Studia Bezpieczeństwa Narodowego
Zeszyt 37 (2025)
ISSN 2028-2677, s. 27-42
DOI: 10.37055/sbn/205743

Instytut Bezpieczeństwa i Obronności
Wydział Bezpieczeństwa, Logistyki i Zarządzania
Wojskowa Akademia Techniczna
w Warszawie

National Security Studies
Volume 37 (2025)
ISSN 2028-2677, pp. 27-42
DOI: 10.37055/sbn/205743

Institute of Security and Defense
Faculty of Security, Logistics and Management
Military University of Technology
in Warsaw

EXPLORING NEW FRONTIERS IN ACADEMIC RESEARCH WITHIN SECURITY SCIENCES — METHODS OF SOCIOENERGETIC DISRUPTION

ODKRYWANIE NOWYCH GRANIC W BADANIACH NAUKOWYCH W NAUKACH O BEZPIECZEŃSTWIE — METODY ZAKŁÓCEŃ SOCJOENERGETYCZNYCH

Artur DYCZKO
Polish Academy of Sciences
ORCID: 0000-0003-1825-9398

Paweł KAWALERSKI
Military University of Technology
ORCID: 0000-0003-1825-9398

Piotr TOŚ
The Silesian University of Technology
ORCID: 0000-0003-1825-9398

Abstract. The aim of this paper is to descriptive deconstruction methods of socioenergy balance, which are used or can be used in economic disruption of the adversary (competitor).The main research problem is: what methods of socioenergetic imbalance can be legitimately distinguished from the cybernetic pattern of an autonomous system? The following hypothesis is an attempt to solve the research problem: from the cybernetic model of an autonomous system, one can reasonably derive methods of disrupting the socio-energetic equilibrium by interfering with the circulation of information, control processes, and energy distribution within social systems, which leads to the destabilization of decision-making structures, disorganization of goals, and disruption of feedback loops essential for the system's selfregulation and adaptation. The considerations are based on the strategy of theory prior to research and the classical method of inference, analogy, opposites and completeness. The authors uses the terminological conventions found in the theory of autonomous systems/processes, information logic, the theory of action systems. The adversary's disruption is carried out in two main stages, the first: recognition of the object to be

destroyed (passive and active), and the second: proper disruption, which consists of direct and indirect disinformation and proper disorganization (indirect and direct). As a concretization of the direct disorganization method, administrative measures (embargoes) and measures based on trade policy (customs duties) are used. Indirect disorganization involves the disruption of economic norms that determine what is economically beneficial to society and the methods of achieving such benefits. The present paper fits into this current of deliberation and metatheoretical search. It is a promising research direction, which complemented by detailed and monodisciplinary knowledge, can improve and deepen the knowledge of security, its essence, manifestations and possibilities of exercising.

Abstrakt: Celem niniejszego artykułu jest opis metod dekonstrukcji równowagi socjoenergetycznej, które są lub mogą być stosowane w ekonomicznej destrukcji przeciwnika (konkurenta). W pracy sformułowano następujący główny problem badawczy: jakie metody zakłócania równowagi socjoenergetycznej można zasadnie wyprowadzić z cybernetycznego wzorca systemu autonomicznego? W celu rozwiązania problemu badawczego sformułowano następującą hipotezę: z cybernetycznego wzorca systemu autonomicznego można zasadnie wyprowadzić metody zakłócania równowagi socjoenergetycznej polegające na zakłócaniu obiegu informacji, sterowania oraz dystrybucji energii w systemach społecznych, co prowadzi do destabilizacji struktur decyzyjnych, dezorganizacji celów oraz zaburzenia sprzężeń zwrotnych, niezbędnych do samoregulacji i adaptacji systemu. Rozważania opierają się na strategii teorii przed badaniami oraz klasycznej metodzie wnioskowania, analogii, przeciwieństw i zupełności. Autorzy wykorzystują konwencje terminologiczne występującą w teorii systemów/procesów autonomicznych, logice informacyjnej, teorii systemów działania. Zakłócanie przeciwnika odbywa się w dwóch głównych etapach, pierwszy: rozpoznanie obiektu, który ma zostać zakłócony (pasywny i aktywny), a drugi: właściwe zakłócanie, na które składa się bezpośrednia i pośrednia dezinformacja oraz właściwa dezorganizacja (pośrednia i bezpośrednia). Jako konkretyzację metody bezpośredniej dezorganizacji stosuje się środki administracyjne (embarga) oraz środki oparte na polityce handlowej (cła). Pośrednia dezorganizacja polega na zakłócaniu norm ekonomicznych, które określają, co jest korzystne ekonomicznie dla społeczeństwa i sposoby osiągania takich korzyści. Przeprowadzone studium stanowi wzorzec teoretyczny o wysokim poziomie ogólności. Dlatego też, z powodzeniem można go zastosować do konkretniejszego opisywania i wyjaśniania prawidłowości bezpieczeństwa oraz konstruowania dyrektyw socjotechnicznych. Wiedza taka jest obiecującym obszarem badawczy, który dopełniony o wiedzę szczegółową doskonali i pogłębia wiedzę o bezpieczeństwie, jego istocie, przejawach i możliwościach sprawiania.

