
THE IMPACT OF THE STRATEGIC SHOCK ON SOCIAL SECURITY

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Abstract

The paradigm shift speculated in the military, economic and social strategies is regarded, in relation with the contemporary doctrinal views, as a consequence of an applied strategic shock over a certain organizational tier. The origin of the strategic shock may be assigned to various factors that can be, usually, correlated to the technological advance or to the endeavor to impose ideological substantiated principles. A parallel between the strategic shock empirical model and the physical shock wave propagation model may describe, from a parametrical point of view, the concept of proportionality regarding the social response, connected to the desired social security which lies within the modern society. The modern society is built and thrived in accordance to the values that are drawn from the individual needs for guaranteeing a safe and secure social climate which constitutes itself as the binder between well-being and progress. The fragility of a society is determined by the gained level of social security and, as a consequence, the security represents one of the pillars on which the social cohesion and directionality are founded.

Keywords: strategic shock; shock wave; social security; entropy; social adaptability.

JEL Classification: H55, E7

Introduction

In the current technological age, where globalization and large scale access to various means of IT and telecommunications fundamentally transformed the social interaction, the society seems to have reached a high level of power and comprehension, augmented by a profound cohesion in solving events that may span to a local, regional, national or international perspective. Nevertheless, the facile access to education, the abundance of information, the dynamic and the complexity of statal and international organizations, together with the dynamics and the complexity of the succeeding events that usually overwhelm the local specter of interest, lead to the formation of individual and collective vulnerabilities that are able to amplify the social reaction

to situations that evolve so that they force a paradigm shift that generates reverberations in the depth of the layers comprising the unitary social system (Nichols, 2017).

The paradigm shift speculated in the military, economic and social strategies is regarded, in relation with the contemporary doctrinal views, as a consequence of an applied strategic shock over a certain organizational tier. The origin of the strategic shock may be assigned to various factors that can be, usually, correlated to the technological advance or to the endeavor to impose ideological substantiated principles. As for the first aspect, the social response is analyzed by means of modernization and evolution due to experts assumed and applied knowledge for improving the social environment. The shock originating in ideological criteria, with military, economical, technological, informatic or biological valences are, regularly, associated with the concept of terrorism, whose objective is to undermine the social security and to destabilize the aimed social organizations, eventually (Fukuyama, 2007).

While the social security objectifies a low risk for harmful accidental events over individuals or over their belongings, the concept of social security quantifies the probability of occurrence of harmful directional events which are intentionally and knowingly applied towards the members of the society or their belongings. As a result, the constitutive assessment of strategic shocks, by considering the specific parameters that determine the reverberations over the social layers, may lead in a first instance to a macro scale description of the adequate social response, with the benefit of permitting the estimation of a potential behavioral pattern in connection to the amplitude of the applied strategic shock and to the level of maturity and development of the affected social organization.

Literature review

Anton (2013) analyzed the impact of the strategic shocks in the activity of institutions, emphasizing the need for them to reconsider the entire policy of the organization. Bhattacharjee et al (2009) highlighted that in periods of macroeconomic instability, as a result of which many companies face financial difficulties, the risk of bankruptcy and liquidation increases considerably. Engelen et al (2024) turned their attention to the different way entities react to systemic shocks, arguing that the ownership of innovative technologies could mitigate the consequences of such shocks. Freier (2008) appreciated that it is necessary to apply a prudent strategy in order to prevent the occurrence of possible shocks. Fukuyama (2007) addressed the issue of uncertainty and the simulation of unforeseen scenarios in the context of systemic crises. Koukakis (2024) analyzed the cause-effect relationship between the security threats

of the European Union and the main components of the Security Strategies adopted at the EU. Kuester (2018) mentioned that any strategy developed must be consistent with the reality of the moment. A similar theme is addressed by Sampler (2015). Lane (2013) studied the relationship between the appropriate planning of the whole economy and the reaction to strategic shocks. Nichols (2017) addressed a number of issues regarding the effects of the use of technology on the results recorded at the level of a national economy. Nielsen (2011) referred to the pressure faced by states in the context of international crises. Pashchenko et al. analyzed the main elements related to social security benefits. Wispelaere et al. (2023) expressed the importance of identifying possible policy options as well as their advantages and disadvantages in the development of norms of the European Union in the field of social security.

