

Complex Effects of International Relations

Unintended Consequences of
Human Actions in Middle East Conflicts

Ofer Israeli



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Complex Effects of International Relations

Causality

The complex-causal mechanism that is developed in this section presents new ways of thinking about world politics. It also represents an effort to understand the complex as well as the interconnected international world scene in which we act and live.

To conduct a systematic examination of the world of complex effects of international relations and in order to extend our understanding of the dynamics of international politics, we need the help of several key concepts and methods of complexity thinking.¹ Complex effects of international relations is not an integrated body of theory but a developing framework.² Its basic principles that are relevant to this book are briefly presented and developed below.³

The complex-causal mechanism seeks to clarify two main themes. First, how things came to be as they are. Here the complex-causal mechanism deals with unintended consequences of both rebound results and derivative products—with positive or negative side effects. The second theme consists of ways in which it is possible to purposefully produce circuitously desirable future change and requested products. Here the complex-causal mechanism deals with intended consequences of circuitous but intended outcomes.

Following are the primary general features of the complex world system, which the complex-causal mechanism relies on:

1. *The complex international relations system is adaptive in nature.*
The properties that allow the adaptive complex system of international relations to react in different ways to the environments they confront are called variety or diversity.

2. *The complex system of international relations is nonlinear in nature.* Countless variables influence the complex system of international relations and allow it to react in a nonlinear manner to the environment it is confronted with; these characteristics also cause the complex international system to respond in a way that is different from, and from time to time even in contradiction of, what was originally intended or predicted by the initiator of the action.
3. *Feedback—negative and positive alike—is important.* The reactions of the key players within the system, which ultimately influence the surrounding environment and cause the *complex effects of international relations*, are mostly based on the type of feedback that is generated in the situation—either negative or positive in nature. The dynamic that the system adopts and the type of feedback that ultimately results is due to a selection process: either naturally developed—as represented by unintended consequences, both rebound results and derivative products; or established on purpose—as represented by intended consequences of circuitous but intended outcomes in nature.
4. *The complex system of international relations is typified by an emergence character.* The defense, economic, political, and social international drivers of emergence and adaptation are the results of some causes more than of randomness; in some cases, these drivers may be referred to as attractors that entered the situation voluntarily and in other cases they are purposely pushed into the situation by one of the main or incidental actors.

These four components form a basic algorithm that describes complex effects of international relations within the world affairs system. This algorithm could also serve as a guide to evolutionary processes in other systems and networks. If one seeks to understand change and growth, and furthermore, to direct actions and decisions to work in his own favor, he must accurately understand which factors and dynamics are driving these basic processes in the system he hopes to influence and whether they are conceptual, political, or social in nature.

It is important to keep in mind that international relations are a complex matrix of interactions in which almost all elements are linked to each other. With modern communications, electronic media, and advanced

transportation systems, an even larger quantity and variety of material and information is being distributed to larger audiences around the globe. As a result, “countless linked decisions and actions and reactions are required to maintain distribution networks, and keep things moving through them.”⁴

Patterns of connections as well as dependence and influences of actors one on the other are becoming more and more complicated with the addition of new distribution systems and new actors. With the emergence of each new actor and form of interaction, hundreds of new actions and dyadic relationships become possible, further complicating the international arena with more interconnectedness.⁵

Still, some things can be considered more connected than others.⁶ Foreign affairs, for instance, are associated with interconnected and dynamic webs. Thus, when dealing with the world scene it is difficult, if not impossible, to deal with subjects separately. In other words, within the international relations system one can never do “just one thing.”⁷ It is also difficult to restrict the description of the world scene to a limited number of characterizing variables without losing its essential global functional properties.

Since the system of international relations consists of parts interacting in a nonlinear fashion, it displays complex behaviors such as unpredictability. It is thus appropriate to differentiate between a complicated system, such as a plane or a computer, and a complex system, such as ecological and economic systems—and, undoubtedly, the system of international relations, which is the main focus of this book. Accordingly, complicated systems are composed of many functionally distinct parts but are still in fact predictable, whereas complex systems interact in a nonlinear manner with their environment and have properties of self-organization, which make them unpredictable beyond a certain temporal window.

A fully complex system would be completely irreducible. This means that it would be impossible to derive a model from this system without losing all its relevant properties. In the international reality, however, different levels of complexity obviously exist.

The reduction of complexity is an essential stage in traditional scientific and experimental methodology. Thus, and as part of the effort of this book to present here a complex-causal mechanism, the number of variables will be considerably reduced to allow for the study of the complex international relations system in a more controlled way, that is, with some degree of causal connection.

Complex effects of international relations are a result primarily of the nonlinear relationships between the components of the system. Foreign affairs can thus be identified by the following characteristics: (1) The realm

of foreign affairs is fundamentally nondeterministic and it is impossible to precisely anticipate behavior even if the exact function of its parts is known—including that of states and other key players, such as international organizations and Non-State Actors (NSAs); and, (2) Foreign affairs has a dynamic structure. It is therefore difficult, if not impossible, to study its properties by breaking it down into functionally stable parts. Its permanent interaction with its environment and its properties of self-organization allow it to functionally restructure itself.

The following main points summarize the complex-causal mechanism developed throughout the remaining portions of this chapter:

- A. Basic assumptions of complex international system:
 1. Nonlinearity of world affairs, ideas, and influence.
- B. The mechanism:
 1. Degree of ripeness for change, or the key idea at the time, which exists at the exact moment that the action was taken—either before, at the beginning of, the height of, the end of, or after the action took place—in the case under consideration.
 2. Types of feedback that the system ultimately adopted—negative or positive or any combination of these—and their magnitude: automatically (voluntarily) or manually (purposely) presented from past, present, future, or virtual tenses.
- C. Outcomes:
 1. Type of reality that will emerge, or the kind of complex effects of international relations that will arise. Actions taken in a nonlinear context and circumstance in which negative or positive feedback are in play will result in the emergence of a new reality that is either:
 - Surprising emergence—unintended consequences of both rebound results and derivative products, or;
 - Expected emergence—intended consequences of circuitous but intended outcomes.

Although many if not all students of international relations try to predict foreign affairs outcomes, few or none succeed in doing so. The international relations system is complicated and dynamic and is continually changing in

		A. Basic Assumptions	B. The Mechanism		C. Outcomes
		Nonlinearity, Ideas, and Influence	Degree of Ripeness for Change	Types of Feedback	Type of Reality that Will Emerge
Unintended Consequences [UC]	Rebound Results [RR]	Ideas caused the outcomes to be reversed and negatively affect the actor	Automatically exists with no intention or control by the initiate player	Positive and/or negative feedback automatically happens	Surprising emergence—the unintentional consequences are autonomy and the emergence of a new reality is surprising
	Derivative Products [DP]	Ideas caused the outcomes to be spillover with negative, positive, or neutral effect from the actor point of view	Automatically exists with no intention or control by the initiate player	Positive and/or negative feedback automatically happens	Surprising emergence—the unintentional consequences are autonomy and the emergence of a new reality is surprising
Intended Consequences [IC]	Circuitous but Intended Consequences [CIC]	Ideas caused the outcomes to purposely but circuitously be achieved	Automatically exists but well recognized, or manually created and controlled by the initiate player	The initiate player manually creates, influences, or controls the positive and/or negative feedback and its magnitude	Expected emergence—the intentional consequences are predicted and controlled

Figure 3.1. Complex Effects of International Relations.

ways that challenge most experts in the field. The huge streams of data that are constantly being generated are not sufficient to build a prediction model. For that goal and others, we do need the complex-causal model developed here. In terms of complexity science, international relations are among the best systems to look at, since they consist entirely of collections of decision making players with a great deal of inherent feedback.

The next section continues as follows. (A) First, I will present a necessarily brief overview and discussion of the basic assumptions on complex international relations, which challenges systems theory and offers a toolkit to help deal with *complex effects of international relations*. Specific consideration will be given to the notions of: (1) nonlinearity of world affairs, ideas, and influence. (B) Then I will develop the mechanism, including: (1) degree of ripeness for change, and (2) types of feedback that the system ultimately will adopt—negative or positive. (C) Finally, I conclude with the outcome: the type of reality that will emerge. Then I will establish the complex-causal mechanism model with specific consideration of each of the two types of *complex effects of international relations* and their three subcategories: surprising emergence—the complex-causal mechanism of unintended consequences of both rebound results as well as derivative products; and, expected emergence—the complex-causal mechanism of intended consequences of circuitous but intended consequences.

