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Securitization Theory and Biological Weapons

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The Threat of Biological Weapons: A Justification of Biological Weapons Securitization

1. Introduction

In 2001, when attacks were carried out in the United States involving *Bacillus anthracis*, the bacterial agent that causes anthrax, the threat of biological weapons came into sharper focus for the American government. These attacks were not the beginning of the biological weapons threat, but rather a point along a continuum of increasing risk. Article 1 of the 1972 Biological Weapons Convention defines biological weapons to include the “microbial or other biological agents, or toxins, whatever their origin or method of production, of types and in quantities that have no justification for prophylactic, protective, or other peaceful purposes” as well as the “weapons, equipment, or means of delivery designed to use such agents or toxins for hostile purposes or in armed conflict”¹. The use of biological weapons dates back centuries, but the fear of biological weapons of mass destruction, here defined as weapons that pose an existential threat to the target, is relatively recent². Much of it is attributable to the rapid advances made in the biological sciences over the past decade, particularly with respect to the field of genomics, where there is a growing ability to manipulate genes³. This knowledge has a variety of applications in the field of bioweapons. Additionally, while states use of biological weapons was a concern through much of the 20th century, the possibility that rogue states or non-state groups would use biological weapons was largely ignored until the start of the 21st century¹.

Therefore, the threat of biological weapons has been framed as a security issue⁴. This essay examines whether, and to what degree, the threat of a biological weapons attack has been overstated with respect to the government's response by drawing on securitization theory, which critically evaluates the process through which an issue comes to be viewed through a security framework. In addition, the essay will also use the precautionary principle, described by the 1998 Wingspread Statement as the notion that “when an activity raises threats of harm to human health or the environment, precautionary measures should be taken even if some cause and effect relationships are not fully established scientifically”⁵. Though more often applied to considerations of environmental risk, in the case of biological weapons, the principle could be used to justify caution even in the absence of consensus surrounding the probability of an attack, simply due to the severity of the consequences if an attack was to occur.

It will be argued that the biological weapons threat has not been overestimated and that the biodefense measures expressed in current policy and funding decisions are warranted. Despite measures such as likelihood-adjusted mortality, which may suggest the U.S. government response is an overreaction, other characteristics of the bioweapons threat justify its securitization and resulting prioritization in the government agenda. To do this, the essay provides a discussion of how the potential consequences of an attack pose an existential threat to the United States, how there is an inadequate degree of preparedness for such an event, how the mere possibility of an attack is enough to warrant high spending on preventive and preparative programs, and how the response has been appropriately measured given the threat. The focus will be on the United States government because it has taken such a prominent role in bioweapon securitization and biodefense funding. A single country, the US, was chosen as a point of focus to avoid confusion due to differing levels of threat and response across countries. Additionally, any exaggerations that may exist in how the media or the public portray and view the biological weapons threat will be ignored; though this could be related to the government's decision to securitize bioweapons, this is a separate issue

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from government policy decisions in response to the security threat and is outside the scope of this paper.

2. Securitization Theory and Biological Weapons

Securitization theory is a constructivist approach informing how certain issues become framed through a security lens⁶. It offers a useful analytical framework for understanding how, why, and what issues come to be viewed as security threats. Securitization is an active process wherein a securitizing actor, in this case the American government, presents and addresses an issue as an existential threat to a particular group, or referent object⁷. In these situations, emergency response measures and extensive resource commitments are considered justified⁷. Securitization theory generally promotes desecuritization as preferable because it avoids the negative consequences of securitization, including a heavy-handed state response, reduced democratic accountability, and the narrowing of public choice⁸. However, it also recognizes that securitization is sometimes appropriate. Recent considerations of securitization theory identify three criteria that, if fulfilled, justify securitization: an objective, existential threat, a referent object whose protection promotes human well-being, and a response appropriately measured to the particular threat⁶.

