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Cooperation and Conflict in the New Century: Strategic Implications for the Islamic Republic of Iran

Bijan Pirouz [1], Saleh Motiee[2] ✉

1. Assistant Professor, International Relations, Faculty of Law and Political Sciences, University of Tehran, Iran. Email:pirouz@ut.ac.ir
2. PhD student of International Relations, Faculty of Law and Political Sciences, University of Tehran, Iran.
E-mail: smotiee.s@ut.ac.ir

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ABSTRACT

Objective:Following the end of the Cold War, the new world order was defined in terms of cooperation patterns in an interdependent world, even in the form of increasing globalization. However, contrary to what was proposed in theory, the practical realm and the operational arena of the world witnessed increasing competition and endless conflicts, confronting countries with emergent properties in the strategic environment. The Islamic Republic of Iran is among the countries that have been severely affected by such emergent properties and requires the create of a new strategic environment, a subject that has rendered international relations literature highly inefficient in both theoretical and applied domains, failing to address the strategic considerations of countries, including the Islamic Republic of Iran, in such a situation. In this regard, the question arises: 'What are the strategic implications commensurate with the intensification and increase of regional and international conflicts?' The answer is that regarding the emergence of a network of emergent conflicts that are sensitively dependent, the strategic decisions and necessities of countries will be influenced by this network. The present study examines the hypothesis by applying the abduction method and based on a complexity-chaos approach. The findings indicated that the Islamic Republic of Iran should formulate policies based on increasing complexity, enduring conflicts, and immediate deterrence by employing power diversity, and avoid any restriction of power elements and disruption in scientific-technological development. Otherwise, it may suffer an irreparable power gap with other actors, as in the past two centuries, and then face an existential threat."
Achieving an understanding based on new international realities is crucial for governments, especially the Islamic Republic of Iran, to formulate effective policies tailored to the evolving international landscape.
Method: The present study employs abduction and a complexity-chaos perspective to examine the hypothesis. Emerging conflicts are emphasized, and existing data on the escalating competition among actors and the state of conflicts are analyzed. Ultimately, the research seeks to complete its model through theoretical inference. Data collection relies on credible and primary library and online resources.
Results: The findings indicate that, given the international system's shift towards increasing complexity and the presence of sensitive dependence, the Islamic Republic of Iran should formulate policies centered on escalating complexity, persistent conflicts, and based on immediate deterrence through the application of power diversification.
Conclusions: The Islamic Republic of Iran must avoid any limitation of power elements and disruption in scientific-technological development. Otherwise, it may experience an irreparable power gap with other actors, as in the past two centuries, and subsequently face an existential threat.

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1-Introduction

With the end of the bipolar international order and the Cold War, academic literature in international relations addressed issues related to the new world order and increasing cooperation in a globalized and interdependent world. The literature on globalization and interdependence, which was considered to pave the way for actor cooperation and avoidance of conflicts, expanded. In practice, with the decline of one of the two superpowers, the strengthening of the Western bloc, and the expansion of institutions emanating from liberal international ideas, a relative decline in some areas of conflict was observable; however, gradually and contrary to the analyses and prescriptions of theories of increasing cooperation and sustained conflict reduction, conflicts manifested in emerging forms and patterns. Intense rivalries and conflicts escalated in military, economic, geopolitical, and even scientific-technical domains and patterns, which contradicted previous predictions. The Islamic Republic of Iran (IRI), as a growing power seeking to continuously strengthen its power, faced a strategic response from regional rivals and hostile global powers who, in politics, economics, and even in the field of science and technology, have sought to contain its growth and empowerment; and have adopted strategic policies to curb the growth and limit the elements of power of the IRI. Alongside this, there has been a kind of consensus among global powers to prevent the IRI from reaching the level of a global power, and numerous challenges and conflicts have been imposed on it. According to the predictions and theoretical prescriptions put forward, the IRI should also have faced a decline in the pattern of conflicts and sustainable trends of cooperation at the regional and international levels. However, in practice, especially over the past two decades, it has faced a diverse set of complex and emerging regional and international threats and conflicts that cannot be easily analyzed based on prevailing theories and analytical frameworks; and for this reason, these theories are not effective and successful tools for analysis and strategic decision-making.

2-Research Background

In examining the state of cooperation and conflict and its impact on the IRI in the existing literature, this issue is mainly discussed within the framework of the security environment. The concept of the security environment refers to the separation of the inside and outside of a political entity by a distance and boundary and includes all elements, forces, and conditions beyond the control and will of the actor.

Based on *Shiping Tang*'s definition, the security environment, with a realist perspective, can be identified by four components: Geographical barriers, interactions between states, the international structure, and military power and technology. According to *Tang*, the less permeability a state's borders are and the lower its vulnerability to external forces, the better and more favorable its security environment will be.

State interactions encompass a state's internal development and the accumulation of power, with a greater accumulation leading to a more favorable security environment for that state. The second aspect of state interactions is external behavior based on self-restraint, aimed at balancing external threats originating from other states. *Tang* argues that a state needs to project a non-destructive and benign image to other states to benefit from a suitable security environment, and the main factor is a state's self-restraint to reduce other states' fear of it. The third component shaping the security environment is the international (or regional) structure, which refers to the polarization of power relations among major actors at the regional and international levels. However, this does not mean that the international structure has the same effect on all states; a similar structure imposes different constraints on different states. Military and dual-use technologies are the fourth element constituting the security environment, and *Tang* argues that they are the most effective factor in disrupting the first element of the security environment, namely geographical barriers. In every revolution in military affairs in human history, a new type of warfare emerges, which changes the calculations and war conditions of states (Tang, 2004: 4-8). *Assariyan Nejad and Pourgholi*, in their study, sought a model for the security environment of the Islamic Republic of Iran based on the views of the Supreme Leader, focusing on interests and ideals (Assariyan Nejad et al., 2015). *Hasan Khani* has examined changes in Iran's security environment, believing that a realistic understanding of each actor's capabilities and resources, as well as the goals and national security interests, should be formulated based on "What is" rather than "What should be." (Hasankhani, 2021) *Minaei*, examining the security environment of the Islamic Republic of Iran based on its unique geopolitical and geostrategic position, has pointed to its variability (Minaei, 2003).

