# The Taiwan Conflict: a strategic and operational analysis

El conflicto de Taiwán: un análisis estratégico y operativo

Abstract: The present article intends to present a strategic and operational analysis of the Taiwan conflict. Currently, the dispute in question is at the stage of a political-strategic crisis. Beyond the China-Taiwan dyad, the complexity of the crisis is stressed by incorporating in its dynamics two rival great nuclear powers: The United States of America and China. In order to assess the possibility of an armed conflict in the Western Pacific region, characterized by a hypothetical invasion of Taiwan or even as a result of the limited use of violence by China, the paper discusses the main strategic and operational aspects implicated in the dispute and the diversified instruments of national power employed by the involved actors, particularly their military apparatus. In conclusion, the article draws inferences about the likely Chinese strategic posture in the face of Taiwanese resistance, strengthened by the political-military support of Washington and its allies.

**Keywords:** Political-strategic crisis; coercion; military strategy; Taiwan; case study methodology.

Resumen: Este artículo tiene el objetivo de presentar un análisis estratégico y operativo del conflicto de Taiwán. Actualmente, el litigio en cuestión se encuentra en etapa de crisis político-estratégica. Además de la dupla China-Taiwán, la complejidad de la crisis se acentúa al incorporar a su dinámica a dos grandes potencias nucleares rivales: Estados Unidos de América y China. Con el fin de evaluar la posibilidad de que estalle un conflicto armado en la región del Pacífico Occidental, caracterizado por una hipotética invasión de Taiwán o incluso como resultado del limitado uso de la violencia por parte de China, el artículo analiza los principales aspectos estratégicos y operativos involucrados en la disputa, y los diversos instrumentos de poder nacional empleados por los actores involucrados, en particular su aparato militar. En conclusión, el artículo hace inferencias sobre la probable postura estratégica china frente a la resistencia taiwanesa, fortalecida por el apoyo político-militar de Washington y sus aliados.

**Palabras clave:** Palabras clave: Crisis político-estratégica; coerción; estrategia militar; Taiwán; metodología de estudio de caso.

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### 1. INTRODUCTION

This article focuses on the Taiwan conflict in the context of the Chinese-American competition in the Western Pacific. At the end of 2021, research institutes witnessed a substantial increase in China's coercive activities over Taiwan. Chinese coercive measures developed through provocative military actions, in addition to the coercive use of other instruments of national power, such as economic pressure and psychological warfare. In the period in question, the People's Liberation Army (PLA) intensified its air raids, carried out by fighter aircraft and bombers, in the Air Defense Identification Zone<sup>1</sup> (ADIZ, ) of Taiwan, as well as undertook naval maneuvers and amphibious assault exercises in the vicinity of the disputed area. According to the International Institute for Strategic Studies (IISS, 2022, p. 6):

From January to November 2021, the PLA conducted 230 sorties in the Taiwan Air Defense Identification Zone. More than 800 aircraft were employed, including fighters, bombers, and special mission aircraft, particularly KQ-200 anti-submarine warfare aircraft [...].

In August 2022, the visit to Taiwan of Nancy Pelosi, Speaker of the United States House of Representatives, aggravated the state of tension of the aforementioned litigation. Beijing has responded through political-diplomatic protest actions and military maneuvers around the main Taiwanese island, which have included the launch of ballistic missiles in maritime areas. It is thus found that Beijing escalates the political-strategic crisis with the purpose of coercively subjecting the Taipei government to its national interests, specifically "Chinese reunification". Also, ostensibly states that it does not rule out the direct use of military force to reincorporate Taiwan into its territory, considered a breakaway rebel province. It can clearly be seen the resolution of the strategic posture despite the various actions of extended deterrence<sup>2</sup> adopted by the United States. Despite the signs of force from Beijing, there have been no territorial violations or other acts of aggression defined in international norms (UNITED NATIONS, 1974).

The analysis undertaken aims to scrutinize the aforementioned crisis through the development of a strategic-operational scenario. For this purpose, the study of applied military strategy (FERREIRA; TEIXEIRA JÚNIOR, 2021) was used in combination with the scenario construction methodology (BUARQUE, 2003). From this theoretical-methodological framework, the article proposes to examine the circumstances and conditions of a hypothetical armed conflict in the Taiwanese geopolitical environment, with spillover risk to the Western Pacific. In the light of the strategic theory mobilized here (BEAUFRE, 1998;

<sup>1 &</sup>quot;Airspace, of defined dimensions, within which prompt identification, location and control of aircraft" (BRASIL, 2015, p. 288). This area does not correspond to the national airspace.