In the case of bioweapons securitization, the second criterion is less controversial, given that the referent object is human population; thus, any harm to the referent object would directly reduce a human well-being. However, the question of whether securitization of biological weapons meets the other two criteria is more contentious. Skeptics may point to Colin Powell's 2003 address to the United Nations as a case where the biological weapons security threat may have been exaggerated and securitization was promoted for political ends, thereby calling into question the legitimacy of the securitizing actor, the U.S. government. In his speech, Powell made the case for an invasion of Iraq by claiming Iraq had capabilities to produce biological weapons of mass destruction, including mobile bioweapons labs, a claim that later turned out to be false⁹.

Critics also target the policies resulting from securitization, arguing that the capacity of aggressors to carry out large scale attacks causing mortality has been overestimated, calling into question whether an existential threat truly exists and whether the response has been appropriately measured¹⁰. Government funding may be seen as unjustifiably skewed in favour of biodefense, defined as the capacity to respond to a biological weapons attack, to the neglect of other key areas, such as endemic and pandemic diseases. For instance, Klotz calculated what is referred as the "likelihood-adjusted mortality" for biological weapons, pandemic diseases, and endemic diseases by multiplying the probability of occurrence by an estimate of mortality were an event to occur¹¹. By comparing these values with government funding allocated to each category, he demonstrated that biodefense receives more funding than its likelihood-adjusted mortality estimate would suggest is warranted¹¹.

However, objections have been raised to this argument. Supporters of biodefense prioritization point to the fact that focusing solely on potential fatalities ignores other issues, such as the negative social and economic fallout from an attack¹². Additionally, they point to the possibility that it is more expensive to combat intentional threats, where there will be an explicit effort to circumvent current practices by exploiting weaknesses¹². It should also be considered that the probability of one attack is not independent from another, and that an increasing probability of success may elicit more attempts¹². To follow will be an examination of whether government spending and policies constitute a justified response to the threat of biological weapons. Securitization is relevant in that it was a way for decision-makers to implement the policies they want and is justifiable to the extent that the programs themselves are necessary and appropriate. Despite other consequences of securitization, such as public fear, political manipulation, and a heavy-handed response, which may give the impression of an overreaction, the reality is that securitization was a means of enabling the implementation of certain policies and programs necessary to respond to the threat of biological weapons.

3. Consequences of an Attack

A government's decision to securitize an issue is a strategy to make extreme responses seem justified, and it centers on the perceived existential risk a threat poses to the population⁷. Beginning with a brief history of biological weapons use, this section will aim to defend the framing of biological weapons use as an existential threat by examining their

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ability to cause mortality or to generate negative social and economic fallout. A brief discussion of the potential catastrophic consequences of a smallpox attack will illustrate the argument.

The use of biological weapons dates back centuries. Examples include the Tatars catapulting plague-infected corpses over city walls at the siege of Kaffa in the 14th century, the deliberate triggering of a smallpox epidemic among Native Americans via contaminated blankets in the 18th century during the French and Indian War, and the contamination of salad bars with salmonella at a restaurant in Oregon in the 20th century². However, with the development of the germ theory during the 19th and into the 20th century, there was an increase in scientific knowledge about biological weapons¹⁰. States became increasingly interested in such weapons, with Japan establishing a bioweapons program between 1932-1945, the United States in 1942, and the Soviet Union in 1973¹³. In 1972, in response to increasing concern about the threat of biological weapons, the United Nations proposed the *Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on their Destruction*, more commonly known as the Biological Weapons Convention (or BWC)¹⁴. The treaty came into effect in 1975, and banned the development, acquisition, and stockpiling of biological weapons¹. However, it failed to halt the research and development of biological weapons, which have continued into the 21st century.