Karami and Alizadeh, considering the unique geopolitical and geostrategic position of the Islamic Republic of Iran and the variability of its surrounding security environment, believe that the formation of powerful and capable states to manage internal conflicts and instabilities,

increase cooperation and participation among the region's states, and limit the role of extra-regional powers will improve the region's security situation (Karami et al., 2012).

Aghaei et al., in examining the relationship between a state's foreign and security policy and its security environment, concluded that the state's security environment is the input and basis of its foreign and security policy, which manifests itself in the form of doctrines, policies, and strategies based on the perceptions of its leaders and decision-makers (Aghaei et al., 2019). *Adami* et al., drawing on the views of *Shiping Tang* and emphasizing a systemic approach, have examined the security environment of the I.R.I. and assessed the security environment of the I.R.I. as favorable and the probability of war as low (Adami et al., 2021). All this is happening while the aforementioned research has not specifically covered the developments of recent years leading up to 1403 AH (2024 AD) or effectively considered the most important determining factor of the strategic environment of the I.R. of Iran, namely the consequences of increasing complexity and the intensification of conflict patterns. Novelty in the arena of conflict and disputes after the Cold War, i.e., the intensification and reproduction of rivalries and conflicts in various forms and territories, is one of the most important determining factors of the regional and international environment of the I.R. of Iran. In the three decades after the Cold War (after the brief period of the 1990s, which was accompanied by a reduction in some interstate conflicts), the international environment has undergone a transformation towards complexity and an increase in conflicts in the political, economic, scientific-technological, and geopolitical domains between actors. In West Asia, too, the conflict situation has intensified in the recent period (2000-2024), and a network of internal and regional conflicts has occurred, along with the widespread intervention of extra-regional powers, some of which have reached a state of persistent conflict; internal conflicts in Bahrain, Yemen, the Saudi-American coalition's invasion of Yemen, the conflict and civil war in Syria with the widespread intervention of regional and global powers, the strengthening and expansion of the role of terrorist groups with state-like influence (such as ISIS and Tahrir al-Sham, etc.) by extra-regional powers, and recently the Gaza war, indicate profound changes in recent years that determine the strategic orientations of states.

In other words, in the West Asian environment surrounding the actions of the I.R. of Iran, conflicts between regional powers have grown, and internal conflicts within important regional states (Iraq, Syria, Egypt, etc.) have intensified and become unstable. These conflicts have been accompanied by extensive intervention from extra-regional powers, leading to

increasing complexity and an intensified pattern of conflict in the regional environment. On the other hand, in a broader transformation, the state of the international system, contrary to the predictions and prescriptions of liberal theories of international relations, has also shifted towards increasing complexity and an intensified pattern of conflict. Tensions between global powers, and even Cold War allies, have been steadily increasing. The US-China geopolitical conflict in Taiwan and the South China Sea, the US-China trade war, and the US-European Union trade conflict have all occurred. In addition, other significant developments, such as Britain's exit from the European Union and the recent outbreak of the Ukraine conflict, have taken place, all of which indicate the dominance of unilateral, non-cooperative considerations and the formation of emerging patterns of conflict. The totality of these developments means that the increasing trend of conflicts in the complex international and regional strategic environment of the I.R. of Iran has significant stability and continuity, and the prospect of intensifying conflict patterns is evident in the future.

Therefore, the most prominent concern in the theoretical and practical domain, which forms the core of the present research, is the emergence of new developments related to conflicts and strategic security competitions of countries, including the I.R. of Iran, in the new situation. This can be framed in the following question: Given the evolution of cooperation and conflict trends in recent years towards increasing complexity and an intensified pattern of conflict, 'What are the strategic imperatives commensurate with these developments for the I.R. of Iran?' (Or, in other words, under conditions of increasing complexity and intensified regional and international conflicts, on what imperatives and considerations should the strategic policymaking of the I.R. of Iran be based?)

In response to this question, the hypothesis is proposed that after the end of the Cold War, a new network of conflicts, or an emerging pattern of networked conflicts, has formed, which are sensitive to interdependence.

This emerging pattern of conflicts and the threats arising from them create and necessitate new implications and requirements for countries, compelling them to make decisions based on these. Otherwise, they will face numerous problems and severe consequences, including existential threats.

3- Method

Answering the question and hypothesis requires analysis through qualitative and abduction methods. In the abduction method, induction and deduction are used simultaneously in the

research. That is, first, emergence and emerging conflicts are emphasized, and the available data on the intensification of actors' competition and the escalation of conflict situations are examined. Then, an attempt is made to present a preliminary theoretical framework based on the theoretical basis of the article, namely complexity-chaos. In the next stage, the cases are carefully analyzed, and finally, through theoretical inference, an attempt is made to complete the initial theoretical model. Accordingly, the research is organized based on the four main steps mentioned. Data collection is also from reliable and primary library and internet sources.