Keywords: economic securitology, socialcybernetics, security philosophy, economic warfare, economic cybernetics.

Słowa kluczowe: cybernetyka ekonomiczna, socjocybernetyka, filozofia bezpieczeństwo, sekuritologia, wojna ekonomiczna.

Introduction

Achievement and maintenance of a preset system security level is directly related to the solution by the decision (control) centers of the optimization task, in which the criteria are determined by specific means (methods) for the implementation of objective functions. In other words, it is a matter of choosing such means that, under given conditions, ensures the achievement of the greatest (when it comes to benefits) or least (when it comes to losses) result. In securitological terms, this is the choice of action, which can be either such that maintains (perseverative acts) or changes the existing state of affairs (permutative acts). Striving to maintain the existing state of affairs can be a preventive (prophylactic) action and a conservative

(maintenance) action. A conservative action is to maintain the existing and current state of affairs. If it was not undertaken, this state of affairs would change under the influence of changes in external conditions or the actions of others. Preventive actions consist of activities aimed at preventing the occurrence of a certain state of affairs. They are preventive and oriented towards a certain type of future state of affairs and prevention of their occurrence (Cabała, 2007, pp. 9-17).

Striving to change an existing state of affairs can be a constructive action and a destructive action. Constructive actions involve activities aimed at bringing a new state of affairs that is different and distinct from the current state of affairs. Destructive actions, on the other hand, are aimed at destroying the current state of affairs.

Therefore, specific measures in making security are, in general, between construction, disruption, prevention and converse. These are treated in securitology as the four basic principles of making security (Świniarski, 2004, p. 21). Principle is a general statement to the extent that deviations from it are considered unexpected and categorized as exceptions. Method, on the other hand, is a principle used to achieve certain goals, e.g., regulatory methods using the principle of fixed feedback. In contrast, a manner is a course of action aimed at a certain goal (Mazur, 1971, p. 66-67).

In the philosophy of security, the principles indicated are related to the security structure understood as a controllable social system. In this view, it is a structure composed of such basic elements and the relations between them as: socioenergy (described and analyzed as the economic dimension of security); sociomass (described and analyzed as the demographic-educational dimension of security); sociostructure (described and analyzed as the political-legal dimension of security manifested in the organization type of social life); socioculture (described and analyzed as the cultural dimension of security manifested in the preferred system of norms and values of the people that make up a given society) (Świniarski, 2004, p. 24). Relationships between these basic elements can be shaped and made using various means. The principle of deconstruction, construction and stabilization (prevention and maintenance) in making security can be used in technical devices, in interpersonal relations to resolve social conflicts, maintain stable relations between social groups, or states.

Assessment of the state of knowledge

Economic warfare is a key element of contemporary international politics, encompassing state-led actions that employ economic tools to exert political pressure without the use of direct military force. Core methods include economic sanctions, currency manipulation, resource embargoes, protectionist policies, and cyberattacks targeting economic infrastructure. As Blackwill and Harris (2016) argue, geoeconomics has become a central instrument of great power competition,

with states increasingly relying on economic coercion instead of military confrontation. Sanctions are the most widely used form of economic warfare and have been extensively studied; however, their effectiveness remains contested. Drezner (2011) contends that sanctions serve more as a signalling tool than a means of compelling behavioural change, while Peksen (2009) highlights their adverse impact on human rights and societal well-being. Currency devaluation and the accumulation of foreign reserves are also employed to undermine rival economies (Krugman, 1989; Cheung & Qian, 2009). Classical literature has emphasized the role of commodity embargoes—Yergin (1991), for instance, details their impact during energy crises, while Goldman (2008) explores Russia's use of resource control as a geopolitical lever. In recent years, the growing role of digital and financial infrastructure has drawn attention to cyber-economic measures. Rid (2013) and Farrell and Newman (2019) introduce the concept of weaponized interdependence, describing how control over global supply chains and financial systems can be used to coerce adversaries. Consequently, emerging strategies such as friendshoring and "decoupling" aim to build economic resilience against such coercion. In sum, economic warfare has evolved into a multidimensional and increasingly complex tool of statecraft.

