

Envisioning New Ways to Use Economic Sanctions and Weaponisation in the Future

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Abstract: According to Clausewitz, war is a continuation of politics by different means (Clausewitz, 1832). The most common method of waging war is to utilise military force; however, other tools are being increasingly employed to persuade the opponent. War is progressively fought using means beyond military action, also targeting societies rather than solely the armies on the battlefield (Gerasimov, 2013; Galeotti, 2022). Economic sanctions and weaponisation are instruments employed to target societies during warfare. This study examines the evolution of economic sanctions and weaponisation and their potential future use. It also explores the mechanisms by which sanctions are designed to function and the conditions under which they prove effective. As sanctions progress over time, a key question remains: What type of economic sanctions might we anticipate, and how could weaponisation be employed in the future? To answer this question, a slightly modified science fiction tool by Hiltunen and Huhtinen, (2022) is used to create scenarios of how the enemy could use economic sanctions and weaponization in technologically dependent societies of the future. The study aims to assess whether such a tool can generate new insights into the future effects of economic sanctions and weaponisation in a technology-dependent society. This article describes two scenarios that show how different sanctions and weaponisation can affect specific technologies. It highlights that by assessing society's critical functions and the technologies required to support these functions, vulnerabilities can be pinpointed—vulnerabilities that an adversary may exploit. From there, effective strategies can be devised to lessen the impact of economic sanctions and weaponisation. This paper holds importance as it proposes that innovative science fiction tools can be instrumental in reflecting on the future of economic sanctions and weaponising. Often perceived solely as entertainment, science fiction possesses the ability to explore diverse strategies regarding future warfare. Furthermore, the paper develops various sci-fi scenarios to analyse the weaknesses of a society reliant on technology.

Keywords: Economic sanctions, Weaponisation, Future, Science fiction, Scenarios, Technology

1. Introduction

The war of the future extends beyond traditional battlefield confrontations, encompassing a broader array of tools such as economic sanctions and weaponisation, as exemplified in the Russo-Ukrainian conflict. This paper examines the future of economic sanctions and weaponisation. First, the article discusses the concepts of economic sanctions and weaponisation, providing examples of their practical applications. The article then tests the science fiction method developed by Hiltunen and Huhtinen, (2022) to envision the future of economic sanctions and weaponisation. The research questions of this paper are: 1) Can a specific science fiction tool be utilised to create technology-focused scenarios of sanctions and weaponisation in the future, and 2) what is the value of these kinds of sci-fi scenarios?

Economic sanctions involve the intentional, government-driven cessation of customary trade or financial relations, or the threat thereof (Hufbauer et al., 2009). Sanctions are a component of international diplomacy as well as foreign and security policy, serving as a tool to coerce target governments into specific lines of response. Sanctions can be comprehensive, prohibiting commercial activities with an entire country, such as the US embargo on Cuba. They can also be targeted, blocking transactions with specific businesses, groups, or individuals (Masters, 2019). Another reason for imposing sanctions is deterrence: the sending country can dissuade future objectionable policies by elevating the associated costs (Hufbauer et al., 2009).

Financial sanctions typically involve reducing lending or other funding sources, such as subsidies. However, Blanchard & Ripsman (2013) and Hufbauer & Jung (2021) also consider their reverse applications as positive sanctions: in certain instances, incentives like grants and loans can be used. In addition to economic sanctions, Pape (1997) defines economic war as a concept that seeks to undermine the target state's economic performance, thereby hindering its ability to enhance its military capabilities. A recent book by van Bergeijk (2021) gives a comprehensive overview on economic sanctions and the recent trends related to them.

