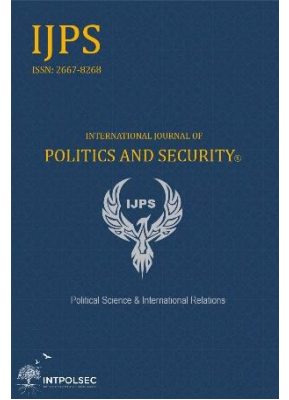


International Journal of Politics and Security (IJPS)

ISSN: 2667-8268

<https://dergipark.org.tr/tr/pub/ijps>



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Source / Kaynak: International Journal of Politics and Security (IJPS) / Vol. 4 / No. 1 / May 2022, pp. 1-57.

DOI: 10.53451/ijps.1020204

Date of Arrival : 07.11.2021

Date of Acceptance : 30.12.2021

To cite this article:

Ariba, Mariam. "The Positivity of Peace Intra-and Inter-State: Strategizing the Balance of Peace-State in Multi-Level Conflict Management Approach". *International Journal of Politics and Security (IJPS)*, Vol. 4, No. 1, 2022, pp. 1-57, DOI: 10.53451/ijps.1020204.

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The Positivity of Peace Intra-and Inter-State: Strategizing the Balance of Peace-State in Multi-Level Conflict Management Approach

Mariam Ariba *

Abstract

This study develops two hypergame-models of intra-and inter-state conflicts within one coherent conflict management approach, modeling conflicts while considering the complexity of real-world circumstances. The aim is to apply theories of IR and media fields, composing a merged diplomatic-strategic approach for achieving peace rather than war within and inter-nations. Using the hypergame theory as a theoretical-methodological basis for modeling, we stand firmly at some equilibria positions, specifying the modality of achieving positive peace as a “win-win” formula nationally, regionally, and globally, thence strategizing a balance of peace-state of intra-and-inter-state conflicts. It can be argued that this study’s (Positivity of Peace Hypergame Model) ’s fundamental equilibrium is equivalently equal to the dual formula of (Global Hegemony of Peace Versus Realist Hegemony of War’s Inevitability) as proved strategically, applicably through our provided equations.

Keywords: *Hypergame Theory, Post-structuralism, Culture Industry, Constructivism, Nash Equilibrium*

Devlet İçi ve Devletler Arası Barışın Olumluluğu: Çok Düzeyli Çatışma Yönetimi Yaklaşımında Barış-Devlet Dengesini Stratejikleştirmek

Özet

Bu çalışmada devlet-içi ve devletler-arası çatışmaların analizinde tutarlı bir çatışma yönetimi yaklaşımı elde etmek için, gerçek yaşamda koşulların karmaşıklığı da göz önünde bulundurularak iki hipergame modeli geliştirilmiştir. Amaç ulus-içi ve uluslar-arasında, savaş yerine barışı sağlamak için Uluslararası İlişkiler ve medya alanındaki teorileri kullanarak bileşik bir diplomatik-stratejik yaklaşım geliştirmektir. Bu amaca yönelik olarak çalışmada, ulusal-bölgesel ve küresel planda devlet-içi ve devletler-arasında çatışmalarda kazan-kazan formülüne dayalı dengeli, pozitif barışa ulaştıracak bir modelleme elde etmek amacıyla teorik-metodolojik bir temel olarak hipergame teorisi kullanılmıştır. Makalede yer alan denklemlerle, çalışmanın stratejik olarak uygulanabilir olduğu ve çalışmanın temel dengesinin (Pozitif Barış İçin Hipergame Oyun Modelinin), (Barışın Küresel Hegemonyasına Karşı Savaşın Gerçekçi Hegemonyasının Kaçınılmazlığı) ikili formülüne eş değer olduğu ortaya konulmaktadır.

Anahtar Kelimeler: *Hiper Oyun Teorisi, Post-Yapısalcılık, Kültür Endüstrisi, İnşacılık, Nash Dengesi.*

1. Introduction and Hypergame Theory

Hypergame theory, which we use as a theoretical-methodological foundation of our built models, represents comprehensively an advanced development of the precedent game theory applied to a more complicated international arena. Game theory is considered a science

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Date of Arrival: 07.11.2021– **Date of Acceptance:** 30.12.2021



of modeling the strategic behavior of decision-makers interacting with one another, which has been used as a methodological tool for analyzing the actors' interactions in the international relations (IR) discipline for more than 50 years. Applications, extensions, modifications, and illustrations of game-theoretic models began to appear in the security studies literature shortly after publishing John Von Neumann and Oskar Morgenstern's *Theory of Games and Economic Behavior* in 1944 by Princeton University Press¹. It has been distinguished between four waves of the game theory emerging in IR over the past years before becoming an indispensable theoretical method in modeling interactive decision-making in this discipline. For Zagare and Slantchev (2021)², these four waves are a) the first generation, which was developed during the Cold War represented in the zero-sum games³; b) the second wave was that of reaching the so-called Nash Equilibrium⁴; while c) the dynamic games described in extensive form⁵, and those of incomplete information⁶ were the significant characteristics of the third wave, besides introducing refinements of Nash Equilibrium; and ultimately, d) the game theory emerged as a major theoretical method in IR during the fourth wave.

After over three decades of building the game theory foundation, the *hypergame theory* term appeared in the 1970s, explaining a situation in which players in a game may have different views of the conflict so that perceiving a game model in a differentiated way from one another in accordance with each player's own perceptions, beliefs, and interpretation of reality. This advance suggested that the second (i.e., hypergame) became an extension to the first, game

¹ Frank. C. Zagare, *Game Theory, Diplomatic History, and Security Studies* (United Kingdom and New York: Oxford University Press, 2019), 44-53.

² Frank. C. Zagare and Branislav L. Slantchev, "Game Theory and Other Modeling Approaches," *Oxford Research Encyclopedias* (International Studies Association and Oxford University Press), (2021): 1-38. <https://doi.org/10.1093/acrefore/9780190846626.013.401>.

³ In zero-sum games, there are either winners or losers in the game. A player wins at the expense of the other where there is no domain of cooperation by signing an agreement or contract between players in such games.

⁴ Nash Equilibrium is the most *optimal* point reached in a non-cooperative game when all players use their strategies simultaneously, achieving the *best response* made by each to the other's strategy choice with the highest (and stable) payoffs obtained by both at the end of this game. Under this position, no one may have the incentive to deviate. Therefore, this equilibrium does not depend on each player(s)'s own rationality only but on that of the other player(s) as well.

⁵ The dynamic game is a condition wherein each player observes the other(s)'s moves, conditioning their future actions on what the other(s) chose first. While the extensive form of game theory best resembles a (decision) tree composed of branches and nodes. The game starts from the first branch's node by player A, for example, making the first move. Then, from the player B branch's node, the second move is made sequentially. This game lasts until reaching the tree's last branch's node, ending the play with payoffs gained by all players, or starting a sub-game.

⁶ In *incomplete* information games, no player exactly knows what the other player(s)'s set of actions or strategic preferences are, the future choices of this/these player(s), or/and the expected payoffs at the end of the game. This game is thus played under a (high, mid, or less) level of *uncertainty*.



theory. Given that the game-theoretic model is being built upon one situation (in real-life circumstances or a predicted one) through playing only one game, the “hypergame theory decomposes a single situation into multiple games... allowing for an unbalanced game model that contains a different view, representing the differences in each player’s information, beliefs, and understating of the game”⁷. So, the hypergame model does not address a specific set of strategic preferences unchangeably and correctly perceived, completely or incompletely, by other players along with a coherently single-situation game _ the case of game-theoretic models. Instead, different views of either perception/misperception or deception held by each player in the hypergame model allow for multiple games to occur, with various strategic preference vectors perceived differently by a player about his opponent(s) in the game _ where the in-correction and faulty about estimating the opponent(s)’s preferences could exist. In sum, those multiple games emerge because of existing *unlike* perceptions for every player about reality _which may be true or not, as well as different understandings and interpretations of the game itself.

Ultimately, the player in the hypergame does not depend only on his own perceptions of the game _ that may be misperceptions or an effect of intentional deception by the opponent, in calculating the outcome but on his belief of how the opponent perceives this game as well, since the hypergame model may contain multiple games according to each player’s perceived (hyper)game. So, “the standard rationality arguments from game theory are replaced (in the hypergame models) by knowledge of how the opponent will reason”⁸. Moreover, a player can raise his utility relying on having unknown information to the other player(s) due to the misperception or intentional deception practiced by his own. Here, the “accuracy of the perceived games depends on available information... (nevertheless) the hypergame model more accurately provides solutions for complex theoretic modeling of conflicts than those modeled by game theory and excels where perception or information differences exist between players”⁹.

⁷ Nicholas S. Kovach, Alan S. Gibson and Gary B. Lamont, “Hypergame Theory: A Model for Conflict, Misperception, and Deception,” *Game Theory* 2015, no. 1 (2015): 4.

⁸ Ibid, 5.

⁹ Ibid, 1-6.



2. Methodology of Research

a. The study aim: The key objective of this study is to employ developed models of the applied hypergame theory for the conflict settlement or/and resolution purpose within and between nations where complex world circumstances exist. Thence, under conditions of *uncertainty* regarding how the opponent reasons and how it perceives the game or the reality of conflict, we introduce two hypergame-models, describing the deception games in the first place and the misperception ones secondly. Therefore, this work contributes to bringing global, regional, and national security and peace into its proper status inter-nations and within them.

b. The built models: Based on using hypergame theory as a methodology, we present a multi-level conflict management approach's first model: the (Positivity of Peace Hypergame Model "PPHGM"), which is composed of strategic interactions occurring on regional, national, and global levels, first, reflecting the first entire hypergame of the model or $(HG)_1$. Then, the (PPHGM) addresses other strategic interactions on global, regional, and national levels, consecutively, representing its second entire hypergame or $(HG)_2$. That approach's second model, the (Balance of Peace-State Hypergame Model "BPSHM"), comes after, including two entire hypergames: the first or $(HG)_1$ resembles the case of intra-state conflicts, whereas the second or $(HG)_2$ simulates another of conflicts inter-state.

c. Hypotheses: 1. The (Positivity of Peace Hypergame Model)'s central hypothesis is: "The binary formula of (Global Hegemony of Peace Versus Realist Hegemony of War's Inevitability) is the equilibrium or solution point of a positivity of peace developed relevant-hypergame model." 2. The (Balance of Peace State Hypergame Model)'s hypotheses are; a. "A balance of peace-state within nation-states is initially achieved through constructing a reconciliation and mutually utility-maximization-oriented-merged diplomacy bridging major conflicting parties socially, politically, and diplomatically at any phase during and post-intra-state conflicts." b. "A balance of peace-state between nation-states is initially achieved through constructing a reconciliation and mutually utility-maximization-oriented-merged diplomacy bridging major conflicting parties diplomatically, politically, and socially at any phase during and post-inter-state conflicts."

At last, this study is divided into five sections. In the parts to follow this introduction, the second section concentrates on relating applied theories of international relations and media



fields to a method of practice strategically, representing the theoretical roots of the first hypergame-model (i.e., the “PPHGM”) mainly and of the second model (i.e., the “BPSHM”) partially. Consequently, the third and fourth sections discuss the multi-level conflict management approach’s first and second hypergame-models, respectively, and their (HG)₁ and (HG)₂. The last part comes sequentially, suggesting the general conclusion.

3. Theory and Application: The Multi-Level Conflict Management Approach’s Theoretical Roots

Building a model of possible positivity of peace and another of the balance of peace state relying on the *hypergame theory* as a methodological foundation, we set the following theoretical application merging some IR peace agendas with other media approaches, aiming at achieving sustainable peace in any disputing region from a combined national, regional, and global scope. This section thus introduces the practice of some applied theories, representing the theoretical roots of the (Positivity of Peace Hypergame Model) essentially, and the (Balance of Peace State Hypergame Model) in part, where these models are the constituent pillars of the study’s multi-level conflict management approach.

3.1. First: An Applied Post-Structuralism Peace Approach; Neo-Post-Structurization of Truth

The post-structuralist agenda of peace imposes its inclusiveness on the peace discourse constructed within any attempt of building peace at all levels. Combining the “power, knowledge, elite, discourse, truth, discursive formations, ideology, and hegemony” concepts of Michel Foucault in his 1989 book¹⁰ “*The Archaeology of Knowledge*,” who is a leading figure of post-structuralism, with the “mass-culture products” conceptualization in the Theodor Adorno and Max Horkheimer’s culture industry theorization of the media’s political economy¹¹, we assume that a *comprehensive* peace agenda of our conflict management approach applies firstly through a “*neo-post-structurization of truth*,” shaped by these stages:

¹⁰ Michel Foucault, *The Archaeology of Knowledge* (London: Routledge, 1989).

¹¹ See “Max Horkheimer and Theodor W. Adorno, “The Culture Industry: Enlightenment as Mass Deception,” in *Media and Cultural Studies: Keywords* (Revised Edition), ed. Meenakshi Gigi Durham and Douglas M. Kellner (USA, UK and Australia: Blackwell Publishing, (2001, 2006)), 41-72; Theodor W. Adorno, *The Culture Industry: Selected Essays on Mass Culture*, ed. J. M. Bernstein (London and New York: Routledge, 1991); and also, Dan Laughy, *Key Themes in Media Theory* (England: Open University Press, 2007); Nicholas Garnham, “From Cultural to Creative Industries: An Analysis of the Implications of the “Creative Industries” Approach to Arts and Media Policymaking in the United Kingdom,” *International Journal of Cultural Policy* 11, no. 1 (2005): 15-29.”



a. Re-producing the (ongoing) *conflict-knowledge* within the elite or/and media discourse nationally/regionally to be in line with conflict *de-escalation*. This is the “*discourse seeds cultivation*” stage.

b. The ideology of mediators in previously and present convened-peace processes is assumed to shift from its “*semi-covertness*” past positions into openly *dominant* ones in a neo-media discourse on national and regional levels, spreading both the *priority* and *inevitability* of peace exerted efforts, highlighting the successes achieved and ignoring the failure’s aspects. This is the “*fledgling positively peace-hegemony*” stage.

According to Gramsci’s hegemony theory¹², hegemony is a power achieved by force or coercion and consent. That occurs when the consensus over the political authority’s accumulated power, domestic and foreign politics, suppressive apparatuses (i.e., police and army), etc., are being agreed on *voluntarily* by the ordinary individuals in society. Thence, the Althusser’s mentioned *ideological state apparatuses* such as churches, schools, and media¹³ play a crucial role in getting that ‘*mass mandate*’ or the mass public consent for achieving an *expansive* hegemony for the political authority. The hegemony system that the ruling (dominant) class or political society disperses not only politically, but economically and culturally, allowing its *absolute* control over diverse structures of the state’s existing system, representing the subaltern groups’ views and aspirations so that getting the civil society’s individuals’ consent as a function of hegemony.

Based on that, under our modeling’s stages, the traditional conception of (expansive) hegemony is used alternatively to seek *not* a “*political power*” within a state but a “*peace-power*” in national and regional societies through the political elite(s)/authority efforts of “*soft coercion*” first and the civil society actions of “*consent/adoption*” publicly second.

¹² See “Steve Jones, *Routledge Critical Thinkers: Antonio Gramsci*, ed. Robert Eaglestone (The USA and Canada: Routledge, 2006).”

¹³ Louis Althusser, “Ideology and Ideological State Apparatuses (Notes Towards an Investigation),” in *Media and Cultural Studies: Keywords* (Revised Edition), ed. Meenakshi Gigi Durham and Douglas M. Kellner (USA, UK and Australia: Blackwell Publishing, (2001, 2006)), 79-87.



c. The notion of Foucault's disciplinary society¹⁴ in Panopticism¹⁵ plays a significant role here, but reversely, in changing the behavior of conflict sides. The change that occurs by employing the mass media power to create an all-seeing eye of a panopticon *public guardian* over conflicting parties *imprisoned* in a social circle only includes acceptable *peace* behaviors, excluding those unacceptable ones. That is being achieved in a usual manner of media functions mechanisms, by objectifying the subjects of peace processes in a peace-oriented-media discourse operated by the *elite(s)* (i.e., the ruling/dominant classes in society) and internalized by all individuals or the public eye of the region's societies, creating '*reinforcing*' knowledge about these subjects. The last express a phase of "*mass-publics-oriented-disciplinization of the conflict parties*" in a peace process. Also, it is considered the "*peace-public flak*" stage. Prominently, if it is one conflict party, political authority, besides being the *observer* in a panopticon (national/regional) society, becomes the *observed* with other conflict sides within peace process *cells* under an all-seeing eye's *peace-guardian* society. The conflict parties' behaviors thus are assumed to *meet* the expectations of a '*positively peace-hegemony*'-instilled-nation(s).

d. Transforming a "*fledgling positively peace-hegemony*" into an '*omnipotent hegemonic state*' reinforces the success of the previous stage, which is an aim of this extended phase. That is to say, under a global/regional governance mechanism, re-producing effectively "*peace process-directed-mass-cultural products*" (i.e., popular music, songs, films, and advertisements) is assumed to be facilitated on all levels for the production and exportation to nations/regions concerned. So, the consumers of this supposed "*neo-mass-culture industry*" of mass media become oriented towards adopting hard issues of politics, history, peace, and war _ instead of shifting the mass audiences to consumers occupied by the capitalist classes ideology-serving advertisements' products/commodities (e.g., the recent version of cellphones, or the new shampoo good), promoted through the mass-culture products industry. Furthermore, having the public eye to observe *peace trajectories* continuously, creating an *omnipotent peace-*

¹⁴ Michel Foucault, *Discipline and Punish: The Birth of the Prison*, trans. Alan Sheridan (New York: Pantheon Books, 1977); and see also, Julie Leth Jespersen, Anders Albrechtslund, Peter Øhrstrøm, Per Hasle and Jørgen Albretsen, "Surveillance, Persuasion, and Panopticon," *PERSUASIVE 2007*, LNCS 4744 (2007): 109-120.

¹⁵ Foucault (1977) sees Panopticism as a general principle of political anatomy where the relations of discipline occur through an existing system of ordinary citizens being controlled and therefore governed by the political authority that makes them a subject of continuous *surveillance* (Foucault, *Discipline and Punish: The Birth of the Prison*, 208-216), simulating Jeremy Bentham's 1791 panopticon prison notion of an all-seeing eye, but rather in an open panopticon society.



hegemonic state, necessitates the *dependence* on that neo-mass-culture industry more than relying on a broadcasting bulletin or news shows.