My aim here is to address complex effects of international relations from an international politics perspective by developing a complex-causal mechanism model focusing on the implications of numerous factors and how they could be used to understand and improve foreign policy decision making within a changing and dynamic world scene.

The Complex-Causal Mechanism for Complex Effects in International Relations

BASIC ASSUMPTIONS OF THE COMPLEX INTERNATIONAL SYSTEM

Nonlinearity, Ideas, and Influence

NONLINEARITY

The nonlinearity of the system of international relations is the most central property relevant to this study and is therefore dealt with first.⁸

Linearity involves two patterns. First, changes in system output are proportional to changes in input. Second, system outputs consistent with the sum of two inputs are equal to the sum of the outputs arising from the separate inputs.⁹

Linearity is connected to the Newtonian paradigm, which characterizes Western thinking and culture in general. The Newtonian paradigm, which is the product of the scientific revolution that began in the sixteenth century, reached its highest point with Isaac Newton who also gave his name to the resulting worldview. Accordingly, the world and everything in it is a giant machine working as a highly precise atomic clock, ticking along predictably and reliably while keeping accurate time.¹⁰

It is possible to identify four main characteristics of the Newtonian paradigm. The first identifying characteristic is that of a system as a closed entity isolated from the outside environment, influenced only via internal workings and not any outside elements.

Linearity is the second cornerstone of the Newtonian paradigm, which dictates that each cause and effect has a direct and proportional connection. For an outcome to have major impact the input also must be major. Likewise, a small input will lead to a minor result. Therefore, such a system, in being more controllable and predictable than a nonlinear one, may also be seen in a more positive light.

The third characteristic in which foreign policy under the Newtonian paradigm works as deterministically predictable has important ramifications for foreign policy. Accordingly, given enough information and knowledge about the current state of an international crisis and its initial conditions and having identified the universal “laws” of international relations—be they about the balance of power or other transhistorical rules—a decision maker should be able to precisely determine the outcome of the crisis. The rational actor model for foreign affairs decision making is a good example of a linear law. Accordingly, determining the outcome of an international crisis becomes a simple exercise if a sufficient amount of precise information is available.

Reductionism is the fourth important characteristic of the Newtonian paradigm of the world. In providing a system for problem solving, reductionism requires the problem to be broken down into more manageable parts. Each part is solved separately resulting in an overall solution to the problem.

While the Newtonian paradigm offers a well-ordered and intellectually satisfying description of the world, it is not one that matches the reality, as it ignores the complex dynamics and inconsistencies of the world system. All Newtonian systems can ultimately be distilled into one simple concept of cause and effect. In other words, the Newtonian world is knowable, all

information needed is available, and all implications can be fully addressed and worked out.

The Newtonian paradigm has governed the way international relations theories have viewed the world for many years. However attractive and simple it may be, it does not satisfactorily describe world affairs and it suffers from a number of serious shortfalls. Thus, its applicability as a basis for analyzing current foreign affairs is increasingly questionable.

Although we may intuitively expect linear relationships when we look at the world, cause and effect rarely function this way. An input of one variable may produce a disproportionate impact, whether because the law of diminishing returns sets in or because a critical mass is needed before impact can be felt.¹¹

Nonlinear dynamic theories, such as catastrophe theory,¹² chaos theory,¹³ and complexity theory,¹⁴ push beyond some of the limitations of classical physics and explore classes of phenomena outside of the traditional linear realm.

In mathematics, linear applies to an equation in which variables, when plotted against each other, form straight lines. In order for it to be linear the system must have proportionality and additivity—that is, the whole must be equal to the sum of its parts. Without additivity, if a problem is broken down into parts and those parts are solved, it would not result in an overall solution to the problem. If a system does not obey these principles and is instead nonlinear in nature, then it may exhibit more erratic behavior and have disproportionately large or small outputs or certain interactions that show the whole is not equal to its parts.¹⁵

Although more parts can certainly contribute to complexity, it is not the number of parts that makes a system complex but the ways in which those parts cooperate and interact. We should differentiate between structural complexity, such as a machine whose numerous parts generally interact in a predesigned way, and interactive complexity, the focus of this book in which the parts of the system interact freely in interconnected and unanticipated ways.

The Soviet Union's collapse and the end of the Cold War, events that almost none of the international relations analysts of the time had predicted, form an ideal model for applying the nonlinearity mechanism.¹⁶ Gorbachev acted as a catalyst for the two superpowers to transform their relationships and the character of international politics.¹⁷

Within the nonlinear and complex system of international relations, small changes in fundamental elements over time do not necessarily produce

small changes in other aspects of the system, or in the characteristics of the system as a whole. While changes may certainly occur, they will change in a variety of ways with a variety of outcomes.¹⁸

The real world of international relations is not remotely as orderly and linear as the Newtonian view suggests but is rather the opposite. The system of world affairs is an open, nonlinear, dynamic arena, highly sensitive to initial conditions and continuous, different kinds of feedback from varied locations and diverse periods, which are combined and mixed together. Thus, rather than thinking of world affairs as a structure at equilibrium we should think of it as a standing wave pattern of continuously fluxing matter, energy, and information. World politics is more a dynamic and emergent process than a thing.

We move on now to discuss the way in which ideas of four different tenses influence reality. As a result of the nonlinearity of the complex international relations system and its adaptive characteristics, ideas may be the reason to form a situation which would impact the system from then on. The ideas could originate from any past, present, future, or virtual tenses, or any combination of them—from the same place and/or from other places in any of the four tenses or any mixture of them or any blend of all tenses or places.

IDEAS AND INFLUENCE

Ideas—including emotions, beliefs, concepts, conclusions, feelings, intentions, interpretations, meaning, opinions, perceptions, thoughts, and many more—actually matter. Ideas about the past, the present, the future, and from any other virtual tense (such as humiliation, wishful thinking, dreams, madness, psychotic break, manic depression, etc.), are normally the key reason for moving individuals and masses alike to act relative to current circumstances. As such, it is important to recognize ideas, since after they are well known and identified they can to some degree be handled, controlled, and in some cases even manipulated as key tools to achieve aims in foreign policy.

The question of how political ideas spread through policy communities and why particular ideas “win out” over others in the “War of Ideas” is important. Our ideas about the social world not only reflect that world but also help shape and create it. Humans are part of the reality they try to describe and explain and they therefore have the potential to alter the reality. A theory is merely intended to describe or explain. Theories about the social world may thus become self-fulfilling prophecies.¹⁹

Ideas and their influence can be divided into three main subcategories of each of the three recognized tenses—past, present, and future. All of the three affect the way people act in a current situation. Another subcategory, namely virtual tense, is not directly related to each of the three regular tenses but it broadly affects humans' actions and therefore should also be dealt.