Those who argue that government response to the biological weapons threat has been overstated point to very low mortality in previous attacks¹¹. The anthrax attacks of 2001 in the United States, for example, resulted in only 5 deaths¹⁵. This argument could be used to urge governments to instead invest resources in areas that consistently cause higher mortality, such as infectious diseases like AIDS or even the seasonal flu. However, in carrying out a threat assessment, it is also important to look at the *potential* for mortality. Here it has been suggested future attacks may not be on the same relatively small scale as those in the past¹⁵. It is difficult to produce reliable estimates of fatalities that might result from an attack; there is huge variation in estimates and, often, little statistical evidence to support the predictions¹¹. That said, it is agreed that, in theory, even small amounts of a dangerous biological agent could cause significant mortality if prepared and disseminated effectively¹⁶. For instance, the WHO estimates that 50kg of *B. anthracis* distributed upwind of a population of 500 000 would leave 95 000 people dead and 125 000 more incapacitated¹⁷. Other sources suggest that 100kg of *B. anthracis*, disseminated via a crop-sprayer, could kill as many as three million people, and comparable values have been projected for other agents^{2,18}. Another concern is that a contagious biological agent will result in person-to-person transmission, creating a self-sustaining effect not present in any other weapons class¹⁰.

While mass casualties are possible, it is also important to note that, even in situations with few casualties, biological weapons attacks may have profound social and economic ramifications³. Such attacks could lead to widespread social panic and disorder, resulting in self-destructive behaviour and creating what is called a “societal autoimmune effect” involving increases in crime and looting¹⁹. While there is little evidence to predict this would occur based on previous disaster situations (such as the terrorist attacks on the World Trade Center in 1993 and 2001, where the public reaction is described as effective and adaptive, rather than panicked and disruptive), it must remain a consideration²⁰. The effects of a largescale attack involving biological weapons are unknown, and epidemics of highly fatal diseases may cause serious social disruption²⁰.

The economic consequences of biological weapons attacks are severe and suggest that investing in defense makes good economic sense. While there were only five deaths in the 2001 anthrax attacks, those attacks resulted in tens of billions of dollars in government spending²¹. Also, the financial sector may be negatively impacted if investor confidence plummets³. Similarly, an attack on the agricultural sector, which accounts for 15% of the United States GDP, could have severe economic ramifications³. If the biological agent being used is contagious, there could also be implications for trade and travel restrictions³. The SARS epidemic of 2003 showed the economic consequences of a highly infectious disease, essentially “crippling” some of the most dynamic cities in the world⁴. The Center for Biosecurity has estimated the economic cost of a biological weapons attack in the U.S. could exceed one trillion USD¹⁵. In short, there are social and economic consequences that, considered in conjunction with the potential for catastrophically high mortality, justify the framing of biological weapons as a significant existential threat to the United States. This is illustrated by considering the specific case of smallpox.

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The Variola virus, which causes smallpox, is an example of an agent that, if weaponized and used in an attack, would pose a serious existential threat to the United States²². It is highly contagious; in a 1972 outbreak in Yugoslavia, even with routine vaccinations, which are no longer carried out, the disease spread rapidly, with each affected individual infecting 11 to 13 others²³. It is also lethal, with a 30% fatality rate¹. Human populations are highly susceptible because, since eradication, vaccinations have not been given for 20 years²⁴. Other features make smallpox an appealing option for bioterrorism: it has no treatment once symptoms occur; it would not be detected for 7-17 days; it is physically disfiguring; and the virus is stable in aerosol form^{1,24}. Perhaps the most problematic aspect of smallpox is that those infected are contagious before symptoms appear. Simulations have been carried out, including a 1999 exercise by the Center for Civilian Biodefense Studies at Johns Hopkins University, where a terrorist release of Variola virus grew into a global outbreak, which the health and emergency response system was unable to control²². Here it could be suggested that prevention efforts promoted by securitization are the only option, given the apparent inability to contain a global outbreak after an attack has occurred. While the dangers posed by the Variola virus are not contested, skeptics argue that it is too difficult to acquire to be a real danger¹⁰. However, there is significant concern over unaccounted Soviet Union smallpox samples, and a 1999 U.S. report pointed to evidence that secret stockpiles of the virus are held by North Korea, Russia, and Iraq^{1,25}. It has also been suggested that the terrorist organization Aum Shinrikyo holds quantities of the Variola virus²².