Research methodology

The subject of research (the basic unit of analysis) is the control of socioenergy pillar from the point of view of cybernetic balance and dynamics (panarchy). The main goal of the author of this paper is the description of deconstruction methods of socioenergy balance, which are used or can be used in the economic disruption of the adversary (competitor). The main research problem is expressed in a complementary question of a praxeological nature: what methods of socioenergetic imbalance can be legitimately distinguished from the cybernetic pattern of an autonomous system? The following hypothesis is an attempt to solve the research problem: from the cybernetic model of an autonomous system, one can reasonably derive methods of disrupting the socio-energetic equilibrium by interfering with the circulation of information, control processes, and energy distribution within social systems, which leads to the destabilization of decision-making structures, disorganization of goals, and disruption of feedback loops essential for the system's selfregulation and adaptation. The considerations are based on the strategy of theory prior to research and the classical

The argumentation process is based on the strategy of theory prior to research (Nachmias-Frankfort, & Nachmias, 2001, p. 62) and refers to the exemplification of theoretical pattern (Kossecki, 2005, p. 35) as well as the classical method of analogy, opposites and completeness. According to this strategy, the research assumptions are first formulated based on theory, and then empirical research is conducted.

The strategy consists of five fundamental steps (Nachmias-Frankfort, & Nachmias, 2001, p. 62):

- constructing a theory or model;
- selecting a hypothesis from the model that should be empirically tested;
- developing a plan for empirical verification;
- if the hypothesis is rejected based on empirical findings, the theory should be modified and the process returns to step 2;
- if the hypothesis is not rejected, another hypothesis should be selected for verification, or efforts should be made to improve the theory.

The authors considers only step 1 an uses the terminological conventions found in the theory of autonomous systems/processes, information logic, theory of action systems along with derived concepts, derived in accordance with certain rules for defining the indicated theories. The premises of reasoning carried out in the text are certain rationales (theorems of the theory) and determine the direction of inference identical to the direction of result (from rationale to consequence).

Social security system pillars

Security in philosophical terms from the perspective of four basic elements that make up the security of a social system (society) can be understood as a spatial form of structured existence, the attributes of which are persistence, survival, development, and improvement – attributes expressed in appropriate Procreation and Education, Affluence and Prosperity, and the common good, the rule of law and certain values preferred for a given civilization (the method of the system of collective life). In other words, it is an interdependence between such pillars as (Świniarski, 2023, pp. 1-23):

- procreation and education implied from "mass" and sociomass,
- affluence and prosperity implied from "energy" and socioenergy,
- law and structure structuring a given social system implied from "space" and sociostructure,
- values preferred in that system (e.g., freedom, equality, fraternity and solidarity, and responsibility) implied from "time" and socioculture.

These are tangential pillars of the first causes regarding the initial conditions of the universe and twist elements of the basic system (being) of society. These elements seem to be "best," "easiest" and probably "attractive" to take temporarily such as sociomass (the quantity and quality of a society's people), socioenergy (their level of affluence, prosperity and satiety), and sociostructure (their mode of organization – law and political system) and socioculture (their aspirations and preferred values).

The indicated pillars can also be referred to the components of the cybernetic system (Kossecki, 1981, p. 221-313) and indicate four principles of deconstruction,

four principles of construction and four principles of prevention and maintenance (stabilization) in making security (Świniarski, 2004, p. 25):

- principle of material deconstruction (sociomas),
- principle of structure deconstruction (sociostructure),
- principle of energy deconstruction (socioenergy),
- principle of goal deconstruction (socioculture),
- principle of material construction (sociomass),
- principle of structure construction (sociostructure),
- principle of energy construction (socioenergy),
- principle of goal construction (socioculture),
- principle of material stabilization (sociomass),
- principle of structure stabilization (sociostructure),
- principle of energy stabilization (socioenergy),
- principle of goal stabilization (socioculture).

Destructive factors are clearly manifested in extreme ranges, which must be understood in two senses. First are excessive information and power overloads (there is maximization of loads), second are excessive information and power underloads (there is minimization of loads), third are imposed information and power structures, fourth are both excessive overloads and combined underloads (confusions) and structuring (information-energy) (Terelak, 2002, p. 194).

For example, a collection of people, being soldiers in a compact unit carrying out the objectives set by the command, can be called an army. For this reason, an army must have elements of the material from which it is constructed (the building cause). Here we can classify soldiers, weapons, means of transportation, construction and telecommunications infrastructure. Next, the energetic elements are, for example, ammunition, fuel, food, uniforms, medical supplies. A prerequisite for its smooth functioning is the possession of material and energy resources. Despite the elements of substance and energy, the army must also have an adequate structure, which is presented in the form of, so-called, logistical security (adequate weapons, timely delivered, food, ammunition, fuel) as well as properly organized communication and command systems. A significant value is the element of socioculture, exemplified by specific objectives at the strategic, operational and tactical levels of social action (Mossor, 1986, p. 196).