Past history of ideas asks how, what people think about the past, affects what they think in the present? For instance, the rise of the Islamic State of Iraq and al-Sham (ISIS)—the radical extremist Islamic group that has declared a caliphate across much of Iraq and Syria—is in many aspects a result of a past idea of the Islamic caliphate that was kept latent among Islamic individuals and communities during the last millennia. It was, however, Abū Bakr al-Baghdadi, who gave this idea life and caused millions of Muslims around the globe to follow him and the caliphate ideology as he practically and ideologically presented it to its followers.²⁰

Present history of ideas asks how, what people think about the present, affects what they think in the present? For instance, according to the “denial doctrine” of the 2010s, Syria, Hezbollah, and Israel all denied—each with its own motives—that Israeli attacks against Syrian interests in Syria and Lebanon had actually occurred so as to avoid the need for both Syria and Hezbollah to respond against Jerusalem.²¹ Operating according to the “denial doctrine” benefits all three: Israel can and, according to non-Israeli press sources and academic reports, Jerusalem probably actually does, keep attacking Syria's and Hezbollah's key targets in Syria and Lebanon, securing its borders and citizens.²² Both Syria and Hezbollah avoid the negative stigma prevalent among Muslims against those Arabs who are not responsive to any attack perpetrated by the “evil Zionists entity.”²³

Future history of ideas asks how, what people think about the future, affects what they think in the present? “I am the citizen of the future,” said Theodor Herzl, “since I am acting to create it.”²⁴ Herzl's famous statement in Hebrew is *im tirzu, ein zo agada; ve'im lo tirzo, agada hi ve'agada tisha'er*, meaning, *if you will it, it is no dream; and if you do not will it a dream it is and a dream it will stay*. Herzl actually did do exactly that. Although Jews throughout the entire two thousand years of exile dreamed of returning to their homeland and renewing the ancient Jewish State of Israel that had existed long ago in the same place, it was Theodor Herzl's vision of rebuilding *the AliNeu-Land*, or *the Old New Land*, that made it happen by connecting Jewish

communities and individuals from the entire diaspora.²⁵ An extreme, not to say controversial, notion argues that the “future matters,” or that some creatures from the future influence the present. According to two esteemed physicists, Bech Nielsen and Masao Ninomiya, in November 2009, the giant atom-smashing Large Hadron Collider (LHC) outside Geneva was being jinxed from the future to save the world!²⁶

Virtual history of ideas asks how, what people healthily or in a sick way imagine about the world, affects what they think about the present? World affairs are powerfully driven by what is called in this book virtual tense, or alternative reality, since it not connected to any of the three recognized tenses.

There are two kinds of virtual tense. The first kind focuses on individuals and their personalities.²⁷ Academics that try to point out what motivates political leaders—such as Saddam Hussein and Adolf Hitler on the one side; or Bill Clinton, Barack Obama,²⁸ and Donald Trump,²⁹ on the other side—require evaluating their personalities and producing comprehensive political and psychological profiles that give a deeper understanding of the volatile influence of their personalities on their behavior in global affairs.³⁰ Using formal psychiatric criteria in the evaluation of dangerous world leaders would help to predict, understand, and better control their behavior for common good, since their behavior is in many cases significantly influenced by their personalities. Thus, a clearer understanding of world leaders’ personalities is a wise strategy in international conflict resolution.³¹ Saddam Hussein of Iraq, for instance, had many of the same personality disorders or their features as Adolf Hitler of Nazi Germany. It appeared that a personality disorders constellation emerged for these two dictators and they both were sadistic, antisocial, paranoid, and narcissistic. Implications for diplomacy and negotiations of these “Big Four” are indicated.³² Hussein had a strong paranoid orientation. Although he may have been in touch with reality, he was clearly out of touch with political reality. Combined with Hussein’s political personality constellation was a messianic ambition for power.³³

Virtual, or alternative realities, do not characterize individuals only but also groups of people and their natures, which is the second kind of virtual tense. This is well represented by utopian thoughts in times of political disagreement or ideal visions created and presented from time to time by leaders or intellectuals. History has been marked by periodic separations, radical changes brought on by wars, revolutionary upheavals, and sudden political shifts that shattered existing social and political structures and belief systems. Countries in modern history have experienced this and witnessed

regime changes—e.g., Germany and Japan during the twentieth century, Iraq and other Arab countries during the twenty-first century, etc.—and experienced both the heights of national euphoria and the depths of physical and moral defeat and destruction.

During times of fundamental change and extreme upheavals, cultural ideas and expressions pave the way for the imagination with a key role for utopian visions of both leaders and intellectuals, which have dramatically changed the world. Major turning points, such as the revolutionary passion during and following World War I, the emergence and rise of fascist and national socialist regimes, the reordering of the world after World War II, the revolutionary spirit of 1968 worldwide, and the end of the Cold War—as symbolized by the fall of the Berlin Wall and the dissolution of the Soviet Union—were inspired by, and provoked, periods of profound cultural and political self-examination. These moments of fundamental reflection were often accompanied by fierce debates about historical ancestries and legacies. Indeed, utopian movements alternately asserted a complete break from the past or claimed to represent the fulfillment of historical destinies.

A much more extreme type of virtual tense was presented by cognitive scientist Donald Hoffman who argued that we do not perceive reality as it is. The Interface Theory of Perception (ITP) that Hoffman developed argued that percepts act as a species-specific user that directs behavior toward survival and reproduction, not truth.³⁴

One of the well-known mechanisms used to deal with the great influence of the past on current events is path dependence, which will be discussed now in detail.

PATH DEPENDENCE

Path dependence is the assumption that within the complex system of world affairs the evolution process is intertwined with early circumstances, which is not the case within a simple structure. Accordingly, if early conditions are different, the system may evolve or emerge according to different rules of movement.

Although path dependence has become a widely used concept in social sciences,³⁵ there is still considerable disagreement among international relations scholars on how best to define and apply it in the field.³⁶

Path dependence is a particular characteristic of the complex international world. Some argue that events that occur in the present are causally independent from those that occur in the past, though it is often argued that

“history matters” and that “the past affects the future.”³⁷ According to the latter view, a small initial advantage, or a few minor random shocks along the way, could considerably alter the course of history.³⁸ Path dependence means “that what has happened at an earlier point in time will affect the possible outcomes of a sequence of events occurring at a later point in time.”³⁹

While this definition is acceptable we could note several additional defining features of path dependence sequences: (1) the idea that initial conditions aid in determining the final outcome of path dependence, (2) contingent events are causally important, as in the well-known example of the selection of the QWERTY typewriter keyboard,⁴⁰ (3) historical lock-in occurs when units find themselves on development paths that are inescapable, because of causal determinism in which the destiny of a unit is highly determined by previous events, and (4) a self-reproducing sequence occurs in which a given outcome is stably reinforced over time.⁴¹

Strongly connected to path dependence is the notion of positive feedback in which past events influence future events,⁴² or when small advantages in time ($t-1$) could cause a big impact in time (t). According to Immanuel Wallerstein, for instance, the large gaps between developed and underdeveloped countries today can be attributed to quite small disparities early on in time, which allowed Western Europe to gradually grow strong while leaving the states in the periphery struggling to do the same.⁴³

Although complex effects could be caused by or be an outcome of all of the four tenses possible, they are in many cases results of previous incidents, or results of path dependence. As such, in many cases what an actor's decision's outcome is at a particular moment in time (t), is not as much a product of that actor's skills and virtues as it is a matter of how well positioned the actor was at that particular moment in time ($t-1$). Following this rationale, even a very small and incidental difference between two actors, if they occur at an early stage, may lead to an enormous divergence later on. The question of timing is important and much of politics and society can be explained not by the actors and actions themselves, but by incidents that occurred earlier—coincidences or otherwise insignificant incidents had led to a certain course of events. While many alternatives may be possible at an early stage, path dependence ensures that a certain path may become “locked in,” becoming the inevitable stable option even if it becomes inefficient or disadvantageous.⁴⁴

Many times, for complex effects to occur within the nonlinear system of international relations, it is necessary for an action to be taken by one of the players at time ($t-1$) in order to make the action path dependent and after a while to cause a new reality to emerge. In such a case, it is very much

the timing and conditions in place exactly at that time that would play a crucial role in determining the subsequent series of events and outcomes.

In path dependent patterns, events that occur earlier in time make a bigger impact than those that occur later in the sequence. In fact, events that happen “too late” may have little influence or no effect at all. Had they occurred at an earlier different time, however, the same events might have had great consequence and great impact.⁴⁵ Accordingly, evolutions and outcomes in the world scene are in many cases path dependent, since the impact of a past decision continues into the present and furthermore defines the options available in the future.⁴⁶ Indeed, past events will determine and limit what direction future developments will take and will follow a relatively deterministic path.⁴⁷ This can be understood as “inertia”—a process set in motion and following a certain track toward a potential outcome will continue to follow this motion and tracking.⁴⁸

Path dependent forms and sequences are worth special attention. They set into motion patterns that have deterministic properties.⁴⁹ Once QWERTY was established as the industry standard for the typewriter and its successor the computer, manufacturers and typists became committed to adopting it. When typists use QWERTY keyboards instead of alternative keyboards such as DVORAK, they type half as fast, make twice as many errors, and move their fingers twenty times as far. Although technological changes have been made over the years to allow for more efficient alternatives, manufacturers have continued to stick with QWERTY due to fear of abandoning a long-held commitment.⁵⁰ The alternatives could not be established, since such a change would require great coordination as well as the loss of already existing machines and skilled employees,⁵¹ and also due to the rigidity of individuals.