4-Theoretical Foundations of the Research

With the extensive transformations following the end of the Cold War, the pattern of the international order is evolving towards increasing complexity. One of the most useful analytical frameworks developed for examining international developments is the complexity-chaos theory or approach. From this perspective, the international system is considered a super system or a system of systems, a complex-chaotic system, and the corresponding analytical approach is the complexity-chaos approach. The first attempts to apply complexity theory to the study of international relations and global politics occurred in the early 1990s, after the end of the Cold War. This led to numerous scholarly debates about the limitations of traditional international relations and foreign policy concepts and theories in explaining the changes that had occurred. Complexity emerged as a framework for explanation as a result of these debates and discussions (Lehmann, 2012). *Kavalski*, in 2007, proposes a complex theory of international relations, stating that this theory introduces the fifth debate in the study of international life (Kavalski, 2007). Complexity theory, or the theory of complex systems, encompasses a range of theories developed to describe and explain the behavior of physical and social systems. The theory of complex systems highlights non-linear, adaptive, network-based, emergent, and co-evolutionary behaviors and characteristics. It has been used to adopt a critical approach to conventional theories of international relations, such as realism, liberal institutionalism, constructivism, and critical approaches that have been dominant approaches throughout the twentieth century (Janzwood and Piereder, 2020). Homer-Dixon states that complex systems exhibit non-linear behavior and possess the characteristic of emergence. Emergence is a characteristic that is sufficient for the attribute of complexity and the complexity of a system, meaning that the system as a whole exhibits entirely new

characteristics that are not understandable based on previous states and behaviors and are probably not predictable based on the state and components of the system individually (Homer-Dixon, 2011).

Pegram and Kreienkamp also mention key features of complex systems, including openness, emergence, nonlinear results, and self-organization (Pegram et al., 2019). To apply a complexity-chaos perspective, it is necessary to identify the logical principles governing the international order in the complexity-chaos situation of the post-Cold War era. This involves several systemic principles or logics that exist simultaneously. In other words, the complexity-chaos analytical framework encompasses several fundamental principles that conceptually and theoretically form its pillars, which are: systemic logic (within this logic, the analysis of system dynamics and values should be considered instead of individuals and micro-components), transition logic (transition logic observes that the international system is always in a state of transition, and analyses should always be based on this logic), the logic of branching order (systems under pressure branch out and create new branches), the logic of dynamic or multi-equilibrium (the international and regional system has multiple equilibrium points, unlike the order pattern in the pre-Cold War era, where equilibrium had a static characteristic), the logic of asymmetry (order in the new international and regional system is asymmetric), and finally, the principle of sensitive dependence; in complex-chaotic systems, conditions of sensitive dependence exist between the components of the system, which lead to nonlinear behaviors and create surprises. Sensitive dependence is a condition where a slight change in the values of the system may create very large and, so to speak, nonlinear consequences in other components and values (Ghasemi, 2017: 8-9, 197 and 219). The first definitions of sensitive dependence are attributed to *Henri Poincaré* (with the three-body problem) and *Edward Lorenz* (the butterfly effect). Lorenz said that the flapping of a butterfly's wings in Brazil could lead to a tornado in Texas in 6 weeks. Although there is no common and precise definition of a complex-chaotic system, there is a maximum consensus that its main factor or indicator is sensitive dependence. Sensitive dependence on initial conditions, or sensitive dependence, is the key feature of complex-chaotic systems, the degree of which determines the degree of complexity and chaos of a system. *Hasselblatt* and *Katok* state that the chaotic nature of a system implies sensitive dependence (Hasselblatt et al., 2003: 209).

Sobottka and *de Oliveira* (2006: 415-24) consider sensitive dependence to be the most important factor in the unpredictability of chaotic systems, stating that it is this effect of sensitive dependence on initial conditions that hinders prediction. *Scheffran* (2015: 229-230) argues that in complex self-organizing systems, each individual component of the system can lead to emergent patterns that do not exist individually for the units and are different from the sum of the parts. He identifies the characteristics of complex systems as including a tendency to produce surprises, a sensitive reaction to variables (sensitive dependence), and unpredictability. In examining the complexity of the new international order, he points out that its landscape is entirely fractal and encompasses a high diversity of actors and factors that are interacting with each other in a very complex and dynamic way. He refers to the issue of sensitive dependence, where seemingly minor events, and even individuals and points within the system, can alter the course of history in rapidly changing and unstable conditions. *Scheffran* states that when everything is connected, a change in one point can have a tremendous effect on another point, which is the same as sensitive dependence. *Robert Jervis* (1997: 210-52), in examining the effects of complexity, raises the paradox of stability-instability, questioning how the efforts of a country's statesmen to strengthen national security may exacerbate external threats to that country. He cites the example of nuclear weapons, which, while pursued with the aim of preventing war, can encourage and escalate conventional wars. He considers the deepest effect of complexity on international relations to be the neutralization and ineffectiveness of linear actions and policies of actors due to systemic and complex characteristics, resulting from the intertwined and complex relationships of units with each other in a space much larger and more complex than the limited interactions of two or more actors.

By examining the developments after the end of the bipolar international order, the most important distinction between the pattern of the international order before and after the Cold War can be seen as the transformation of the nature and manner of conflict patterns influenced by the main characteristic of the international system: complexity-chaos.

Based on this premise, in the complex-chaotic state, classical conflicts and wars have become largely irrelevant, and new and emergent patterns of conflicts and wars have appeared. These new patterns of conflict and war are based on the function of the three traditional and major dynamics of international relations (power, economics, and culture-identity), and at their head, the dynamic of power and the new dynamic of communication-cybernetics have been

formed. These dynamics have been reproduced in a way in the post-Cold War international order. In fact, the fundamental dynamics of the international order in the bipolar order, in the so-called globalized world (as expressed by liberal theories claiming a sustained reduction in conflicts), have also been reproduced and are functioning again in the new conditions. In the transformed space of the post-Cold War international order, due to factors such as increasing complexity, the branching of order, the formation of regional orders, the re-closure of the system in terms of territorial changes (after slight changes), and nuclear strategic stalemate, the patterns of classical conflict and war have faded. This fading and change in the pattern of conflict and war has been discussed within the framework of proxy war, civil war, the agency of anti-system groups, and hybrid warfare (Ghasemi, 2021: 216). International relations in complex-chaotic transition are faced with a variety of sub-orders and their transformation into each other, and for this reason, they have a very high diversity in terms of causal mechanisms and control mechanisms. From this perspective, the controlling action of actors towards each other (which has a conflictual nature) must be focused on diversity because diversity can be controlled by diversity; and the type and nature of control must be proportional to the nature of the system. That is, the diversity of causal mechanisms causes the diversity of control mechanisms. In these conditions, the dynamics and control mechanisms are transformed towards homogeneity and are proportional to the new conditions of the system, and control in a complex-chaotic state has become fluid and diverse. Based on this, states must have the ability to convert power in its various forms into other forms of power at the operational level in order to be able to activate and use control mechanisms in complex and chaotic transition conditions.