Sanctions may encompass travel bans, asset freezes, arms embargoes, and trade restrictions (Masters, 2019). The sanctions and restrictive measures imposed by the EU encompass freezing funds and economic resources, imposing restrictions on admission, enforcing arms embargoes, prohibiting equipment that could be used for internal repression, and introducing other export and import restrictions, alongside flight bans (Council of the European Union, 2018). According to Hufbauer & Jung (2021), the use of sanctions has been dramatically increasing, partly due to the US Trump administration and new actors such as the European Union and the growing utilisation of sanctions by Russia and China. Recent additions to sanctions include, for instance, cyber-attacks and sanctions aimed at non-state actors such as criminal or terrorist groups, as well as sanctions targeting individuals identified as “the bad guys” (Hufbauer & Jung, 2021).

The effectiveness of economic sanctions relies on the economic losses they inflict, or the threat thereof, which ultimately prompts a change in the policies of the target country (Blanchard & Ripsman, 2013). One of the critical questions in decision-making is the cost of sanctions for both target and sender countries. The deterrence calculus, in simple terms, states that if the perceived cost of an action exceeds its perceived benefit, then it will achieve deterrence (UK Ministry of Defence, 2019). Many researchers are also questioning the effectiveness of sanctions, see for example Early (2015). This is not a question that can simply be answered with a yes or no; it largely depends on the specific situation, the objectives, and the nature of the sender and recipient countries involved (Hufbauer et al., 1991, 2009).

On 24 February 2022, Russia commenced its unlawful full-scale military attack on Ukraine. The West reacted to Russia's crime against peace and international law with an unprecedented wave of solidarity for Ukraine, arms deliveries to the country, and economic sanctions against Russia unlike anything seen before among major powers in relations short of war (Oermann and Wolff, 2022).

New sanctions have evolved, and some of the most recent additions include, for instance, excluding the target country's banks from the SWIFT messaging system used for payments (Dizaji, 2021), restricting tourism to the target country (Hall and Seyfi, 2021), or refusal of insurance (Welt et al., 2022). Moreover, sanctions aimed at specific individuals have increased in popularity (Hufbauer & Jung, 2021). Sanctions design is a game: how to use sanctions that inflict the greatest pain on the target country while keeping the costs to the sender and potential collateral damage as low as possible.

Economic sanctions might be referred to as the weaponisation of the economy and trade. Weaponisation has become a concept of increasing interest in recent years, and the comprehensive book by Galeotti (2022) provides concrete examples of various things that can be weaponised. The book's title asserts that the weaponisation of everything represents the new way of war. Although Galeotti (2022) does not explicitly define weaponisation, he depicts the situation: “Wars without warfare, non-military conflicts fought with all kinds of other means, from subversion to sanctions, memes to murder, may be becoming the new normal.” This implies that future warfare will target the society of the state rather than primarily occurring on the battlefield anymore.

When considering all the beneficial and familiar aspects of life, it's likely that one is also contemplating how these can be weaponized against oneself. For instance, the power grid could be targeted, potentially cutting off electricity for numerous users. Boute (2022) discusses Russia's energy weapon against Europe following Russia's unlawful attack on Ukraine and the sanctions packages implemented by the EU, US, and UK. Examples of weaponisation can be found in the literature. For example, Rauhala (2022) has studied the weaponisation of smartphones. Quaglia and Verdun (2023) discussed the weaponisation of finance and the role of the European Central Bank in the sanctions against Russia. Piekarski and Wojtasik (2022) examined the possibility of weaponising drones. In the new National Risk Assessment, Finnish authorities have acknowledged that one of the threat scenarios is the intentional direction of migrant flows to Finland, which may be used as a means of political pressure and hybrid influence (Ministry of the Interior, 2023). This situation began in November 2023 when Russian officials reportedly assisted more than 900 asylum seekers from Somalia, Yemen, Iraq, and Syria in reaching the Finnish border without the necessary documents required to enter the Schengen Area (Bryant and O'Carroll, 2023).

In assessing weaponisation, the following factors should be considered (Aalto et al., 2022):

- Accuracy on target: the weapon affects the target only, or its collateral damage and reflected damage on the user of the weapon are minimal and foreseeable.
- Timing: can the weapon be launched immediately after the decision, is the effect immediate and can the effect be removed quickly.