Both by destroying material elements (e.g., command or line troops) and energetic elements (ammunition, combat equipment, food, fuel), as well as by inspiring the wrong war aims, the military can be completely or partially incapable of fighting. The same can happen when there are unfavorable changes in the structure, such as when soldiers are cut off from the command or the command is rearranged in such a way that it is inefficient. The latter method is especially used in times of so-called peace, mainly the system's structure (entropy is increased) and sociocultural element (misguided goals are inspired) are destroyed, which has an indirect effect on the amount of material and energy.

Basics of socioenergy regulation

In cybernetic and securitological terms, the schematic operation of regulatory processes is the same in any field in which there are active relations (feedbacks) in the form of exchange of information and energy-matter. One of the regulation regularities is the deviation compensation principle, which implies deviation compensations of the actual value of the effect from the set value (norm) (Lange, 1965, p. 20). The main purpose of the deviation compensation principle is to eliminate the steady-state error, i.e., to keep the output value of the system close to the setpoint, even in the presence of disturbances. The steady-state error is the difference between the setpoint and the output value, which does not zero out despite the operation of other control elements.

The introduction of deviation compensation principle is important in cases where the control system is exposed to disturbances that are not eliminated by proportional and differential regulation. Thanks to this principle, the system is able to compensate for errors that may occur due to system non-ideality or non-linearity.

In the context of economics, the deviation compensation principle refers to the concept in which differences between actual values and target values are compensated for in order to achieve economic balance. Indeed, as far back as the ancient Greeks saw economics as the art of managing (ruling) own household fairly, and the virtue of justice was defined by Aristotle as the maintenance of moderation between excess of gain and privation of loss. In modern times, such moderation is often identified with balancing (gains and losses) or optimizing them. The expression and manifestation of such balancing and fairness ("the invisible hand of the market") is the principle of deviation compensation often used in fiscal policy and monetary policy, as well as in business management.

In fiscal policy, the principle of deviation compensation refers to adjusting government spending and taxation to ensure economic stability. If the economy is below full employment and there is a shortage of demand, the government can use fiscal policy, which involves increasing public spending or reducing taxes to stimulate demand and compensate for deviations between the actual level of output and the potential level. In contrast, if the economy is overheated, the government can reduce public spending or raise taxes to reduce excess demand and compensate for deviations.

In monetary policy, the deviation compensation principle refers to the regulation of money supply in the economy. The central bank can apply the deviation compensation principle by regulating interest rates, buying government bonds or market operations to influence the money supply. If the economy is too slow, the central bank can lower interest rates or increase the money supply to stimulate economic activity and compensate for deviations. If the economy grows excessively, the

central bank can raise interest rates or reduce the money supply to reduce inflation and compensate for deviations.

In business management, the principle of deviation compensation refers to management techniques that are used to minimize differences between actual and expected performance. Enterprises can use various strategies, such as budget adjustments, cost analysis, risk management and performance monitoring, to compensate for deviations between financial performance and targets.

Regulation can be implemented by compensating for disturbances (distortions) (Lange, 1965, p. 20). Disturbance compensation in regulation theory refers to the techniques and strategies used to minimize the impact of disturbances on the regulated system's performance. Disturbances are unwanted external or internal signals that can affect the system's behavior and hinder the achievement of desired output values.

There are several methods of disturbance compensation in regulation, e.g. dynamic compensation, use of an additional disturbance observer, feedforward compensation, use of filters, active disturbance control. The goal of disturbance compensation is to minimize the impact of disturbances on the control system and maintain the desired output value, regardless of the disturbance's presence. In practice, the compensation method is chosen depending on the type of disturbance, the characteristics of control system and the available measurement information.

In economics, disturbance (interference) compensation refers to methods and strategies aimed at minimizing the impact of interference factors on economic processes and achieving better economic stability. Disturbances in economics can take many forms, such as changes in fiscal policy, market volatility, changes in commodity prices or global fluctuations.

One of the main compensation methods for economic disruption is the use of countercyclical policies. It involves adjusting policy actions, such as fiscal policy and monetary policy, to offset the impact of business cycles. For example, during periods of economic downturn, the government may increase public spending, lower taxes or reduce interest rates to stimulate demand and reduce the negative effects of recession. Conversely, during periods of economic overheating, the government can raise taxes, reduce public spending or raise interest rates to reduce inflation and limit excessive growth.

In the case of fluctuations in commodity prices or currencies, countries can use various stabilization instruments to minimize the effects of such disruptions on the economy. These can include, for example, foreign exchange reserves, stabilization funds or interventions in financial markets to ensure stability in the face of changes in the value of currencies or commodity prices.