Using many conventional and digital media outlets, the *peace-hegemony* message conveying supporting norms and values of conflict settlement/resolution/transformation to widespread classes of (conflict) regional societies could take the shape of any medium regardless of being contemporary modern, or future high tech-advanced. Since *the medium is the message* according to the Canadian philosopher Marshall McLuhan's main axiom of *media theory* developed in the 1960s, and the *message* here is *the peace-medium*, then *the "medium is the peace."* In sum, that is the "*omnipotent peace-hegemonic state*" stage of this applied post-structuralism peace approach.

e. Ultimately, the outcome of the production and re-production processes of the "discourse, truth, knowledge, power orientation, peace mediators' ideology, neo-mass-culture industry, and peace-hegemony" composes what we called "*peace-broker discourse.*" This stage is an accumulated output with a *repetitive* frame in traditional and digital media platforms actively politically and socially, and it is long-term. The following strategies-paradigm of the applied post-structuralism peace approach and culture industry summarizes the mentioned above stages:

{{Discourse seeds cultivation → Fledgling positively peace-hegemony → Conflict parties' disciplinization & peace-public flak → Omnipotent peace-hegemonic state
→ Peace-broker discourse (Total Outcome)}}}

3.2. Second: From a Constructivist Peace Approach Perspective

The persuasion power practiced during a peace process course is crucial in this conflict management approach by employing well-known rehabilitation, socialization, and reconciliation strategies. The *rehabilitation* programs of *aggressive* non-state actors, such as terrorist groups/organizations, are *credibly* applicable here. These programs target a. the arrested members in prisons by influential characters, preachers, or/and previous-spiritual leaders of the same (terrorist) group/organization, working on changing a pro-conflict mentality or misguided labeled (terrorist) behaviors; or/and b. the concentration on dealing with the conflict parties' communities in a concerned society through some oriented-media programs or other '*pacific*' (inter)state-policies formulated on the same lines. On the other hand, during and



post-conflict stages, the socialization process focuses on integrating (non-) state actors of some/all conflict parties as partners or free persons within (national/regional) society, involving them in governmental and private institutions across/inter-state. Comparingly, the reconciliation process is achieved through signing a peace deal, pact, accords, agreement, etc., between conflicting sides, tackling significant causes of conflict partially or entirely, through convened peace talks officially or unofficially. Having this process (i.e., reconciliation) third, after the rehabilitation and socialization ones, consecutively, or initiating the constructivist trajectory by bringing it about firstly, depends *more likely* on how far every party of dispute may trust the other in future joint-political/diplomatic steps taken by each altogether. In general, the more the trust estimates' credibility and certainty among conflict parties are, the more that each prefers the reconciliation choice first to that of rehabilitation or/and socialization, and vice versa. This constructivist approach's phases are long-term.

At last, employing the precedent strategies tends to be ascertained regarding changing both conflict parties' behaviors coinciding with dispersing the peace process(es) norms and its comprehensive sustainability standards within/between nations. In this context, media discourse role as a mass persuasion power, considering the media one of the ideological state apparatuses¹⁶, is also significant in facilitating all/some parties' harmonious involvement in the (inter-)society's institutional structures during-and post-conflict stages, as well as providing them a popular acceptance in the pursuit of promoting the rehabilitation, socialization, or/and reconciliation process' efficiency.

3.3. Third: An Extended Peace Approach; Towards Mass-Ideological Rehabilitation & Neo Constructivism

While implementing a peace process facilitated by the interference of third parties, some intermediate variables may intervene in an opposite line, spoiling a reached peace agreement, for instance, or this process course at any other stage. Those factors or variables can mainly be the following¹⁷: i. The actors' interests (e.g., disputed territories, political ends, and natural

¹⁶ Althusser, "Ideology and Ideological State Apparatuses," 79-87.

¹⁷ See "Edward Newman and Oliver Richmond, "Obstacles to Peace Processes: Understanding Spoiling," in *Challenges to Peacebuilding: Managing Spoilers During Conflict Resolution*, ed. Edward Newman and Oliver Richmond (The USA, New York: United Nations University Press, 2006), 1-19; Ertan Efeğil, *Devlet-İçi Çatışmalar ve Çatışma Yönetimi (Intra-State Conflicts and Conflict Management)* (Istanbul: Gündoğan Yay, 2019); and, Michael J. Butler, *International Conflict Management* (United Kingdom: Routledge, 2009)."



resources supplies), where the conflict actors might represent state actors, (international/regional) foreign actors, or/and non-state actors like terrorist groups. ii. The political economy of conflict (i.e., the accessibility to natural resources such as water, oil and natural gas, diamond, and minerals). iii. The diaspora groups as peace spoilers or an international opposition to peace process arrangements, adopting anti-peace propaganda or/and providing financial support for the conflict continuity. iv. The conflict motives: these could be ethnic, religious, national, sectarian, ideological, or cultural. v. The conflict incentives (i.e., the war/conflict gains, or/and future utility).

Many counter-impact efforts of those peace-spoiling behaviors' intervening variables manifest increasingly for maintaining the conflict management path's achievements/successes, suggesting that:

The media discourse roles within our 'applied post-structuralism and culture industry' peace approach entail the *capability to* neutralize those variables that cause/express the conflict settlement/resolution's spoiling behavior. Still, it is worth noticing that the benefits of the conflict/war continuation for the peace spoilers (e.g., individuals, private or public groups, (non)state-actors, or/and superpowers) sometimes become higher than the cost accumulated from initiating the conflict/war itself or those gains obtained by participating in or implementing a peace process.

Media diplomacy¹⁸ operating through political and media discourse generally, and the discursive formations within the elites' spoken out discourse, in particular, practiced in favor of conflict settlement/resolution, is seen as an *expansionist* way in functions under this frame. It *reflects* obstacles to the masses raised by those intervening factors and *overcomes* them by attempting to achieve *breakthroughs* in the conflict trajectory. Furthermore, empowered by a 'positively peace-hegemony'-instilled-nation(s), the media diplomacy, in this context, can transform the war/conflict circle to run conversely by *directly/indirectly* forcing making concession(s) for the public interests (i.e., the common good) or what is best described as '*peace-hegemony-oriented-national interests*.'

¹⁸ See "Dmitri P. Gavra and Alyona S. Savitskaya, "Mass Media in Interstate Conflicts: Typological Model "Peace-Conflict Journalism Multidimensional Approach"," *Russian Journal of Communication* 4, no. 3-4 (2011): 251-265; and, Eytan Gilboa, "Diplomacy in the Media Age: Three Models of Uses and Effects," *Diplomacy and Statecraft* 12, no. 2 (2001): 1-28."



If war served to achieve national interests of self-interested states according to Realism's fundamental axiom, then it was the perception of the Realists that led them to imagine the international system actors (i.e., nation-states) as the system-competitors, self-helpers, and conflicting power-acquisitors, leading decision-makers to act in same lines for decades to come, excepting those liberal states that opt for the democratic *perpetual-peace* as a regional institution *dominating* their inter-relations in Europe in the aftermath of World War II by the 1950s through an economic unity first followed by a political one (i.e., European Union). So, constructing the *peace institution* at the core of every state-actor perception instead of that '*manufactured*' war-based-conflictual reality of Realist thought about the international system is assumed to transform a chaotic structure of system defined by anarchical order into an organized structure of a semi-hierarchical system in which global "*hegemonic*" governance has both "*(future) power and force*" to impose consent *voluntarily* of peace rather than war, acquiring global mass-consensus over such a progressive advance.

The outcome of this extended approach is that such exerted efforts by global *hegemonic* governance combined with its media mechanisms and tools regionally and globally, which necessitate medium-and long-term periods, gradually achieve *breakthroughs* in conflicts around the globe, and then *global hegemony* of peace, coinciding with diffusing the *peace-broker ideology* within the relevant discourse and the global re-production of *neo-mass-culture products*. Here, this explained course predictably strategizes what we called the "*mass-ideological rehabilitation*" as total output, targeting *not* some/all conflict parties and their communities under this approach, but rather the '*global ordinary publics*.'

Overcoming a possible negative impact of those intermediate variables on the quality of a peace process resulted might further occur by employing the media discourse when operating in a state(s) affected by the war or conflict through these three processes: i. *re-interpreting* and representing any zero-productivity variable from positively peace process-focused-news framing eye; ii. Providing *priority* of events satisfy the '*peace-broker ideology and discourse*' purposes, as to be *perceived* approximately symmetrically in a sequential process of agenda-setting within the publics' consciousness; and iii. Activating *priming* effects through changing those publics' standards used to make political evaluations, rebuilding their judgments regarding the conflict/war and its parties, and future peace arrangements taken intra-or/and inter-state in a way to be inclusive of the other conflict sides. The last process plays a key role



in getting the publics' support to a "neo-hegemony of peace versus current hegemony of war's inevitability" formula.

The "*inevitability of war*" notion traces its roots from the Realist thought, particularly from the first developed Classical Realism school to which Hans Morgenthau is a founding father through his 1948 book¹⁹ "*Politics Among Nations: The Struggle for Power and Peace.*" Classical Realism considers war or conflict as a natural outcome or product of an aggressive and flawed human nature operating in an ungoverned and therefore insecure global environment²⁰ entails suspicion-based-inter-state relations. On the other hand, Structural Realism which *Kenneth Waltz* founds through his book "*Theory of International Politics,*" published in 1979²¹, sees the war or conflict as the accumulated outcome of a security dilemma dominating the state-to-state relations in an international system defined by its anarchical structure due to existing no central authority. Here, each system's unit (i.e., the nation-state) seeking its own survival and self-interests in a self-help system based on mutual suspicion is forced to move to the rational choice of making alliances and building arming strategies aggregating power and acquiring more weapons for *declared* defensive reasons. However, that behavior threatens other states in the system, prompting them to act likewise, where the war or conflict occurs as a gradual outcome of such a domino effect.

In sum, if the war or conflict is not necessary, it is "inevitable" from both viewpoints, in terms of considering the flawed individual human nature in a world without government to restore security or impose peace, or the anarchical structure of a threatening international system. Under either argument, and mainly for the pretext of serving national/state-interests, the war's inevitability principle is seen cultivated in every individual's posture that became narrowed by the same narrowness of the nation-state frontiers, under which this individual must be ceaselessly *obedient* to a *constant state of war/conflict* within a *no longer* Hobbesian state, and therefore, Hobbesian world.

Since Thomas Hobbes, in his 1651 book "*Leviathan,*" defined anarchy based on perceiving a world without government or hegemon ruler to restore order or achieve peace

¹⁹ Hans J. Morgenthau, *Politics Among Nations: The Struggle for Power and Peace* (The USA, New York: Alfred A. Knopf, 1948).

²⁰ Michael Cox and R. Campanaro, *Introduction to International Relations* (London: University of London, 2016), 109.

²¹ Kenneth N. Waltz, *Theory of International Politics* (The USA: McGraw-Hill, 1979).



when a state of war of all against all dominates²²; at the same time, this perspective had prevailed during the seventeenth century when the nation-state's notion was still fledgling after the peace of Westphalia had achieved in 1648 among conflicting states and principalities of the European regional system, where the English Civil War was taking place along over one decade (1642-1651). That points out that Hobbes or any other like-minded philosopher of that era if witnesses our today's *absolute* order of having hegemon ruler with sovereignty (still) maintained by a way or another for preserving the Enlightenment thinker John Locke's (1632-1704) individual liberal rights of life, property, and liberty of a state of human nature (i.e., human rights), would be wondering the reason why the war is judged as a *necessity* _ if not a *means* of achieving peace intra-or-inter-state, as long global diplomacy institution and collective security organizations composed of nationally-hegemon state-actors became the alternative of Hobbes's perceived global hegemon (one) ruler/government. That is to say, the *singularity* of the Hobbesian world's ruler/government is contemporarily translated into a *multiplicity* of the same imagined hegemon one with like functions as well, in each nation-state within the global system. As an outcome, a "neo-constructivism vision" of a 'universal/global peace-hegemony' for conflict management might strategically be substitutional to a current (national/regional) hegemony of war institution as a means for achieving national interests, integrating Europe's liberal democratic peace-built-regional system as a piece of an analogical whole.

Ultimately, these strategies outline a paradigm of our "extended peace approach and neo-constructivism" as the following:

{ { *Capable* neutralization of peace spoiling behavior → Media diplomacy of '*peace-hegemony*'-oriented-national interests → Constructed *peace* institution, perceptions, and reality & Imposed peace-global mass consensus by global *hegemonic* governance

→ *Mass-ideological rehabilitation* of global publics (total output) →

Neo-constructivism of a "*global* hegemony of peace vs. Realist hegemony of war's inevitability" binary formula (extended output) } }

²² See Thomas Hobbes, *Leviathan*, ed. J. C. A. Gaskin (USA: Oxford University Press, (1651, 1996)).



3.4. Fourth: Coercive Diplomacy and Bargaining Conventional Approach

Succeeding in previous phases does not ensure initiating the bargaining strategies' course without using 'force' by some powers (e.g., the UN, US, and EU) first for coercing one or both conflict parties to accept mediation efforts and the diplomatic resolution. Although the Realism agenda of peace represents what so-called survival or victor peace²³ in which one wins at the expense of the other, using the coercive diplomacy means (e.g., imposing sanctions/tariffs, and threats), which lies in the Realism realm, by one or more coercion-practicing power in the short term, is seen indispensable for subjugating some/all conflicting sides to take part in a peace process. Moreover, the journalists as mediators may play a role in a pre-negotiation phase expressing *media-broker diplomacy*²⁴ during a conflict. Also, a conflict knowledge-based-debriefing process assumingly improves the performance of peacemaking and conflict resolution practice²⁵ on the one hand and the diplomatic resolve on the other.

Accordingly, the bargaining strategies such as; mediation, negotiation, and peace talks²⁶ are initiated once pressure is practiced over conflicting parties distinguished by involvement in peace spoiling behaviors²⁷ by mediatory deterrence-applying powers. Again, the co-optation and integration of all, rather the exclusion of some in peace talks, are considered social tactics followed for a sustainable peace process results at the end of the day. Here, power-sharing in a post-conflict stage²⁸ might appear as an exit for some intra-state conflict resolution tracks under these advantages; i. it is a security guarantee for all parties to commit an agreed-on peace settlement's terms after the conflict ends; and ii. it works on eliminating the peace spoilers' behaviors directed against a convened or implemented peace process. Furthermore, the power-

²³ See Oliver P. Richmond, *Peace in International Relations* (United Kingdom: Routledge, 2008).

²⁴ Gilboa, "Diplomacy in the Media Age: Three Models of Uses and Effects," 1-28.

²⁵ Jacquie L. Greiff, Matthew Graville Bricker, Philip Gamaghelyan, Margarita Tadevosyan and Shu Deng, "Debriefing in Peacemaking and Conflict Resolution Practice: Models of Emergent Learning and Practitioner Support," *Reflective Practice* 16, no. 2 (2015): 254-268.

²⁶ See "Butler, *International Conflict Management*; Claudia Hofmann and Ulrich Schneckener, "Engaging Non-state Armed Actors in State and Peace-Building: Options and Strategies," *International Review of the Red Cross* 93, no. 883 (Sep. 2011): 603-621; Efeğil, *Devlet-İçi Çatımlar ve Çatışma Yönetimi*; and, Richmond, *Peace in International Relations*."

²⁷ See "Marie-Joëlle Zahar, "Understanding the Violence of Insiders: Loyalty, Custodians of Peace, and the Sustainability of Conflict Settlement," in *Challenges to Peacebuilding: Managing Spoilers During Conflict Resolution*, edited by Edward Newman and Oliver Richmond (The USA, New York: United Nations University Press, 2006), 40-58; and, Newman and Richmond, "Obstacles to Peace Processes: Understanding Spoiling."

²⁸ See "Butler, *International Conflict Management*; Efeğil, *Devlet-İçi Çatımlar ve Çatışma Yönetimi*; and, Richmond, *Peace in International Relations*."



sharing mechanism taking the shape of participating in domestic constituencies, constituting political parties, or governmental coalition after internal conflict, is a core part of de-escalating this conflict intensifying level _ necessarily but *not* sufficiently for a peace trajectory's success, achieving each party's conflict interests through *absolute* gains depending on making the peace process benefits exceed the conflict/war's continuation cost for both. Agreeing with Hofmann and Schneckener (2011)²⁹, employing the bargaining strategies necessitates medium-and long-terms.

The expected equilibrium (solution) of witnessed conflicts occurs through our modeling coinciding with achieving the previous paradigms' strategies and combined approaches in alternately sequential roles, transforming any disputing region into a state of positive or win-win peace. Namely, it achieves an ideal-liberal peace in its abstract norms spread across political, economic, or/and social structures of a state-system and the inter-state one. Nevertheless, a complementary element is needed to effectively restore such civil peace, embodying the idea of an "International Mediators Team (IMT)."

3.5. Fifth: The (IMT) & "Collective Diplomacy" Principle

Towards conflict resolution exerted efforts' accomplishment, functions made by an (*International Mediators Team*) inarguably take place within our modeling. The (IMT), we assume, comprises *neutral mediation*³⁰ representatives of i. intergovernmental organizations (e.g., UN, and EU); ii. Inter-state regional organizations (e.g., the League of Arab States (LAS), the African Union (AU), and the Organization of Islamic Cooperation (OIC)); and iii. The nation-state(s) or entity affected by the war/conflict (SAW) _ which is the substantial theme of assigned peace missions. The (IMT)'s peace missions are assumed to be ascertained with dependence on precedent phases' strategies through these mechanisms: i. *Examination and debriefing*: focuses on examining the conflict's nature through interactive connectedness with representatives of (SAW), where the (IMT) pursues a debriefing process of previous/ongoing conflicts, accumulating further experience in peacemaking and conflict resolution practice. ii. *Publicization of the 'peace-broker discourse'* regionally within the conflict

²⁹ Hofmann and Schneckener, "Engaging Non-state Armed Actors in State and Peace-Building," 603-621.