- Undeniability: the effect of the weapon can be proven publicly, if needed, and it is difficult to be protected from the effect.
- Flexibility: the effect of the weapon can be adjusted both in terms of the target(s) and severity of effect.
- Cumulation: the time passed after initiating use of the weapon will cumulate the effect or there are additional weapons that can be applied on the same target.
- Combinability: hybrid warfare consists of multiple different weapons starting from information operations and cyberattacks and, for example kinetic attacks, which altogether create the total effect.

2. Science Fiction Method to Analyse the Future of Economic Sanctions and Weaponisation

Economic sanctions have changed throughout history to better affect a changed society and warfare. When considering economic sanctions in the future, it is essential to study what the future society will be like and what kind of sanctions would be effective for that society. This can be done by using scenarios, which are images of the future created by merging potential developments in various ways (Ruijter, 2014). For example, Nephew (2015), Astrov et al. (2022) and Rasoulinezhad & Sabri (2019) have created valuable scenarios about future economic sanctions.

However, scenarios can sometimes be considered flat and narrow (Sætra, 2024), and they do not and do not necessarily put one of the essential elements of society, *technology*, at the centre. Sætra (2024) underlines that a critical approach to understanding the interplay between social, environmental, economic, and *technological* aspects is *science fiction-based* scenarios. Roussie et al., (2024) states that the interest in science fiction has increased in many organizations lately. According to Menadue et al. (2020) science fiction is used as a significant source of insights to identify public interests, inspire public policy, and influence future science. Science fiction has been used, for example, in military planning in Canada, the US and NATO (Gaub, 2024; Schroeder, 2014; U.S. Army TRADOC Mad Scientist Initiative, 2016). It has also been used to study urban planning in South Korea, Saudi Arabia and Singapore (Klimczak, 2020), and innovation processes of companies (Michaud and Appio, 2022). Miller and Bennett (2008) suggest that innovative socio-literary methods drawn from science fiction may enhance the governance of emerging technologies by fostering a better understanding of the social dynamics of socio-technical systems.

3. Methodology

According to Hauptman and Steinmüller (2018) we require strict fantasies, methodically structured visions, rational irrationalities, and counter-intuitive intuitions. Science fiction tools could provide this. Unfortunately, there are few science fiction tools in the literature, particularly those that have been used to anticipate the future of warfare. However, some can be found, such as a science fiction tool developed by Hiltunen and Huhtinen (2022). The tool encompasses scenario thinking, randomisation, and crafting sci-fi narratives (see Figure 1).

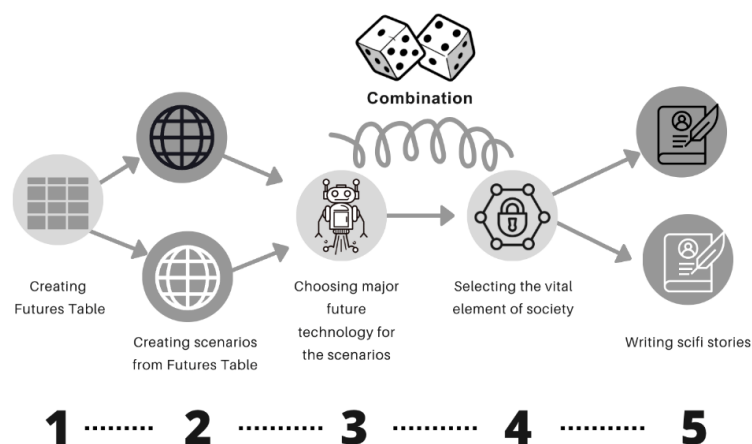


Figure 1: A slightly modified science fiction tool used in this article to imagine the future of economic sanctions and weaponization in technologically dependent world (Hiltunen & Huhtinen, 2022)

Hiltunen and Huhtinen (2022) utilised the tool to contemplate information operations in future warfare. This article, on the other hand, examines whether this sci-fi tool can assist in creating technology-centric visions for the future of economic sanctions and weaponisation. The slightly modified method was tested due to its fresh and systematic approach to developing technology-driven economic sanctions and weaponisation scenarios. The working group for testing the tool consisted of four individuals, the authors of this article.