Data, results and discussion

• Uncertainty and predictability

The essence of the strategic shock is founded by the level of predictability of the triggering event, which is quantified by the readiness and the capability of a social organizations to anticipate the short, medium and long term results and effects over the political, socio-cultural and economical formal or informal mechanisms, that describe the organization at the reference moment of time. The events that encounter a low probability as for various reasons like the diminished occurrence chances, the erroneous inclusion of their nature on the current list of local, regional and global social security challenges, or a rigid doctrinal approach with respect to the experience gained from the last decades' geo-strategic activities, are often associated and treated from the perspective of uncertainty that covers the dynamics of the regional and international relations, in the sphere and under de auspices of their dimensional complexity.

Often, planning and resource administration for countering the manifestation effects of certain events that are perceived as unfavorable are substantiated under the mechanisms of conventional. The concept of conventional is rooted in the learned lessons from the previous events, whose pattern is considered generic for elaborating the prevention measures against the following undesirable events. Rigorous reporting to conventional may blur the impact of certain conventional events that take place in a conventional manner. This is due to the fact that the conventional environment is assimilated to the ideal environment, and the organizational security related issues are simplified by applying the material point theory. However, the modern society faces various challenges, whose evolution and interaction exceed the classic profile of the established social relations at statal and global

level: the social consequences of triggering conflagration may be inferior to the effects generated by punctual terrorist attacks, by inducing a financial, resource, biological or informational crisis, for which planning and execution may be done even in the absence of the physical presence in the territory of the opponent social organism. Such directional events, that have the capacity for jeopardizing the social security, are an integral part of a hybrid war, whose development overwhelms the borders of the conventional social organization.

The confrontation between conventional and reality, from the point of view of a hybrid threat to the society, may determine significant repercussions towards both its members and the recognized multilateral functional relations. The unforeseen character of reverberations, that may lead to a shift in paradigm in the organizational spectrum, is defined by applying a strategic shock or surprise, for which the commencement and the evolution may be traversed in relation to the level of predictability of the motor event and to the intensity of the effects that are experienced at the level of the organizational layers. While a strategic surprise may represent the short and medium term effect of an unconventional event, spread into the conventional elements of the society and that can be countered by conventional means, the strategic shock characterizes the short, medium and long term reverberations manifested in the conventional layers of the society, which can be ameliorated through an unconventional approach that draws a paradigm shift at operative and organizational level (Freier, 2008).

The evolution of the strategic shock is determined by the propagation model of the generated shock wave, embodied divergent towards the psychological and institutional components of the society. From a psychological point of view, the strategic shock manifests by virtue of the difficulty of an conscientious approach, by the society members, on the possible consequences associated to the unfavorable events that hold no precedent. From an institutional point of view, the manifestation probability of an unfavorable unconventional event, which is often considered white noise within the analytical projections, are frequently politically exploited in connection to the conventional events, leading to the premise of a late adoption of certain adequate institutional prevention and countering mechanisms. Therefore, the strategic shocks lie within twilight spaces, whose visibility from the conventional layers of the psychological and institutional components of the society is deeply diminished (Fukuyama, 2007).

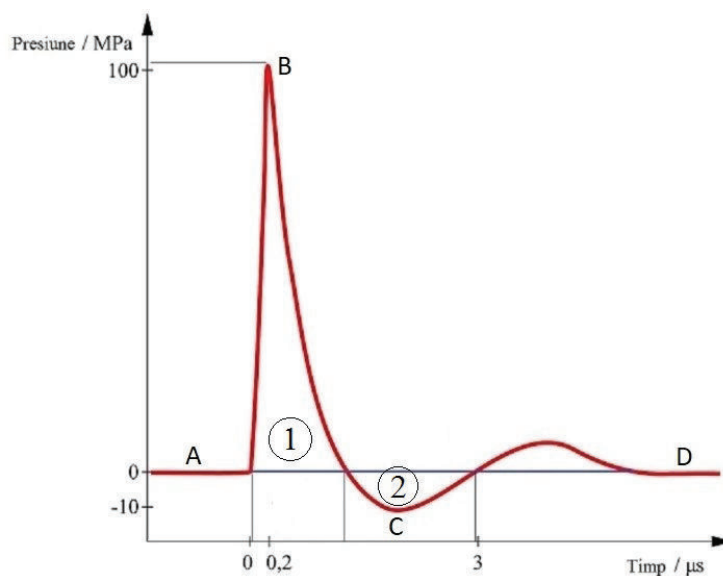
- *The physical shock wave*

The physical shock waves are usually generated following the detonation of an energetic material, characterized by a spontaneous high