³⁰ See Isak Svensson, "Who Brings Which Peace? Neutral Versus Biased Mediation and Institutional Peace Arrangements in Civil Wars," *Journal of Conflict Resolution* 53, no. 3 (June 2009): 446-469.



settlement/resolution context. iii. *Legitimacy and cooperation*: the (IMT) does not have the political power authorization means for coercing any conflict party for initiating negotiation or recognizing their presence as official mediators unless a majority votes do legitimize it in the UN's general assembly, while being suggested by one or more Permanent Five (i.e., the U.S, Russia, China, the United Kingdom, France) member, cooperating with any for the coercive diplomacy purposes. iv. *Bargaining initiation*: the (IMT) begins its mediation efforts following the legitimacy and cooperation's fulfillment tasks, down to conducting negotiations and peace talks between given conflict parties. v. *Non-militarization*: the (IMT) is not concerned with taking any military decisions or actions regarding one side or both parties of the war/conflict. At last, vi. the (IMT) performs (or reinforces) a '*monitoring function*' or '*surveillance*' mechanism upon the conflict parties overtly. It indicates that if any side deviated from the drawn course of a peace process, the (IMT) takes necessary (coercive) actions or issues acts, cooperating with some coercion-applying powers and employing mutually '*deterrence*' practices for getting an aggressor into discipline or repelling a *violating* behavior from affecting others. So, the very Panopticism scope of the "all-seeing-eye" generates not a manufactured disciplinary society only but above that a 'disciplinary region or disciplinary societies.' Thence, the (IMT) idea is an *amended* translation of the *collective security* principle _ if the latter meant a common security effort or war ensued by an inter-state coalition for deterring *undeterrable* aggressor or/and repelling a devastating international violation(s) made against others in the system. That is, the (IMT) reflects a notion of "diplomacy versus war-based-*collective* conflict management" on global, regional, and national levels, which we call the "*collective diplomacy*" principle.

4. The Multi-Level Conflict Management Approach's First Model: *The Positivity of Peace Hypergame Model (PPHGM)*

Under a multiple-games-based-hypergame model, each player in the game makes the strategy choices while a misunderstanding or incorrect information about the game's players, their strategic preference vectors, or/and their decisions made could exist. All players consider how other players reason, available information, and each one's beliefs and perceptions of reality for making those actions (decisions) of an *expected maximized utility's* perceived outcomes. So that what a player reasons about an opponent or the other(s)'s strategies and moves might be an effect of misperception or deception practiced by another. Accordingly, this



part explains our developed (PPHGM)'s two entire hypergames first and then outlines their equilibrium equations sequentially.

4.1. First: The Positivity of Peace Hypergame Model's Multiple Games

4.1.1. The (PPHGM)'s Main Assumptions and Hypothesis

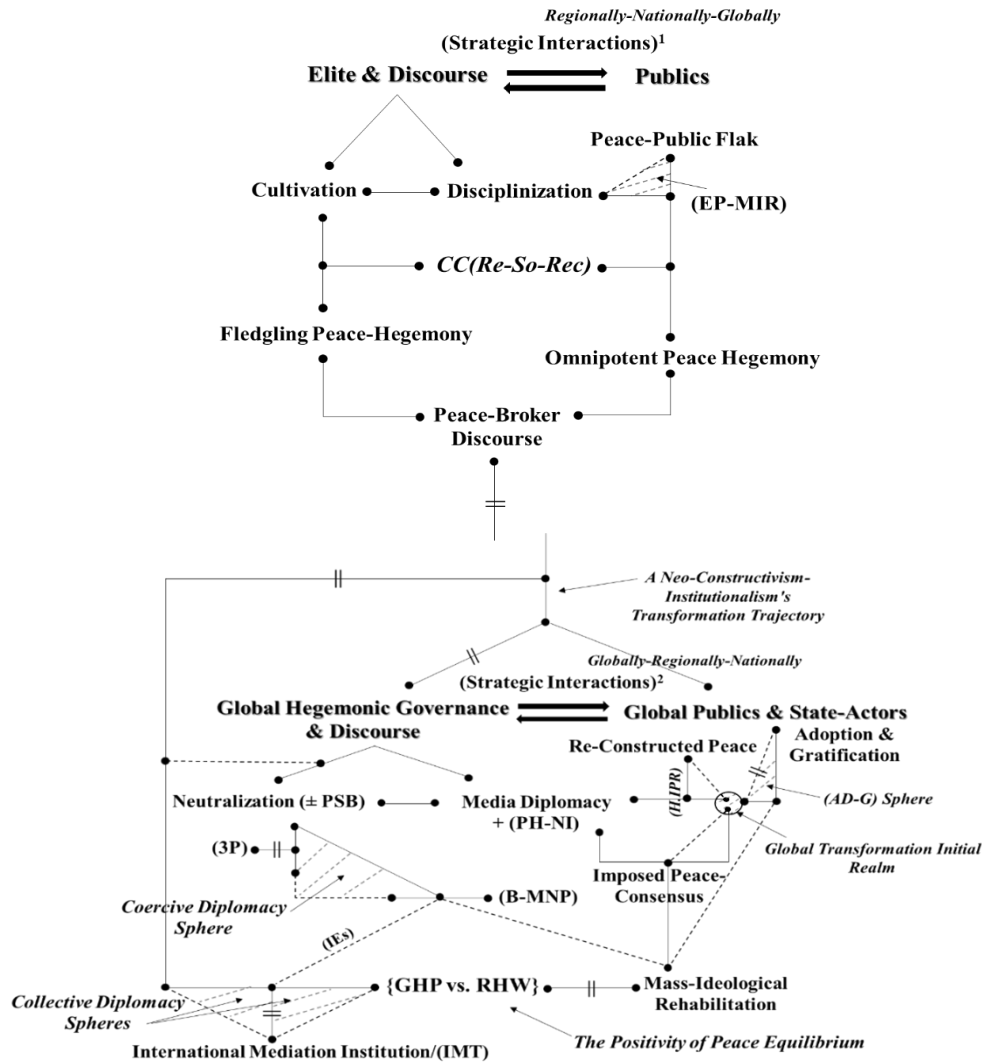
The (PPHGM) is a second-level hypergame composed of two main hypergames. In a second-level hypergame, one player or more knows that a hypergame is being played, where at least one player perceives that another player (or more) has misperceptions about the game. Including two second-level hypergames within this model, which are $\{(HG)_1, (HG)_2\}$, each entire hypergame contains those separate hypergames perceived by both players.

A given player's hypergame, in this context, is constituted out of this player's perceptions of what the other player(s)'s played game(s) is/are. Containing multiple different games, the (PPHGM) as an *unbalanced* hypergame-model emerge, representing different perceptions and views of each player about the game and the reality of conflict while being *rebalanced* to shape two spheres of strategic interactions where the entire $(HG)_1$ and $(HG)_2$ are being played with all players' views overlap when common knowledge of the conflict exists among them.

In the (PPHGM), any equilibria that could exist within each player's perceived hypergame are not needed in our model. Still, the players' strategic preference vectors, which appear by analyzing each one's hypergame separately, provide stable information for this modeling. That information is useful in determining how each actor reasons and what it believes about the game and reality, thus reasoning what the *entire* hypergames, $\{(HG)_1, (HG)_2\}$, equilibriums are. Accordingly, this stability analysis became a way of reaching a Positivity of Peace Equilibrium (PPE) of the entire (PPHGM), specifying how any may make decisions for acquiring *expected maximized utility* of *perceived* outcomes _ given that the strategic interactions of *rebalanced* models at an *overlap point* of common knowledge in either the $(HG)_1$ or the $(HG)_2$ determine those outcomes or the resulted equilibriums of each entire hypergame.



Figure 1:The Positivity of Peace Hypergame Model



Within this model, there are two players in the (Strategic Interactions)¹, which is the first played entire hypergame or the (HG)₁, and four players in the (Strategic Interactions)² that represent the second played hypergame or the (HG)₂. The actor I in both hypergames is the most *dominant* and *important* player, who has the advantage to play simultaneously or sequentially, taking one action (decision) or more at the same move, relying on having Actor II unknowledgeable, misperceived, or/and deceived about its strategic preferences, its played-game, and made actions. At the same time, Actor II in both hypergames, unknowing that a hypergame is being played, has misperceptions about the game and reality while playing in a sequential move as a reactor. So, the model is built on simultaneous-sequential move's nature. Furthermore, Actor, I has different preference vectors for each hypergame, playing those



strategies of expected utility only after reasoning how Actor II or any other actor reasons, and their beliefs and perceptions or misperceptions of the reality and the game. At last, this model is a *reductionist* one that dismisses equilibriums resulting within each player's perceived hypergame, utilizing analyzed theoretical approaches in IR and media discourse to achieve a Positivity of Peace Equilibrium (PPE). Through a process of including strategy-input and output, we outline some equations describing each entire hypergame's interactions at an overlap point of all players' views on one hand and the expected utility of *known perceived-or/and unknown*-resulted outcomes on the other, reaching the (PPE) consequently. In sum, through this modeling, we seek to prove the validity of this hypothesis: "The binary formula of "Global Hegemony of Peace Versus Realist Hegemony of War's Inevitability (GHP vs. RHW)" is the equilibrium or solution point of a positivity of peace developed relevant-hypergame model."

4.1.2. The (Strategic Interactions)¹ Hypergame: (HG)₁

a. The (HG)₁ Description: Misperception and Deception Games

In (HG)₁, there are two hypergames: (HG_{1.1}) and (HG_{1.2}). The HG_{1.1} (i.e., Actor I's perceived hypergame) includes i. the knowledge of a hypergame being played; ii. the strategic preference vector of Actor I (i.e., the Elite and Discourse), which is composed of: {(Cultivation); (Disciplinization); and (Conventional Constructivist strategies: Rehabilitation, Socialization, and Reconciliation)} mixed strategies. The HG_{1.1} contains {G_{1.2}} which is the game played by the other player, Actor II (i.e., Publics), as it is perceived by Actor I. Here, Actor I is aware of Actor II and perceives {G_{1.2}} as i. a game of incomplete information where Actor II has misperceptions about the game, or/and reality; ii. Actor II's preference vector includes overt strategies such as "obedience, compliance, and subordination;" iii. a game in which Actor II is a subject of Actor I's authority influence and a reaction to its taken moves. On the other hand, the HG_{1.2} (i.e., Actor II's perceived hypergame) includes i. unknowledge of existing a hypergame being played; ii. uncertainty about who the other player is, its strategic preference vector, and the moves or actions (decisions) made; iii. strategic preference vector composed of: {(Peace-Public flak); and (Omnipotent Peace Hegemony)} mixed strategies. In the HG_{1.2}, Actor II does *not* perceive the {G_{1.1}} or the game played by Actor I, who is the sole player with Actor II in the (HG)₁. At last, the (Strategic Interactions)¹ hypergame or the (HG)₁, merging the perceived hypergames of Actors I and II, where: i. $HG_{1.1} = \{G_{1.2}\}$, and $HG_{1.2} \neq \{G_{1.1}\}$; ii. $\{(HG)_1 = (HG_{1.1} + HG_{1.2})\}$, is being played at an *overlap point* of all players' views



and perceptions where a common knowledge of intra-and inter-state conflicts exists, constituting a *rebalanced* model of equilibrium positions of the entire $(HG)_1$ – while not considering any equilibriums reached within each player’s separately perceived hypergame.

b. The $(HG)_1$ Overlap Point’s Strategic Interactions: A (Rebalanced Model)₁

- Building the (PPHGM) upon real-world circumstances, the (Strategic Interactions)¹ hypergame begins with Actor I, which is the (Elite) (i.e., ruling/dominant classes) having the (Discourse) power, activating our applied post-structuralism and culture industry peace agenda by moving to the “(Cultivation) of media, political, and academia peace-discourse seeds” action. The $(HG)_1$ ’s moves are taken regionally, nationally, and globally, consecutively.

- Within the cultivated elite’s discourse, the ‘*mass-publics-oriented-disciplinization of the conflict parties*’ strategy *first* occurs with Actor I’s moving to the (Disciplinization) choice. Here, the Panopticism idea’s inversion by achieving the *observer society* principle to be an alternative, in this given context, to the notion of individually *observed society* or the panopticon society as an ordinary citizens’ open prison, does not occur but when a society’s existing superior watcher (i.e., ruling/dominant class(es), or political authority) allows for such relation’s shifting to be internalized within the discourse and translated into active social participation in digital outlets nationwide and zero-violence mass protests publicly.

- In that case, Actor I made both the first and second moves depending on Actor II’s lack of information about its strategic preferences deceiving this actor of whether those were its picked actions or unintentionally made by another (e.g., the media gates guards such as the content-producers, and editors).

- Misperceiving Actor I’s precedent actions and moving according to its beliefs and perceptions of reality which are built on that *deception* of the (Disciplinization) strategy, Actor II (i.e., regional, national, and global Publics) choosing to be the all-seeing eye public guardian of the conflicting parties, and as a rationality-guided-actor and subject to Actor I, moves to the (Peace-Public Flak “PPF”) strategic alternative, sequentially.

- An (Elite-Publics’ Mutually Impact Realm, “EP-MIR”) outcome arises when using in a sequential move the {(Disciplinization); (Peace-Public flak)} pair of strategies by Actor I and Actor II, respectively.

- Meanwhile, Actor I moves to the (Conventional Constructivist Strategies: Rehabilitation, Socialization, and Reconciliation, “CC(Re-So-Rec)”) choice, in a simultaneous-



move to that of picking the (PPF) action by Actor II, with the (Fledgling Peace Hegemony “FPH”) results as an outcome of using both the {(Cultivation), (Disciplinization), and (CC(Re-So-Rec))} strategies by Actor I and the (Peace-Public Flak) strategy by Actor II within the (EP-MIR) initial outcome.

- As an extension of its deception and misperception-directed-previous strategic preference _ the (PPF), the (Omnipotent Peace Hegemony “OPH”) choice is now the second strategic move of Actor II, coinciding with the latter’s *own* understanding and interpretation of Actor I’s all precedent actions. Consequently, the (OPH) becomes an outcome for both in (HG)₁, with a strategic payoff/utility of Actor I (*the deceiver*) only.

- The (HG)₁ ends by the (Peace-Broker Discourse “PBD”) resulting as an ‘*accumulated output*’ of Actors I and II’s strategic interactions, constituted out of aggregating the two outcomes: {(FPH); (OPH)} as input-shifted-output strategies (ISOS); see [Figure 1](#).

- Based on that, the (HG)₁’s equilibriums are these four outcomes, which are all output strategies of expected maximized utility _ as come later, considering that we determine, in this study, each resulted equilibrium when picking a number of strategies by two players or more as an outcome while the expected utility refers to a player’s payoffs of those resulted outcomes:

- i. The (Elite-Publics’ Mutually Impact Realm) equilibrium, an unperceived and unknown outcome for both actors.

- ii. The (Fledgling Peace Hegemony) equilibrium, a perceived and known outcome for both players _ where the (FPH) is the first of (ISOS) within the (PBD) accumulated output.

- iii. The (Omnipotent Peace Hegemony) equilibrium, a perceived and known outcome for Actor I (i.e., the deceiver) and unperceived and unknown outcome for Actor II (i.e., the deceived) _ where the (OPH) is the second of (ISOS) within the (PBD) accumulated output.

- iv. The (Peace-Broker Discourse) equilibrium, an outcome unknown for the misperceiving Actor II and a known and perceived for the correctly perceiving Actor I.

4.1.3. The (Strategic Interactions)² Hypergame: (HG)₂

a. The (HG)₂ Description: Misperception and Deception Games

Including multiplied actors and interactions compared to the (HG)₁, the (HG)₂, or the second played entire hypergame of the (PPHGM) we named the (Strategic Interactions)². In the (HG)₂, there is one perceived hypergame by each player; these players are: Actor I (i.e., the Global Hegemonic Governance & Discourse “GHG-D”), Actor II (i.e., the Global Publics &



State-Actors “GP&SA”), Actor III (i.e., the Pressure-Practicing Powers “3P”), and Actor IV (i.e., the International Mediation Institution “IMI,” or the International Mediators Team “IMT”). The $(HG)_2$'s four hypergames are:

a) *The $HG_{2,1}$*

- The $(HG_{2,1})$ is Actor I's perceived hypergame within the entire “ HG_2 ,” which includes a. the knowledge of a hypergame being played; b. a strategic preference vector composed of $\{(\pm PSB); (MD-PHNI); (IPC); \text{ and } (B-MNP)\}$ ³¹ mixed strategies; c. the awareness of the other players (i.e., Actors II, III, and IV) in the game; and d. the belief that it (i.e., Actor I) is the most *influential* and *important* player of the $(HG)_2$.

- The $HG_{2,1}$ contains the $\{G_{2,2}, G_{2,3}, \text{ and } G_{2,4}\}$ which are the games played by Actor II, Actor III, and Actor IV, respectively, in the $(HG)_2$, where these games are perceived by Actor I, as follows:

i. Actor I perceives the $\{G_{2,2}\}$ as a. a game of incomplete information in which Actor II has misperceptions about the game, or/and reality; b. a deception/misperception-based game, directed by collective diplomacy means and effective deterrence mechanisms; c. Actor II's preference vector includes overt strategies such as “obedience, compliance, subordination, or/and deterrable revisionism;” d. Actor II is a deceived subject, receiver, or/and reactor of Actor I's made moves _ where both actors' views and perceptions overlap at a conflict management-related-common knowledge strategic focal point.

ii. Actor I understands the $\{G_{2,3}\}$ as a. a game of incomplete information in which Actor III does not have complete knowledge about Actor I's preference vector, beliefs, or perceptions of the game/reality; b. Actor III is the deterrence applying party within the entire $(HG)_2$; c. the preference vector of Actor III includes (COD) pure strategy means; d. Actor III has joint leverage with Actor I, acting multilaterally with it in some cases; e. Actor II is Actor III's targeted subject in the $(HG)_2$.

iii. The $\{G_{2,4}\}$ is perceived by Actor I according to this context: a. a game of incomplete information where Actor I's preference vector is unknown to Actor IV; b. Actor IV is another diplomacy practicing party beside Actor I within the $(HG)_2$; c. Actor IV's preference vector includes the (CL-D) pure strategy; d. Actor IV is a subject or informal organ of Actor I, acting

³¹ All strategies' abbreviations mentioned in this part are explained in the next one to come.



multilaterally with it. Those $\{G_{2.2}, G_{2.3}, \text{ and } G_{2.4}\}$ games are based on Actor I's beliefs and perceptions of the game and reality, which may be true or not.

b) The $HG_{2.2}$

- The $HG_{2.2}$ is Actor II's perceived hypergame within the $(HG)_2$ that includes a. unknowledge of a hypergame being played; b. uncertainty about who the hypergame's Actor I is, its strategic preferences, and moves or actions (i.e., decisions) made; c. awareness of the third and fourth actors/players (i.e., the 3P; and IMI/IMT), their preference vectors, and actions/moves; and d. strategic preference vector composed of: $\{(RCP); \text{ and } (AD-G)\}$ mixed strategies.