Steps 1 and 2: Creating Futures Tables and Scenarios

This article introduces two scenarios for country X in the year 2050. Table 1 describes a modified futures table featuring two distinct types of extreme future scenarios: a Black world, which represents a pessimistic outlook, and a more optimistic Green world scenario (steps 1 and 2 of the sci-fi tool are combined). The primary driver for these scenarios is the severity of climate change, which also impacts other factors. In the Black world, climate change spirals out of control, inflicting significant damage on country X, resulting in the depletion of resources needed to address the consequences. Conversely, in the Green world, climate change has been effectively tackled through advanced technology and international legislation, successfully meeting the goals of the Paris Climate Agreement. Clearly, the Black world embodies a dystopia, whereas the Green world represents a utopia.

Table 1: Modified futures table with two different scenarios in 2050.

Drivers	Black world, the year 2050	Green world, the year 2050
Climate change (main driver of scenarios)	Temperature: + 5°C by the year 2100	Temperature: + 1,5°C by the year 2100
Level of technological development	Moderate	High, specifically on green tech
Use of digital tools	Digital tools are utilised; however, there is a deficiency of resources.	Digitalisation is essential for success in society.
Sources of energy	Mostly fossil fuels	Green energy sources
Demography	The population is relatively youthful due to climate refugees.	The nation is ageing rapidly
Resources	Lack of food because of challenges in food production	The circular economy and new technologies have enhanced resilience.
Trust in society	Low	High
International co-operation	The growing damage caused by climate change has heightened international tensions globally.	International cooperation is close and harmonious.
Travel and logistics	Logistics primarily relies on fossil fuels.	Electricity and solar vehicles managing the logistics.
Government type	Authoritarian	Democracy

Steps 3 and 4: Listing the Critical Elements of the Society and Key Technologies

When considering economic sanctions, one approach is to focus on the targets of the sanctions: the various essential elements in society that could be regarded as society's vital functions. By destabilising these vital functions, which rely on certain technologies, an adversary can effectively influence society through the use of economic sanctions. So, what exactly are the vital functions of society? Security Committee of Finland (2017) describes these: "The functions vital to society consist of what keep the wheels of secure daily life turning: a well-functioning judicial system, sufficient border surveillance, smooth traffic and a clean living environment, for instance". Vital functions are often connected to critical infrastructure (Wigell et al., 2022). Finland's Security

Strategy for Society seeks to safeguard the essential functions of society. The activities listed below are considered essential in Finland by The Security Committee (n.d.):

- Leadership: parliament, prime minister, president, public officers etc.
- International activities: EU and other international co-operation in all levels
- Defence: developing and maintaining defence capability
- **Internal Security: crimes against the country's population, accidents and environmental damage or other similar disturbances and threats as well as managing their consequences**
- Economy, infrastructure and security of supply: securing the economy, infrastructure and security of supply, funding and other resources needed to maintain the vital functions are secured.
- Functional capacity of the population and services: Maintaining the central services for the population like education, health and social services
- Psychological resilience: the ability of people, communities and the nation to tolerate the psychological pressure created by crises.

Technology plays a crucial role in shaping the future of society and the economy, as well as in vital functions within society. Various emerging technologies could significantly impact the future of communities. These technologies may also play a critical part in economic sanctions, either directly or indirectly. Potential future technologies for society include the following: 1) AI, 2) quantum computing, 3) robotics, 4) ubiquitous computing and the Internet of Things, 5) autonomous transport, 6) the metaverse, 7) synthetic biology, 8) digital payments and cryptocurrencies.