Threat and risk assessments should not rely solely on the worst-case scenarios of biological weapons attacks, especially since practical challenges still limit terrorists' ability to conduct attacks that will have the greatest possible effect. However, it is equally crucial to be aware of the wide range of consequences of such an attack. This section has argued that there could be serious ramifications on several dimensions, ramifications which justify the framing of biological weapons as an existential threat to the United States and warrant investment in an appropriate response capacity. Securitization, therefore, played an important role encouraging policy responses that were justified and appropriate.

4. Preparedness for an Attack

This section will examine the capacity of the United States to mitigate the consequences of an attack, a primary aim of biodefense. For government action to be justified, the response must be appropriate to the given threat level. The argument will be that this is the case with biodefense programs, which must seek to address key weaknesses in the preparedness system.

There is a general consensus that the United States has insufficient capabilities to respond effectively to a biological weapons attack³. Three primary components of preparedness will be addressed: the ability to detect an attack, the preparedness of the health care and emergency response system to respond, and the medical countermeasures that currently exist. It will be shown that there are important deficiencies in all three of these areas, further suggesting that programs aimed at developing a more appropriate response capacity are not overestimating the threat but are both justified and necessary.

Biological weapons are a unique class from conventional, nuclear, and chemical weapons because their effects may not be felt immediately²⁶. It could take days before it becomes apparent that an attack has taken place; this is problematic as immediate treatment may be crucial to survival²⁷. Oral antibiotics for inhalational anthrax, for example, should be administered within 48 hours of exposure, which leaves little time for detection and delivery¹. Any delay in detection could result in a large number of casualties.

Additionally, if the weapon agent is contagious, failure to detect and respond the attack may result in a greater spread of the infection. For this reason, adequate detection capabilities are essential to bioterrorism preparedness.

Unfortunately, while funding for biodefense has led to improvements, such as biosurveillance systems that seek information on disease outbreaks, there are still weaknesses in the system¹⁵. The systems are still quite rudimentary, relying on a time-consuming process of clinician reporting, laboratory diagnostics, and the phoning, mailing, or faxing of reports¹⁵. To improve, biosurveillance must be modernized. We need more effective electronic reporting, quick, cheap, and reliable diagnostic tests, and the integration of public health surveillance data with that from other sectors

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such as law and intelligence agencies²⁶. Currently, however, detection systems are not able to detect biological agents at relatively low concentrations, or to detect multiple biological agents with a single system, and they are not sufficiently portable and user-friendly²⁶. Detection ability is further compromised by poor diagnostic capabilities in hospitals. One U.S. study found that 91.2% of U.S. hospitals surveyed lacked the necessary diagnostic technology to analyze and identify biological agents²⁸.

Hospitals have been targeted as the weakest link in the preparedness chain, in particular due to their inability to accommodate a sudden influx of mass casualties²⁹. It has been found that 60% of hospitals lack such resources as the supplies, equipment, beds, and staff to respond to a mass casualty situation²⁸. Consequently, hospitals lack the surge capacity to attend to patients; this could be disastrous in terms of victims not receiving life-saving treatment, the failure to quarantine infectious individuals, and the possibility of social disorder as a result of public frustration. The problem is that hospitals need far greater resources to respond to a bioterrorist attack than they do for everyday functioning³⁰. Practice scenarios have demonstrated this resource shortage problem on more than one occasion. A simulated attack on a U.S. city that involved the pneumonic plague resulted in antibiotic shortages after just three days; the situation worsened until, at the end of the weeklong simulation, 3700 cases of plague had been identified and 2000 “deaths” had been reported³¹.