One long-term approach to offsetting disruptions in the economy is to promote diversification of the economy. By diversifying sectors and income sources,

an economy can be more resilient to fluctuations in specific sectors or markets. For example, a country that depends primarily on one sector (such as raw materials) may seek to develop other sectors, such as services, industry or technology, to reduce the risk of disruptions associated with one sector.

In some cases, such as financial markets, market stabilization mechanisms may be used to reduce the effects of disruptions. Examples include the introduction of capital controls, the provision of liquidity in financial markets during periods of instability, or the use of regulation and supervision mechanisms.

The third method of regulation is implemented by eliminating disturbances (Lange, 1965, p. 20). It is used to achieve a better quality of regulation by the reduction or complete elimination of disturbances. The main strategies used in the disturbance elimination process of regulation are: analysis of the causes of disturbance, design of the regulation system, removal of sources of disturbance, optimization of regulation parameters, monitoring and analysis.

Distortions in economics can take various forms, such as market fluctuations, unpredictable political changes, external shocks or financial instability. Governments and economic institutions can use various stabilization policy tools to minimize the effects of disruptions. For example, in the case of business cycle fluctuations, fiscal and monetary policies can be used to stimulate economic growth in periods of slowdown or limit excessive growth in periods of overheating. Stabilization policies can include changes in government spending, taxes, interest rates or bank reserves.

Among the approaches to eliminating distortions in the economy is the promotion of sectoral diversification and sources of income. An economy based on multiple sectors is less susceptible to disruptions in single sectors. Diversification can include the development of new sectors, investment in technology, support for small and medium-sized enterprises or the development of service sectors.

Elimination of disruptions in the economy may require ensuring financial stability. This may include introduction of appropriate regulation and supervision of financial institutions, monitoring of systemic risk, prevention of excessive risks and speculation, and provision of liquidity in financial markets when needed.

It is impossible to completely eliminate disruptions resulting from political factors, but measures can be taken to reduce their impact on the economy. This can include political stability, predictability in political decision-making, putting in place legal and institutional frameworks that provide legal certainty and protection of property rights, and promoting dialogue and cooperation among various interest groups.

It may seem that the easiest and the simplest way to regulate is to eliminate disorder. Indeed, disturbance elimination devices are used quite often. They are called, for example, shock absorbers, buffers, shields, isolators, etc. Such devices also exist in living organisms, e.g. a turtle's shell protects it from environmental

influences and thus eliminates disturbances that could cause undesirable effects in the turtle's body. A shock absorber in the economy is, for example, unemployment benefits, social security, fiscal policy. Buffers in the economy are foreign exchange reserves, strategic reserves, stabilization funds.

When buffers or other mechanisms cannot be used, the economy often uses methods of compensating for deviations or compensating for disturbances. Disturbance compensation may seem a simpler method at first glance, as it is based on knowledge of the quantitative relationship between variables. However, it requires extensive knowledge, especially if there is a wide variety of disorder sources.

Disorder compensation involves identification of such sources and development of strategies to compensate for them through appropriate actions. For example, if there is an unexpected fluctuation in commodity prices, a compensation strategy may be to seek alternative suppliers or use financial hedging. The compensation method assumes that there is a known functional relationship between the intensity of disturbances and the effect they have on the economic system.

The offsetting principle, on the other hand, involves gradually adjusting parameters or activities to reduce deviations from the desired state. This method is more empirical and does not require detailed knowledge of the functional relationships between disturbances and effects. It is based on trial and error, where the system is adjusted iteratively based on the feedback received.

In business practice, the deviation compensation method is more often used, especially when there are frequent and unpredictable disturbances and the relationship between the intensity of disturbances and the effect is unknown. It gives greater flexibility to adapt to changing conditions, but requires constant observation, evaluation and modification of activities to achieve the desired results.

Results

All balance deconstruction processes are based on the regularities associated with the disruption of the adversary (competitor), which can be diagnosed on the basis of the courses of loss functions over time (Piasecki, 1968, pp. 36-37). Disruption processes can be divided by adopting various criteria. The division criteria that are most relevant from a research and practical point of view are the following: type of disruption, method of disruption, structure of disruption, structure, nature and number of process stages (Konieczny, 1970, pp. 94-95).

For the purposes of this chapter, it is worth looking at disruption processes taking into account the type of disruption and the distinction between informational and power (energy) disruption – according to the second principle of duality. Economic disruption has a combined nature (informational-energetic) and therefore

both informational and power (energetic) methods and means will be presented (Dymkowski, 2018, pp. 52-74).