Naturally, this issue has a complete impact on the entire spectrum of government actions: from military statecraft (strategy, operations, and tactics), economic governance (sanctions, economic aid, and economic cooperation), and political governance (general policy, foreign policy, and diplomacy). Another important issue in hybrid conflicts is the emergence of new phenomena and the formation of chaos and surprise in the moment, which requires the implementation of a high-speed decision-making system by units, which in turn depends on rapid and real-time access to scene information. The next characteristic of hybrid conflicts is their dynamism and the existence of new equilibrium points that are formed based on non-static and dynamic stability (Ghasemi, 2018: 109).

Conflict and war theories from the perspective of complex systems are related to conflict patterns and the relationship of these patterns to change and how power values change; how the amount of change in the power differential leads to changes in the behavior of other actors and the pattern of conflict and war. The units of the international system, through their actions and reactions, try to control these behaviors.

5-Patterns of Conflict Escalation in Complex-Chaos Conditions After the Cold War

In the period under study (2000-2024), a set of observable data and evidence indicates a relative decline in cooperation patterns and a shift in the international environment and the West Asia region towards conflict patterns. They have mentioned the unipolar moment.

The trend analysis of events in the three decades following the Cold War indicates a period of relative conflict reduction in the 1990s, coinciding with the collapse of the bipolar system and the decline of one of the two superpowers, and a brief period of American global unipolarity, which some scholars have referred to as the unipolar moment (Wohlforth, 1990: 5). In this regard, two time periods can be distinguished: first, a period of global unipolarity and the globalization of liberal international institutions, with the majority of the world's states joining them, laying the groundwork for the expansion of cooperation patterns around liberal principles; second, the intensification of conflict patterns, particularly from the end of the 2010s. This intensification of conflict patterns can be divided into four sections.

5-1-Military-Arms Pattern of Conflicts

The Expansion of Armed Conflicts in West Asia: The interactions of West Asian states encompass tension and conflicts in economic, political, military, and arms issues. The armed conflicts in Syria and Iraq, the Saudi-led coalition's aggression against Yemen, and the alignment of regional states around them can be assessed in this context. More notably, some states, guided by Western powers, are seeking to create a regional alliance (such as the Arab NATO) or a joint coalition with global powers to confront the I.R. Iran (Deutsche welle, 2022).

Crossing Nuclear Proliferation Boundaries: While for about twenty years, Western powers and the United States have forged a high degree of unity and cohesion against the I.R. Iran to limit its nuclear capacity, many of the states in the I.R. Iran's surrounding environment possess nuclear capabilities and even weapons (India, Pakistan, the Occupied Palestinian

Territories, Turkey through the presence of the US military, etc.); furthermore, the United States and Britain, in a move contrary to the non-proliferation regime, have equipped their non-nuclear allies with nuclear devices and, by granting nuclear submarines to Australia, have crossed one of the non-proliferation boundaries. Although a submarine with a nuclear propulsion engine is not considered a weapon of mass destruction, it is a type of proliferation of military nuclear equipment. China has strongly condemned this agreement as irresponsible, referring to Australia's lack of commitment to non-proliferation and calling it a tool for advancing geostrategic games. The Chinese Foreign Minister called it a weakening of the Non-Proliferation Treaty (Washington Post, 2021; Sheng, 2021).

Continuous Increase in Military Expenditures: With the continuous increase in military expenditures and the growth of its share of GDP, it can be expected that this will affect the quantity or quality of the pattern of military conflicts. A look at actors in West Asia and allies of the United States, Japan, Germany, South Korea, etc., indicates the growth of military spending as one of the pillars shaping the security environment. In 2021, the total military expenditure of governments worldwide was $2100 billion, marking the seventh consecutive year of increased global military spending. (SIPRI, 2021; SIPRI, 2024) NATO has also approved and announced to its members the allocation of at least 2% of GDP to military budgets (Gray and Siebold, 2023; NATO, 2024). A significant number of the world's top 10 arms importers are located in the West Asia region.

Continuous Increase in Military Conflict Preparations: Governments around the world have made a clear shift towards increasing military readiness. During a visit to the Chinese army after a large-scale military exercise in the Taiwan Strait, the President of China called on them to prepare for a real war. The Prime Minister of Japan has announced a change in the country's military strategy, according to which the military budget should double to 2% of GDP within the next 5 years (Johnson et al., 2022). Japan is deviating from its defensive military policy (Guardian, 2023) and is preparing a program to produce long-range and hypersonic missiles to create deterrence against Russia and China. In addition, a plan has been prepared to deploy 1,000 long-range missiles to deter China (Johnson, 2022; Liang et al., 2023). Germany is also playing a military role in distant regions by sending warships to the Indian and Pacific Oceans; General Eberhard Zorn says he will do so to participate in exercises with allies and defend freedom of navigation and international norms (Reuters, 2023).

Changing Strategic and Nuclear Documents towards Intensifying the Military Pattern: Two revisions of Britain's foreign and defense policy document after Brexit with a conflict-oriented approach under the title "Global Britain in an Age of Competition"; Britain's nuclear deterrence document mentions increasing threats in scale, diversity, and complexity (GOV.UK, 2023; ibid., 2024; UK Government, 2021).