- In the $HG_{2.2}$, Actor II does not perceive Actor I's played game, the $\{G_{2.1}\}$, whereas it perceives these $\{G_{2.3}, \text{ and } G_{2.4}\}$ – which are the games played by Actor III, and Actor IV, consecutively:

i. Actor II understands that the $\{G_{2.3}\}$ is a game in which: a. deterrence-based-game is played by the international system's *hegemon*s; b. the strategic preference vector of Actor III includes: (Imposing Sanctions, Boycott/Embargo, or/and Import Tariffs; Threats; Use of Hard Power; Declaring (unjustified) Wars) against aggressors or revisionists of the system; and c. Actor III is a hegemon seeks building (counter-)alliances and the accumulation of power at the expense of others, threatening both units of the system (i.e., state-actors) and their subjects (i.e., Publics).

ii. Actor II views the $\{G_{2.4}\}$, considering it played by *mediators* intervening for resolving conflicts, and that this actor's (i.e., Actor IV) strategic preference vector is composed of toothless or ineffective means for conflict management activating mediation and negotiation strategies with having no influence or apparent achievements in return.

c) The $HG_{2.3}$

- The $HG_{2.3}$ is Actor III's perceived hypergame within the $(HG)_2$ containing a. a knowledge that a hypergame is being played and awareness of all other players of the game (i.e., Actors I, II, and IV); b. certainty about who the hypergame's Actor II is, but uncertainty about its strategic preferences and actions made; d. strategic preference vector composed of: $\{(COD); \text{ and } (B-MNP)\}$ mixed strategies; e. Actor III's beliefs and perceptions over Actor II of being an *active* receiver-subject of an effective deterrence's global sphere of influence; and f. the belief that it (i.e., Actor III) might make its moves unilaterally or multilaterally.



- In the $HG_{2.3}$, Actor III does not perceive the game of Actor II, the $\{G_{2.2}\}$, while it perceives the games of Actor I and Actor IV, the $\{G_{2.1}$, and $G_{2.4}\}$, as follows:

i. Actor III understands the $\{G_{2.1}\}$ or the game played by Actor I in the $(HG)_2$ as global security maintaining and reinforcing-oriented game, in which Actor I's preference vector includes: (Conventional Conflict Management Strategies of Conflict-De-escalation; Bargaining; and Conflict Zones-Dispatched Collective Forces/Missions of Peacemaking and Peacebuilding/Peace enforcement).

ii. Actor III perceives the $\{G_{2.4}\}$ as a *mission game* operated by Actor I, in which neither Actor I nor Actor IV _ who has (Conventional Bargaining and Diplomacy Strategies) within its preference vector as understood by Actor III, has *capable* or *credible* threats or deterrence means for accomplishing such a mission; and that Actor IV is the structure-agent or the international system hegemons' client.

d) *The $HG_{2.4}$*

- The $HG_{2.4}$ is Actor IV's perceived hypergame within the $(HG)_2$ that includes a. knowledge of a hypergame being played and who the other players of the game are; b. certainty about the hypergame's Actor II, while existing uncertainty about its preference vector and moves; d. strategic preference vector composed of $\{(CL-D)\}$ pure strategy; e. beliefs over Actor II that it is the receiver-subject of a *collective* diplomacy's global spheres of influence; and f. perceiving Actor III as a capably and credibly *deterrent*-third party who might make its actions or decisions unilaterally or multilaterally.

- Within the $HG_{2.4}$, Actor IV perceives the games of Actor I and Actor III, the $\{G_{2.1}$, and $G_{2.3}\}$, but it does not perceive Actor II's _ the $\{G_{2.2}\}$, as to follow:

i. Actor IV understands that the $\{G_{2.1}\}$ is a conflict management game directed towards restoring global peace and security aim, in which Actor I's preference vector includes (Mediation, Negotiation, Peacemaking, and Peacebuilding/Peace-Enforcement Strategies), perceiving that Actor I's perceptions of reality are based on multilateralism beliefs.

ii. Actor IV perceives the $\{G_{2.3}\}$ as a *power-showing game*, considering Actor III as Actor I's '*masculine*' mechanism, and a global security's maintaining side operating as the deterrence means-applying party; as well as understanding that Actor III's preference vector contains (Coercive Diplomacy, and Preventive/Collective Security-War Initiation Strategies).



Based on that, firstly, either $HG_{2.1}$, $HG_{2.2}$, $HG_{2.3}$, or $HG_{2.4}$, is a hypergame based on an actor's own understanding and interpretations of the game, perceptions of reality, available information, and reasoning of the other players' beliefs and perceptions, which all may be true or not. Also, those hypergames might be built upon misleading, inaccuracy, fault and defect, misperceiving, or/and misunderstanding. Secondly, the $(HG)_2$ includes those perceived four hypergames _ that are composed of other players' games, which we denote as: $(HG_{2.1} = \{G_{2.2}, G_{2.3}, G_{2.4}\}; HG_{2.2} = \{G_{2.3}, G_{2.4}\}; HG_{2.3} = \{G_{2.1}, G_{2.4}\}; HG_{2.4} = \{G_{2.1}, G_{2.3}\})$. Merging the (Strategic Interactions)² (entire) hypergame's perceived hypergames of Actors I, II, III, and IV altogether, where $\{(HG)_2 = (HG_{2.1} + HG_{2.2} + HG_{2.3} + HG_{2.4})$ while having an *overlap point* where a common knowledge of the conflict exists, the $(HG)_2$ is being played reaching equilibrium positions of this entire hypergame _ with dismissing any equilibria occurred within each player's separately perceived hypergame, rebalancing a would-be unbalanced hypergame model, which is explained below. Given the $(HG)_1$ and $(HG)_2$ entire hypergames, and each rebalanced model at an overlap point within the "*Positivity of Peace Hypergame Model*," the latter can be denoted as: $\{(PPHGM) = (HG)_1 (HG_{1.1}, HG_{1.2}) + (HG)_2 (HG_{2.1}, HG_{2.2}, HG_{2.3}, HG_{2.4})\}$.

b. The $(HG)_2$ Overlap Point's Strategic Interactions: A (Rebalanced Model)

- These strategic interactions resemble a neo-constructivism-institutionalism's transformation trajectory, in which the interactions tracks begin on global, regional, and national levels, respectively. Actor I, here, enhanced its sphere of influence to represent (Global Hegemonic Governance & Discourse, "(GHG-D)")³². Likewise, Actor II extended in leverage, representing (Global Publics & State-Actors "(GP&SA)").

³² If economic inputs determine political and social outcomes according to the Marxism or structuralism main axiom, and that hegemony is a power accumulated by both force of the most powerful (i.e., ruling capitalist classes) and consent of its subjects considering Gramscian theory of hegemony; then if Actor I or the global governance or government is *hegemonic* _ where being political and economic global hegemon is a condition here, this equals having a "sufficient" economic and political *capability* and *credibility* for repelling social attacks targeting social and conventional media outlets utilized as main means for this actor in achieving multi-level leverage and change of the global system within the given context applied to our model. That is to say; economic and political capability and credibility resulted from merging both the economic power and the generated political one with an internalized hegemony coined by the global governance/government actor, results in an *extended* outcome of another "social capability and credibility" of this actor after the latter's political and media discourse becomes such an integration's activated mechanism to be used within this model's context. Therefore, Actor I of the $(HG)_2$ is set as the (Global Hegemonic Governance & Discourse); and, using approximately the same reasoning, Actor I of the $(HG)_1$ was the (Elite/ruling classes & Discourse).



- Actor I, as a rational player and observer to the $(HG)_1$, begins the interactions, moving to the (Neutralization of Peace Spoiling Behaviors “(±PSB)”) strategic preference; an action made implicitly, thus deceiving Actor II in the $(HG)_2$ as to act in a similar course of action without having (complete) knowledge that it was Actor I’s decision or move. In this context, Actor II has misperceptions about the hypergame or possible future actions of Actor I.

- Simultaneously, Actor I activates the (Media Diplomacy of Peace-Hegemony-Oriented-(re-perceived) National Interests, “(MD-PHNI)”) strategy. Given the equilibriums of the precedent $(HG)_1$, Actor I, again, relies on Actor II’s misperceiving of its made moves, stimulating the latter to behave within its preferred interactions realm.

- Sequentially, Actor II absorbing a peace state as a “Hegemonic Institution, Perceptions, and Predispositions, and Re-perceived Reality, (H-IPR),” globally, regionally, and nationally, within the (MD-PHNI) strategy’s effects domain, prefers as a rational player and a (still) subject of Actor I, the (Re-constructed Peace “(RCP)”) strategic choice with excepted maximized utility of a perceived outcome to result.

- In a simultaneous move of Actor II’s action, Actor I, based on the rationality arguments of how the other reasons seeking an expected utility, moves to the (Imposed Peace-Consensus “(IPC)”) action _ as a hegemonic actor accumulating power of both force capabilities it owns and consent of the publics.

- A (Global Transformation Initial Realm, “(GTIR)”) outcome arises, here, as the output of choosing the {(Neutralization); (Media Diplomacy + PH-NI)} strategies simultaneously by Actor I firstly; and secondly, using the {(Re-constructed Peace); (Imposed Peace-Consensus)} pair of strategies by Actor II, and Actor I, respectively, in a sequential move by the former, and a simultaneous one by the last.

Indeed, Actor I’s dependence on existing a misperceived game or reality of how it reasons or what its preferences or actions (decisions) are, allows this player to randomize its choices while having unavailable information to Actor II, playing *simultaneously* in a basically extensive form game distinguished by its sequential-move nature, and enjoying a two-moving sequences advantage at the same move as well; while considering Actor II its deceived subject who, unknowing that a hypergame is being played, may not _ or mistakenly, reason(s) what Actor I’s *actual* strategic preference vectors or actions/decisions are.



- Another outcome results in the $(HG)_2$ at the overlap point, that is, the (Adoption and Gratification (AD-G) Sphere), with Actor II's using of the (Adoption and Gratification) strategy sequentially to Actor I's choice of the (Imposed Peace-Consensus) one _ where the misperceiving Actor II is a subject of this strategy's effects domain (i.e., the IPC's) re-acting upon it.
- An actor, "Actor IV" in the $(HG)_2$, mediates the strategic interactions circle, playing a central conflict-mediation role. This actor constitutes "Collective Diplomacy Spheres" using the (Collective Diplomacy "(CL-D)") pure strategy _ which is the only strategy it has in the game, simultaneously with Actor I's (Neutralization) move. Actor IV is the (International Mediators Team "IMT") or another *symmetrically* constituted (International Mediation Institution "IMI"). Therefore, the (Strategic Interactions)² begins with a simultaneous-move initial play by Actor I and Actor IV as observers to the precedent $(HG)_1$ and the previous *unbalanced* model of $(HG)_2$.
- Another player interferes here, which is the "Pressure-Practicing Powers (3P)," or the "Actor III" in $(HG)_2$. Meanwhile, the "Coercive Diplomacy Sphere" constitutes by the (3P)'s intervention, choosing the (Coercive Diplomacy "COD") strategic alternative in a sequential move after Actor I's moving to the (Neutralization) action and Actor IV's using of (CL-D) strategy.
- By the end of the (Strategic Interactions)², both Actor I and Actor III move to the (Bargaining Strategies: Mediation, Negotiation, and Peace Talks, "(B-MNP)") same strategic choice simultaneously, sequentially after the "(AD-G) Sphere" outcome results, and under (Interference Effects "IEs") of Actor IV's (CL-D) strategy _ considering how those actors (i.e., Actor I and Actor III) perceive this strategy.
- The accumulated output of all $(HG)_2$'s interactions, at the overlap point, is the (Peace-Hegemony-Oriented-Mass-Ideological Rehabilitation, "(MIR)") strategy outcome. That is to say, rehabilitation as one of the (Conventional Constructivist Strategies) diffused and internalized first regionally and nationally within the (Strategic Interactions)¹ hypergame was to target the conflicting parties and their communities only. However, the (MIR) within the $(HG)_2$ is a "*mixed strategy-outcome*," distinguishably resulting from the previously used strategies of Actors I, IV, III, and II, collectively, which is also an *extended* output on global, regional, and national levels, respectively, including the whole global publics.



- Based on that, *the (HG)₂'s equilibriums* are these three strategy-outcomes of expected maximized utility:

- i. Firstly, the (Global Transformation Initial Realm) equilibrium as a known and perceived outcome for Actor I and Actor II.

- ii. Secondly, the (Adoption and Gratification Sphere) and the (Peace-Hegemony-Oriented-Mass-Ideological Rehabilitation) equilibriums, which are perceived and known outcomes for Actor I (i.e., the deceiver) and unperceived and unknown outcomes for Actor II (i.e., the deceived). Furthermore, Actor IV and Actor III _ who is the (COD) strategy applying party, are assumed to make their {(CL-D), and (B-MNP)} moves, consecutively, “*multilaterally*” with Actor I, which we referred to as “*simultaneous-move plays*” in the (Strategic Interactions)². So, an expected utility acquired by that player (i.e., Actor I) in the given context entails that those players (i.e., Actors IV and III) obtain *absolute* gains or shares within this utility's related payoffs in real-world circumstances as in the (HG)₂, which is explained below.

- Out of the {(HG)₁ + (HG)₂} two entire-hypergames equilibriums, the (*Positivity of Peace Equilibrium* “PPE”) of the (PPHGM) results, expressing this binary formula, see [Figure 1](#): “Global Hegemony of Peace Versus Realist Hegemony of War's Inevitability, (GHP vs. RHW).” The last is an active, feasible, and viable translation of transforming the international system into a state of durable, sustainable, and positive (win-win) *peace* globally, regionally, and nationally, as proven through the (PPE) equation illustrated in the following section.

4.2. Second: The Positivity of Peace Hypergame Model's Equilibrium Equations

In the (PPHGM), either Actors I and II in the (HG)₁, or Actors I, II, III, and IV in the (HG)₂ may *not* perceive all outcomes reached of the entire hypergame since each player chooses a strategy depending on its own interpretations and perceptions of the game and the reality of intra-or/and inter-state conflicts. Still, a known outcome, or unknown one to an actor or more which is a strategic surprise in this case, within our hypergame model, is considered “*stable*” given that the player cannot change from a perceived outcome unilaterally. The (PPHGM) is thus seen as a hypergame played by all, with all, versus all. In this section, using the strategic preference vector of every actor as stability information, we show how equilibriums, determined above, of the entire (HG)₁ and (HG)₂ at the overlap point might be proven through



some input-output relations equations. Also, each player may perceive an expected maximized utility correctly or incorrectly when using a given strategy within this context.

4.2.1. The (Strategic Interactions)¹ Equilibrium Equation: (SI¹EE)

$$\xrightarrow{\text{Input}} \square A^1 ((C) + (D) + (CC)) + A^2 ((PPF) + (OPH)) \xrightarrow{\text{Output}} \square \{ (EP-MIR)^{U(1+2)} + (PBD)^{U(1+2) + U(1)} ((FPH)^{U(1+2)} + (OPH)^{U(1)}) \}$$

- The (SI¹EE) Assumptions: i. (A¹) is Actor I, and (A²) is Actor II of the (Strategic Interactions)¹; ii. the {(C) + (D) + (CC)} are (A¹)’s chosen strategies of (Cultivation; Disciplinization; Conventional Constructivist approaches) respectively, within this interactions’ equation; iii. the {(PPF) + (OPH)} are (A²)’s used strategies of (Peace-Public Flak; Omnipotent Peace Hegemony) _ where the second strategy is an extension of the first.

- The (SI¹EE)’s outputs: i. first; the (Elite-Publics’ Mutually Impact Realm “EP-MIR”) strategy (unknown) outcome with U (Utility) of (A¹) and (A²), denoted in the equation as {U (1+2)} where (1; and 2) numbers refer to Actor I, and Actor II, respectively. ii. Second, the (Peace-Broker Discourse “PBD”) *extended* strategy-outcome that is composed of a. the (Fledgling Peace-Hegemony “FPH”) first “input-shifted-output strategy” with a utility of both, {U (1+2)}, perceived by (A¹) and (A²). Moreover, b. the (Omnipotent Peace Hegemony “OPH”), which is the second “input-shifted-output strategy” with an expected utility of (A¹) only, denoted as “U (1)” _ where the (OPH) is an unknown outcome for (A²) due to the incomplete/misled information it has about the game and reality. Nevertheless, the accumulated or “Collective Utility (CU)” of both actors’ strategic actions results within the (PPE) equation, including aggregative payoffs for all. Still, choosing the (OPH) strategy as extended input of its first used strategic choice, (A²) was perceiving an increase in its utility within the (SI)¹ while reasonably raising the (A¹)’s instead, given who the latter is and what a perceived hypergame it has. So, the misperception and deception practiced by (A¹) versus (A²) became a way of balance achieved either in future utility’s payoffs or stable positions reached at the (SI)²’s end.

4.2.2. The (Strategic Interactions)² Equilibrium Equation: (SI²EE)

$$\xrightarrow{\text{Input}} \square A^1 ((\pm PSB) + (MD-PHNI) + (IPC)) + IMI (CL-D) + 3P (COD) + A^2 ((RCP) + (AD-G)) + IEs ((A^1 + 3P) (B-MNP)) \xrightarrow{\text{Output}} \square \{ (GTIR)^{U(1+2)} + (AD-G)^{U(1)} + (MIR)^{U(1 + ag(3+4))} \}$$



- The (SI²EE) Assumptions: i. (A¹) is Actor I, and (A²) is Actor II of the (Strategic Interactions)²; ii. the {(± PSB) + (MD-PHNI) + (IPC)} are the used strategies of {(Neutralization of Peace Spoiling Behaviors); (Media Diplomacy of Peace Hegemony-Oriented-(re-perceived) National Interests); (Imposed Peace-Consensus)} consecutively, by (A¹) within this interactions' equation; iii. the (IMI) is Actor IV in the (HG)₂ or the “International Mediation Institution (or the “IMT”),” having the (Collective Diplomacy “CL-D”) pure strategy; iv. (3P) is Actor III or the (Pressure-Practicing Powers), while the (COD) is the (Coercive Diplomacy) strategy it uses; v. the {(RCP) + (AD-G)} are the chosen strategies of {(Re-Constructed Peace); (Adoption and Gratification)} by (A²) in the (SI)²; vi. both (A¹) and (3P) move to the (Bargaining Strategies of Mediation, Negotiation, and Peace Talks, “B-MNP”) strategy multilaterally by the (SI)²'s end, under (Interference Effects “IEs”) of Actor IV's (CL-D) strategy.

