	Y

		Initiative. And now it seems that some Senators want to move in the same direction."	
	Existential threat	" particularly the most destabilizing weapons -- fast-flying ballistic missiles "	Y
	Hyperlink	https://www.reaganlibrary.gov/archives/speech/statement-soviet-united-states-nuclear-and-space-arms-negotiations-8	
16.	**Remarks on the Strategic Defence Initiative to Martin Marietta Denver Astronautics Employees in Waterton, Colorado (24/11/87)**		
	Urgency	" Our goal is to strengthen deterrence by moving as soon as we're ready to increasing reliance on defences to keep the peace."	Y
	Exceptionalism	" In the case of SDI, America cannot afford not to do everything necessary to develop this missile defence system and put it into operation."	Y
	Existential threat	" And I want you to know that what you accomplish will be put to good use in protecting your country, the free world, and perhaps all mankind against the threat of nuclear holocaust "	Y
	Hyperlink	https://www.reaganlibrary.gov/archives/speech/remarks-strategic-defence-initiative-martin-marietta-denver-astronautics-employees	
17.	**Address Before a Joint Session of Congress on the State of the Union (25/01/88)**		
	Urgency	-	N
	Exceptionalism	" SDI funding is money wisely appropriated and money well spent. SDI has the same purpose and supports the same goals of arms reduction. It reduces the risk of war and the threat of nuclear weapons to all mankind. " ...	Y
	Existential threat	" when taken together, offer a chance none of us would have dared imagine 7 years ago, a chance to rid the world of the two great nightmares of the postwar era. I speak of the startling hope of giving our children a future free of both totalitarianism and nuclear terror. " ... " our efforts are to give future generations what we never had—a future free of nuclear terror." ... " We must also remember that SDI is our insurance policy against a nuclear accident, a Chernobyl of the sky, or an accidental launch or some madman who might come along. "	Y
	Hyperlink	https://www.presidency.ucsb.edu/documents/address-before-joint-session-congress-the-state-the-union-0	
18.	**Remarks to the Institute for Foreign Policy Analysis at a Conference on the Strategic Defence Initiative (14/03/88)**		
	Urgency	" The Soviets already have the world's only deployed ABM defences" ... " The Soviets already have an operational antisatellite system. " ... " I believe that, given the gravity of the nuclear threat to humanity, any unnecessary delay in the development and deployment of SDI is	Y

		unconscionable. " ... " Every extra minute that we leave the population of the West defenceless against ballistic missiles is one minute too long. "	
	Exceptionalism	" In that eventuality, without SDI, we would be dangerously unprepared "	Y
	Existential threat	" free from the nuclear terror " ... " The fact is that many Americans are unaware that at this moment the United States has absolutely zero " ... " If they were able to succeed in stopping SDI, then we would be left forever with that loaded pistol to our heads, with an insecure and morally tenuous peace based forever on the threat of retaliation. defences against a ballistic missile attack "	Y
	Hyperlink	https://www.reaganlibrary.gov/archives/speech/remarks-institute-foreign-policy-analysis-conference-strategic-defence-initiative	
19.	**Radio Address to the Nation on the Deployment of United States Forces to Honduras and the Strategic Defence Initiative (19/03/88)**		
	Urgency	" to note that the Soviets have been making extensive progress on their own SDI-like program in the last few years. Indeed, the Soviets may be preparing a nationwide defence, which would mean a breakout from the restrictions of the ABM treaty, which prohibits a massive deployment of such a system. However, at the very moment when the Soviets are so far along in their efforts, Congress has been cutting back ours. Every year Congress has cut the SDI budget. We are now 1 to 2 years behind schedule "	Y
	Exceptionalism	" That's why we cannot permit some in Congress to take dangerous risks with America's national security."	Y
	Existential threat	"strategic defence against ballistic missiles "	Y
	Hyperlink	https://www.reaganlibrary.gov/archives/speech/radio-address-nation-deployment-united-states-forces-honduras-and-strategic-defence	
20.	**Statement on the Fifth Anniversary of the Strategic Defence Initiative (23/03/88)**		
	Urgency	" The Soviets not only are ahead of us in ballistic missiles but also are deeply engaged in their own SDI-like program. If they are allowed to keep their near monopoly in defences, we will be left without an effective means to protect our cherished freedoms in the future. " ... " We are now 1 to 2 years behind schedule. " ...	Y
	Exceptionalism	" a program vital to our future security." ... " The challenge before us is of course difficult, but with SDI, we are showing already that we have the technological know-how, the courage, and the patience to change the course of human history."	Y
	Existential threat	" a future free from the threat of the most dangerous weapon mankind has invented: fast-flying ballistic missiles. " ...	Y
	Hyperlink	https://www.reaganlibrary.gov/archives/speech/statement-fifth-anniversary-strategic-defence-initiative	
21.	**Message to the House of Representatives Returning Without Approval the National Defence**		

	Authorization Act, Fiscal Year 1989 (03/08/88)		
	Urgency	" It would limit critical funding for the space-based interceptor program, altering long-established "priorities for the SDI and delaying unacceptably the development of technology to defend against missiles in the boost-phase, where defensive leverage is greatest." ... " The Soviet Union continues, without letup, its own strategic modernization program which includes both new rail- and road-mobile ICBMs. " ...	Y
	Exceptionalism	" Together, these restrictions and funding cuts would cripple our ability to fulfill the promise of effective strategic defence."	Y
	Existential threat	" Most importantly, we owe our children an alternative to the current policy of deterrence based solely on the threat of nuclear retaliation. "	Y
	Hyperlink	https://www.reaganlibrary.gov/archives/speech/message-house-representatives-returning-without-approval-national-defence	
22.	**Remarks on the Veto of the National Defence Authorization Act, Fiscal Year 1989, and a Question-and-Answer Session With Reporters (03/08/88)**		
	Urgency	-	N
	Exceptionalism	" No development has been more crucial to the progress in arms reduction negotiations than our decision 5 years ago to proceed with a Strategic Defence Initiative."	Y
	Existential threat	" a defensive system that can protect this nation from nuclear missile attack and may someday free the world of the nightmare of nuclear terror "	Y
	Hyperlink	https://www.reaganlibrary.gov/archives/speech/remarks-veto-national-defence-authorization-act-fiscal-year-1989-and-question-and	
23.	**Remarks at a Republican Campaign Rally in Raleigh, North Carolina (21/10/88)**		
	Urgency	-	N
	Exceptionalism	-	N
	Existential threat	" pushing ahead in our efforts to protect the United States and the world from the threat of a nuclear attack "	Y
	Hyperlink	https://www.reaganlibrary.gov/archives/speech/remarks-republican-campaign-rally-raleigh-north-carolina	