exothermal oxide-reduction reaction. The shock waves represent the expression of the propagation through a medium of a state perturbation together with a kinetic transformation towards the propagation direction, with velocities that overwhelm the local sound velocity. The shock wave expansion determines a rapid growth of entropy, which leads to a highly irreversible process. There is also a discontinuity in the values of state parameters describing the medium, like pressure, temperature and density. Not least, the induced kinetic transformation is a consequence of the growth of the material velocity of the medium constituents, by directing their movement towards the wave expansion direction. The standard profile of a shock wave in a pressure vs. time graph is shown in Figure 1.

Profile of a shock wave generated by the detonation of an energetic material

Figure 1



At first, the medium is found in its equilibrium state, which is characterized by a relative ambiental pressure equal to 0 (A). Once the shock wave propagates through it, the pressure manifests an abrupt growth, until it reaches its maximum (B). Further, the relative pressure amplitude diminishes fast under the equilibrium threshold of the medium and faces negative values (C). The oscillating phenomena associated to the pressure amplitude follow the time of reach of its maximum until the medium is found again in equilibrium (D). Region 1 represents the positive phase period of the shock wave, in which

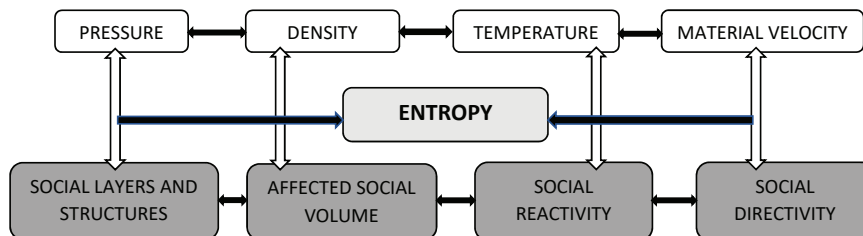
pressure is positive and the medium is being compressed under the shock. Region 2 represents the negative phase period, characterized by negative pressure values, specific to the rebound of the medium components. The rebound period is superior to the compression period, even if they manifest in time intervals of microseconds. Equation (1) presents the proportionality between the pressure variation (dp) and the density (ρ), the wave front velocity (c), and the variation of the material velocity (du), respectively (Goga and Orban, 1997):

$$dp = \rho \cdot c \cdot du \quad (1)$$

As a consequence, the magnitude of the crossed medium material velocity goes up with the increasing pressure. A correspondence scheme for the physical shock wave parameters with the propagation model of the reverberations induced following the application of a strategic shock is illustrated in Fig. 2. The parallel between the physical shock wave and the wave which is propagated through the society upon absorbing a strategic shock may be achieved by correlating the parameters that determine their temporary evolution.

Correspondence between the physical shock wave parameters and the strategic shock propagation model

Figure 2



- *the pressure* generated into the medium, with considerable amplitudes for the physical shock wave, may be associated to the institutional component of the strategic shock, being assimilated to the pressure towards the social layers and structures. The strategic shock influences the institutional coordination process and affects the decision capacity, manifesting reverberations in the depth of the existing social layers. A high pressure can cleave the conventional paths and methods for communication, coordination and decision, with direct consequences against the organizational and operational profiles of the affected society;

- *the density* of the medium constituents may be associated to the volume of society structures which are affected by the strategic shock as related to time. In the first evolution period, the compression period, the volume of the affected structures, which is dependent on their implication and awareness capacity regarding the nature of events and their effects, is inferior to the volume of structures that have the ability to process the information. As time passes, the rebound period manifests towards a high volume of society by means of a collective awareness of the shock and its effects, but in the absence of a uniform and coherent comprehension process;