Budget amendments to supply the British army with ammunition (Kirk-Wade, 2024); investment in the Australian nuclear submarine contract, increasing it to £5 billion; the antagonism of Russia, China, and their collaboration with Iran (Reuters, 2023); and the pivot to Asia strategy of the United States during the Obama administration, continued through the Biden administration, are indicative of these changes (Wyne, 2023). Britain and the United States have also revised their nuclear doctrines, with the most significant issue being a move closer to the potential use of nuclear weapons. North Korea has also passed a law allowing it to launch preemptive nuclear strikes (Smith, 2022).

5-2-Economic-Trade Pattern of Conflicts

Violation of free trade and the failure of interdependence to reduce conflicts; the United States, through political pressure and threats to other governments, especially its allies, forced them to exclude leading Chinese companies in telecommunications and information technology from all telecommunications infrastructure projects and the development of fifth-generation telecommunications. To achieve this, the United States resorted to threatening strategic allies with the termination of military and intelligence cooperation if they did not expel Huawei. After the end of the Trump era, the Chinese ambassador to the United States stated that Biden had not changed the positions of the Trump era and that the United States was acting based on a Cold War mentality (UK Government, 2020; Artyukhina, 2021; The guardian, 2019; Financial Times, 2019; Mason et al., 2021). In another development, interdependence has led to more intense and deeper tensions, evident in two prominent cases: Russia-Europe and the United States-China. Years of diplomacy aimed at creating economic interdependence between Russia and Europe, particularly in the energy sector, failed to prevent the escalation of conflict between Russia and Europe (Atlantic Council, 2022). On the other hand, despite the very extensive economic relations between the United States and China, the world's two largest economies have entered into conflict and trade war (Project Syndicate, 2024; BBC, 2021).

5-3-Geopolitical Pattern of Conflicts

Increased geopolitical competition and the dominance of high politics over low politics; conflicts such as those in Taiwan, Ukraine and Yemen have demonstrated that geopolitical priorities and hard power are of decisive importance to states and powers.

Amidst the escalating Taiwan conflict, the United States seeks to establish a balance of power in the regions and promote regional order against countries like China and Russia, in order to create order and stability that secures its strategic interests and those of its allies (Rasmussen, 2022; Mohan, 2022). In the United States, Huawei, ZTE, Hytera Communications, Hikvision, and Dahua were blacklisted in March 2021 as threats to national security (Shepardson, 2021).

Disagreement between strategic allies and the desire for strategic autonomy; another fact is visible in the desire for strategic independence of US allies. France has been seeking to launch a unified European army. The annexation of Crimea by Russia and the lack of operational involvement of the United States in the Russia-Ukraine military conflict, the occurrence of Brexit, and the trilateral US-Australia-UK agreement have been noteworthy for non-Anglo-Saxon governments. The President of France and the President of the European Council, referring to the above, have expressed dissatisfaction with Europe's dependence on the United States in security and strategic matters. During his visit to China, Macron emphasized the need for Europe not to interfere in the Taiwan conflict and to pursue the implementation of France's and the European Union's policy of strategic independence from the United States and non-interference in crises that are not related to Europe (Welle, 2023). The President of the European Council has also welcomed the strategic independence from the United States proposed by Macron (Grady, 2021; Anderlini et al., 2023; Goujard, 2023).

The decline of cooperation in the symbol of convergence and cooperation; with Britain's challenging exit from the European Union and the militarization of the Ukraine conflict, the most prominent example of cooperation has faced serious challenges. European integration, the site of two world wars with extensive casualties and destruction, is evidence of the reversal of the pattern of cooperation after the Cold War towards a pattern of conflict.

5-4-The Scientific-Technological Paradigm of Conflicts

Scientific-technical innovations have consistently driven strategic political-economic-security transformations. Certain fields of science and technology, in particular, possess a distinct characteristic in accelerating states' capabilities and generating economic value-added. These

technologies have been analyzed using terms such as game-changing, emerging, or disruptive. Disruptive technology does not perpetuate changes in previous and existing technologies but creates high levels of transformation, such as artificial intelligence and its derivatives (e.g., machine vision and voice processing, natural language processing, machine learning, expert systems, etc.). Leading states in advanced specialized fields define the direction, manner, and future horizon of advanced tools and artifacts. The horizon envisioned for some technologies indicates momentous changes, similar to what the steam engine, railways, and new weaponry brought about in the 18th-20th centuries. Artificial intelligence, for example, has the potential to create significant changes in the economy, defense, and national security of states (Manning, 2020; Guillot, 2016). These technologies are important drivers of change and, therefore, have become a source of conflict among states because they create empowering and even exclusive tools for control and oversight in economics, politics, and strategic affairs. According to a Pentagon report, China is producing new technologies faster than the United States, giving it an advantage in competition with the U.S. until 2032 (Erwin, 2024; Albon, 2022). The U.S. Department of Commerce has added Chinese artificial intelligence and semiconductor companies to its blacklist to restrict China's access to them, including two major chip manufacturers, Cambricon and Yangtze Memory Technologies (The White House, 2022; Mark and Roberts, 2023). The European Union is also seeking to develop power and leadership in power-generating technologies to be a global player (Ringhof and Torreblanca, 2022).

In West Asia, the establishment of artificial intelligence centers indicates their importance in gaining national advantages. Turkey, Kuwait, and Qatar have formulated and implemented national artificial intelligence strategies (MCIT, 2019; CAIT, 2024; Yilmaz and others, 2021). Saudi Arabia plans to invest $40 billion in artificial intelligence (Farrell and Copeland, 2024; Satariano and Mozur, 2024). Iraq is seeking to develop its nuclear infrastructure, ostensibly for power generation, but has initiated nuclear development negotiations with China and Russia, in addition to Western governments (Mehrnews, 2021; AlAnsary and DiPaola, 2021; Lee, 2022). The United Arab Emirates is also striving to expand its nuclear infrastructure, with its fourth nuclear reactor scheduled to begin operations in 2024. The Pakistani Foreign Minister, within the framework of the Comprehensive Economic Partnership Agreement between the UAE and Pakistan, has announced his country's readiness to share its nuclear expertise with the UAE (Dalton, 2024; Pid.gov.pk, 2024). Furthermore, Saudi Arabia and

Turkey have also invested heavily in developing nuclear infrastructure and even acquiring the enrichment cycle. For example, Turkey is in negotiations with Rosatom to build its second nuclear power plant and with China to build its third. All of this indicates a kind of competition with a conflict pattern for enabling and superior technologies (Gallagher, 2019; WNN, 2024).