Taking path dependence as a basis for the complex-causal mechanism, could result in four fascinating consequences: (1) outcomes can be predicted on the basis of initial conditions, (2) shifting to a different path becomes increasingly difficult over time, (3) stochastic factors do not “average out” over time, and (4) a final outcome may be inefficient relative to previously available options.⁵²

THE MECHANISM

Degree of Ripeness for Change

Ripeness for change,⁵³ or timing, is very crucial in foreign affairs, as the impact of an action will depend on the stage of the process in which it

occurs. Thus, within international politics, two policies that have otherwise very similar components can produce different outcomes depending on the timing of the introduction of these components. For example, a policy may reach a certain balance between concessions and threats depending on timing—if the concessions are introduced prior to the threats as opposed to afterward, how they are received may be very different.⁵⁴

Ripeness for change is a moment of great sensitivity. Changes that are made, either voluntarily or purposely, exactly at the threshold point, can have enormous consequences. Depending on the exact moment, a small change can cause large effects even if other variables, such as the balance of power or the actors' preferences, stay constant.

World affairs typically produce a deep sense of uncertainty, contradiction, and ambiguity in people. During crisis and instability, the world scene is more likely to be influenced by minor events that can give rise to large outcomes than by major events.

The assassinations in the Balkans in 1914, for instance, triggered World War I.⁵⁵ In this tumultuous epoch of pre-World War I Europe, the assassinations of two people were enough to cause the killing of tens of millions and to wiped out existing nations and three empires—the Austro-Hungarian, the Ottoman, and the Tsarist Russian. At a time of stability, however, an opposite outcome is more feasible. This was the case in post-World War II Europe in which the murder of thousands in these same Balkans did not spread into a regional, or even a global, conflict, as it had a few decades earlier.⁵⁶

The difference between the degree of ripeness for change in the system in pre-World War I Europe and in post-World War II Europe accounts for the difference in outcomes described above. Thus, while in 1914 a very small change in the system parameters led to major transformations of the system as a whole, the change in the second instance was minor if there was any. Consequently, the same world system could manifest crisis and instability at some places during some eras while displaying calm elsewhere or in other eras.

Understanding degree of ripeness for change requires us to deal with the role of a threshold,⁵⁷ known also as a tipping point.⁵⁸ Accordingly, if a system passes a specific threshold, changes will occur to such an extent that a large number of otherwise apathetic people will suddenly incline toward a forceful movement for change.⁵⁹ Such a threshold gives rise to unexpected structures and events whose properties can differ from the underlying basic laws.⁶⁰

Threshold in international relations can be best understood in the context of an outbreak of a crisis, one that—if it crosses a certain point—leads

either to an arms race or ultimately to an armed conflict and even to a war. Suppose, for example, that country *A* begins acquiring arms, starting with a submarine in the first year, then soon after, a large vessel, and eventually a squadron of fighter jets. However, country *A*'s three rivals balance the situation by each acquiring an equivalent number of arms. This equilibrium is broken, however, when in the coming years, country *A* purchases a large number of state-of-the-art weaponries, becoming heavily armed. This may become a tipping point—that moment when country *A* heavily and quickly upgraded its weaponry would become the moment when a stable situation crossed the threshold into an arms race—and in an extreme situation possibly into a war between the belligerents.

The complex international relations system tends to fluctuate among various arrangements in ways such that areas of order are created—for example, the eruptions and endings of wars might lead to order. When such transitions might occur, as in the Balkans scenarios described above, has everything to do with timing.

We could take the “Arab Spring” as an example to explain how various actions along with their contexts and dynamics can broadly influence and make a huge difference in the world scene. No single event made the Arab world in early 2010 inclined toward the turbulent transformative period that became known as the “Arab Spring.”⁶¹ Yet it was not purely an accident. Whereas much of the previous history of the Middle East region is important—for instance, the long eras when the Middle East was under colonial influence and occupation, as well as the tyrannical regimes and monarchies that characterize Muslim countries in the region today—we can nevertheless point to the otherwise negligible events in Tunisia—the protests in December 2010—as a threshold for igniting the stormy events that ensued in the Arab world in the following years and that will probably continue for years to come.⁶²

The success of the Tunisian protests inspired protests in several other Arab/Muslim countries: Hosni Mubarak of Egypt was forced to resign,⁶³ and Muammar Gaddafi of Libya was overthrown and killed after a violent civil war,⁶⁴ with the constant help of NATO's air strikes. A great civil war erupted in Syria and uprisings also broke out in Yemen, and more limited demonstrations erupted in other Middle Eastern Islamic countries, including Morocco and Algeria of the Maghreb region but also in Jordan and even far beyond in Bahrain and Iran of the Gulf area.

The Lehman Brothers' investment bank collapse of 2008 is another example of the threshold phenomenon. This giant international economic

event led to the collapse of other banks in the United States but also in other places—such as Japan and Europe and particularly Greece—and to the threatened collapse of major federally supported mortgage companies.⁶⁵

Types of Feedback that the System Ultimately Adopted

Regardless of whether or not the ideas that leaders and masses alike are holding are accurate, they will ultimately influence the decisions made by leaders of all sides in a conflict. The decision makers among the players involved will probably remember what had been done in regard to certain previous events and would likely have learned what the best courses of action in those cases would have been. We will all, therefore, know how much success we or others had in past wars and conflicts. Hence, we will have a notion as to whether our strategies need to be revised or not.

The international relations system tends to occupy the middle ground between order and disorder, making occasional excursions toward one or the other and back again without the help of any central international regime. It is the emergence of such properties that makes international relations complex. Key elements of the complex system of international relations are positive and negative feedback, which includes: ideas from past, present, future, and virtual tenses, which leaders and peoples alike are holding and that lead them to act and/or react.

Actions and events in foreign affairs cannot erupt or happen without the presence of some feedback. Thus, the emergence of events within international relations requires the help of some of the players that are part of the system and the ideas that are prevalent within the system and that motivated the players' actions and reactions.

Many of the possible complex effects of international relations result from positive and/or negative feedback. We should note that international relations display forms of negative feedback, which produces stagnation, and positive feedback, which produces change. In some conflicts, one actor's actions serve as positive feedback, thereby causing further escalation. In other conflicts one actor's actions serve as negative feedback, thereby causing stagnation.

Leaders and people who are leading states and NSAs alike are human beings and as such they are complicated organs. Yet, somehow their combined decisions and actions give rise to well-defined effects such as adapting or behaving according to balancing, bandwagoning, buck passing, and catching the buck strategies, or any combination of them all.

Although leaders, like any other humans, are complicated in terms of their beliefs, emotions, narratives, and more, the ways in which they are each complicated as individuals may not be so important when they are acting together as a group. Even though there are many differences between all their different personalities, these differences may cancel each other out to some extent when they are acting in a large enough group. Hence, a group as a whole behaves in such a way that these individual differences do not matter very much.

This does not mean that groups of people behave in a simple way. The behavior of emergent phenomena such as wars or conflicts does not typically reflect the behavior of any particular individual. The overall behavior of such groups can be quite similar to one another. Even though the personalities of two individuals differ, the groups to which they belong can behave in quite a similar way. For this reason, although the individuals involved are very different, wars and conflicts tend to look quite the same in every part of the world at any time—be it the Middle East, Africa, or any other region on the globe.

The ways in which collections of humans tend to wage wars and handle conflicts are remarkably similar, despite their individual differences in terms of geographic location, background, language, and culture. This is one of the reasons why the patterns that emerge from such a complex entity as the international relations system can be so similar to one another. Within foreign affairs the emergent phenomena have some transhistoric qualities.