- *the temperature* is represented by the level of vibration and by the amplitude of the atom movement around their equilibrium position. It is inversely proportional to the degree of atomic stability of the matter. Associated to the psychological component of the strategic shock, the temperature may be correlated to the society reactivity to shock and to the way in which the society is able to keep its structural and organizational stability in a certain period of time;

- *the material velocity*, associated with both the institutional and psychological components of the strategic shock, may be connected to the direction and the magnitude of society displacement after the application of the shock, in relation to the direction of travel of the generated wave;

- *the entropy* characterizes the equilibrium of the thermodynamic processes. For the real processes, which are irreversible, the entropy is strictly positive. As it is associated to both institutional and psychological components of the strategic shock, the entropy may be assimilated to the level of social resilience, which determines the degree of irreversibility following the effects of the shock.

• *Application of physical shock wave parameters for the analysis of the evolution of known strategic shock*

Application of physical shock wave parameters for the analysis of the evolution of known strategic shock may determine their capacity to describe a pattern for the reverberations that manifest further into the society. Commencing from the hypothesis that each strategic shock comports a different character and is directed towards certain targeted social layers and structures, its consequences are carried over a superior volume of the society, and the correlation of the physical phenomena specific to physical shock wave propagation to the events that describe the social changes driven by the reverberations of the strategic shock may constitute the basis of a society oriented model, whose implementation leads to the augmentation of the resilience and to the diminishing of the short, medium and long term implications.

One of the strategic shocks whose reverberations are felt even today is represented by the terrorist attacks that took place in the USA on the 11th of September 2001. The attacks aimed for the World Trade Center twin towers, New York, representing symbols for the American social structures and a standard for their conventional power. The shock that was generated following these events was felt immediately and profoundly affected the American society in a temporal distribution whose limits are still intangible.

The high amplitude shock propagation *pressure* disordered the social layers and structures and forced, a first, a social redistribution in relation to the security measures whose new standards have been determined, and then an organizational change, with a new flow of communication, coordination and decision, adapted to the new paradigm. Its consequences progressively affected an increasingly more society volume following the implemented social protection measures and following the governmental response to the identified threat, which consisted in the wars carried in the Middle East.

The moment when the strategic shock was applied determined a compression of the social structures volume with respect to the physical or cognitive implication over the nature, progress and consequences of the events. Therefore, the *density* of the crossed medium grew, according to the physical shock wave propagation model. In relation to the volume of the American society that firstly absorbed the shock, it was concentrated into the decisional layers and into the population that manifested direct connections to the nature and venue of the events. Further, the response assumed by the USA decision factors implied an increased volume of the society, by the additional control and verification measures, by the psychological effect associated to the shock nature understanding and by the implication of the international structures in the counter-terrorist oriented conflagration. The reverberations of the shock shortly overwhelmed the USA borders and globally determined high amplitude vibrations.

As for the dynamics of the social equilibrium state, the *temperature* induced following the application of the shock determined an increased reactivity amongst the social layers and structures, addressing a major challenge to the social equilibrium. The institutional reorganization and the USA military response represented reactions whose course of action was directed towards the prerequisite of restoring a stability state, for which the internal and external stress having consequences over the equilibrium of the system were augmented with new tasks that exceed the conventional spectrum.

The direction of the American society following the terrorist events, together with the displacement amplitude were determined by the *material velocity* induced by the application of the strategic shock. Also, considering

that the induced material velocity is proportional to the applied pressure, the applied shock lead not only to a paradigm shift in terms of social layers and structures organization and functioning, but it also modified the parameters that ground the social order. The material velocity quantifies the evolution time, that is necessary to the society for adapting to the new strategic spectrum. Following the high pressure of the shock, the American society was forced to remodel its strategic objectives in a relatively short time. This behavior was possible due to certain substantial changes in social aims, by identifying new forms of addressed threats that occur in relation to the phases of the shock generation terrorist attacks.