The first stage of economic disruption involves acquiring information about the adversary's system and the characteristics of its information path and power path (recognition of the substance and structure of the system) (Kossecki, 1981, p. 413). Recognition of a disruption object allows securing its disruption operations by defining its weaknesses and strengths (in other words, higher-order points of strong dependence).

Reconnaissance in the destroyer's system is the responsibility of business intelligence, the receptors of which are tasked with acquiring data on key energy waveforms in the adversary's (competitor's) system. Taking into account the feedback of the destroyer's system with the environment, economic intelligence includes: the adversary's (competitor's) system, its closer and further surroundings (trade partners, neutral states, trade competitors), as well as the relations between them (Liedel & Serafin 2011, p. 132). The effectiveness of using business intelligence and the reliability of messages delivered to headquarters depends on having information channels in the adversary's system. This can be achieved through networks of economic intelligence agents, a network of correspondents, mass media, diplomatic representations, as well as academics. It is worth noting that at the time of information revolution, much of the reconnaissance and analytical work is carried out on the basis of open-source data.

The first method commonly used in the second stage of economic disruption of the adversary is disinformation (Kossecki, 1981, p. 420). Disinformation is a type of distorted information and by definition is false information. Disinformation occurs when the code strings are separate (unambiguous), but incomplete. It can be dissimulative disinformation (obfuscation), when certain originals are not processed into any images, and simulative disinformation (fabrication), when images are not the result of processing any original (Mazur, 1976, pp. 141-153).

Direct disinformation consists of transmitting individual destructive information (infoviruses) into the adversary's system, which is intended to cause specific actions contrary to the interests of the object being destroyed (competitor). Measures used for this purpose include foreign economic advice, the activities of consulting companies, propaganda of *think tanks* and other pseudo-scientific centers, as well as contracted analyses, expert reports, forecasts, and lobbying. Through subordinate individuals and institutions, the destroyer is able to inspire certain economic decisions of the adversary or prevent legitimate decisions that could strengthen the functional balance of the coupling party. Such actions of the aggressor are difficult to detect, as the absence, on the tactical-operational scale, of visible and direct consequences for the destroyed entity is revealed. In turn, using the mass media, information is disseminated to promote relevant perceptions of the situation and perceptions of decisions related to the economy.

Indirect disinformation involves the transmission of entire destructive algorithms (normoviruses) to the adversary system, which generate a whole series of individual destructive information over time. In other words, there is a distortion of cognitive norms (Kossecki, 1981, p. 420).

In the modern information production processes and cognitive norms in social systems, three main actors are involved: educational and scientific institutions, administrative institutions, and institutions of mass information transmission. The disruption of cognitive norms can involve the transmission of poorly diagnostic knowledge at various levels of education, e.g. education degradation in majors such as economics, management, finance and accounting. Administrative institutions can introduce normoviruses by discouraging people from learning new laws, e.g. banking law, tax law, property law. This happens as a consequence of inflation and high variability of laws. Through burdensome regulations, there is an increase in the time it takes for the system to retrieve, process and issue feeds. Decision-making time and execution time are also lengthened. Meanwhile, through the mass media, the public's political and ideological tastes and preferences can be shaped.

In direct connection with the issue of social information production, there is the question of controlling people of science. These are all people who do work that is judged to be scientific and research, e.g. a lecturer at a university, a social researcher, a person with a degree in a particular discipline. Among the main methods of controlling people of science is the general method of stratification. It consists, in a nutshell, in using people of science to destroy the system organizer (distortion of cognitive and decision-making norms) as well as elements of the system (people). Hence, in anthropotechnical actions against people of science, various techniques are used – e.g., so-called blind insertion, brain drain, antagonization, blocking of relevant information, abundance of irrelevant information – in order to inhibit development, funding of fashionable and low-value research topics (Rudniański, 1989, p. 178). The integration processes of science and interdisciplinary research are also counteracted. It promotes the atomization of science and hinders access to knowledge that offers a "common language" and provides a basis for mutual communication within the circle of scientific community. Moreover, the technique of channeling ideals, amplifying the need for expansion, and intensifying anxiety is also being used. Such actions, which are based on the rule of controlled environment, in the long term cause the inhibition of progressive development in science and push the system to the "curve of pursuit."

Distortion of the situational picture of the state of own systems and environment (distortion of cognitive processes), prevents the adversary from diagnostic orientation in the situation and puts him into helplessness. Therefore, the adversary loses the ability to respond appropriately to threats (distortion of decision-making processes) and causes damage to himself through his inappropriate actions. The destroyer, using methods of operational security (camouflage), will try to create the

image that any damage caused to the opposing side is the result of a natural course of events without the conscious and intentional participation of an external object (camouflage of violence and power).