Explaining complex effects of international relations requires us to explore the manifestations of feedback in world politics, since it is a key phenomenon in explaining how the world system works.⁶⁶ Accordingly, when the relationship between elements or the element itself experiences a change, this will consequently alter other elements and in turn affect the original. This demonstrates a circular and dynamic cycle between cause and effect rather than a one-way relationship.⁶⁷

Complex systems usually have multiple feedback loops. Negative feedback slows down processes while positive feedback speeds them up. Positive feedback loops strengthen the cause and the subsequent effect in an ever-increasing cycle that can lead to nonlinear transitions and system collapse.⁶⁸ Therefore, of principal concern is how negative feedback plays itself out in keeping the equilibrium and how positive feedback operates in processes of change.

Negative feedback includes actions that strengthen and maintain the system in its current state. The feedback is negative or stabilizing if the sig-

nals from the goal are used to restrict outputs that would otherwise extend beyond the goal. In this case, the alteration activates forces that counteract the original change and return the system to its original situation. The feedback is positive or destabilizing if the fraction of the output that reenters the object has the same signal as the original input signal. It adds to the input signals and does not correct them.⁶⁹ In this case, change in one direction leads to further change in that same direction. Negative feedback creates stability that lets patterns continue and thus allows for organized society. On the other hand, positive feedback allows for change and growth.⁷⁰ While the balance of power is an example of negative feedback, an arms race is an example of positive feedback.

Positive and negative feedback can operate simultaneously or replace each other very quickly. Arms races are exemplified by positive feedback. The result may be negative feedback, however, since a security dilemma may develop if the front-runner position in the race continually alternates between competitors, preventing either side from leading and ultimately resulting in war.⁷¹

Positive feedback in world affairs is a phenomenon that enhances self-reinforcing dynamics as represented by the domino theory,⁷² which is illustrated by a row of dominoes that falls sequentially until none remain standing. The analogy was popular during the Cold War era predicting that if one state fell to communism its neighbors would also fall in a chain reaction.⁷³ The spiral model was also popular during this epoch describing the tendency of efforts to enhance defense, resulting in an escalating arms race.⁷⁴ Any action in the world system taken by one sole actor leads to the involvement of other actors. Taking positive feedback as a building block leads us to conclude that one actor becoming armed causes spiral actions to be launched by that actor and its adversaries. Ultimately, they both become more heavily armed and more hostile toward each other.

The dispute between the balance of power concept and the domino effect view is central to international politics: whether or not and under what conditions states will balance themselves against a threat rather than climb onto the bandwagon of the stronger side.⁷⁵

The balance of power theory, which mainly explains why no state has come to dominate the international system,⁷⁶ includes two viewpoints. The automatic model views restraint as arising from interactions within the system and illustrates general principles of system dynamics, especially negative feedback.⁷⁷ The manual model envisions a much greater role for self-restraint.⁷⁸

In world politics, if the power pendulum swings toward one pole, those losing influence usually will increase their unity and their joint activity against the potential hegemon. Thus, in its ultimate development a complete positive feedback has never evolved in the global arena because no single state has ever become a hegemon.⁷⁹ A superpower's growth leads to more expansion, which is positive feedback. The result is a counterbalancing mechanism that automatically erupts and starts to operate and delay or oppose the superpower's expansion, which is negative feedback. Ultimately, withdrawals weaken the superpower's strength and, in some cases, could even lead to its collapse and hasten the growth of another superpower, which is positive feedback.⁸⁰ The key question is, under what circumstances will international politics be characterized by positive feedback rather than by the balancing mechanism represented by negative feedback?⁸¹ In balancing processes after a period of increasing returns, negative feedback works to bring a system back to equilibrium.

Consequences are often unintended because of the failure of decision and policymakers to anticipate positive feedback. By taking even minor or limited action, a series of forces are set in motion that may require further actions in the same direction. Even a small move can change the environment and circumstances in such a way as to require more and sometimes major additional efforts and actions.⁸²

OUTCOMES

Type of Reality That Will Emerge

Emergence is one of the basic and key characteristics of a complex system. George Lewes expressed it as far back as the nineteenth century:

Although each effect is the resultant of its components, we cannot always trace the steps of the process, so as to see in the product the mode of operation of each factor. In the latter case, I propose to call the emergent effect an emergent. It arises out of the combined agencies, but in a form, which does not display the agents in action. Emergent is unlike its components insofar as these are incommensurable, and it cannot be reduced either to their sum or their difference.⁸³

Emergent phenomena occur due to the pattern of nonlinear and distributed interactions between the elements of the system over time. According to the

theory of emergence, the whole is more than the sum of its parts.⁸⁴ Thus, it accounts for the transformation of quantity into quality.⁸⁵

Emergence in international relations signifies a type of change. There seem to be three important classes of changes considered possible in discussions of modern international politics. First, there is change occurrence, or an occurrence to which no law can be applied. Second, there is a shift, or a change in which one characteristic replaces another. Third, there is a cumulative change, or a change in which certain characteristics supervene upon other characteristics.⁸⁶

One of the main points about emergent phenomena is that they are observable in macrolevel effects and from microlevel causes.⁸⁷ A dispute is prevalent among international relations theoreticians—who argue over which players (individuals and states alike) or systems dictate the course of history. This disagreement is well demonstrated in the induction-deduction dispute within the field of international relations.

According to the top-down, or the deductive perspective, history is essentially formed and shaped by forces outside the control of players and mainly by the structure of the international system.⁸⁸ Reductionism, however, seeks to understand the system by looking only at the units and their relations with one another.

The bottom-up, or the inductive approach, holds that history is shaped by players' actions where a consistent, though not necessarily direct, link exists between the preferences and actions of political leaders on the one hand and the long-term international processes on the other.⁸⁹ Deduction is the inference of particular instances by reference to a general law or principle.

To use a somewhat overworked metaphor to explain the difference between the top-down or the deductive perspective and the bottom-up or the inductive approach—detailed empirical analysis tends to miss the forest for the trees, while general explanatory concepts stare so hard at the forest that they sometimes fail to discern a single tree.

Since social systems are open it is unlikely that conditions will remain constant or be comparable between different states of affairs. In open systems, a cause may have different effects at different times due to changed conditions. Social systems are so complex that parsimonious theories, which attempt to isolate one or a few causes for observed effects, may dangerously oversimplify models.⁹⁰ Accordingly, it is not surprising that no general laws of world politics have ever been identified.⁹¹

An opposite view, in which decrease rather than emergence is the prevalent perspective in foreign affairs, is presented in the realist theory of international relations.⁹²

The resulting complex system of international relations will show the following behaviors. First, the system evolves in a highly nontrivial and often complicated way, driven by players who interact under the influence of feedback. Second, the system displays emergent phenomena that are generally surprising and that may be extreme. The international system is far from a state of equilibrium, which means that almost anything can happen. In the emergent phenomena we should ask whether extreme events, such as the outbreak of World War I, might result from a sort of a series of errors or as a result of a domino effect. Third, the emergent phenomena typically arise in the absence of any sort of “invisible hand,” or central controller under the state of anarchy. The complex system of international relations can evolve in a complicated way all by itself.

Complex-Causality of Unintended Consequences

Although the phenomenon of unintended consequences is deep-rooted in history, its occurrence has sharply increased in modern times and is now spread throughout all of international life, above all in the spheres of international relations and foreign affairs. As the movements that have characterized the global system have become more interactive and as access to technology has increased, unintended consequences have become more and more common.

By definition, unintended consequences, with its two subcategories of rebound results and derivative products, cannot be precisely foreseen. After all, we should always remember this is why they are in fact called unintended. Occasionally, however, the realization that some undesired unintended consequences might occur could hopefully lead policymakers to take the necessary steps to prevent undesired unintended consequences from occurring in the first place.⁹³

On many occasions the unintended consequences of wars do not outweigh the original justifications and benefits foreseen by those who first led the country into belligerency. In other cases, wars produce unintended consequences that ultimately outweighed the intended consequences. As shown in this book, many of the consequences of wars and conflicts were either different or even contrary to those that were intended. Their ramifications were, more often than not, more far-reaching than the original and intended goals.⁹⁴

When dealing with the complex system of international relations we should remember that consequences cannot be reduced to the many

components that comprise activities. Emergent characteristics arise from, but are not reducible to, the microdynamics of the phenomenon in question.⁹⁵ Thus, in the analysis of unintended consequences of both rebound results and derivative products, an occurrence is frequently, but not always, considered a result of a previous incident but with a mixture of present, future, and even virtual tenses. We will move on now to find out how the mechanism has actually worked.