Also of concern is the overall inadequacy of medical countermeasures for biological weapons, identified as one of the areas in greatest need of attention¹⁵. Of the twelve biological agents identified as posing the highest threat to the United States, only anthrax, smallpox, and botulism receive substantial funding for medical countermeasure development and acquisition¹⁵. One reason for this is that pharmaceutical companies are not as motivated to fund research and development addressing biological weapons since there is not as great a commercial market as there is for chronic diseases and influenza¹⁵. Even such practices as decontamination require funding and improvement. The decontamination procedures for *B. anthracis*, previously used in the 2001 anthrax attacks, while effective, were also slow and expensive, and could not be replicated in a situation with mass casualties¹⁵.

In the discussion above, it was argued that high government funding is not overestimated but is appropriate and justified to implement biodefense initiatives required to improve response capacity. This was done by demonstrating that the United States is ill-equipped to deal with a significant biological weapons attack, and that this lack of preparedness risks further exacerbating the already potentially catastrophic consequences of a biological weapons attack. Securitization was useful in helping justify prioritizing funding to address this issue.

5. Probability of an Attack

The potentially disastrous consequences of an attack and the lack of preparedness for such an event have been demonstrated, but perhaps none of that would matter (or justify prioritizing biodefense) if the probability of an attack by states or terrorists was negligible, due to an absence of capacity or will to carry out a biological weapons attack on the United States. This section will consider the likelihood of a biological weapons attack in the United States by states or terrorist groups. This issue is hotly contested, with some groups arguing that the chances of an attack are much lower than popular fears and perceptions would suggest, while others, like CIA Director Gross, believe it is “only a matter of time”, and predict another biological weapons attack on the United States before 2020^{28,32}. As noted earlier, this essay’s focus is not on whether media rhetoric is inflated or public perceptions unrealistic. Rather, it will be argued that the increasing *availability* of biological weapons and the documented *intent* of various hostile groups to acquire such weapons make an attack more likely. This is where we see the relevance of the precautionary principle, as an uncertainty surrounding the probability of an attack encourages us to adopt the principle, promoting caution where funding is allocated in light of the dire consequences that may arise were an attack to occur.

Officially ratified in 1975, the Biological Weapons Convention addressed concerns relating to the increasing biological weapons threat¹. While commendable, the convention had important flaws including an absence of any formal verification of compliance by states. For instance, after signing the declaration, the Soviet Union continued to develop their biological weapons program (unbeknownst to the global community)³³. Soviet defectors later confirmed the scale of their program, describing a massive, covert operation³⁴. Other countries have also been alleged to have biological weapons programs, including Iraq, North Korea, Iran, Libya, and Syria^{33,35}. While Iraq has since claimed

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that its biological weapons were all destroyed, this has been impossible to verify². Additionally, with the recent emergence of biotechnology industries in low and middle-income countries, most notably Brazil and India, more states are gaining advanced scientific capacity that could potentially be applied to biological weapons development and production³. The key here is that many states now have the scientific and technological capacity to develop biological weapons, but there is a limited capacity for national states or international organizations to monitor such a process³⁶.

In the BWC definition of biological weapons, the primary focus is on intent—both in terms of the purpose of the microbial agent and the delivery system¹. Intent is the determining factor in the classification of biological weapons, but this is extremely difficult to measure or prove until after an act has been committed. In the biological sciences, much research is readily applicable to justifiable ends (vaccines), as well as hostile ones (biological weapons). The United States will often accuse other states of hostile intent based solely on the presence of pharmaceutical and biotechnological expertise necessary for biological weapons development³⁵. This can be viewed as an area of overreaction to the bioweapons threat, illustrating how securitization processes seem to legitimize some bad policy responses as well as good ones. Despite the fact that most states could use this expertise to develop biological weapons, the majority does not. This suggests that, while capacity is present, the intent to use biological weapons is limited. In fact, over the past century, there is only one confirmed case of a biological weapons attack by one state on another: Japan's striking against China in the 1930s and 1940s¹. It has been suggested that reasons for this may stem from fear of retaliation or the difficulties of controlling effects on civilians and combatants¹. Most countries possessing biological weapons claim their purpose is to deter attacks or biological weapons use by others³⁵.