6-Results: Network of Emergent Conflict (Emergent Network of Conflicts)

The above four patterns of emergent conflicts operate interdependently within the complexity-chaos state of the international order. This dependence and influence, based on the characteristic of sensitive dependence, constantly causes the system to fluctuate between equilibrium and disequilibrium, leading to the reproduction of conflicts in various domains. It is observable that the sum of the four emergent conflict patterns, within the complexity-chaos conditions of the order, forms a network of interconnected conflicts and threats for actors in a general conflict model. Controlling and countering this network of conflicts (or network-based conflicts) and the threats arising from it requires the application of network requirements based on the determinants of complexity, namely sensitive dependence, extroversion, etc. States' confrontation with these four emergent conflict patterns in the form of a network pattern of conflicts (or a network of conflicts and threats) and the threats emanating from it necessitates strategies commensurate with the determinants of complexity-chaos.

The expansion of network-based conflict patterns within a complex-chaotic system leads to surprise and the continuous generation of threats for actors. Furthermore, the post-Cold War international order, which has become increasingly complex, lacks a stabilized and institutionalized status.

The aforementioned four patterns, under conditions of sensitive dependence, possess a high potential for spreading to different domains and transforming into one another. For example, Britain's exit from the European Union has geopolitical, economic, and military dimensions, as seen in the delivery of nuclear submarines to Australia (following the cancellation of the contract with France); or, the scientific-technological pattern of conflict has a strong potential to create a sensitive dependence effect on the military and economic patterns of conflict. A prime example is artificial intelligence-related technologies, which, due to creating a

significant capability gap in the military and economic spheres, can transform the military and economic patterns of conflict.

7- Discussion: Intensification of Network-Based Conflict Patterns and Strategic Implications for Countries

The international order, as a complex-chaotic system, encompasses three determining factors or characteristics of the system: sensitive dependence, emergence, and perpetual balance-imbalance. The existence of sensitive dependence means that with slight manipulation and alteration of some components, the system undergoes nonlinear and substantial transformations in other parts, meaning the sensitive dependence effect will create a high disproportion in the system's inputs and outputs. Emergence refers to a behavior and effect in the system that is new and not predictable based on its components and history. The third determining factor is the system's constant oscillation between balance and imbalance, which affects the stability and strategic position of actors. Of these three factors, sensitive dependence is the cause of emergence and the shift of the system's state from balance to imbalance, creating a very significant danger for actors: surprise. As examined, the international order in the recent period, due to the reproduction and re-functioning of the main dynamics of international relations (power, economy, culture-identity, and communications), has become intensely competitive and conflictual.

Following the recovery of Russia's power and the rapid growth of China, along with other developments stemming from the reproduction and functioning of the primary dynamics of international relations, we are witnessing a resurgence of non-cooperative rivalries and an intensification of conflict patterns, leading to the formation of a network-based conflict model. The characteristic of sensitive dependence creates emergence and oscillation of the system between equilibrium-disequilibrium, pushing the system to the edge of chaos. The lack of preparedness of actors to confront these conditions creates significant risks, ranging from surprise to existential threat. In this context, the most important mechanism and the most effective tool for actors to remain secure is maintaining immediate deterrence in the face of a network-based and escalating conflict pattern; states in a fragmented and complex-chaotic regional order need to maintain immediate deterrence through the production and application of power diversity and the continuous strengthening of national power elements based on it. Any impairment of immediate deterrence may, due to the sensitive dependence effect and its

immediate consequences in the emerging conflict network, lead to completely surprising and irreversible outcomes, shifting the system's behavior towards instability against the security and interests of the actors. Furthermore, considering the sensitive dependence effect and the possibility of surprise, actors must, in addition to continuously strengthening national power elements and avoiding any limiting factors, take action to counter its consequences. Another dimension of the intensification of conflict patterns is related to the scientific-technological pattern of conflict. The nature and essence of new scientific-technological developments indicate a kind of intense and revolutionary impact, creating a high power differential and a potentially irreparable (or at least difficult to repair) power gap between those who possess it and others.

On the other hand, the issue of conflict termination is also raised. With the intensification of the network-based conflict pattern, what becomes fundamentally important is the extent of actors' susceptibility to potential conflicts, and then the issue of conflict termination and the factors influencing it. The most fundamental determining factor regarding an actor's vulnerability, the interests given or taken in conflicts, how control is exercised and will is imposed, and ultimately the termination of conflicts, will be the capabilities and controlling tools of each actor.

For this reason, the issue of conflict termination becomes doubly important and is dependent on the capabilities and control instruments of each actor. Furthermore, all of these factors, until the occurrence of the highest and most intense form of conflict, namely war, are relevant. In war, the primary mechanism and factor for conflict termination is force, which is entirely dependent on the power and capabilities of the actors in possessing effective means of self-defense and protecting their interests, inflicting damage on the adversary (damaging the adversary's ability to inflict damage or destroying its existence), and ultimately exerting control and will. It is noteworthy that even entering the negotiation and bargaining phase for conflict termination will not reduce the impact of the aforementioned factors; rather, the level of capabilities and instruments of the parties will still determine the outcome of the negotiation and bargaining. Consequently, the quantitative and qualitative increase in conflicts and the issue of conflict termination necessitate specific strategic requirements for the actors, tailored to the situation. This has been observed in the changing strategic documents of global and nuclear powers. These requirements can be inferred to revolve around maintaining and strengthening capabilities and the absence of limitations on an actor.