COMPLEX-CAUSALITY OF REBOUND RESULTS

With so many forces and players simultaneously acting in the global system and influencing complex effects of international relations, an action taken by one actor might, under some circumstances, go against his own interests. In other words, some actions may turn out to be self-detrimental or costly. In many cases, such circumstances could cause rebound results.

This is the main focus of the current section, in which I try to answer the following question: When and under what circumstances do complex effects of international relations cause rebound results—negatively affecting the actor? This relates to the questions of context, which are at the core of the definition and purpose of causal mechanisms. First, “How and why does a hypothesized cause, in a given context, contribute to a particular outcome?”⁹⁶ Second, which of the characteristics of causal mechanisms, as described earlier, need to be present in order to lead to such outcomes?

From time to time small states as well as superpowers will be dragged into wars that they strongly opposed from the outset. Washington, for instance, got involved in the first and second world wars despite its traditional foreign policy of isolationism.⁹⁷ Frequently, however, polar powers also initiate wars that, according to some scholars, are contrary to their own interests, causing rebound results in the long term.

Hans J. Morgenthau, a leading early realist theoretician, opposed the United States war against North Vietnam, largely on the grounds that it was an unnecessary war.⁹⁸ In the end, the United States war in Vietnam actually undermined U.S. efforts, deepening distrust of the government and creating deep-seated hostility among the population, all of which ultimately had serious consequences for the country.⁹⁹

We move on now to present and explain the complex-causality mechanism of unintended consequences of both rebound results and derivative products.

REBOUND RESULTS: THE MECHANISM

Nonlinearity, Ideas, and Influence. In the category of unintended consequences of rebound results, an idea that is somehow placed in the sphere of international relations causes the outcomes to be reversed and negatively affect the actor that originally initiated the action.

On the other hand, taking steps to prevent the development of an idea in the sphere of international relations that would evolve into a negative idea, which would in turn block or cancel the earlier idea that was presented, would in the end cause the rebound results not to occur.

Degree of Ripeness for Change. In the category of unintended consequences of rebound results, degree of ripeness for change automatically arises without any intention or control by the initiate player.

In relation to rebound results, why a certain negative outcome occurs could be attributed just as much or more to the timing with which it occurred as to the nature of the event itself. Here, the role of context as the defining feature of the complex causal mechanism comes into play, in the sense that time plays a key role in context. In many cases, degree of ripeness for change at one moment is the primary compelling explanatory factor behind a rebound result.

Had a certain decision or event taken place at any other time, either slightly before or after a sensitive threshold point, then it very well might not have had a great impact or any measurable impact at all. Here the complex-causal mechanism is a very powerful tool to understand complex effects, and rebound results in particular. While many variables and interactions lead to outcomes, degree of ripeness for change and the existence of threshold points are often the conditions that ultimately lead to the rebound results. Failure to anticipate the importance of timing or to identify what point should be considered the threshold, contribute to the ultimate outcome of a rebound result. Understanding when a threshold exists and what actions will go beyond and break it, is crucial in anticipating results of actions. Without such foresight, unintended rebound results can result.

Types of Feedback. In the category of unintended consequences of rebound results, positive or negative feedback automatically occurs. Many international relations theories consider equilibrium to be a building block assumption. Accordingly, through the mechanism of the negative feedback loop, the system returns to its original position following any small deviations. However, since

foreign affairs are a sphere of change and evolution, we should challenge this assumption by bringing positive feedback loops into the discussion.

Within foreign affairs, negative and/or positive feedback frequently turns the desired behavior of an actor into self-limiting, and often self-defeating outcomes, as represented by rebound results. Positive feedback loops drive a system beyond equilibrium. Even small changes can have critical effects on a system, triggering alternate paths at crucial turning points. While systems theory generally assumes a level of proportionality between cause and effect, this challenges that assumption and introduces the role of nonlinearity in the dynamics between entities.¹⁰⁰

These dynamics and relationships contain both negative and positive feedback loops, which stand at the core of all complex effects of international relations. The complexity of the system of international relations entails the interconnectedness of its main parts. In some cases, when states seek to achieve goals that if successful might change the current state of affairs, the result may be unintended and undermine the original goal—as rebound results demonstrate.

Failure to anticipate or to manage positive feedback is one reason why consequences are often unintended. Indeed, even a very limited action can set in motion a number of otherwise unplanned or unanticipated actions and can influence the decisions and actions of others. A small endeavor that seems to require just a minor effort may completely change the environment and context and therefore require further actions and commitments by a variety of actors. In many ways this creates long-term obligations and makes interests less structured and stable. In reality, a variety of possible outcomes could have occurred, but the sequence of events and reactions may make it feel like the course that was taken was inevitable. The growth and change that characterize positive feedback, along with the circular, interloping dynamic of the system, are very difficult if not impossible to predict, often resulting in rebound results.¹⁰¹

Type of Reality That Will Emerge. In the category of unintended consequences of rebound results, the type of reality that will emerge, or the kind of complex effects of international relations that will arise, is the product of: actions, taken in a nonlinear context and circumstance in which negative or positive feedback are in play, that will result in the emergence of a new reality that is a surprising appearance.

As we already noticed, without any doubt the world affairs system is complex. Results in general, and the way complex effects of international

relations are defined in this book in particular, emerge from multiple and nonlinear connections among variables. Thus, the state of the international relations system should be understood to include an emergent property. While effects in international relations are certainly a product of the actors and their earlier decisions and actions, it is not possible to simply look at these effects as a sum of the parts, or components, which were inputted into the equation. The special relationship and dynamics between these components and the times in which they develop play a significant role. As such, according to the theory of emergence, the whole is more than the sum of its parts. It is also a product of the unique interactions among those parts and the ways in which they transform and develop over time.

When a situation of rebound results emerges, one cannot simply trace it back to a single root cause. After all, according to emergence theory, there is no single variable or component that can be held responsible for the resulting outcome. As tempting as it may be, a decision maker or analyst looking for an explanation of how a rebound result came to be cannot take a reductionist approach. They must consider the unique interactions between the components and events that took place and recognize that the nonlinear nature of the system gives rise to unique interactions and dynamics that are difficult to measure. Understanding the *how* and *why* of the rebound results requires this appreciation of emergence, even though it will make a simple and precise identification of an outcome's causes more difficult. Especially if the media and public demand someone or something to blame for negative outcomes in the world picture, it is important not to default to a more reductionist approach that may package the root cause in a simpler, but not necessarily accurate, manner.

In the context of complex effects of international relations with rebound results, the type of reality that will emerge will reverse and undermine the actor's original intentions. The actor accidentally causes unintended consequences and effects that are in direct contrast to his original goals or desires.

As such, under complex conditions, path dependence entails that an action that caused one outcome in the past may cause a different outcome today, even if the same players are playing the same game. If the players in the system can accurately sense the environment and proactively change their reactions to fit their conditions, then in essence the rules of the game are changed as well.¹⁰²

This notion of path dependence is strongly linked to concepts of timing, or ripeness for change, and also to the concept of feedback loops.

When past events influence future events, a small event can have a disproportionate effect, and the timing very much matters. Events that occur earlier in time make a bigger impact than those that occur later in the sequence, and those occurring later may even have little or no effect at all. Furthermore, the rebound result itself may influence the original variables that caused it. This is the nature of multiple feedback loops in which the causes and effects among variables go in all directions.

COMPLEX-CAUSALITY OF DERIVATIVE PRODUCTS: POSITIVE, NEUTRAL, OR NEGATIVE

With so many forces responding to each other and influencing the complex effects of international relations, the actor's desire to attain a specific goal may take him in quite a different direction.

In many cases it gives rise to derivative products, the main focus of the current section, which addresses the following question: Why and under what circumstances do the complex effects of international relations mistakenly create a range of spillover effects, or derivative products?