In the past, the prospect of terrorists using biological weapons received little attention³. It was generally believed that terrorists would not be able to engineer biological weapons because they lacked access to the necessary biological agents, the technological capabilities, and the specialized knowledge to weaponize and disseminate a biological weapon¹⁰. Skeptics still believe that the advanced genetic capabilities required to produce biological weapons will not be available to terrorists in the near future³. For instance, the ability to process a biological agent into aerosol form, the most effective delivery method, requires expertise across a wide range of scientific disciplines³². Also suspect is their ability to account for environmental and meteorological conditions that may disrupt weapon dissemination^{10, 32}.

However, a changing global and scientific landscape has led to a greater potential for the acquisition of biological weapons capacity by terrorist groups. For instance, during the Cold War, the Soviets reportedly employed approximately 55,000 scientists and technicians at 6 biological weapons research labs and 5 production facilities³⁷. Among other things, smallpox was weaponized into ballistic missiles and bombs³⁸. In 1997, the United States conducted a visit to one of these research labs to find that the facility was half empty, poorly guarded, and that most of the scientists had left³⁹. It is, therefore, possible that the biological agents, the equipment, and the human knowledge and expertise have since fallen into the hands of rogue states or terrorist organizations. Additionally, methods of biological weapons production are now freely accessible via the Internet, and the technological requirements are not beyond the means of a determined, well-funded terrorist organization². Moreover, recent scientific advances may support biological weapons production by enabling the production of a higher yield of high-quality product³⁶. They may also support more effective weaponization, by making agents more resistant to environmental hazards or by making agents targetable against specific biochemical pathways³⁶. As these capabilities spread across the globe, there will be a greater potential for terrorists to harness and use these techniques. While the capabilities of terrorists to engineer biological weapons may have been overstated in the past, this can no longer be said to be the case.

It has been argued that two of the preconditions for assessing the threat of bioterrorism, vulnerability to an attack and terrorist capability, are in place; the only remaining consideration is intent⁴⁰. It is important to determine whether the intent to acquire and use such weapons is present among terrorist groups. While terrorist groups have not often used biological weapons, it is unclear whether this is due to insufficient capabilities or lack of intent¹. There are a variety of reasons why they may not be interested in the use of biological weapons, including viewing such weapons as illegitimate in military combat, risks of tactical failure, perceptions of high technical difficulty, and concerns about the indiscriminate nature of a biological weapons attack³. That said, various terrorist groups, including Aum Shinrikyo

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and al Qaeda, have a documented interest in the acquisition of biological weapons, and with advances in biotechnology and weaponization, their use may become more attractive^{2,41}.

Experts also point to a shift in terrorist intent: “post-modern” terrorism aims to inflict the highest mortality rather than make political statements through violence³³. This makes biological weapons an attractive option for such groups; one estimate suggests that the cost to cause civilian casualties is only one dollar per square kilometer for biological weapons, compared to 800 and 2000 dollars per square kilometer for nuclear and conventional weapons, respectively⁴². In a similar vein, the recent “war on terror” has created an increasingly decentralized terrorist threat; biological weapons are particularly well-suited to this form of smaller, more informed terrorist groups²⁸. In short, while the intent to use biological weapons has been documented in terrorist groups in the past, present circumstances may make the acquisition and use of biological weapons more attractive.

To conclude, it is difficult to either predict or prevent a bioterrorism attack, which makes any assessment of attack probability, by necessity, subject to a high degree of estimation. However, due to the potential severity of consequences of an attack, the precautionary principle justifies the government decision to allocate spending according to the severity of consequences, recognizing a situation where it is better to overestimate than to underestimate the probability of an attack. As argued by Michael Moodie of the Chemical and Biological Arms Control Institute, “The odds (of bioterrorism) are increasing...we have to walk a fine line between hyping the risk...and trying to convince people that it is a possibility for which we need to invest resources”².