- The (SI²EE) outputs: the (Strategic Interactions)² equation output is assumed to be:

- i. the (Global Transformation Initial Realm “GTIR”) strategy outcome with mixed utility (U) of (A¹) and (A²), denoted as {U (1+2)}, which is an outcome known and perceived by both.

- ii. The (Adoption and Gratification Sphere “AD-G”) strategy outcome that is perceived and known for (A¹) and unperceived and unknown for (A²), with an expected utility of (A¹) only, {U (1)}. In that case, being a misperceiving player and subject to (A¹) under the (IPC) strategy effects' domain, (A²) made a choice (i.e., “AD-G” strategy) that raises (A¹) utility within the (SI)², however, maintaining a (Collective Utility) for both in the (PPE) equation.

- iii. The (Peace-Hegemony-Oriented-Mass-Ideological Rehabilitation, “MIR”) strategy outcome. Since the last is a mixed strategy-outcome standing directly in Actor I's interests' realm, perceived and known for (A¹) while being unknown for the other players in the (SI)², the expected utility of this outcome (if resulted) is assumed to be obtained by (A¹) – given who this player is and its perceived hypergame. In this context, Actor III and Actor IV playing their {(B-MNP); (CL-D)} strategies multilaterally with (A¹), obtain “Absolute Gains (ag)” out of the Actor I's received utility here. This utility's interrelation is denoted in the (SI²EE) as: {U (1 + ag (3+4))} where (1; 3; and 4) numbers refer to Actor I, Actor III, and Actor IV, respectively.



4.3.3. The Positivity of Peace Equilibrium Equation (PPEE): The (PPHGM)’s Solution Point

$$\begin{aligned}
 \frac{\text{Outputs}}{\text{Input}} &\square \left\{ \left((\text{EP-MIR}) + (\text{PBD}) \right)^{\text{CU} (U^2 (1+2) + U (1))} + \left((\text{GTIR}) + (\text{AD-G}) \right. \right. \\
 &\quad \left. \left. + (\text{MIR}) \right)^{\text{CU} (U (1+2) + U (1) + U (1 + \text{ag} (3+4)))} \right\} \\
 \frac{\text{Total}}{\text{Output}} &\square \left\{ (\text{GHP})^{\text{CU} (U^3 (1+2) + U^2 (1) + U (1 + \text{ag} (3+4)))} - (\text{RHW})^{-\text{CU}} \right\} \\
 \text{PPE} &\simeq \left\{ \left((\text{EP-MIR}) + (\text{PBD}) \right)^{\text{CU} (U^2 (1+2) + U (1))} + \left((\text{GTIR}) + (\text{AD-G}) \right. \right. \\
 &\quad \left. \left. + (\text{MIR}) \right)^{\text{CU} (U (1+2) + U (1) + U (1 + \text{ag} (3+4)))} \right\} \\
 &\simeq \left\{ (\text{GHP})^{\text{CU} (U^3 (1+2) + U^2 (1) + U (1 + \text{ag} (3+4)))} - (\text{RHW})^{-\text{CU}} \right\}
 \end{aligned}$$

In the (PPHGM), the *Positivity of Peace Equilibrium* (PPE) refers to the *highest utility point* reached by all actors when using their strategies simultaneously within an *unlimited* domain of strategic interactions occurring over more than one entire hypergame. Under the (HG)₁ or the (HG)₂, not all actors, having their own perceived hypergames, perceive or know (exactly) the other’s/opponent’s strategic preference vector, the game’s (all) players, or the others’ (actual) games. Substituting the standard rationality arguments of game theory, reaching the (PPE) conditions that each player calculates an expected utility of its chosen strategy depending on the belief of how the other reasons, what perceptions the other player/opponent has about the game and reality, and the available information. Therefore, in multiple games-based-hypergame models, misperception and deception can occur, and an outcome may be unknown for one player or more, rationally resulting in a utility or payoffs received by both. Nevertheless, as no player can deviate unilaterally from an equilibrium’s reached position, such an unknown outcome is seen *stable* as well as the received payoffs or the maximized utility relevant to it.

Since some equilibriums illustrated above do achieve utility for some players without others, those stable positions are considered aggregately outputs-input for having the most stable point of the whole model as total output, which is the “Positivity of Peace Equilibrium.” Here, no player would have the incentive to deviate from that stability point with the highest payoffs received by all _ not equally but equivalently coinciding with each one’s actual position in a real world-circumstances within this equilibrium domain. So, in the (PPHGM), all actors accumulate *absolute* gains by which both win; however, unequivocally given the difference in



distributing the payoffs achieved. Simultaneously, this equilibrium or (PPE) entails that the international system's aggressors are *deterred* or/and *deterable* through the input strategies used by the (HG)₂'s third and fourth actors (i.e., the "3P," and "IMI/IMT") within the (SI²EE).

Accordingly, based on the (SI¹EE) and (SI²EE) assumptions, the (Positivity of Peace Equilibrium Equation) is reached through the integration of accumulated-"outputs and utility" of the (SI)¹ and (SI)²'s equilibrium equations, proving the following:

i. *The central premise equation:* The outputs' input of $\{(EP-MIR) + (PBD) ((FPH) + (OPH))\}$ strategy outcomes in the (SI¹EE), and the $\{(GTIR) + (AD-G) + (MIR)\}$ strategy outcomes in the (SI²EE), leads to this total output: (Global Hegemony of Peace "GHP"), eliminating the (Realist Hegemony of War's Inevitability, "RHW") strategy outcome if the latter's related (Collective Utility "CU") for both (A¹) and (A²), *primarily*, is less than zero.

ii. *The (PPE) is approximately or equivalently equals; first:* the dual-output of $\{(EP-MIR) + (PBD)\}$ in the (SI¹EE), where this output's (Collective Utility "CU") is the sum of a. (A¹) and (A²)'s doubled-maximized utility; and b. (A¹)'s own maximized utility. This is denoted as: $\{CU (U^2 (I+2) + U (I))\}$. *Second:* the triple-output of the (SI²EE), containing the $\{(GTIR) + (AD-G) + (MIR)\}$ strategy outcomes, with (CU) representing the sum of a. (A¹) and (A²)'s maximized utility; b. (A¹)'s own maximized utility; and c. (A¹)'s *extra* maximized utility including absolute gains/shares (ag) within for the (HG)₂'s Actor III and Actor IV. This is expressed in the (PPEE) through this formula: $\{CU (U (I+2) + U (I) + U (I + ag (3+4)))\}$.

iii. *The conditionality of the (PPE):* this equilibrium is assumed to occur when the last strategy outcome of (SI)¹, which is the (PBD), and that of the (SI)², which is the (MIR), become parallel with each other in *real-world circumstances* while having internal parallel relations of some "*transformational strategies*" in the (SI)² used by: a. (A¹) or the (Global Hegemonic Governance & Discourse "GHG-D") actor for all its chosen strategies; b. Actor IV (i.e., "IMI/IMT") for its (Collective Diplomacy "CL-D") pure strategy; c. Actor III (i.e., the "3P") for its (Coercive Diplomacy "COD") strategy; and d. Actor II or the (Global Publics and State-Actors) for its (Adoption and Gratification "AD-G") strategy. Those are "*Conditional Parallel Relations (CPRs)*" of the (Positivity of Peace Equilibrium "PPE"), which we can denote as follows _ where the (So; Sn; S) are the abbreviations of (Strategy Outcome, Strategy Numbers, and Strategy) consecutively:



$$(CPR_s)^{PPE} \approx \{(GHP - (RHW)^{-CU})\} \parallel \{(PBD)_{so} \parallel (GHG-D)_{sn} \parallel (CL-D)_s \parallel (COD)_s \parallel (AD-G)_s \parallel (MIR)_{so}\}$$

iv. *The (PPE) and the extended output:* Constituting out of the (SI¹EE) and (SI²EE)'s outputs, which are shifted to be input in the first (PPEE), the (Positivity of Peace Equilibrium) thus is also *equivalent* to the resulted total output, or the $(GHP - (RHW)^{-CU})$ in this given context. That is an extended output with a *total* Collective Utility (CU), which reflects the sum of a. (A¹) and (A²)'s tripled (accumulated) utility; b. (A¹)'s own doubled (accumulated) utility; and c. (A¹)'s extra utility with Actors III and IV's absolute gains/shares. The total (CU) mentioned is denoted in the (PPE)'s equation as:

$\{(CU (U^3 (1+2) + U^2 (1) + U (1 + ag (3+4)))\}$, conditioning the elimination of the (Realist Hegemony of War's Inevitability, "RHW") *opposite* strategy-outcome, if existed, and the value of its related (Collective Utility) was minus, (- CU), or less than zero, mainly for (A¹) and (A²) collectively.

Ultimately, the last condition is the justification term of a *limited* zone of a collective diplomacy-or/and deterrence's failure-generated-necessitated collective security war(s) initiated by the (HG)₂'s Actor I. That is if this war serves the "*common good or virtue*" of (HG)₁ and (HG)₂'s Actor I and Actor II altogether with a (CU)'s value for both higher than zero _ provided that "zero" is a value refers to the possible elimination of any or some of those actors in favor of the other(s). Based on that, the deterrence field will still have leverage over aggressors in the system who are demanded to be constrained but for the '*collective*' human good/interest maintaining purposes. Finally, we prove the validity of this model's hypothesis: "The binary formula of "Global Hegemony of Peace Versus Realist Hegemony of War's Inevitability (GHP vs. RHW)" is the equilibrium or solution point of a positivity of peace developed relevant-hypergame model."

5. The Multi-Level Conflict Management Approach's Second Model: A "Balance of Peace-State Hypergame Model (BPSHM)"

Preliminary: The (BPSHM)'s Main Assumptions

Within this model, there are two essential hypergames; one resembles an intra-state conflict case and the other of an inter-state conflict one, in a dynamic sequential-move game based on misperception and incomplete information. The key focus is on modeling a conflict through developing an applicable reconciliation and mutually utility-maximization-oriented-



merged diplomacy hypergame-approach. Accordingly, this model applies to a specific context of application where the major conflicting parties represent the political authority and non-fighting dissident (artificially branded as terrorist) group(s)/movement(s) in the first model (intra-state). At the same time, those parties refer to the most powerful state and the less powerful one, or equally powerful two states, in the second model (inter-state). The basic definition of (reconciliation) within this model's context is that; it is a grand strategy reflected through these intra-and inter-state strategies: i. the (Social, Political, and Diplomatic Integration) cross-state-structures, and the (Limited Power-Sharing), intra-state; and ii. the (Peace-Process Initiation/Implementation), and the (Integration) diplomatically, politically, economically, and socially, cross-societies. In the (BPSHM), other assumptions exist; these are:

i. The (BPSHM) is a first-level hypergame model based on incomplete information where all actors are rational players, reasoning about the other's beliefs and perceptions of the game and reality. In this hypergame model, some players are not aware of other players in the game or/and their moves and actions (i.e., decisions). So, the players may have misperceptions about the game. At the same time, each has its own view of the conflict intra-or inter-state depending on their perspectives, interpretation, and understanding of the reality of conflict and how the other players reason about the game. Furthermore, any may have some equilibriums in its perceived game relying on its beliefs that these positions represent the game's solution(s). Still, mapping the model through matching equilibria (i.e., outcomes/solutions) reached by players at given positions _ even if some do not perceive that, contributes to reflecting stable outcomes of the entire hypergame, dismissing those perceived separately in every player's game. So that choosing the strategic actions of an expected high utility, excepting those of zero- or less-utility values seeking the most stable positions of best utility obtained by all players when using their strategies simultaneously, mirrors *Nash equilibrium* positions within this model's two hypergames' mapping function of relating outcomes between the players' individual games.

ii. The (BPSHM) is a dynamic hypergame resembling a *future* second play of a previously played (hyper)game of intra-and inter-state conflicts under real-world circumstances. So, after observing other players' moves/actions in a precedent play in the past and previous action(s) in a sequential-move current (future) hypergame, each actor randomizes its choices, depending on what other(s) chose first within a *reductionist* model focusing on



relating outcomes between individual games. Thus, each uses newly chosen strategies or/and enhances previously used ones to reach a balance point of stable and higher utility for all simultaneously – which any could not have achieved in that first play or the past (hyper)game. In sum, this model's two hypergames do not represent sub-games that emerged from nodes of extensive-form games (i.e., sequential-move games); instead, they are entirely replayed hypergames.

iii. The payoffs or utility value: Instead of referring to the utility achieved of a reached position when picking a pair(s) of strategies by some players in numbers or symbols, we assumed that the players' payoffs/gains at those positions occurred in the two hypergames are best described by providing a value of each player's payoffs at an equilibrium, averages between $\{-\}$ to $\{0\}$ to $\{1\}$ of a utility (U), dividing these values into six categories as follows:

- a. The $\{U_{-u}\}$ or (*minus-utility value*) when the player becomes “*severely worse off*” in the game.
- b. The $\{U_Z\}$, which represents the (*zero-utility value*) with the player being “*worse off*.”
- c. The $\{U_{0.1}, U_{0.2}, U_{0.3}\}$ category: that describes the (*low-utility value*) or the (U_L) when the player is “*slightly better off*.”
- d. The $\{U_{0.4}, U_{0.5}, U_{0.6}\}$ category of a (*mid-utility value*) or the (U_M), for the player who is “*moderately/adequately better off*.”
- e. The $\{U_{0.7}, U_{0.8}, U_{0.9}\}$ category of a (*high-utility value*) or the (U_H), if the player is “*highly better off*” by making an action. Where the $\{U_{-u} < U_Z < U_{0.1} < U_{0.2} < U_{0.3} < U_{0.4} < U_{0.5} < U_{0.6} < U_{0.7} < U_{0.8} < U_{0.9}\}$.
- f. The $\{U_1\}$: this is the (*highest-utility value*) absolutely in the hypergame or the (*perfect-utility value*), where the $(U_1) > (U_{0.9})$.

iv. At last, *comprehensiveness* is the primary basis of modeling intra-and inter-state conflicts within this model's specific context. Namely, the model does not deal with only the given domain of actions and reactions between each hypergame's players but also considers those *intermediate* variables/factors that could exist along with the analyzed strategic interactions.



5.1. First: The Balance of Peace-State Hypergame Model's Intra-State Hypergame "(HG)₁"

5.1.1. The (HG)₁'s Description: Assumptions and Hypothesis

In this first-level hypergame model, we have four players who are: {(Political Authority "PA"); (Dissident Group(s)/Movement(s)³³ "DG"); (Mediation Power "MP"); and (Coercive-Diplomacy Power "CP")}. The (HG)₁ is considered the future (second) play of a previously played (hyper)game in the past. This current (future) hypergame is composed of the game understood by every actor, where each comprises perceived preference vectors of other players. This can be denoted as: (HG)₁ = {G_{1.1}, G_{1.2}, G_{1.3}, G_{1.4}}; and G_{1.1} = {V_{1.2}, V_{1.3}}, G_{1.2} = {V_{1.1}}, G_{1.3} = {V_{1.1}, V_{1.2}}, and G_{1.4} = {V_{1.1}, V_{1.2}, V_{1.3}}, as we explain below. Where {(HG)₁; (G_{1.1}); (G_{1.2}); (G_{1.3}); (G_{1.4})} abbreviations refer to {(the (BPSHM)'s first hypergame); (the game perceived by player I or "PA"); (the game perceived by player II or "DG"); (the game perceived by player III or "MP"); (the game perceived by player IV or "CP")}. Comparingly, the {V_{1.1}; V_{1.2}; V_{1.3}; V_{1.4}} refer respectively to the strategic preference vectors of the {(PA); (DG); (MP); and (CP)} players considering how the other actors in the game perceive one player's vector.

The central premise of the (BPSHM)'s (HG)₁ is: "Initiating a peace process between major conflicting parties by the political authority in intra-state conflicts reaching a balance of peace-state does not necessarily depend on opting for a mature mediation's conflict ripeness moment or the mutually-hurting stalemate one." Accordingly, this model's first hypothesis is: "A balance of peace-state within nation-states is initially achieved through constructing a reconciliation and mutually utility-maximization-oriented-merged diplomacy bridging major conflicting parties socially, politically, and diplomatically at any phase during and post-intra-state conflicts."

5.1.2. The (HG)₁'s Perceived Games:

a. The G_{1.1}: Political Authority's

In an incomplete information hypergame either played in the past or future, the (PA) who is the most influential and important participant of the game, has a strategic preference vector (i.e., the V_{1.1}), contains these actions: a. (Branding and Naming "BN"); b. (Systematic

³³ In this model, the (Dissident Group(s)/Movement(s)) player represents those groups of people who are branded as a terrorist group(s)/organization(s) nationally artificially for some political purposes without committing actual-terrorist acts/behaviors identified legally. So, dealing with terrorist groups does not lie within this model's limits.



Persecution “SP”); c. (Social, Political, and Diplomatic Integration “GR”); d. (Limited Power-Sharing “LPS”); e. (Imposed Disciplinary Doctrine “IDD”). In this model, the (PA) randomizes its choices between the last three strategic moves, reasoning about other players’ beliefs and perceptions of the game and reality. Where the probability (p) of every strategic preference in the *future* (second) play (i.e., the (BPSHM)’s $(HG)_1$) is: i. ($p \leq 0$) for the {(BN); and (SP)}; and ii. $\{(0 < p \leq 1)\}$ for the {(GR); (LPS); and (IDD)} _ given that the (PA) cannot activate the {(GR); and (LPS)} actions if it did not deactivate first the {(BN), and (SP)} strategies if used. In contrast, the (p) in the *past* (first) play were: i. $\{(0 < p \leq 1)\}$ for the {(BN); (SP); and (IDD)} strategic preferences; and ii. $\{p \leq 0\}$ for the {(GR); and (LPS)} actions.