The second method used for control and diversionary purposes is proper disorganization, the purpose of which is to reduce the control and executive power of the adversary (competitor). Proper disorganization is divided into two types (Kossecki, 1981, p. 420):

Direct disorganization involves inspiring the leadership of the adversary's structure to send disorganizing control signals, or signals that increase the organizational level of the adversary's (competitor's) system are hindered (Kossecki, 1981, p. 422). The indicated directive can include, for example, destroying legitimate concepts, promoting unfavorable decisions, promoting personnel with low education levels and poor ethical motivations. To carry out economic disorganization of the direct adversary (competitor), there are measures based on the mechanism of commercial policy and measures that do not belong to this mechanism. Due to the way in which the means of disruption affect foreign trade, a distinction is made between tariff and non-tariff barriers. Then non-tariff barriers can be divided into quasi-tariff and non-tariff barriers (Table 1).

Table 1. Measures for carrying out economic disruption based on trade policy

TYPE	TARIFF BARRIERS	NON-TARIFF BARRIERS	
		QUASI-TARIFF	NON-TARIFF
measures	customs	taxes (internal, consumption, border)	restrictions (quantitative, foreign exchange)
		charges (compensatory, fiscal, special)	technical and sanitary standards
		import deposits	import or export concessions (licenses)
		subsidies	voluntary restrictions
		anti-dumping procedures	rules of origin
		tariff quotas	national component requirement
		customs value increases	government purchases
			exchange rate mechanism

Source: D. Dymkowski, *Economic sanctions in creating state security*, Warsaw 2019, p. 72

Measures of direct economic disorganization that are not based on the mechanism of trade policy include: administrative (Table 2), diplomatic and unconventional measures.

Table 2. Administrative measures for carrying out economic disruption

<table>
<tr><td>TYPE</td><td colspan="3">ADMINISTRATIVE</td></tr>
<tr><td rowspan="11">measures</td><td rowspan="11">embargo</td><td>TARGETED AT THE STATE INSTITUTION</td><td>TARGETED AT CITIZENS</td></tr>
<tr><td>seizure in port of ships and goods of a foreign state</td><td rowspan="2">detention of citizens of a foreign country</td></tr>
<tr><td>penalties for embargo violations</td></tr>
<tr><td>confiscation of capital and assets</td><td rowspan="2">foreign exchange restrictions</td></tr>
<tr><td>withdrawal of aid or selective provision of aid</td></tr>
<tr><td>taking control of a foreign country's assets</td><td rowspan="2">travel restrictions or elimination</td></tr>
<tr><td>licensing procedures hindering international exchange</td></tr>
<tr><td>freezing bank accounts</td><td rowspan="3">freezing personal accounts</td></tr>
<tr><td>revocation of government loans or guarantees</td></tr>
<tr><td>limitation of joint research</td></tr>
</table>

Source: D. Dymkowski, *Economic sanctions in creating state security*, Warsaw 2019, p. 81

Administrative measures of economic disruption consist of various forms of prohibition and restrictions intended to cause disruption of the adversary's social – economic system. They are divided into embargo (import, export, total) and administrative repression (affecting the state or its citizens). Diplomatic measures complete the repertoire of destructive measures and take the form of political pressure, boycotts or propaganda. Unconventional measures include, for example, the induction of an arms spiral, securitization with the allocation of threats, and counterfeiting of banknotes (Dymkowski, 2019, p. 82).

Indirect disorganization is directed at destroying the fundamental social norms of the adversary system. Mainly norms related to informational motivations are destroyed, but unlike indirect disorganization, in addition to cognitive norms, constitutive norms are destroyed, i.e. ideological norms (ideological diversion), ethical norms (ethical diversion) and legal norms (undermining the rule of law). Aesthetic norms, economic norms, vital norms are also becoming objects of disruption. The dominance of energy motivations in social life is sought. Informational motivations are weakened, leading to the obliteration of the sense of social interest in favor of purely personal interests (Kossecki, 1981, p. 422).

The group of indirect disorganization methods includes the disruption of economic norms that determine what is economically beneficial to society and the

methods of achieving these benefits. Economic motivations are created in order to provide for oneself and other members of the social system, i.e. they regulate the functioning of economy (Kossecki, 1981, p. 422-426).

Conclusions

The economy plays a key role for the state's security on many levels and dimensions. Sustainable (equitable) economy allows for job creation, income growth, provision of basic goods and services, and poverty reduction. This, in turn, reduces the risk of social tensions, social conflict and unrest, which can threaten the socio--political security of the state. Access to stable and reliable energy sources is crucial to economic function and security of citizens' basic needs. Countries that rely on energy imports may face the risk of political or economic supply disruptions, and therefore the development of their own energy resources or the diversification of supply sources are important for energy security.