<sup>2</sup> Extended deterrence consists of discouraging armed aggression against allies or partners (MAZARR, 2018).

BIDDLE, 2004; EASTON, 2017; GRAY, 1999; MAZARR, 2018; SCHELLING, 1966),<sup>3</sup> the article seeks to assess the plausibility of the occurrence, in the short term (2022-2027), of a Chinese amphibious assault against Taiwan. The time frame of 2027 is particularly relevant, given that it is the centenary of the founding of the PLA. Reinforcing this thesis, the 5th Plenum of the 19th Central Committee of the Chinese Communist Party stated that the pace of modernization of the military apparatus should be accelerated, with the goal being 2027 (IISS, 2021).

The article makes use of the deterrence theory<sup>4</sup> (MAZARR, 2018; SCHELLING, 1966) and, for a finer understanding of China's strategic situation, it draws on authors such as Fravel (2019) and his research on Chinese strategic evolution. Easton's (2017) study was instrumental in a more accurate examination of the Taiwanese perspective. For strategic and operational analysis, we combine Beaufre's (1998) theory of strategy with the typology of basic strategic methods at the national and military levels. The text adopts the qualitative approach, essentially following a case study methodology. The observations of the authors and inferences are based on the prevalence of rationality in the strategic calculation undertaken by the states considered. To elucidate the strategic calculation, physiographic, political, economic, psychosocial and military variables were used.

The article is organized as follows: after the introduction, the strategic analysis will seek to identify the goals, ways and means of the main contenders; in sequence, addressing operational issues of the conflict on screen, the work discusses scenarios which illustrate the options of the major powers involved, including a possible Chinese invasion of the Taiwanese islands. By analyzing the multiple facets of the strategic environment, we seek to identify the likely posture of Beijing in the face of Taipei's opposition, resulting from the analysis of the costs, risks and benefits involved.

## 2. STRATEGIC ANALYSIS

Given the inescapable character of geography in strategic issues (GRAY, 1999), it is initially necessary to present the conflict region. The main island of Taiwan is observed in a position close to the Chinese coast, at a distance of approximately 180 km. Some of its islands, such as Kinmen and Matsu, are only 10 to 20 km from the Chinese coastline. Surrounding Taiwan is Japan's strategic island, Okinawa, 600km to the Northeast, site of a major US naval and other air base in the Western Pacific. The Philippines, an ally of the United States, is 400 km away to the south and the island of Guam (USA) 2,700 km away to the southeast, home to the naval base of the Seventh Fleet and U.S. strategic bombers. A little further north, Japan and South Korea, traditional allies and sites of several military bases of the United States, particularly in

<sup>3</sup> Strategy, from a holistic perspective, is the bridge that connects the resources of power (available means) to political purpose (desired ends). In other words, the resources must be adequate and sufficient to achieve the objectives through the selected methods (ECHEVARRIA II, 2017).

<sup>4</sup> A modality of strategic coercion (SCHELLING, 1966), deterrence consists of the use of threats to discourage a rival actor from undertaking an act undesirable to the interests of the coercing state, with the purpose of maintaining the current political-strategic situation (FREEDMAN; RAGHAVAN, 2013). It is associated with the ability to repel (deterrence by denial) or retaliate (deterrence by punishment), with nuclear or conventional force, eventual hostile actions against the State (RÜHLE, 2015).

Yokosuka and Sasebo. It is verified that the geographical location of Taiwan directly impacts China's national security, since its relative positioning allows the control of maritime traffic on the Chinese east coast, as well as represents a gateway to the Western Pacific, enhancing the power projection of Beijing.

With the intention of explaining the different interactions between the actors involved in the litigation, it is necessary to expose a diagram of relationships. In particular, Taiwan is noted as the epicenter of the controversy, in direct antagonism to China's reunification interests. In parallel to the China-Taiwan duality, the United States, Beijing's geopolitical rivals, promote close political-military cooperation with the Taiwanese (HSIEH, 2020) and can lead a coalition of countries in defense of the island, constituted, in addition to the Americans, by the United Kingdom, Australia and Japan, without taking into account the range of possibilities for participation by nations that have disputes with China. Thus, the strategic articulation between the United States, India, Japan and Australia, known as *Quad*, with the purpose of fostering political-military cooperation between these countries, clearly aimed at containing Chinese expansion in the Indo-Pacific region (IISS, 2022). In addition, Washington and London articulated a military cooperation agreement with Australia, referred to as AUKUS, endorsing, among other terms, the transfer of nuclear propulsion technology to the Australian Navy's attack submarines, a naval vector of great relevance in a strategy of containment of China by denying the use of the sea (IISS, 2022).