In the $G_{1.1}$, the (PA) perceives the $(V_{1.2})$ as a preference vector of these actions: a. (Terrorism); b. (Social Disorder and Chaos Creation); c. (National Treason or/and Foreign Agenda Adoption). So, from its own perspective of the conflict and interpretation of the game, moving to the {(GR); and (LPS)} preferences means making decisions upon a risk taken, under a level of uncertainty about how actually the (DG) actor reasons. Also, the (PA) player understands that the $(V_{1.3})$ includes a. (Biased-Mediation); and b. (Foreign Powers Interests Serving) actions. Comparingly, in the $(G_{1.1})$, the (PA) actor has a lack of information about the $(V_{1.4})$, since it is not aware of the (CP) player _ given that it is a modeling of intra-state conflicts in real-world circumstances without addressing ‘fighting’ dissident groups. Thus, the (PA) makes its moves and actions (decisions) depending on its beliefs of “state sovereignty,” excluding the possibility of the (CP)’s interference until it occurs explicitly in the hypergame. In sum, those preference vectors included in the $(G_{1.1})$ refer to how the (PA) perceives the hypergame, which may be built on a misled understanding or incorrect interpretation. This game is denoted as: $G_{1.1} = \{V_{1.2}, V_{1.3}\}$.

b. The $G_{1.2}$: Dissident Group(s)/Movement(s)’s

The (DG) player has a preference vector (i.e., the $V_{1.2}$) along with the entire hypergame, including these strategic moves: a. (Rebellion/Revolution “RR”); b. (Regime Change “RC”); c. (Maintenance of State-System’s Existing Political Structures “MSSEPS”); d. (Existing Regime’s Mass-Legitimization and Consensus “ERMLC”). Where the probability (p) of those strategic actions in the *past* (first) play were: i. $\{(0 < p \leq 1)\}$ for the {(RR); and (RC)}; and ii. $\{p \leq 0\}$ for the {(MSSEPS); and (ERMLC)}. On the other hand, the probabilities in the *future* (second) play are: i. $\{0 \leq p < 0.5\}$ for the {(RR); and (RC)} strategic actions; and ii. $\{0 < p$



$< 1\}$ for the $\{(MSSEPS); \text{ and } (ERMLC)\}$ _ given that the (PA) actor's strategies used in the first play are the $\{(BN); \text{ and } (SP)\}$, and the (DG) is aware of the (PA) either in the past or a current (future) game, while the former is the reaction to the last's actions in this sequential-move second play. Within $(G_{1.2})$, the (DG) player understands that the $(V_{1.1})$ entails this set of actions along with the conflict course: a. (State-Terrorism); b. (Suppression and Injustice); c. (Political Authoritarianism/Dictatorship). In contrast, the (DG) actor is not aware of the $\{(MP); \text{ and } (CP)\}$ players in the $(HG)_1$. Therefore, there is a lack of information in the $(G_{1.2})$ about the $\{V_{1.3}; \text{ and } V_{1.4}\}$ where that player does not perceive them. This is denoted as: $G_{1.2} = \{V_{1.1}\}$.

c. The $G_{1.3}$: Mediation Power's

The (MP) was not a player in the past play but only in the second one. It has a (Neutral-Positive Mediation "N-PM") strategic move within its preference vector (i.e., the $V_{1.3}$) _ which is a pure strategy, of this probability: $\{(0 < p \leq 1)\}$ in the game. In the $G_{1.3}$, the (MP) player perceives that the $(V_{1.1})$ contains a. (Nation-State-Stabilization); b. (Security and Order Imposing); and c. (Maintaining and Reinforcing the Political Regime's Pillars) strategic actions. The same actor understands that the $(V_{1.2})$ includes two preferences: a. (Rebellion/Revolution); and b. (Regime Change). The (MP) is not aware of the (CP) player and does not perceive its $(V_{1.4})$, therefore. So, this game is denoted as: $G_{1.3} = \{V_{1.1}, V_{1.2}\}$.

d. The $G_{1.4}$: Coercive-Diplomacy Power's

The (CP) was also not a player in the past play but an actor of the second one only. It has a strategic preference vector (i.e., the $V_{1.4}$) including a. (Active-Coercive Diplomacy "A-COD"); b. (Pro-Conflict Settlement/Resolution Policy-Making Participation, "P-CS/R-PP"), where the probability of the first is: $(0 < p < 1)$, and of the second is: $(0 < p < 0.5)$. In $G_{1.4}$, the (CP) player perceives all other players' preference vectors in the $(HG)_1$. It understands the $\{V_{1.1}; \text{ and } V_{1.2}\}$ from the same perspective of the (MP) within the $(G_{1.3})$. However, the (CP) is aware of the (MP) player, perceiving that the $(V_{1.3})$ contains a (Biased-Mediation) strategic move, relying on its interpretation of the conflict. This game is denoted as: $G_{1.4} = \{V_{1.1}, V_{1.2}, V_{1.3}\}$.



5.1.3. The (HG)₁'s Strategic Interactions, equilibria, and Expected Utility: Relating Outcomes Between Individual games in a Mapping Function

a. The “Mini-Maximum Equilibrium” & Conflict Settlement: Zero-Mediation Stage

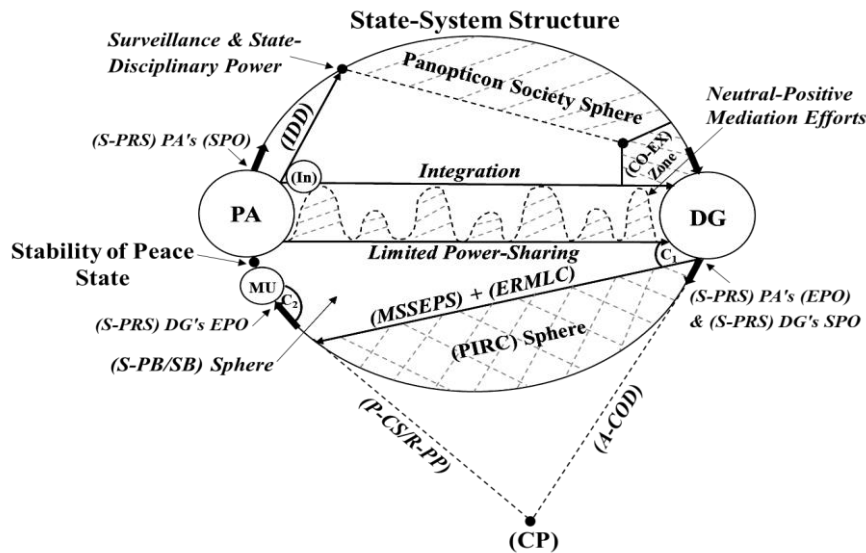
- Within the state-system structure, the (PA) player (i.e., Political Authority) having the first-move advantage in the (HG)₁ initiates (In) the game, choosing the (Social, Political, and Diplomatic Integration “GR”) strategic action. In a misperception game where the players may misunderstand or not perceive others’ moves/actions, the (PA) makes a second move which is the (Imposed Disciplinary Doctrine “IDD”), simultaneously with its chosen first one. This (IDD) strategic preference includes the (Surveillance & State-Disciplinary Power) mechanisms. The last is a significant factor that distinguishes authoritarian regimes as well as (some) liberal-democrat ones. Also, under the (IDD) action, the (PA) employs the (*state-discourse*) practices across all state-structures to be both “*pro-integration*” and an “*all-seeing eye*” of the whole society’s (individual) behaviors. Namely, instead of excluding unacceptable behaviors that ran against the (PA) and naming, shaming, or/and branding them, within the realm of that (IDD) move of the (HG)₁, this player contains those behaviors under a pro-(not anti)-still existing-disciplinary power, directing them toward this new course of action.

- Thence, the political-social integration becomes the coin of the day versus the branding and naming, under an *amended* inclusive not exclusive (Imposed Disciplinary Doctrine) strategy applied within both the nation-state structures’ all-seeing-eye or surveillance mechanisms and the political, media, religious, and academia mainstream discourse’s discursive formations, as well.

- Given that this is a comprehensive hypergame that considers some interference factors, the last picked actions of the (PA) player preserve a (Conditionality of Existence Zone) factor. Since this actor perceives that the Dissident Group(s) or (DG) player may resume the (Rebellion/Revolution) action chosen in the hypergame’s first (past) play. Within this “(CO-EX) Zone,” the (DG) becomes a “*contained subject*” of the (PA), imprisoned ‘*freely*’ in an open panopticon society, instead of undergoing *actual* imprisonment conditions that more likely create future chaos or social disorder out of revenge tactics due to (harsh) oppression and social suppression methods followed under the domain of the (Systematic Persecution “SP”) (PA)’s strategic move of the first play. That would occur if the (DG) actor preferred its {(RR); or/and (RC)} strategic actions over the others, whose probability is: $\{(0 \leq p < 0.5)\}$ in this stage.



Figure 2: The Balance of Peace-State Hypergame Model: The Intra-State Hypergame “(HG)₁”



- The (PA) as a rational player chose the “negative with vs. devastating without” formula _ given the expected chaotic social and political positions in the mentioned probabilities. Based on that, an outcome arises, which is not only an equilibrium within the (PA)’s perceived game, but also it became an equilibrium of the entire (HG)₁. It is the (Panopticon Society Sphere), which is resulted from using the {(GR); (IDD)} strategies under the (CO-EX) Zone, with the (DG) player choosing to *neutralize* the possibility of picking the {(RR); and (RC)} strategies at this position of the game. *This can be denoted as: {PA ((GR), (IDD) + (CO-EX)); DG (± {(RR + RC))}* _ where the (RR + RC) actions’ probability is ($p = 0$) at this equilibrium position. This reached outcome is the “Mini-Maximum Equilibrium” of our (BPSHM)’s (HG)₁, which is the exit of a previous “zero-sum game” of this hypergame’s past first-play.

The payoffs or expected utility resulted when reaching the (HG)₁’s (Mini-Maximum Equilibrium) is: {(U_{M-1}, U_{L-1})} for the (PA), and (DG) players respectively _ where the (M-1) is a “mid-level” utility, representing the (U_{0.6}) value gained by the (AP). Moreover, the (L-1) indicates “low-level,” reflecting the (U_{0.3}) utility value obtained by the (DG) at the same position in the game. In this context, the (U_{L-1}) value is close to being a mid-level utility that starts by the (U_{0.4}) value _ according to our categories of the hypergame’s expected utilities mentioned above. Likewise, the (U_{M-1}) value is near the high-level utility’s first estimate, the



($U_{0.7}$). So, for settling the conflict and under this exact equilibrium, the (PA) player who is the most potent conflicting party could achieve *'less than higher,'* which is the “minimum of the payoffs’ maximum.” At the same time, the (DG) actor gains *'more than less'* in return, which is the “maximum of the minimum.” This outcome, known for the (PA) only while being unknown for the (DG), is *stable* since both become better off receiving higher payoffs than before at a stable position of the hypergame.

- Accordingly, using sequentially these strategies $\{PA ((GR), (IDD) + (CO-EX)); DG (\pm \{(RR + RC)\})\}$ is the Mini-Maximum Equilibrium, which is stable even if the game ends by this stage, since playing backward may have caused the $\{(U_{-u}, U_{-u}); (U_Z, U_Z); (U_Z, U_{-u}); (U_{-u}, U_Z); (U_M, U_{-u}); (U_{-u}, U_M); (U_M, U_Z); (U_Z, U_M)\}$ eight utility’s cases for the (PA), and (DG) players consecutively, in a possible *repeated* zero-sum game. In this case, either one or both become(s) (*severely*) worse off (i.e., the first four cases); or one player *adequately* wins _ when getting the $\{U_M\}$, at the expense of the other (i.e., the last four cases), under this hypergame’s given context.

- Within this stage, a (Socio-Political Reconciliation Sphere’s (PA)’s Starting Point, “(S-PRS) PA’s SPO”) occurs, like a circle in a chain for other points to come, see Figure 2.

b. The Nash equilibrium & conflict resolution: A mediatory non-state actors’ stage

- The (Mediation Power) or the (MP) player who is a non-state actor in this *intra-state* hypergame, being aware of the (PA) and (DG) players and that the (Rebellion/Revolution or/and Regime Change) are strategic preferences for the (DG) in the $(HG)_1$, chooses to pick its (Neutral-Positive Mediation “N-PM”) strategic move. The (MP) employs the (N-PM) efforts officially or/and unofficially, regularly or/and irregularly, and in simultaneous or/and sequential mediatory interactions.

- Also, being aware of all players, and that the (DG) actor, if not deterred, may prefer the (Rebellion/Revolution or/and Regime Change) strategic action in a future play, perceiving the (Possible-Instability and Resuming Conflict, “PIRC,” Sphere) as an outcome of a possible zero-sum game to arise, the (Coercive Diplomacy Power) or the (CP) player _ as another non-state actor in the $(HG)_1$, plays the (Active-Coercive Diplomacy “A-COD”) strategic move, in sequence to the (MP)’s (N-PM) one. So, depending on its understanding of



the hypergame and perceptions of the other players' preferences, which may be true or not, the (CP) picked its action.

- Sequentially, the (PA) reasoning about how the (DG) actor believes about the game and reality, and in terms of the '*minimum*' stability achieved at first reached equilibrium's position, while being a subject of the (CP)'s deterrence domain, prefers as a rational player to move to the (Limited Power-Sharing "LPS") strategic action, expecting higher utility to result.

- Observing the (PA)'s (LPS) previous move, and being a subject of the (CP)'s deterrence realm and aware of the zero-sum game played in the past, the (DG) player as a rational actor and sequentially to the precedent chosen actions of {(N-PM); (A-COD); and (LPS)} by the (MP), (CP), and (PA) players respectively, moves to the (Maintenance of the State-System's Existing Political Structures "MSSEPS") strategic action. Here, this position represents the (Socio-Political Reconciliation Sphere's (PA)'s Ending Point, "(S-PRS) PA's EPO"), and the (Socio-Political Reconciliation Sphere's (DG)'s Starting Point "(S-PRS) DG's SPO").

- In a dynamic game where each condition their actions on what the other(s) picked first, the (CP) actor, observing the (DG)'s (MSSEPS) move, chooses the (Pro-Conflict Settlement/Resolution Policy-Making Participation, "P-CS/R-PP") strategic preference from its set of actions, in a sequential-move.

- Symmetrically, perceiving that a. the (PA) played first the (GR) move and also the (LPS) strategic action preferring them to the past play's strategy choices of the {(BN), and (SP)}, b. the (MP) actor's moving to the (N-PM) action, and c. the (CP) chose the (A-COD) action and then the (P-CS/R-PP) one, the (DG) as a rational player and depending on its interpretation of the game, calculating an expected high utility, chooses the (Existing Regime's Mass-Legitimization and Consensus "ERMLC") action. Given that the (DG)'s security and participation in political and social life in post-conflict society became *de facto* guaranteed through the chosen strategies of those players collectively, as well as its capability to avoid '*credibly*' the (SP) strategy's practices used by the (PA) in the first play. Based on that, the regime's legitimacy and consensus are no longer restricted between specific social borders of the "pro-regime versus anti-regime" formula. Instead, a nationwide legitimacy and consensus become *dispersed* across all state structures, diverse mass classes, and every individual posture in society.



- The (Societally-Peacebuilding and State-building, “S-PB/SB,” Sphere) arises in which the (Socio-Political Reconciliation Sphere’s (DG)’s Ending Point, “(S-PRS) DG’s EPO”) occurs when reaching a mutual utility (MU) position. The “(S-PB/SB) Sphere” is a *known* outcome for all players, occurring reversing the (*Stability of Peace State*) equilibrium, which is the *Nash equilibrium* of the entire (HG)₁ resulted by using:

- a. The {PA ((GR), (IDD) + (CO-EX)); DG (± {(RR + RC))} strategies by the (PA) and (DG) players sequentially, in the first stage _ where the (RR + RC) actions probability becomes ($p = 0$) at this position.

- b. And the second stage’s strategies of {MP (N-PM); CP (A-COD); PA (LPS); DG (MSSEPS); CP (P-CS/R-PP); DG (ERMLC)} in a sequential-move; see Figure 2.

- The payoffs or the mutual utility achieved at the (HG)₁’s Nash equilibrium position is: {(U₁), (U_{H-1}), (U_{H-1}), (U_{H-1})} for the {(PA), (DG), (MP), and (CP)} players, respectively, where the (U₁) is the ‘*perfect utility*’ value, which is the highest utility can be achieved ever in the hypergame. At the same time, the (U_{H-1}) is a ‘*high utility* (U_H)’ that ranges here between the {U_{0.7}, and U_{0.8}} high-level (H-1) values obtained by the (DG) at the reached position. So, under Nash equilibrium, the (PA) who is the most influential conflicting side raised its (U_{M-1}) payoff of the settlement’s equilibrium in the first (zero-mediation) stage, while the (DG) or the less influential conflict party increased its (U_{L-1}) one. In this context, the payoffs of the (MP) and (CP) players are: {(U_{H-1}), (U_{H-1})}, where each represents high-level utility values equal to those of the (DG) player. Thus, all players become better off, simultaneously playing their strategies, achieving the *best* response to each other’s strategic choice _ where no one may have the incentive to deviate from this *stable* position of the *highest* payoffs yielded for all in the entire (HG)₁.