The sci-fi tool's idea is to imagine the future of country X in various scenarios when a particular technology Y plays an essential role in society. After creating the scenario stories with technology Y, the next step is to consider the vital functions of society that the enemy tries to affect with economic sanctions or weaponisation of technology Y.

This article selects two variables: one in technology and one in society's vital functions: robotics and internal security. In this case, robotics refers to autonomous or semi-autonomous physical machines. Naturally, robots include various other technologies, like artificial intelligence, sensors, cameras, etc. Another method for selecting the variables could have been randomising the selection.

Steps 5: Writing sci-fi narratives

The following stories, "The Black World" and "The Green World," are science fiction narratives that delve into the imagined futures of Country X in the year 2050, examining the impact of economic sanctions and the weaponization of robotics and internal security.

Black World, the year 2050

Climate change is wreaking havoc in country X. The green transition has been non-existent, and fossil fuels continue to be used extensively. As a result of climate change, the quantity of crops has decreased, leading to a persistent food shortage. Climate change also frequently causes difficulties. For instance, extreme weather events, such as storms and floods, result in massive destruction of infrastructure and increased costs. Due to climate change, the number of climate refugees has risen globally, leading to constant pressure to accommodate them in the country. Numerous disruptions contribute to internal unrest, including ongoing demonstrations, criminal activity, and corruption.

Robots in the Black World

Due to excessive internal unrest in society, the police force is understaffed. To help prevent disorder and vandalism, an increasing number of robots have been employed for guard duties. Robots are also utilised to oversee prisons to reduce costs. Given that society is authoritarian, surveillance robots do not necessarily uphold all human rights.

Internal security in society has been shaken because constant disturbances cause restlessness among citizens. Authoritarian grip and supervision are attempted to patch up internal security. Key players in monitoring and securing internal security are police, rescue workers, firemen, health care professionals, and, in some cases, the military. Robots play a crucial role in ensuring internal security in this scenario. For example, they aim to prevent crimes in advance by using artificial intelligence, big data, and predictive algorithms.

Green world, the year 2050

Significant investments have been made in the green transition and in addressing climate change, enhancing Country X's productive industries and overall economic well-being. Green technology has transformed numerous sectors; for example, energy production now relies on renewable energy sources, while agriculture has shifted towards aquaculture. In transport, hydrogen and green electricity serve as fuels.

As the population ages and the immigration rate is insufficient to offset the shrinking labour force, robotics and digitalisation have addressed the labour shortage.

Robots in the Green World

As the country demands more labour, society's operations rely heavily on the extensive use of robotics and digitalisation. Robots are deployed across both the manufacturing and service sectors. For instance, they play a significant role in healthcare, elderly care, education, and rescue operations. Furthermore, they are essential in transportation, logistics, goods production, and agriculture.

Society operates in harmony. Internal security is maintained by squads of robots, which serve as a vital element in rescue operations and healthcare. Robots are intricately woven into the fabric of society to ensure internal security, yet their function is not to monitor individuals or sway their behaviour. They are engaged solely, for instance, in rescue scenarios.

In both scenarios, economic sanctions will target robotics. In both sci-fi narratives, the self-evident economic sanctions aim to limit the export of robots, as well as robotics-related parts, materials, and components to country X. As robotics encompasses software and artificial intelligence, restricting access to or updates for this software also poses a threat to country X. The software further includes cybersecurity measures designed to protect robots from cyber-attacks.

Additionally, robot manufacturers could potentially incapacitate them remotely, rendering them inoperative. This exemplifies the weaponisation of robots. Another method of weaponising robots involves the remote control of these machines to inflict damage on their environment and people. For instance, a robotic car could cause substantial harm if an adversary were to control it from a distance.