Self-sufficiency in food production and stability of food supply are important to secure the basic needs of citizens, especially for consumption. Limited food availability or price spikes may lead to social and political instability. Hence the importance of agricultural development, infrastructure and food stock systems.

All these elements indicate that socioenergy is fundamental to state security. A strong and sustainable economy promotes social and political stability, and enables an effective response to threats and challenges that can affect the security of the state and its citizens. However, the use of deconstruction methods of socio-political balance negatively affects the state's economy, leading to a decline in exports, loss of jobs, a slowdown in economic growth, a decline in living standards or an increase in social discontent and other negative effects on economic and social stability.

The exploration of balance and dynamics of the socio-energy pillar is a theoretical model with a high level of generality. Therefore, it can be successfully used for more specifically describing and explaining security regularities and constructing socio-technical directives. Such knowledge is a promising research field, which complemented by specific knowledge, refines and improves the knowledge of security, its essence, manifestations and causal possibilities. Based on the conducted research process, the research hypothesis can be confirmed.

BIBLIOGRAPHY

1. Blackwill, R. D., and Jennifer M. Harris, 2016. War by Other Means: Geoeconomics and Statecraft. Harvard University Press.
2. Cabała, Z., 2007. Prakseologiczna analiza działania. Prakseologia, 147 (2007), 9-17.
3. Cheung, Y-W & Qian, X., 2009, Hoarding of international reserves: Mrs Machlup's wardrobe and the Joneses', Review of International Economics, 17(4), 777–801.

4. Dahl, M., Hanczewski, P., Lewicka, M., 2018. Współczesny ład międzynarodowy. Toruń: Wydawnictwo Adam Marszałek.
5. Drezner, DW., 2011. Sanctions sometimes smart: targeted sanctions in theory and practice. International Studies Review, 13(1), 96–108.
6. Dymkowski, D., 2019. Sankcje gospodarcze w kreowaniu bezpieczeństwa państwa. Rozprawa doktorska, Warszawa: WAT.
7. Farrell, H., Newman, A., 2019. Weaponized Interdependence: How Global Economic Networks Shape State Coercion. International Security 2019, 44 (1).
8. Goldman, M., 2008. Petrostate: Putin, power and the new Russia, Oxford University Press, Oxford.
9. Konieczny, J., 1970. Cybernetyka walki. Warszawa: PWN.
10. Konieczny, J., 2020. Kryminalistyczny leksykon śledztwa. Opole: Uniwersytet Opolski.
11. Kossecki, J., 1981. Cybernetyka społeczna. Warszawa: PWN.
12. Kossecki, J., 2015. Metacybernetyka, Warszawa: NAI.
13. Krugman, P., 1989. Exchange-rate instability, MIT Press, Cambridge, MA.
14. Lange, O., 1965. Wstęp do cybernetyki ekonomicznej. Warszawa: PWN.
15. Liedel, K., Sereafin, T., 2011. Otwarte źródła informacji w działalności wywiadowczej, Warszawa: Difin.
16. Mazur, M., 1969. Świadome działanie jako rozwiązanie problemu optymalizacyjnego. Nauczyciel i Wychowanie, 6 (62).
17. Mazur, M., 1971. Jakościowa teoria informacji. Warszawa: WNT.
18. Mossor, S., 1986. Sztuka wojenna w warunkach nowoczesnej wojny. Warszawa: MON.
19. Peksen, D., 2009. Better or worse? The effect of economic sanctions on human rights, Journal of Peace Research, 46(1), 59–77.
20. Piasecki, S., 1968. Teoria badań operacji. Elementy teorii niszczenia. Warszawa: WAT.
21. Podgórecki, A., 1967. Zasady socjotechniki. Warszawa: Wiedza Powszechna.
22. Rid, T., 2013. Cyber war will not take place. Oxford University Press, Oxford.
23. Rudniański, J., 1989. Kompromis i walka. Warszawa: PAX.
24. Świniarski, J., Kawalerski P., 2019. Drogi i bezdroża securitologii. Warszawa: WAT.
25. Świniarski, J., 2004. Filozofia bezpieczeństwa. Warszawa: Akademia Obrony Narodowej.
26. Świniarski, J., 2023. Philosophy and Social Sciences in a Securitological Perspective. Polish Political Science Yearbook, 52.
27. Terelak, J., 2001. Psychologia stresu. Bydgoszcz: BRANTA.
28. Yergin, D., 1991. The prize: the epic quest for oil, money & power, Simon & Schuster, New York.
29. Zaniewski, Z., 1989. Podstawy interdyscyplinarnej teorii czynników kryminogennych. Warszawa: ASW.