As this book demonstrates, the complex effects of international relations cannot be understood by using only linear mechanisms or direct cause-effect dynamics. Indirect effects may have greater impact than direct ones. The Russian intervention in the Syrian internal war in 2015, for instance, has had significant derivative products—it has dramatically influenced both Israel's and Turkey's positions and security.¹⁰³

Political science study has traditionally tended to focus on a single factor and has relied on the assumption that others are constant. The reality is actually quite the opposite. Complex effects of international relations are not a result of one variable but a consequence of the interaction of multiple, and in some cases even countless, variables. The complexity of international relations is also the product of the fact that actors consciously react to both the actions of others and what they expect others to do.

Repeatedly, polar powers initiate wars that cause derivative products in the long term. Before the clashes of the 2003 U.S.-Iraq War erupted, for instance, John J. Mearsheimer and Stephen M. Walt, two of today's foremost American students of international relations studies, sharply criticized the rationale of Washington in launching the war.¹⁰⁴ After more than a decade, looking at the catastrophic derivative products of the U.S.-Iraq War, such as the rise to power of ISIS in Syria and Iraq and the "Arab Spring," it seems that their predictions were precisely right.¹⁰⁵

The conditions in place at the time an action is taken have a dramatic effect on the outcome, often resulting in outcomes very different from those intended by the initiator of the action. The key principle here is nonlinearity, which makes the notion of direct cause and effect irrelevant.

The direct relationship of cause-effect is a common assumption in the study of foreign affairs. Linearity in international relations, however, is prevalent mostly when interconnections are lacking or weak, which is definitely not the usual case under the state of anarchy that characterizes international relations. Thus, within the system of international relations, changes do not occur solely in a linear fashion. Frequently this nonlinearity principle can produce disproportionate outcomes,¹⁰⁶ in which small changes are magnified by positive feedback that causes rebound results, as presented above. On other occasions, small changes can produce side effects or derivative products, as presented here.

The system of international relations frequently displays nonlinear results. Within the complex international relations system, “no important issue exists in isolation; rarely is it only bilateral.”¹⁰⁷ Frequently, a policy, or an action of a state toward another state, will have implications and effects on other policies, actions, or states.

As reflected in a path-dependent pattern, early conditions will affect the flow of later events and the progression of these events. As a consequence, a certain inertia and deterministic path is created, and it may seem difficult to influence or disrupt that flow of action. This occurs when events set into motion a pattern or chain of events over time that seems to be “locked in” to a deterministic path. This path can originate from contingent events or more general processes and from both small and larger system effects. Indeed, the order in which events occur and when in time they occur will significantly influence the outcomes, even after very long periods of time.

As such, derivative products are very much the outcome of this path dependence and nonlinear pattern. They are a product of the flow and wave of events and their outcomes and, of course, of the dynamic interaction between them. As a consequence of path dependence in the complex-causal mechanism, outcomes cannot be predicted on the basis of initial conditions, and a number of possible outcomes can arise from single actions. Just as rebound results cannot be avoided, positive derivative products cannot be planned or anticipated, due to the dynamic interaction of all the variables in play and the role that timing plays in the end results.

DERIVATIVE PRODUCT: THE MECHANISM

Nonlinearity, Ideas, and Influence. Under the category of unintended consequences of derivative products, ideas that were placed and developed somehow in the sphere of international relations caused the outcomes to be spillover results with negative, positive, or neutral effects from the actor's point of view.

Degree of Ripeness for Change. In the category of unintended consequences of derivative products, degree of ripeness for change automatically exists with no intention or control by the initiate player.

Timing, as a crucial aspect of context, can affect whether certain outcomes will take place or not. Indeed, "social processes are rarely instantaneous," and a certain time period can affect a causal process and its ultimate results.¹⁰⁸ A variety of time-related mechanisms can be taken into consideration when determining the likelihood of certain outcomes, such as sequencing or the order in which things happen. There are also tempo and duration or how long things take to happen. Something that takes a long time to occur may have a different effect in terms of its intensity and impact. Indeed, a tipping point, or threshold point, might be crossed only if the outcome were produced swiftly or suddenly.¹⁰⁹

Types of Feedback. Within the category of unintended consequences of derivative products, positive or negative feedback automatically happens.

Central to explaining the complex system of international relations is the idea of emergence, the awareness not only that the sum is greater than the size of its parts, but rather, that some complex effects of international relations can occur that are actually totally different from their parts. In analyzing these nonlinearities, positive feedback loops are especially significant, as opposed to the negative feedback mechanism.

When stresses and tensions already exist in the system, positive feedback loops only serve to exacerbate these tensions. As a result, the system is unable to handle disruptions or shocks to the system and has trouble reaching the equilibrium that initially existed. In the history of a number of economic-technological systems, observers may find the phenomenon of this positive feedback, evident in the analyses of the increasing returns that generate path dependence. An interesting example of this is in the case of the VHS video system replacing the superior technology of the Betamax.¹¹⁰

Type of Reality that Will Emerge. In the category of unintended consequences of derivative products, the type of reality that will emerge, or the kind of complex effects of international relations that will arise, is the product of: actions taken in a nonlinear context and circumstance in which negative or positive feedback are in play and will result in the emergence of a new reality that is surprising in appearance.

The emergence characteristic of world affairs entails that the great complexity of international relations comes from simpler building blocks interacting with one another from the bottom up creating new properties and behaviors that cannot be described by looking at the individual parts of the system alone. One cannot simply trace the cause of an outcome to the single components or variables that went into it. Due to nonlinear interactions that occur over time the system is quite open and has a number of moving parts. Unlike the reductionist approach, which involves looking at each part separately in order to determine the effects, an emergent approach makes one sure to consider the in-between factors—the dynamic interactions along with the mechanisms that control these interactions—and how these create a new whole: “In a mechanistic argument, causation resides not solely in the variables or attributes of the units of analysis but in mechanisms.”¹¹¹

For derivative products to result from an action—whether they are positive, neutral, or negative in nature—the outcome had to be unanticipated by the actor. If it were just a matter of the different variables imputed into a standard formula that produced a certain result then that result would be much easier to anticipate. When mechanisms and context come into play, as emergence posits, then the formula is no longer so simple. This is where derivative products result.

In such complex effects of international relations as they relate to derivative products, the types of reality that will emerge would produce spillover effects. The players that are making the decisions and are taking the action will unintentionally cause a number of consequences that may be neutral or positive in nature or that may very well run contrary to their initial goals and desires. It is the timing, or ripeness for change, and the various feedback flows that lead to the particular outcome.

Complex-Causality of Intended Consequences

The complex-causal mechanism developed in this section seeks to determine how it is possible for policymakers and decision makers to circuitously

produce desired future changes and outcomes in the realm of intended consequences, that is, of circuitous but intended outcomes.

COMPLEX-CAUSALITY OF CIRCUITOUS BUT INTENDED OUTCOMES

Intended consequences of circuitous but intended outcomes is the main focus of the current section, which tries to answer the following question: In what circumstances and under what conditions can complex effects of international relations result in purposely desired results as represented by circuitous but intended outcomes?

In the multi-actor world system, a minor change in time ($t-1$) could consequently make a big difference after a while in time (t), even if the actors' powers, beliefs, and preferences are constant.¹¹² Often, however, what happens in one place can quickly spread to other areas as well, since diffusions may be found both in the international politics and international economy arenas as well, which both serve to deliver ideas from one part of the world to another part of the world, or from one tense of time to another tense of time—namely, from the past to the present, and/or from the future to the present, and/or from any virtual tense to the present.

We should differentiate between chaos and randomness. As international relations scientists know well, the ways in which players on the world stage interact dramatically affect the overall dynamics of the system and therefore determine what happens to the system itself over time. The ways in which the key great powers in the system interact will affect the arrangements that they form, how long they remain in place, and the transitions between these arrangements. This, in turn, will affect the output of the system such as the number and the magnitude of wars during any period.

If there are countless possible activities of the international system's players and the system moves in a complicated way between these activities, then the resulting output of the system can look random and unpredictable. It is under these conditions that the system is not complex anymore but might actually display chaos. If, instead, there is an obvious method to the unexpected results, then the system can look ordered and predictable. The system will then definitely demonstrate chaos. The presence of some kind of consistency or path dependence in the system can be crucial in determining whether the evolutionary result looks unpredictable and therefore whether it is likely to be chaotic or not.