The aim of economic sanctions may also be to prevent the manufacture of robots in Country X if the export of such items is prohibited. Banning the export of all components, including chips, circuit boards and sensors associated with robots, computers, and artificial intelligence (the "brains" of robots), to Country X complicates the manufacture, repair, and updating of robots. Furthermore, restricting the exports of certain raw materials, such as steel, aluminum, or rubber, used in the production and maintenance of robots suggests potential economic sanctions against country X. Smart robots are connected to the Internet, and disrupting their Internet connections can make their operation more difficult. Economic sanctions or weaponisation can achieve Internet disruption.

As robotics necessitates specialised knowledge, economic sanctions could aim to restrict the transfer of skilled workers from abroad to Country X. Moreover, limiting access to various databases that provide research information on robotics may also hinder the manufacturing capabilities in this field. Additionally, as robots require power, restricting access to energy could serve as a deterrent.

Due to variations in the scenarios, weaponisation robots operate somewhat differently in the Black and Green worlds. Nevertheless, in both cases, a cyber-attack could serve as a tool for weaponisation robots. Table 2 outlines distinct weaponisation tactics employed by the enemy for the two scenarios.

Table 2: Enemy tactics in the weaponisation of robotics across two distinct scenarios

Black world	Green world
Surveillance robots can, for instance, be rendered inoperable by a manufacturer remotely, leading to the robots being non-functional or malfunctioning. Furthermore, the robots could be turned against their operators. By instigating individual conflicts through manipulation, various chains of events in society can be exacerbated. For instance, if a surveillance drone or electric car attacks a citizen, it would amplify mistrust towards the authorities.	Rendering robots inoperable, for instance, through a cyber-attack, effectively paralyses society, as the functioning of society is primarily based on the work produced by robots. Robots compromised by viruses can also directly inflict harm on their surroundings; for example, in a nursing home, they may administer the wrong medication to elderly individuals.

Economic sanctions and the weaponisation of robots produce slightly different outcomes in various scenarios. In the Black World scenario, as robots manage societal unrest, impairing their operation will worsen social instability. This may enhance citizens' influence and potentially lead to the ousting of an authoritarian leader. Conversely, in the Green World scenario, if economic sanctions disrupt the functioning of robots, the entire society could become immobilised, as it is fundamentally reliant on robots for its operations. This paralysis of essential societal functions can lead to unrest, hoarding, and, in the worst case, increased mortality, as food production and healthcare become increasingly challenging.

However, there are several actions that Country X can take in both scenarios to enhance its resilience. One approach is to increase self-sufficiency in producing and maintaining robots and their software. 3D printing could assist with this, as robot parts can be fabricated. Another option is to focus on a circular economy by recycling and reusing materials, spare parts, and components. In the Black world, within an authoritarian society, intellectual property rights are not highly regarded; thus, a natural method would be to reverse-engineer and replicate robots, uncovering how they are made and commencing their manufacture.

Furthermore, if society depends on outdated technology, the import ban would have minimal impact. Additionally, within the context of the Black world, there is a greater presence of younger workers, allowing human labour to occasionally replace robots. As the Green world is more technologically advanced, emerging technologies such as synthetic biology could be utilised in robotics. Employing this technology might facilitate the future development of biological robots, potentially reducing the reliance on specific imported components or materials.

4. Discussion

This article tested a science fiction tool to envision the future of economic sanctions and weaponisation. The research questions were : 1) Can a specific science fiction tool be used to create technologically focused scenarios of economic sanctions and weaponisation in the future, and 2) what is the value of these kinds of sci-fi scenarios.

The answer to the first research question is affirmative. Two sci-fi scenarios were developed using the tool. The potential economic sanctions and weaponisation had varying effects on technology-dependent societies in these scenarios. This also leads to a range of solutions in their resilience strategies. Employing a science fiction tool can offer diverse insights into the future of warfare. The tool subtly encourages users to transcend trivial thinking to contemplate various futures, societal weaknesses within those futures, and the technologies that can address these shortcomings. In this context, we observe that a tool of this kind can generate distinct and innovative perspectives on the future of warfare (in this article, economic sanctions and weaponisation) that might not have arisen without the tool's assistance.