The irreversibility, characterized by the *entropy*, denotes the property of a transformation that is not able to shift back to the initial state and represents an intrinsic property of the shock. Therefore, the application of a shock generates a wave of change inside the society, whose forming rules will dwell in the pattern of the events that challenged its equilibrium state. Following the terrorist events, the American society went on a new path, that replaced the conventional order and then, itself, became the new conventional where the input was updated by means of the triggering factors associated to the perturbations.

The physical shock wave related parameters, extrapolated to the successive phases of the strategic shock, are associated to the social security concept by the reverberations that stress the fragility, determined by the resilience and the adaptability of the social components. Security represents one of the founding pillars for social cohesion and directionality. The strategic shock is able to cleave the cohesion and to alter the manifested directionality. One of the important perspectives that come from the social security concept is represented by the need to ensure a stability climate that the society perceives and in whose spectrum grounds the horizontal and vertical relations. However, an advanced social perception on stability may influence the society's adaptability level, with consequences over the sensitivity augmentation to external stimuli whose minimum amplitudes necessary for initiating a progressive reaction follow digressive patterns. The pressure amplitude, the density variation, the temperature magnitude and the transmitted velocity following the strategic shock application force the social redistribution by the fine tuning of the security measures updated with the newly determined standards, the organizational change, the reduction of the social density within the repartition spectrum of the shock consequences, the reactivity growth within the social layers and structures and the remodeling of the strategic objectives in a relatively short period of time, necessary in order to adapt to the new strategic spectrum. These actions are intended to restore a

stability state and are understood and interpreted in relation to the gained social security. The model of social organization by means of stability assurance and, implicitly, of security assurance, is irreversibly modified following the shock, due to the increased associated entropy. The social security evolution pattern, following the application of a strategic shock, is rather represented by the implementation finality of those social changes that cover the security concept in relation to the reverberations that altered the equilibrium state. The immediate consequences, dependent on and proportional to the social fragility level, offers limited perspectives on the shock reverberations propagation and are influenced by subjective factors that may distort the final results and implications objectively correlated to the nature of the strategic shock triggering events.

Conclusions

Social security denotes desideratum of individual and collective relations and conduct, that facilitates and optimizes the smooth running of the social events, with implications over the society progress and evolution level. The premises for grounding the social security concept are based on the need to ensure a stability state, with an equilibrium defined between the input and the output factors from the considered social layers and structures. In the current context, where change is a certitude, the degree of social adaptability to the variation of the input components will model the evolution of the social security state, at least on a local point. Also, conceptually, the strategic shock applies a massive change that implies a paradigm shift towards the social veils, and the resilience level is the main factor that determines the magnitude of the gap between the conventional and required.

In accordance to the physical shock wave evolution model, the parameters that characterizes the effects of its propagation may determine the level of social adaptability and resilience. By all its components, the strategic shock affects the social security measure and determines an update of the security considerations that were the basis of the social order up to the date of its application.

The strategic shock represents the measure by which unconventional events overlap the conventional thinking and strategy. The high social dynamics, together with an increased level of knowledge, with effect on the awareness of the existence of a greater number of potential threats, will inevitably generate new ways for the strategic shock to manifest, even upon the societies that benefit from a high level of adaptability and resilience. Therefore, the social trends should be focused on how to apply certain measures that can mitigate the shock, with an applicability spectrum larger

than the one belonging to the shock countering measures. In connection to the aspects that describe the evolution of the physical shock waves, the decrease of pressure in the vulnerable social space together with a decrease of the social compression and rebound periods from the point of view of reverberations will lead to a decrease of the generated impulse and, as a consequence, to the decrease of the motor ability of the shock to alter the involved social layers and structures constitution.

It is desirable that the social readiness for the countering and the uniformization of the social response to shock is to commence from the premises of the assurance of a dynamic social climate, respecting the conditions for equilibrium, with feedback loops updated to the input parameters modifications, that will benefit from the internal circuits adaptation possibility with respect to the shock parameters. The social security, proportional to the level of stability, may be so maintained inside the optimum interval by diminishing the absorbed waves pressure and by reducing the temperature, the material velocity the reverberations manifestation time, with a result in diminishing the entropy, a very important parameter in quantifying the level of irreversibility associated to the shock induced phenomena.

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