CIRCUITOUS BUT INTENDED OUTCOMES: THE MECHANISM

Nonlinearity, Ideas, and Influence. In the category of circuitous but intended consequences, an idea that was intentionally placed in the sphere of international relations caused the outcomes to purposely be achieved.

Degree of Ripeness for Change. In the category of circuitous but intended consequences, degree of ripeness for change automatically exists but is well recognized or is manually created and controlled by the initiate player.

When it comes to circuitous but intended outcomes, timing accounts for certain positive outcomes—in the eye of the actor who initiated the actions—as much as any other factors. For circuitous but intended outcomes to be achieved, the timing should be a combination of ripeness for change and the willingness of other players in the system to take the actions necessary to cause the indirect but expected and required outcomes to happen.

Types of Feedback. In the category of circuitous but intended consequences, the initiate player manually creates, and even influences or controls, the positive or negative feedback and its magnitude.

Attractors can be useful in explaining why both conflicts and wars as well as peace agreements occur. Within international politics, using active manipulation for creating a new attractor can achieve circuitous outcomes by producing a novel reality. While understanding this basic law, players may purposely try to build antagonistic or pacific attractors, which hopefully cause a new reality to emerge.

Intentionally and purposely using attractors in foreign affairs goes beyond the linear way of thinking that dominates the field. The main goal of placing a new attractor is to cause a chain of reactions and the evolution of repeated positive feedback, eventually creating a change in the existing patterns, which ultimately achieves the actor's desired goals.

Following this rationale, actors may be able to reach their goals by proceeding in directions opposite to their goals and by utilizing reactions to produce the desired ends. They may also provoke through the reaction of a third party. Actors may also work not by causing direct damage but by causing overreactions in public opinion and governments. Terrorism, for instance, works not by the direct damage it does but by overreactions in public opinion and the government.¹¹³

In the complex system of world affairs, attractors could also emerge as self-generative processes, while international players develop them latently.

The concept of latent attractors could provide an important new perspective on international repercussions, since the system constantly does evolve toward a certain state due to attractors that emerge and generate certain types of outcomes.¹¹⁴

A player's act of conflict or of war is a form of feedback. It represents feedback on performance from the same point in time or from the same region in the system. Other forms of feedback include: actions taken at an earlier point in time and/or actions taken in other regions in the system. The fate of Libya and its leader Col. Muammar el-Qaddafi, for instance, happened in the Middle East during 2003 but still intensively influenced North Korea, a country from the Far East, during its 2018 negotiations with the United States.¹¹⁵

Type of Reality that Will Emerge. In the category of circuitous but intended consequences, the type of reality that will emerge, or the kind of complex effects of international relations that will arise, is the product of: actions taken in a nonlinear context and circumstance in which negative or positive feedback is in play, which will result in the emergence of a new reality that was expected and directed to emerge by the actor that initiated the actions.

In general, results in international relations emerge from multiple connections among variables. However, when a situation of circuitous but intended outcomes emerges, one can track back to a key actor at its root who circuitously caused and can be held responsible for the resulting outcomes.

With these kinds of complex effects of international relations of circuitous but intended outcomes, the types of reality that will emerge are those that were purposely intended and achieved. This means that the player who is taking the action is causing intended consequences. The effect would actually be in direct consideration of the initiator's goal or desire, but at the same time it would be circuitously achieved.

Conclusions

As this chapter demonstrates, the direction of complex effects of international relations can be understood as follows. First, when dealing with unintended consequences, the outcomes can be reversed, as is represented by rebound results, or they can mistakenly cause spillover effects, as is represented by the concept of derivative products. Second, when dealing with intended

consequences, outcomes can also purposely be achieved, as is represented by circuitous but intended outcomes.

The mechanisms of international relations interact in clear, though complicated ways, and the international system is getting more complex day by day. Among international outcomes that occur in this complicated scene are mostly phenomena that cannot be explained by the deterministic Newtonian rules, which are popular and prevalent among many international relations scholars.

The complex-causal mechanism that has been developed is about dealing with the fundamental and dynamic changes in the real world of international relations. That is how they function as adaptive agents reacting to one another in often unpredictable ways.

Before getting involved in the empirical analyses of the case studies it is important to differentiate between immediate and long-term consequences, as every action has both. The consequences that follow directly after the action may be the most obvious, but an action can continue to produce consequences for a long time after the initial action. In addition, these consequences may mix and merge with the consequences of otherwise unrelated actions, resulting in a ripple effect with waves of more distant consequences emerging.

By definition, these distant consequences are different from their immediate counterparts in two ways. First, they occur later in time and must be spatially distant. Second, they may also be functionally distant. As consequences create waves and ripples of other sets of consequences these will seem quite different from the initial action. Time and distance may mean they will bear little resemblance to the action that caused them.

As far as the application of the complex explanation and the complex-causal mechanism that is presented here is concerned, these conclusions mark only the beginning. It must be clearly understood that the general understanding of complexity that was developed here does not supply a complete description of any specific complex system. Especially not, for sure, a description of the complex system of international relations, which include both linear and complex effects of international relations, as is presented in the following figure.

The discussion up to here completes the major analytic and theoretical basis of the book. In chapter 1, the theoretical framework and main concepts were developed as a basis. Chapter 2 went into greater depth, presenting a typology of the complex effects of international relations. Chapter 3 went

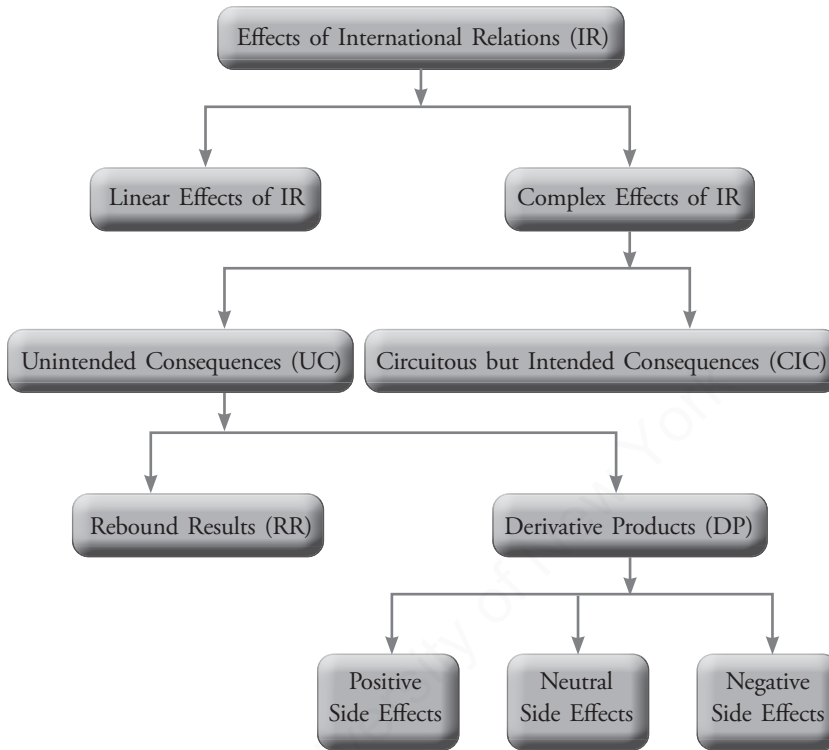


Figure 3.2. Effects of International Relations—Linear and Complex.

on to link the many causal factors of the different types of complex effects. Chapter 3 also introduced the concept of the complex-causal mechanism to explain rebound results and derivative products in the realm of unintended consequences, and circuitous but intended outcomes in the realm of intended consequences.

We now have the basic theoretical tools to proceed through a variety of case studies and to examine them in terms of their classification within types of complex effects of international relations. Since international relations are complex, a clear description of what is happening is not easy. If something is too complex to be grasped as a whole, as international relations definitely are, it tends to be more effective to divide the issue into units to be analyzed separately.

I will now turn to analyzing six case studies from Middle East history during the Cold War era, 1945–90, which deal with the various complex effects of international relations, guided by the complexity toolkit and the complex-causal mechanism of international relations presented and developed above.

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