The second research question examined whether such science fiction scenarios possess value. The answer to this question is similarly affirmative. The tool's value arises from its ability to systematically generate new perspectives on the future of economic sanctions and weaponisation in a technology-dependent future world. The tool's value was particularly evident when the working group was compelled to consider economic sanctions from a new standpoint. The discussion process guided by the tool provided new insights on the topic.

One reason this tool is well-suited for contemplating the future of economic sanctions and weaponisation is that, as warfare evolves rapidly, trend-based foresight tools tend to be more rooted in history. They can lead to inaccurate, historically biased future visions. Conversely, weak signals may be overlooked in the Delphi method, which aims for consensus. Consequently, sci-fi scenarios can yield more compelling future visions, as employing imagination is often more acceptable than, for example, in trend-based methods or expert opinion-based approaches like Delphi. Various foresight methods complement one another and are likely to produce different results. Therefore, the selection of a tool is more about expediency than superiority.

There are, however, limitations to the tool. It does not provide accurate predictions regarding the future use of economic sanctions and weaponisation. It is essential to understand that tools like the one tested in the article are by no means reliable predictors of future events. No other foresight tool—whether scenarios, trend analysis, technology foresight tools, or Delphi surveys—can predict the future either.

Another limitation is that the tool yields results similar to those that the group using it can envision. In this article, four individuals participated in the visioning exercise. Different outcomes would likely have emerged had more people been involved in the group and more man-hours had been dedicated to building the scenarios on the futures table. Therefore, it can be said that the method is not replicable because it will always produce

different science fiction narratives even though the variables (vital function + technology) remain constant. Since it is an imaginative tool, the results depend on the group of users, meaning each iteration will, at best, generate different science fiction narratives.

The tool was never intended to predict the future (as no tool can achieve that). Instead, it was designed to stimulate new ideas about how economic sanctions and disarmament could be employed against a country. In this regard, the tool was successful. It generated fresh ideas for the working group regarding how an adversary might act. Additionally, it illuminated vulnerabilities within society. In this article, the tool was tested with only one combination: internal security and robotics. By exploring different combinations of vital functions of society and technology, new insights can be created into the future of economic sanctions and weaponization.

Comparing this study with other research that has developed scenarios for the future of economic sanctions reveals two significant differences (see Table 3). First, this study's methodology for creating science fiction scenarios is transparent, making it reproducible, even if different groups yield varied results using the method. Second, this study places a pronounced emphasis on the future impact of technology.

Table 3: Comparison of this paper to other scenario studies of economic sanctions.

Study/ Features	This paper	Nephew (2015)	Astrov et al. (2022)	Rasoulinezhad & Sabri's (2019)
Target country	Imaginary Country X	(Indirectly) the United States.	Ukraine or Russia	Russia and Iran
Special focus	society's vital functions + technology	how a global trade war could indirectly impact the performance of US companies	Russia's actions regarding Ukraine	The relationship between oil prices and economic development.
Imposer of economic sanctions	Anonymous adversary	China (to Taiwan) EU (to Israel)	EU and USA	Western world
Step-by-step method described?	yes	no	no	no
Number of scenarios	2	2	2	4

5. Conclusions

This article examines an existing, slightly modified, sci-fi tool and its significance for reflecting on the future of economic sanctions and weaponisation in a society reliant on technology. Although the scenarios it generates are not forecasts of actual events, they present valuable insights that can help policymakers contemplate the evolution of warfare, the vital functions of society, and how much they will depend on technological development. Ultimately, this tool offers perspectives that enable policymakers to brace for various complex futures and, ideally, to prevent potential vulnerabilities and threats through proactive measures today.

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