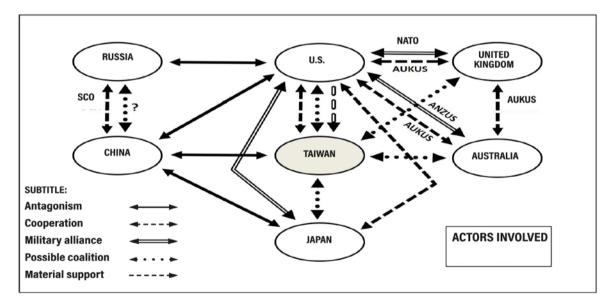


Figure 1 – Diagram of relations in the Taiwan conflict<sup>5</sup>

Source: The authors based on Carpenter( 2021), Easton (2017), Fravel( 2008), Greer( 2018), Grossman & Mayers (2019), Heginbotham *et al.* (2015), Mearsheimer (2005, 2013) and IISS (2021, 2022).

<sup>5</sup> The relationship diagram is part of the military strategic planning methodology (FERREIRA; TEIXEIRA JÚNIOR, 2021), however, as a simplified model of reality, it does not portray all the actors that may eventually be involved in the conflict, such as India. The expression "possible coalition" reflects the common security interests of the connected actors in relation to the conflict on screen.

However, the Washington stance of strategic ambiguity over the Taiwan conflict needs to be considered. U.S. endorses commitment to island defense efforts,<sup>6</sup> through military assistance and the provision of military materiel, but do not attest to direct military intervention in the event of belligerence. The U.S. supports a peaceful negotiated settlement, but rejects Taipei's unilateral declaration of independence. On the other hand, it is unwise to disregard the Russians. China and Russia are members of the Shanghai Cooperation Organization and enjoy a strong military-political partnership at present, despite their latent historical antagonisms.

Since the beginning of the Twenty-First Century, based on consistent Chinese economic growth, there has been an ambitious program of expansion, reforms and modernization of the people's Liberation Army, the Beijing armed forces (IISS, 2021). Today, China has full mastery of almost all military technologies used in contemporary multidimensional combat, taking the forefront in some research sectors, notably in the area of anti-ship ballistic missiles and hypersonic glider vehicles (IISS, 2022).

Despite the Taipei investments in its armed forces, the military imbalance in favor of the Chinese is notable, in both quantitative and qualitative terms. The ground forces of the PLA outnumber their Taiwanese counterparts by ten times. The Chinese superiority in war material, whether tanks, fighter aircraft, submarines or other equipment, is almost similar. In technological terms, it emphasizes the remarkable Beijing progress in hypersonic weapons, fifth-generation fighters, airfield ships, anti-ship missiles, anti-aircraft defenses, satellites and other military systems. In this context, the PLA's Rocket Force stands out, equipped with about 2,000 ballistic and cruise missiles, of varying ranges, and the Strategic Support Force, which incorporates electronic, cybernetic and psychological warfare units, being also responsible for Chinese space operations (UNITED STATES, 2021a).

However, it is necessary to emphasize the great influence of subjective aspects on the relative combat power, such as the effectiveness of doctrine, military leadership, troop motivation, as well as the level of professionalism and training of the Armed Forces, *inter alia*. Not always numerical and technological advantage ensure victory (BIDDLE, 2004). In addition, it should be noted that, in the previous comparison of the antagonistic forces, the military forces of an eventual coalition of countries, led by the United States, are not related. In this case, the Chinese advantage would be minimized or even nullified<sup>7</sup>.

From the perspective of Taiwan's military apparatus, it is possible to affirm that its armed forces, despite the numerical and technological prevalence of Beijing, are very well prepared for defensive combat against amphibious landings, as well as for urban combat. Its military bases are deployed mostly on the western coast of the island, facing the Taiwan Strait, with an emphasis on coastal defense supported by Moderna fighters, fast attack vessels and artillery batteries equipped with anti-ship missiles. Its main naval bases are located to the south and North, in Kaohsiung and Keelung, respectively. Taipei, recognizing the military

<sup>6</sup> U.S. support is based on the law known as Taiwan Relations Act (TRA), approved in 1979 (EASTON, 2017).