6. Biodefense Funding

The essay’s previous sections have argued that a biological weapons attack would pose an existential threat to the United States, that there is an inadequate capacity to respond to such an event, and that the possibility exists for such an attack to occur. This would suggest that a substantial amount of government funding should be allocated towards addressing this threat. The decision to securitize bioweapons facilitated this process. Critics who believe the threat has been overstated often argue that the government should not invest so heavily in biodefense, but instead, improve other sectors, such as reducing mortality from endemic disease¹¹. Meanwhile, proponents may argue that a securitized issue should receive more funding than issues that are not framed as an existential threat⁴. This section will argue that the response, in terms of government spending, is justified in that it seeks to protect the public and has not exaggerated the threat of bioterrorism. This will be demonstrated by examining the degree of investment in biodefense, showing that a relatively small amount is allocated specifically to biodefense.

In 2000, the United States federal budget proposed that 10 billion USD be allocated to counterterrorism programs, an increase of 3.3 billion dollars from the previous year¹⁰. This covered all forms of terrorism, but there was a greater focus on biological terrorism than in the past, with spending on medical countermeasures and defense measures increasing fourfold from 91 million USD in 1998 to 336.6 million in 2000². These trends intensified after the 9/11 attacks and the subsequent “Amerithrax” scare. While estimates vary, the consensus is that, since 2001, the United States government has invested between 50 and 100 billion USD towards research and development in response to the perceived threat of a biological weapons attack⁴³.

One calculation posited that the U.S. allocated 54.39 billion USD to civilian biodefense programs between 2001 and 2010⁴⁴. This did not include allocations to Bioshield, a program designed to address the lack of adequate medical countermeasures for terrorist attacks; 8.7 billion USD has been allocated since 2004⁴⁵. However, of civilian biodefense funding, 42.57 of the 54.39 billion USD was directed towards programs with multiple goals beyond biodefense improvement, such as basic infectious disease research, programs to improve public health planning and operations, and improving preparedness for a range of disasters⁴⁴. One example is the Department of Health and Human Services (DHHS) Hospital Preparedness Program, which seeks to improve surge capacity in healthcare facilities⁴⁴. Some estimates suggest that up to 92% of biodefense funding has been directed to programs that serve secondary purposes, such as improving preparedness for disease pandemics and natural disasters¹⁵.

One could argue that the amounts dedicated to biodefense as a percentage of entire budgets are not very substantial given the existential threat posed by an attack. The DHHS, the largest recipient of federal biodefense funding, has a

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budget of 879 billion USD, of which biodefense made up only 0.5%⁴⁴. Similarly, biodefense makes up less than 1% of the Department of Homeland Security budget, and only 0.10% of the Department of Defense Budget⁴⁴. Accordingly, it could be argued that the bioweapons threat does not, in fact, take as high a priority in terms of government funding as one might expect, given the associated security risk. Additionally, almost all of the increases in investments have arisen from new funding; other sectors are not suffering at the expense of biodefense prioritization¹².

High funding is appropriate independent of any controversy relating to estimates of attack probability, as the precautionary principle would suggest that decisive action is warranted given the potential for dire consequences, even with a low probability of the event occurring. These figures show that the funding response is not an overreaction but has been justified and appropriate given the documented threat of biological weapons, targeting programs that are likely to protect the public.

7. Conclusion

The anthrax attacks of 2001 are a case where biological weapons were used against the United States in the absence of any direct provocation. Since then, though the issue is controversial, biological weapons have been considered an important threat to U.S. security. This essay has defended the securitization of the biological weapons threat as a means to an end. It is a process to engage in where it is necessary to get approval for policies that are, in themselves, necessary and justified. By analyzing the existential threat posed by bioweapons, the lack of preparedness by the United States for such an event, and the possibility of an attack, evidence presented in this essay suggests that these policies and the overall government response were appropriate. Taking these issues into account, the essay concluded that the threat of bioterrorism has not been overestimated; it warrants securitization and the resulting response measures. Moving forward now, government must recognize and respond to the reality of an increasing bioterrorism threat.

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