5.1.4. The (HG)₁’s Cost and Utility Assumptions:

a. Abbreviations:

- a) The cost of the (PA)’s strategies used in the (HG)₁ (i.e., “C₁”), is the “CA_R,” where (C) is the (Cost), (A) refers to the (PA) player, and (R) indicates the (HG)₁’s (Reconciliation) between the (PA) and (DG) as the main conflicting parties _ considering (R) the strategic objective of this hypergame’s interactions.



b) Likewise, the cost of the (DG)'s strategies used in the (HG)₁ (i.e., "C₂"), is the "CB_R," where the {(C); (B); and (R)} refers to the {(Cost); (DG) player; (HG)₁'s (Reconciliation) strategic objective}, respectively.

c) The {(U_{A-Cf}); (C_{A-Cf}); (U_{B-Cf}); (C_{B-Cf}); (U_{MR(A-B)}); (U_{NE(A-B)}); (U_{NE(A)}); {(U_{NE(B)}); (CS_{A-R}); (CS_{B-R})} abbreviations refer consecutively to the: {(utility "U" for "A" (i.e., the "PA") by conflict "Cf"); (cost "C" for (PA) by conflict); (utility for "B" (i.e., the "DG") by conflict "Cf"); (the cost "C" for (DG) by conflict); (utility of the (HG)₁'s (Mutual Reconciliation) "MR" for both "A and B" (i.e., the (PA) and (DG) players); (utility "U" at the (HG)₁'s Nash equilibrium "NE" position for both "A and B" players); (utility at the (HG)₁'s "NE" position for the "A" player only); (utility at the (HG)₁'s "NE" position for the "B" player only); (concession(s) "CS" made by the "A" player at the (Reconciliation "R") position of (HG)₁'s Nash equilibrium "NE"); (concession(s) "CS" made by the "B" player at the (Reconciliation "R") position of "NE")}.}

b. The Cost and Utility Assumptions:

- a. If: $\{CA_R \approx (U_{A-Cf}) + (C_{A-Cf})\}$, where the $\{(U_{A-Cf}) = (C_{A-Cf})\}$
Then: $\{CA_R \approx (U_{A-Cf})^2 = (C_{A-Cf})^2\}$
- b. And if: $\{CB_R \approx (U_{B-Cf}) + (C_{A-Cf})\}$, where the $\{(U_{B-Cf}) = (C_{A-Cf})\}$
Then: $\{CB_R \approx (U_{B-Cf})^2 = (C_{B-Cf})^2\}$
- c. If: $\{U_{MR(A-B)} \approx (CA_R + CB_R) + (U_{A-Cf} + U_{B-Cf})\}$, where $\{CA_R \approx (U_{A-Cf})^2$ and $CB_R \approx (U_{B-Cf})^2\}$ and that $\{R \approx (U_{A-Cf} + U_{B-Cf}) - (C_{A-Cf} + C_{B-Cf})\}$
Then: $(U_{MR(A-B)}) \approx ((U_{A-Cf})^2 + (U_{B-Cf})^2) + (U_{A-Cf} + U_{B-Cf})$
 $\approx (U_{A-Cf})^3 + (U_{B-Cf})^3$
- d. If: $\{U_{MR(A-B)} \approx (CA_R + CB_R) - (C_{A-Cf} + C_{B-Cf})\}$, where $\{CA_R \approx (C_{A-Cf})^2$ and $CB_R \approx (C_{B-Cf})^2\}$ and that $\{R \approx (U_{A-Cf} + U_{B-Cf}) - (C_{A-Cf} + C_{B-Cf})\}$
Then: $(U_{MR(A-B)}) \approx ((C_{A-Cf})^2 + (C_{B-Cf})^2) - (C_{A-Cf} + C_{B-Cf})$
 $\approx (C_{A-Cf} + C_{B-Cf})$
- e. Based on the previous assumptions, where the $\{(U_{NE(A-B)}) \approx (U_{MR(A-B)})\}$, then:
 $\{(U_{NE(A-B)}) \approx ((U_{A-Cf})^3 + (U_{B-Cf})^3) + (C_{A-Cf} + C_{B-Cf})\}$
 $\{(U_{NE(A)}) \approx (U_{A-Cf})^3 + (C_{A-Cf})\}$, where $\{(C_{A-Cf}) \approx (CS_{A-R})\}$
 $\{(U_{NE(B)}) \approx (U_{B-Cf})^3 + (C_{B-Cf})\}$, where $\{(C_{B-Cf}) \approx (CS_{B-R})\}$

And given that: $p \{(U_{A-Cf}) \geq (U_{B-Cf})\} > p \{(U_{A-Cf}) < (U_{B-Cf})\}$; and that: $p \{(C_{A-Cf}) < (C_{B-Cf})\} > p \{(C_{A-Cf}) > (C_{B-Cf})\}$ _ where the probability (p) is: $(0 \leq p \leq 1)$.

Then, based on the *highest probabilities* assumptions of i. $\{(U_{A-Cf}) \geq (U_{B-Cf})\}$; ii. $\{(C_{A-Cf}) < (C_{B-Cf})\}$, we prove that: the $(U_{NE(A-B)}) = \{U_1 (A); U_{H-1} (B)\}$ _ where a. the *less* cost paid in



conflict “ (C_{cf}) ” reverses a *higher* utility “ (U_{cf}) ” in return for a given player, and vice versa; and b. the $\{(CS_{A-R}) < (CS_{B-R})\}$ if the $\{(C_{A-Cf}) < (C_{B-Cf})\}$. It is an *opposite* relation, therefore, existing between the $\{(C_{cf}) \& (U_{cf})\}$ within this hypergame. Also, the “ (C_{cf}) ” or the “cost of conflict” in an ongoing intra-state conflict approximately *equals* the (CS_R) or the “concession(s) at the (NE)’s (Reconciliation) position,” made in a balance of peace state’s conflict settlement/resolution interactions. So, the (U_1) is the (NE)’s ‘perfect’ utility value gained by the (PA) who paid less (C_{A-Cf}) , making less (CS_{A-R}) at the $(HG)_1$ ’s (NE) position. While the (U_{H-1}) is a ‘high’ utility value for the (DG) at the (NE), simultaneously, the actor who paid higher (C_{B-Cf}) , thus making higher (CS_{B-R}) , under the given context.

c. The Hypothesis’ Validity:

Based on the reached Nash equilibrium of the $(HG)_1$ and the cost and utility assumptions of the $(U_{MR(A-B)})$ and $(U_{NE(A-B)})$, we prove the model’s first hypothesis’ validity: “A balance of peace-state within nation-states is initially achieved through constructing a reconciliation and mutually utility-maximization-oriented-merged diplomacy bridging major conflicting parties socially, politically, and diplomatically at any phase during and post-intra-state conflicts.”

5.2. Second: The Balance of Peace-State Hypergame Model’s Inter-State Hypergame “ $(HG)_2$ ”

5.2.1. The $(HG)_2$ ’s Description: Assumptions and Hypothesis

In another first-level hypergame, we have five players who are: $\{(State A); (State B); (Mediation Power); (Coercive Diplomacy Power); \text{ and the } (Global \text{ Hegemonic Governance and Discourse})\}$. We refer to them by $\{(SA); (SB); (MP); (CP); (GHG-D)\}$ respectively. The $(HG)_2$ is the future (second) play of a previously played (hyper)game in the past. Also, this $(HG)_2$ is composed of every player’s perceived game, and each game includes realized preference vectors of other players. This can be denoted as: $(HG)_2 = \{G_{2.1}, G_{2.2}, G_{2.3}, G_{2.4}, G_{2.5}\}$; and $G_{2.1} = \{V_{2.2}, V_{2.3}, V_{2.4}\}$, $G_{2.2} = \{V_{2.1}, V_{2.3}, V_{2.4}\}$, $G_{2.3} = \{V_{2.1}, V_{2.2}, V_{2.4}\}$, $G_{2.4} = \{V_{2.1}, V_{2.2}, V_{2.3}\}$, and $G_{2.5} = \{V_{2.1}, V_{2.2}, V_{2.3}, V_{2.4}\}$. Where $\{(HG)_2; (G_{2.1}); (G_{2.2}); (G_{2.3}); (G_{2.4}); (G_{2.5})\}$ abbreviations refer to $\{(the \text{ model’s second hypergame}); (the \text{ game perceived by player I or “SA”}); (the \text{ game perceived by player II or “SB”}); (the \text{ game perceived by player III or “MP”}); (the \text{ game perceived by player IV or “CP”}); (the \text{ game perceived by player V or “GHG-D”})\}$. At the same time, the $\{V_{2.1}; V_{2.2}; V_{2.3}; V_{2.4}; V_{2.5}\}$ indicates the strategic preference vectors of the $\{(SA);$



(SB); (MP); (CP); and (GHG-D)} actors, consecutively, also considering how any player may perceive one or more of the others' vectors. In the $(HG)_2$, either the (SA) and (SB) players are *equal* in power (i.e., military, economic, and political power), or that the (SA) actor is *more* powerful than the (SB). As well, the (SA) actor plays first before the (SB) in a sequential-move dynamic game, while both the (SA) and (GHG-D) actors are the most *influential* and *important* participants in this hypergame.

The central premise of the (BPSHM)'s $(HG)_2$ is: "Initiating a peace process between major conflicting parties by the most-powerful state, or one of the power-equal two-states in inter-state conflicts reaching a balance of peace-state does not necessarily depend on opting for a mature mediation's conflict ripeness moment or the mutually-hurting stalemate one." Therefore, this study's second hypothesis is: "A balance of peace-state between nation-states is initially achieved through constructing a reconciliation and mutually utility-maximization-oriented-merged diplomacy bridging major conflicting parties diplomatically, politically, and socially at any phase during and post-inter-state conflicts."

5.2.2. The $(HG)_2$'s Perceived Games:

a. The $G_{2.1}$: The (State A)'s

The (State A) or (SA) player has this set of actions within its strategic preference vector (i.e., the $V_{2.1}$) along with the hypergame's course either in the past play or a replayed current 'future' one: a. (Activation of Conflict/War "A-C/W"); b. (Territorial/Political/Economic Non-Recognition/Non-Legitimization "N-R/L"); c. (Initiation of a Peace-Process "In-PP"); d. (Diplomatic, Political, Economic, and Social Integration "GR"). Where the probability (p) of those strategic preferences in the *past* (first) play were: i. ($0 < p \leq 1$) for the (A-C/W) and (N-R/L); ii. ($0 \leq p < 0.25$) for the (In-PP); iii. ($p = 0$) for the (GR). In a comparison, the probability in the *future* (second) play (i.e., the " HG_2 ") is: i. ($0 \leq p < 0.25$) for the (A-C/W) strategic action; ii. ($0 < p \leq 0.5$) for the (N-R/L); iii. ($0.5 < p \leq 1$) for the (In-PP); iv. ($0 < p < 1$) for the (GR).

In a misperception-based-hypergame, the $(G_{2.1})$ includes the $\{(V_{2.2}); \text{ and } (V_{2.3})\}$ where the (SA) player understands that the $(V_{2.2})$ includes a. (Continuation of Conflict/War), b. (Peace-Process Participation), and c. (Non-Recognition/Non-Legitimization) strategic actions. Simultaneously, the (SA) perceives that the (MP) has a (Neutral-Mediation) action in its $(V_{2.3})$. As well, within the $(G_{2.1})$, the (SA) perceives the $(V_{2.4})$, realizing that the (CP) has these



deterrence means/actions: a. (Imposing Sanctions, Boycotts/Embargos, or/and Trade Tariffs); b. (Use of (Credible/Capable) Threats); or/and c. (Use of Physical Power for Initiating Preventive/Collective Security-War(s) _ should the deterrence failed). The (SA) is not aware of the (GHG-D) actor in the game, and therefore, does not perceive its ($V_{2.5}$). The game is denoted as: $G_{2.1} = \{V_{2.2}, V_{2.3}, V_{2.4}\}$.

b. The $G_{2.2}$: The (State B)'s

The (State B) or (SB) player has a strategic preference vector (i.e., the $V_{2.2}$) in the entire hypergame that is approximately analogical with that of the (SA), containing these actions: a. (Activation of Conflict/War "A-C/W"); b. (Territorial/Political/Economic Non-Recognition/Non-Legitimization "N-R/L"); c. (Implementation of a Peace-Process "Im-PP") _ in terms of moving second sequentially to the (SA)'s first move; d. (Diplomatic, Political, Economic, and Social Integration "GR"). The (p) of the (SB)'s strategic preferences in the *past* (first) play were: i. ($0 < p \leq 1$) for the (A-C/W) and (N-R/L) moves; ii. ($0 \leq p < 0.25$) for the (Im-PP); iii. ($p = 0$) for the (GR). In this *future* (second) play, the probability is: i. ($0 \leq p < 0.25$) for the (A-C/W) strategic move; ii. ($0 < p \leq 0.5$) for the (N-R/L); iii. ($0 < p < 1$) for the (Im-PP); iv. ($0 < p \leq 0.5$) for the (GR) _ given that the (SB)'s actions represent the *reaction* of the (SA)'s and that there are three players (i.e., the (MP); (CP); and (GHG-D)) interfere in this (second) play, who did not participate in the first one.

In the $G_{2.2}$, the (SB) actor perceives the $\{(V_{2.1}); (V_{2.3}); \text{ and } (V_{2.4})\}$ while not perceiving the ($V_{2.5}$) because it is not aware of the (GHG-D) player in the $(HG)_2$. The (SB) understands that the (SA) has a preference vector (i.e., $V_{2.1}$) composed of a. (Peace-Process Initiation); b. (Peace-Process Spoiling); c. (Continuation of the War/Conflict); and (Non-Recognition/Legitimization). On the contrary to the (SA)'s perception of the ($V_{2.3}$), the (SB) realizes the (Biased-Mediation) as the (MP) vector's included action. Nevertheless, the (SA) and (SB) perceive the ($V_{2.4}$) symmetrically. This game is denoted as: $G_{2.2} = \{V_{2.1}, V_{2.3}, V_{2.4}\}$.

c. The $G_{2.3}$: The (Mediation Power)'s

As its role in the $(HG)_1$, the (MP) player is a participant in the second (future) play only of the hypergame, having the $\{(Neutral-Positive Mediation); \text{ and } (Face-Saving Diplomatic Tactics)\}$ moves within its preference vector (i.e., the $V_{2.3}$), which are of this probability: ($0 < p \leq 1$) in the game. In the $(HG)_2$'s $G_{2.3}$, the (MP) actor perceives the other players' preference



vectors as follows: first, it understands that both the ($V_{2.1}$) and ($V_{2.2}$) include: a. (National Security Preserving-Oriented-Military Engagement), b. (Homeland/Nation-State Borders Protection), c. (National/Natural Resources Supplies Maintaining/Securitization), and d. (Activation of Conflict/War) strategic moves. Second, the (MP) has the same perceptions over the (CP)'s ($V_{2.4}$) as the (SA) and (SB), while not being aware of the (GHG-D) in the game so that not perceiving its ($V_{2.5}$). This is denoted as: $G_{2.3} = \{V_{2.1}, V_{2.2}, V_{2.4}\}$.

d. The $G_{2.4}$: The (Coercive Diplomacy Power)'s

The (CP) player also participates in this future play solely or the (HG)₂. It has a preference vector (i.e., the $V_{2.4}$) indicating one strategic action that is the (Active-Coercive Diplomacy "A-COD"), which is considered a pure strategy it uses in the hypergame of this probability: ($0 < p \leq 1$). The (CP) player, in the $G_{2.4}$, understands both ($V_{2.1}$) and ($V_{2.2}$) precisely as the (MP) does while perceiving that the latter's preference vector (i.e., $V_{2.3}$) comprises the (Neutral-Mediation) strategic action, with not realizing the (GHG-D) player's existence in the game. We denote this as: $G_{2.4} = \{V_{2.1}, V_{2.2}, V_{2.3}\}$.

e. The $G_{2.5}$: The (Global Hegemonic Governance & Discourse)'s

The (GHG-D) player is the (HG)₂'s third actor who participates in this second (future) play without existing in the first (past) one. It has a preference vector (i.e., the $V_{2.5}$) composed of these strategic preferences: a. (Peace-Broker Discourse "PBD"), which is one strategy outcome of the (Positivity of Peace Hypergame Model)'s first hypergame and a possible strategy choice within this model; b. (Pro-Conflict Settlement/Resolution State-Building "PCS/R-SB"); and c. (the (PBD)'s Reinforcing Cultivation "D-RC"). The (p) of each of those strategic actions is: ($0 < p \leq 1$). In the $G_{2.5}$, the (GHG-D) perceives the other players' preference vectors since this actor is aware of them all in the hypergame. It understands the ($V_{2.1}$) and ($V_{2.2}$) as the (MP) and (CP) players do while realizing that the ($V_{2.3}$) includes the (Collective Diplomacy) strategic move and that the ($V_{2.4}$) contains the (Coercive Diplomacy) one. This game can be denoted as: $G_{2.5} = \{V_{2.1}, V_{2.2}, V_{2.3}, V_{2.4}\}$. Ultimately, all explained preference vectors perceived by players about others depend on those players' understanding and interpretation of the game and reality and how the others reason, which may be true or not.



5.2.3. The (HG)₂'s strategic interactions, equilibria, and expected utility: Relating Outcomes Between Individual Games in a Mapping Function

The (HG)₂'s Strategic Interactions:

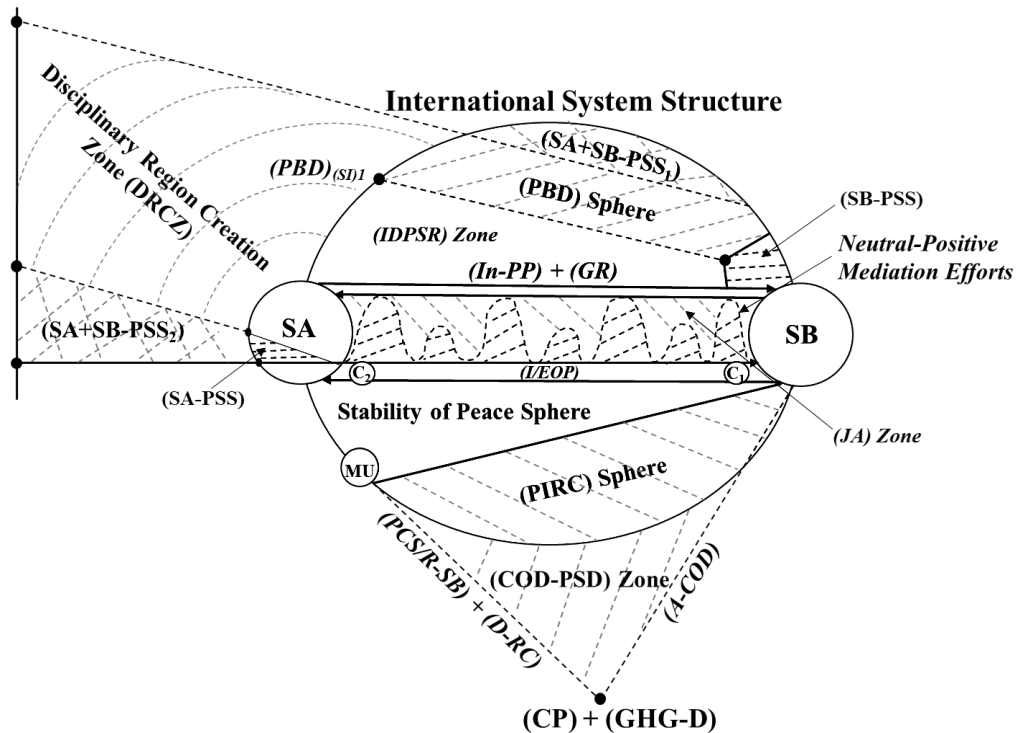
- Within the international system structure, the (Global Hegemonic Governance and Discourse) or the (GHG-D) player initiates the (HG)₂, having a first play advantage and moving to the (Peace-Broker Discourse “PBD”) strategic preference. The (PBD) is now an action to be picked after resulting as an accumulated output in the (Positivity of Peace Hypergame Model “PPHGM”)’s (Strategic Interactions)¹, the action that we refer to as the ((PBD)_(SD1)). Given that a cross-region “peace-hegemony-oriented-mass-disciplinary power” results out of the {(Fledgling Peace Hegemony), and (Omnipotent Peace Hegemony)} strategy outcomes _ that are the input-shifted-output strategies of the (PBD) output in the (PPHGM), a “(PBD) Sphere” constitutes here. This outcome is an equilibrium within the (GHG-D)’s perceived game but not for the entire (BPSHM)’s (HG)₂.