As mentioned, one of the domains of state conflict that has expanded despite the expectations of many theorists is conflict in the scientific-technological realm, particularly in enabling and disruptive technologies. The main reason for this lies in the possibility of a leap in capabilities and a significant upgrade in the control instruments of the actor possessing them, which allows for the creation of an effective and even irreparable power gap between the possessing actor and others. From the perspective of conflict termination, it is acceptable that the mechanisms for conflict termination through the unilateral imposition of will and conflict resolution by resorting to force or bargaining based on capabilities are being strengthened. Even the role of international institutions and regimes that promote cooperation has been severely reduced from what theorists had in mind and has even become ineffective. In this regard, the strategic requirements for countering the network-based conflict model include the following: Production and application of power diversity; creation of immediate deterrence based on power diversity; continuous growth of national power elements; suppression of threats in the security environment; non-acceptance of restrictive commitments and treaties; development of enabling technologies, especially disruptive ones.

These strategic implications will serve as guidelines for strategic decision-making and policymaking.

Strategic Implications of the I.R. of Iran in the Face of the New Model of Intensified Network Conflicts

The political system emerging from the Islamic Revolution has succeeded in realizing all components and elements of the national state and sovereign authority in its modern and Westphalian sense for Iran, and it is necessary to continue these trends and power dynamics without disruption. Continuously strengthening and upgrading the elements of hard power (as a primary priority), with a focus on the strengths and advantages created after the Islamic Revolution (as exemplified in the aerospace industry), is essential to enable continued growth in other areas and the production of possible and feasible power diversification; and to create immunity against the intensification of the network conflict model in its strategic environment, in order to avoid strategic surprise in the face of regional and international rivals and hostile actors. Transformation in the regional and international environment and its interaction with the sensitive dependence effect, the emergence and fluctuation of the balance-imbalance of the international system is observable by analyzing the collected evidence and

data; which has been accompanied by an increase in the quantity and qualitative intensification of non-cooperative conflicts and competitions of regional and international actors, and in the foreseeable future, the intensification of the network model of conflicts will be sustained. The occurrence of war as the most important form of conflict also has numerous instances in the strategic environment of the Islamic Republic of Iran, and the intensification of the network conflict model in the form of new and hybrid wars is also emerging. In this regard, considering strategic implications commensurate with the effects of complexity-chaos and sensitive dependence and its consequences should be decisive for the strategic decision-making of the I.R. of Iran. For this reason, the Islamic Republic of Iran must avoid any internal and external restrictions on its elements of power. Insufficient and untimely access to power diversification and enabling technological tools is very effective, and any restrictions on the growth and development of vital and disruptive scientific-technological fields should also be avoided due to their strategic consequences.

These strategic and security consequences may lead to an inadequate and untimely response to the novel pattern of network-based conflicts in the strategic and security environment. The Islamic Republic of Iran, as a growing power in a highly competitive, transformative, and uncertain security environment resulting from the effect of sensitive dependence, must fully observe the strategic requirements mentioned in the face of the network-based conflict pattern. In particular, it is essential to establish and continuously renew immediate deterrence against rivals and hostile states based on the characteristics of the complex-chaotic international order and the effect of sensitive dependence.

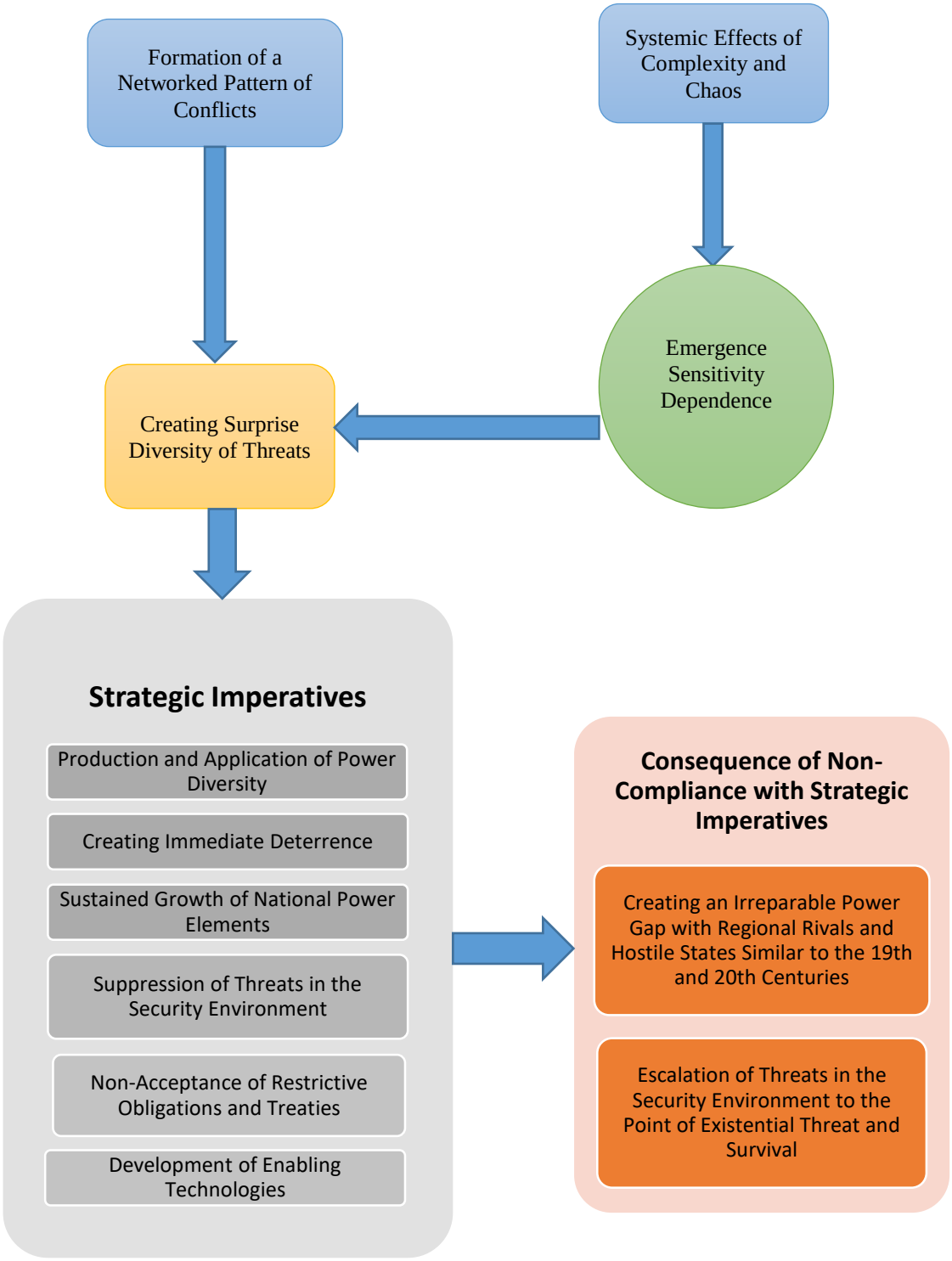
Therefore, any policy-making and action, including membership in pacts and treaties that lead to long-term commitments or in any way limit the current state or future growth of its power elements and components in the three areas of political-geopolitical, economic-industrial, and scientific-technological (because it can lead to an existential threat in the future), must be prevented. In this regard, the strategic requirements for the Islamic Republic of Iran in the face of threats arising from the novel pattern of network-based conflicts (section 3.6.) and the risk of facing strategic surprises and unpredictable developments (resulting from the nature of the complex-chaotic international order) can be summarized as follows: All elements of power and dimensions of power, including hard, soft, smart, and communicative, should be activated in line with the main dynamics of international relations, and power diversity should be generated (with a focus on and priority of hard power); immediate deterrence should be

created against threatening actors and existing threats in the security and strategic environment; any actual security threat in the security environment should be confronted; acceptance and membership in treaties, agreements, and regimes with restrictive characteristics should be rejected; research and development in the fields of superiority-creating and disruptive scientific-technological fields should be expanded continuously at the state level and at the level of private and knowledge-based institutions.

To achieve a desirable strategic and security environment with long-term stability, the Islamic Republic of Iran must strictly avoid any action and policy that limits the elements of national power and access to empowering technological tools.

Otherwise, due to the potential for an irreparable power gap with regional rivals and hostile states (similar to the 19th and 20th centuries), it may face an existential threat. Failure to comply with the above requirements could lay the groundwork for the erosion of sovereign authority, followed by severe security consequences. In a manner similar to the nineteenth century, insufficient growth of national power and erosion of sovereign authority could lead to the postponement or prevention of national growth and development of the Islamic Republic of Iran and create an irreparable power gap with other competitors for many years to come. Furthermore, this gap in power and capabilities could prevent it from playing a suitable role in the new international order and from reaching the level of a global power in the future, ultimately leading to an existential threat. Such conditions in the eighteenth to twentieth centuries were also manifested in national poverty, repeated territorial separations, and significant military defeats, along with their irreparable political, economic, and cultural consequences. All this is happening in a context where the complex and chaotic international order and the existence of sensitive interdependence have led to the formation of a new network-based model of conflict, creating high uncertainty and a greater likelihood of strategic surprise.

Figure 1. How to Deduce Strategic Implications



Conclusions

The performance of the monarchical systems governing Iran during the so-called Westphalian system or the modern era, despite their ups and downs and differences, have had complete similarities in some cases: strategic neglect of developments in the international order, being surprised by the consequences of these developments, and ultimately harming national interests, weakening national sovereignty, and existential threats against the existence of Greater Iran, one of the costs of which was the separation of large territorial parts.

Only the system emerging from the Islamic Revolution has realized all the elements of modern statehood for Iran, continuously developed all elements of national power, and provided a high level of national capability; and alongside that, it has created deep and practical awareness and insight into the developments of the international order, even in one of the most important periods of human history (namely, the collapse of the bipolar system and the formation of a new international order characterized by complexity and chaos), in all governmental and non-governmental pillars of Iran.

The post-Cold War transformations and the unpredictable consequences of a complex-chaotic order, along with the sensitive dependence effect, have made the continuation of this trend even more necessary, transforming it into a strategic imperative. The issues and difficulties that have arisen and been imposed in the domestic and foreign arenas should not cause a disruption in this growing trend for the Islamic Republic of Iran. The continuation of this trend is also dependent on observing the aforementioned strategic requirements, and failure to observe them may, as in the 18th and 19th centuries and the first half of the 20th century, cause Iran to suffer a significant gap in power and capability with its rivals and hostile states; an issue that could have severe and potentially irreparable consequences, and even endanger the existence of a great and historical Iran.

Author Contributions

“Conceptualization, Bijan Pirouz and Saleh Motiee; methodology, Bijan Pirouz and Saleh Motiee; software, Bijan Pirouz and Saleh Motiee; validation, Bijan Pirouz and Saleh Motiee and; investigation, Bijan Pirouz and Saleh Motiee; resources, Bijan Pirouz and Saleh Motiee; data curation, Bijan Pirouz and Saleh Motiee; writing—original draft preparation, Bijan Pirouz and Saleh Motiee; writing—review and editing, Bijan Pirouz and Saleh Motiee; visualization, Bijan Pirouz and Saleh Motiee; supervision, Bijan Pirouz; project

administration, Bijan Pirouz; All authors have read and agreed to the published version of the manuscript." Please turn to the CRediT taxonomy for the term explanation. Authorship must be limited to those who have contributed substantially to the work re-ported.

All authors contributed equally to the conceptualization of the article and writing of the original and subsequent drafts.

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