- Sequentially to the (GHG-D)’s ((PBD)_(SD1)) move and its resulted sphere of influence regionally, nationally, and globally, with being not aware of the (GHG-D) player in the game, the (MP) actor moves to the (Neutral-Positive Mediation “N-PM”) strategic action.

- Perceiving the (SB)’s ($V_{2.2}$) in its ($G_{2.1}$) as a preference vector includes the {(Continuation of Conflict/War); and (Peace-Process Participation)} actions, whereas the probability of the (SA)’s (Activation of Conflict/War “A-C/W”) strategic choice _ if made (i.e., “ $p \neq \text{zero}$ ”), is: ($0 < p < 0.25$), the State A or (SA) player as a rational actor and a *subject* to the “(PBD) Sphere” _ while not being aware of the (GHG-D) actor or its game, moves to the (Initiation of a Peace-Process “In-PP”) strategic preference. Here, the (SA) expects a maximized utility to result, according to its own interpretation and understanding of the game and perceptions of reality.



Figure 3: The Balance of Peace-State Hypergame Model: The Inter-State Hypergame “(HG)₂”



- With the (SA)’s choosing of the (In-PP) action, the “*first*” of this hypergame’s “*interruption factors*” appears, which is the (Peace Spoiling Behaviors Spheres “PSBS”). This factor’s circle begins by the “(SA) player-directed-peace spoiling sphere,” or the (SA-PSS).
- Given that it understands that: a. the (SA)’s ($V_{2.1}$) and (SB)’s ($V_{2.2}$) include the (Activation of Conflict/War) action, and b. there is a (Possible-Instability and Resuming Conflict, “PIRC,” Sphere) as a probable outcome in the (HG)₂, the (Coercive Diplomacy Power) or the (CP) player chooses to make its (Active-Coercive Diplomacy “A-COD”) move sequentially to the (SA)’s (In-PP) one. Therefore, this actor brings major conflicting parties (i.e., the “SA, and SB”) into line, as well as overcoming possible (*high*) leverage of the constituted (PSBS) factor over one, or all, of those parties.
- The (SB) player (i.e., the State B) moves, sequentially, to the (Implementation of a Peace-Process “Im-PP”) action, thus, taking place in an initiated peace process, relying on its available information and perceptions about the (SA)’s ($V_{2.1}$) within its ($G_{2.2}$), and being a subject to possible deterrence means applied by the (CP). Since the (SB) also understands that the (SA) initiates a peace process while seeking to practice a spoiling behavior implicitly (i.e.,



the “Peace-Process Spoiling” perceived action of ($V_{2.1}$) in the “ $G_{2.2}$ ”), acquiring benefits through the initiation, the (SB)’s (A-C/W) strategic move’s probability is still ($0 \leq p < 0.25$) at this stage of the (HG_2).

- Consequently, the “(SB) player-directed-peace spoiling sphere,” abbreviated as (SB-PSS), arises with the (SB)’s choosing of the (Im-PP) action.

- Out of the previous interactions and when using these strategies sequentially: {(PBD)_(SD1) by (GHG-D); (N-PM) by (MP); (In-PP) by (SA); (A-COD) by (CP); and (Im-PP) by (SB)}, an outcome arises that is an *equilibrium* within the (SA) and (SB)’s perceived ($G_{2.1}$) and ($G_{2.2}$) only. This equilibrium is the (Joint-Agreements/Accords/Pacts Zone) or the “(JA) Zone,” which refers to how the two players understand that such an outcome can resolve the conflict or believe what will happen in the future. At this position, the payoffs accumulated by the (SA) and (SB) players respectively are: $\{(U_{M-1}), (U_{M-1})\}$ representing the mid-level utility value of ($U_{0.5}$) for both. Thence, no player is worse off, but also none is *sustainably* better off, where the probability of the (A-C/W) is still ($0 \leq p < 0.25$) at this position. So, this outcome is *not* stable, and therefore, *not* needed as equilibrium for the entire (HG_2).

- The (SA) player, expecting an extended maximized utility by the diplomatic resolution given the reached “(JA) Zone” equilibrium, chooses the (Diplomatic, Political, Economic, and Social Integration, “GR”) strategic action in a sequential move to the (SB)’s (Im-PP) preference. However, the “*second*” interruption factor occurs as an interference variable, which is the (Internal or/and External Opposition “I/EOP”). This (I/EOP) factor represents the cost (C_1) of the (SA)’s strategic choices in the (HG_2).

- Sequentially to the (SA)’s (GR) choice, the (MP) moves to the (Face-Saving Diplomatic Tactics “FS-DT”) preference.

- Consequently, the (SB) player, having like-perceptions as the (SA)’s regarding an expected maximized utility while also considering the “(JA) Zone” equilibrium, acts likewise preferring the (Diplomatic, Political, Economic, and Social Integration, “GR”) same strategic choice. Symmetrically, the (SB) player coups with the cost (C_2) of its strategic choices in the hypergame for having the (I/EOP) similar interference factor.

- Simultaneously with aggregating the (C_1) and (C_2), the “(SA) and (SB)-directed-peace-spoiling sphere (1)” constitutes, as well as the “(SA) and (SB)-directed-peace-spoiling sphere (2).” Both are abbreviated as (SA+SB-PSS₁) and (SA+SB-PSS₂); see Figure 3.



b. The (HG)₂'s Equilibria and Expected Utility:

a) With the (SB)'s choosing of the (GR) action, the (Initial Diplomatic-Political-Social Reconciliation Zone) or the "(IDPSR) Zone" arises as an outcome for the entire (HG)₂ when using the {(GR), (FS-DT), (GR)} strategies in a sequential move by the {(SA), (MP), and (SB)} players, respectively. Being *known* outcome for those players, the "(IDPSR) Zone" equilibrium is also stable, given the stability of payoffs or utility accumulated at this position, which is: {(U_{H-1}), (U_{M-1}), and (U_{H-1})} of each consecutively. In this context, the (U_{H-1}) is a high-level utility in the (U_{0.7}) value gained equally by the (SA) and (SB) players, and the (U_{M-1}) is a mid-level utility in the (U_{0.6}) value, where the probability (*p*) of choosing the (A-C/W) strategic choice at this position by either (SA), or (SB), is (*p* = 0). So, using these strategies sequentially: {(GR), (FS-DT), (GR)} is the "*Nash Equilibrium (1)*" of the (HG)₂. Moreover, if the hypergame ends by this stage, no player would have the impulse to deviate from this stable position of higher payoffs achieved for all by simultaneously making their *best* reply to each other's strategy.

b) When using these strategies sequentially: {(PBD)_{(SD)1} by (GHG-D); (N-PM) by (MP); (In-PP) by (SA); (A-COD) by (CP); (Im-PP) by (SB); (GR) by (SA); (FS-DT) by (MP); and (GR) by (SB)}, an *unknown* accumulated outcome arises, which is the (Disciplinary Region Creation Zone "DRCZ"). Under this equilibrium, the payoff becomes: (U_{H-1}), for the {(SA), (SB), and (GHG-D)} players in this high-level utility value: (U_{0.7}), equivocally. As well, the {(MP) and (CP)} players' utility value at the same position is (U_{0.6}) – that is a mid-level utility (U_{M-1}) close to being high. Given that the (A-C/W) strategic choice's probability when using the {(GR), (FS-DT), (GR)} strategies by the {(SA), (MP) and (SB)} players, sequentially, is (*p* = 0), the (DRCZ) outcome becomes stable, which is the "*Nash equilibrium (2)*" of the (HG)₂. Again, once this position is reached, no player may have the incentive to deviate since each achieved higher and stable payoffs in the hypergame, simultaneously making the *best* response to the others' used strategies.

c) Considering the previous equilibria of the "(IDPSR) Zone" and the "(DRCZ)," the hypergame's yielded payoffs for all players at both positions are higher and stable. However, in the (HG)₂, and sequentially to the (SB)'s (GR) action, the (GHG-D) player as a rational actor perceiving a possible '*perfect*' equilibrium position, is assumed to prefer picking the (Pro-Conflict Settlement/Resolution State-Building, "PCS/R-SB") strategic choice, as well



as the “(PBD)’s Reinforcing Cultivation, (D-RC),” at the same move. We denote both the {(PCS/R-SB) and (D-RC)} actions as the (PSD). Given that the other players are not aware of the (GHG-D) in the hypergame, then making those two choices is more likely *not* perceived within the other players’ (individual) games unless they obtain information about this player’s game or/and made choices (i.e., decisions). In other words, the accuracy of the (HG)₂ is dependent on available information. Nevertheless, that dual-action or the (PSD) made in a sequential move to the other chosen strategic preferences results in:

d) The {(COD-PSD) Zone} equilibrium: that occurs when sequentially using these strategies: {(PBD)_{(SD)1} by (GHG-D); (A-COD) by (CP); and then, the (PCS/R-SB), and (D-RC), or (PSD), by (GHG-D)}. The utility value achieved for the (CP) and (GHG-D) players, respectively, at this position, is: {(U_{0.7}), (U_{0.8})}, which both lie in the high-level utility “(U_{H-1})” category, where the (*p*) of the (SA) and (SB)’s (A-C/W) strategic preference is (*p* = 0). Despite being stable, this equilibrium is *only* perceived within the individual game of the (GHG-D), conveying this player’s perceptions of how the conflict can be resolved. It is *not* needed as equilibrium for the entire hypergame, therefore.

e) The (Stability of Peace Sphere) outcome: that is the “*Nash equilibrium (3)*” of the (HG)₂, which occurs when picking these strategies in a sequential move: {(PBD)_{(SD)1} by (GHG-D); (N-PM) by (MP); (In-PP) by (SA); (A-COD) by (CP); (Im-PP) by (SB); (GR) by (SA); (FS-DT) by (MP); (GR) by (SB); (PCS/R-SB), and (D-RC) by (GHG-D)}. Here, the hypergame extends based on the previously achieved “Nash equilibrium (2)” so that no player deviated, but only *unilaterally*, the (GHG-D) actor develops the precedent equilibrium’s position. Similarly, each makes the *best* response to the other players’ strategies simultaneously, where the probability of the (SA) and (SB)’s (A-C/W) action is (*p* = 0). Accordingly, the payoffs result as a total “*mutual utility (MU)*,” whose values are: {(U₁), (U₁), (U_{0.8}), (U_{0.8}), (U₁)} for the {(SA), (SB), (MP), (CP), (GHG-D)} players, respectively. So, the *perfect* utility value (U₁) is yielded for the {(SA), (SB), and (GHG-D)} actors, which is *absolutely* the highest value the players can receive ever either in the (HG)₁ or the (HG)₂ of the (BPSHM). Comparingly, the {(MP) and (CP)} players achieve high-level utility “(U_{H-1})” values (i.e., “U_{0.8}”), also raising their gains in the (HG)₂ under this equilibrium. Ultimately, the (Stability of Peace Sphere) outcome is *stable* _ given its relevant position’s stability with the highest payoffs received by



all players if reached, despite being *known* for the (GHG-D) player solely and *unknown* for the other players in the hypergame.

5.2.4. The (HG)₂'s Balance of Peace-State: The (BPS)'s Equations of Inter-State Conflicts

a. The Equations' Assumptions:

a) Main premise: if $p \{SA (In-PP)\} \simeq \{p (N-PM) + p (In_{SA}) + p (GR_{SA}) + p (C_1)\}$, where (p) is the probability, and that the $\{p (N-PM) \geq p (In_{SA}) > p (GR_{SA}) \geq p (C_1)\}$ where ($0 < p \leq 1$).

b) If $N (SB-PSS) \geq N (SA-PSS)$, where (N) is the (Total Influence), given that the (SA) is the initiator to a peace process (PP). And that:

- $N (SA+SB-PSS_1) < N (SA+SB-PSS_2)$, where the (PSS₁) arises outside the (DRCZ) while the (PSS₂) occurs inside this zone.

- $N (SA+SB-PSS_2) < N (DRCZ)$.

c) If $N^2 (DRCZ) \simeq N (COD-PSD)$ Zone, where (N^2) is the (Overwhelming/Doubled Total Influence N).

And that: $\{(DCS \equiv MS); \text{ but } (MS \nparallel DCS)\}$, where the (DCS) is the "Diplomatic Convention(s) Signing;" the (\equiv) is the *equivalency* relation; the (MS) is the "Mediation Success;" and the (\nparallel) is the *unparallel* relation.

b. The (HG)₂'s "balance of peace-state (BPS)" equations:

Based on the previous assumptions and configurations, there are three cases of the "Success of Peace Process" or the $\{S (PP)\}$ inter-state under the (HG)₂'s given context; these are:

a) **Case 1:** The "Multiplied $\{S (PP)\}$ " or the $\{S^2 (PP)\}$ that occurs when:

$$S^2 (PP) \simeq \{((SA (In-PP)) + N^2 (DRCZ)) - (N (SA+SB-PSS_2))\}, \text{ where } \{N^2 (DRCZ) \simeq N (COD-PSD)\}. \text{ In this case, the } \{S^2 (PP) \parallel (MS)^2\}.$$

b) **Case 2:** The "Limited $\{S (PP)\}$," occurring when:

$$LS (PP) \simeq \{(SA (In-PP)) + (n (DRCZ)) + (n (COD-PSD))\}, \text{ where the (L) refers to (Limited), and the (n) is the (Partial Influence).}$$

$$\text{Then: } \{LS (PP) \parallel (MS) + \frac{1}{2} (N (SA+SB-PSS_2))\}; \text{ or } \{LS (PP) \parallel (MS) - \frac{1}{2} (N (SA+SB-PSS_2))\}. \text{ Then: } \{LS (PP) \parallel L (MS)\}.$$

c) **Case 3:** The "Normality of $\{S (PP)\}$," which occurs when:



$RS (PP) \simeq \{ (SA (In-PP)) + (N(DRCZ)) + (n (COD-PSD)) \}$, where the (R) here refers to (Normality) _ given that if there is (n) of the (COD-PSD), then there cannot be (N^2) of (DRCZ).

Then: $\{RS (PP) \parallel (MS)^2 + \frac{1}{2} (N (SA+SB-PSS_2))\}$; or $\{RS (PP) \parallel (MS)^2 - \frac{1}{2} (N (SA+SB-PSS_2))\}$. Then: $\{RS (PP) \parallel R (MS)\}$.

c. Cases probabilities:

Based on the previous equations: the $\{N(S^2 (PP)) > N(RS (PP)) > N(LS (PP))\}$, where the $\{p(S^2 (PP)) > p(RS (PP))\}$, and the $\{p(LS (PP)) > p(RS (PP))\}$ where $(0 < p < 1)$.

Nevertheless, the $\{p(S^2 (PP)) > p(LS (PP))\}$ if the $\{PPE \simeq GHP - RHW^{-CU}\}$ as proved above in the (Positivity of Peace Hypergame Model)'s (Positivity of Peace Equilibrium "PPE") equation.

Finally, depending on the (Balance of Peace-State Hypergame Model)'s $(HG)_2$'s reached Nash equilibria, and the "balance of peace-state" equations of inter-state conflicts, we prove the validity of this model's second hypothesis: "A balance of peace-state between nation-states is initially achieved through constructing a reconciliation and mutually utility-maximization-oriented-merged diplomacy bridging major conflicting parties diplomatically, politically, and socially at any phase during and post-inter-state conflicts."

6. Conclusion

This study introduces a multi-level conflict management approach, including the (Positivity of Peace Hypergame Model "PPHGM") and the (Balance of Peace-State Hypergame Model "BPSHM"). The (PPHGM) is a second-level hypergame where the entire hypergame comprises hypergames perceived by the players _ conditioning that one player at least understands that a hypergame is being played and that there is a misperception in the game so that the deception can find its way within the course of such interactions. Comparingly, the (BPSHM) is a first-level hypergame where the entire hypergame includes games perceived by the players where the misperception and incomplete or misled understanding may exist about the reality, the game, and other players' preference vectors.

Within the (PPHGM), which contained two separate entire-hypergames of different levels of strategic interactions transforming the IR and media theories applied into strategic



practice, the equilibria reached are as follows: 1. The (PPHGM)'s (HG)₁'s equilibria: {(Elite-Publics' Mutually Impact Realm "EP-MIR"); (Fledgling Peace Hegemony "FPH"); (Omnipotent Peace Hegemony "OPH"); and (Peace-Broker Discourse "PBD")}. 2. The (PPHGM)'s (HG)₂'s equilibria: {(Global Transformation Initial Realm "GTIR"); (Adoption and Gratification Sphere "AD-G"); and (Peace-Hegemony-Oriented-Mass-Ideological Rehabilitation "MIR")}. 3. The (Positivity of Peace Equilibrium "PPE"): The (PPE) is *equivalent* to the $(GHP - (RHW)^{-CU})$ formula that equals the "Global Hegemony of Peace Versus Realist Hegemony of War's Inevitability (GHP vs. RHW)" if the (RHW) was in a minus value of collective utility (CU) as proved in the (PPE) equations mentioned above.

Lastly, the (BPSHM) included an intra-state hypergame "(HG)₁" and another inter-state one "(HG)₂", emulating conflict management cases in real-world circumstances and reaching these equilibria: 1. The (BPSHM)'s (HG)₁'s equilibria, which are the {(Mini-Maximum Equilibrium) for conflict settlement in a zero-mediation stage; and (Stability of Peace State) Nash equilibrium for conflict resolution in a mediatory non-state actors' stage}. 2. Nash equilibria of the (BPSHM)'s (HG)₂, that are: the {(Initial Diplomatic-Political-Social Reconciliation Zone "(IDPSR) Zone"); (Disciplinary Region Creation Zone "DRCZ"); and (Stability of Peace Sphere)}. Based on the reached equilibria of our multi-level conflict management approach's two models, we proved the validity of this study's hypotheses.

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