<sup>7</sup> For a more accurate perception of the balance of forces in the conflict, consult the comparison of Chinese and U.S. military capabilities in the Western Pacific developed by Heginbotham et al.. (2015).

disparity in favor of Beijing, has made heavy investments in asymmetric warfare systems such as portable anti-aircraft and anti-tank missiles, naval mines, submarines and remotely piloted aircraft. In order to mitigate the effects of a Chinese missile attack, the Taiwanese promoted the fortification of their military bases and command centers, as well as built shelters embedded in the mountains of the eastern coast to protect their fighter aircraft (EASTON, 2017). In order to optimize combat performance, Taipei currently conducts a process of transition from compulsory conscription to voluntary and professional military service. In addition, it is necessary to consider the large Taiwanese capacity to mobilize human resources, which can reach up to one and a half million soldiers.

Based on previous considerations, the crisis maneuver<sup>8</sup> of the Chinese government, in the search for a peaceful resolution of the dispute, employs a combination of strategic actions, highlighting the use of direct negotiations, political-economic coercion, psychological and cyber operations, as well as naval maneuvers, amphibious exercises and air raids on the Taiwanese ADIZ areas (EASTON, 2017). Chinese strategic thinking emphasizes the concepts of unrestricted war and conflict in the gray zone,<sup>9</sup> applicable to an indirect strategic conception, which admits, however, the direct application of military force on a limited basis. The Chinese government's behavior of escalating the crisis seeks to modify the *status quo* and achieve its political goal – reunify the country – at the same time, it seeks to control coercive confrontation to avoid a multidimensional armed clash against the United States and its allies, with unpredictable results.

On the other hand, the U.S. political-diplomatic action is notorious in order to consolidate military alliances with friendly countries in the Indo-Pacific to enhance its deterrent strategy against the Chinese. The implementation of the U.S. strategy can be exemplified by combined training operations to promote interoperability of multinational forces, as well as the transfer of sensitive armaments and critical technologies to regional partners. Therefore, it is plausible to characterize the U.S. posture by extended deterrence (nuclear and conventional), advanced presence, power projection and geostrategic containment in depth.

As a complement to the foregoing, it is noted that the military bases of the United States and its allies are arranged in two lines (island chains), which provide strategic depth to the containment device. The basis of this strategic conception lies in the fact that, being a nation dependent on maritime trade to sustain its economic growth, China is at a geographical disadvantage compared to the aforementioned island chains, which restrict its free access to the Western Pacific.

<sup>8 &</sup>quot;Crisis management process that has as its basic purpose to achieve an advantageous peace, preventing it from evolving into armed conflict. It comprises a set of actions triggered to strain, stabilize or escalate in relation to the crisis situation" (BRASIL, 2015, p.161).

<sup>9</sup> Unrestricted warfare is based on political, legal, economic, financial, psychological, cyber, terrorist and other actions as complementary alternatives to direct military confrontation (LIANG; XIANGSUI, 1999). In turn, conflict in the gray zone means a coercive confrontation, in a situation of political-strategic crisis, through diverse instruments of national power, including limited violent actions, at a level below the armed conflict or of the war (MAZARR, 2015).



Figure 2 – China Containment Strategy (Island Chains)

Source: United States (2010, p. 23).

Despite the absence of Chinese-American territorial disputes, the United States has repeatedly carried out naval operations entitled *Freedom of Navigation* in the South China Sea and the Taiwan Strait, to enforce the precepts of the United Nations Convention on the law of the Sea (UNCLOS), challenging Chinese maritime claims deemed excessive<sup>10</sup>. As occurred in 2020, in 2021 transits were conducted in the Taiwan Strait at an average rate of one monthly occurrence (IISS, 2022).

Taipei, in turn, acts in the field of foreign policy to withdraw Beijing's freedom of action within the framework of the international community, conducts information operations<sup>11</sup> to enhance national resistance and to gain support from world public opinion, as well as evidence of its military capabilities, through successive military exercises in order to deter the Chinese. However, it is estimated that the success of its external maneuver is limited. Taiwan does not benefit from the political recognition of the international community, with the exception of a few countries such as Honduras, Paraguay and Palau, *inter alia*, as well as not being a member of the United Nations since 1971, when it was replaced by the People's Republic of China.

<sup>10</sup> They contradict what is contained in UNCLOS, in particular the rights of navigation and the limits of jurisdictional waters.

<sup>11</sup> According to Brasil (2015, p.198), they are "coordinated actions that contribute to the achievement of political and military objectives. Executed for the purpose of influencing an actual or potential opponent by diminishing their combativeness, internal and external cohesion, and decision-making ability. [...]". It is possible to affirm that information operations consist of the synergistic performance of capacities related to the flow of information, in order to provide knowledge and situational awareness to the command, inform and influence groups and individuals, perform non-kinetic interdiction actions, as well as affect the decision-making process of opponents, while neutralizing the effects of adverse actions in the informational dimension.

The success of China's crisis maneuver, backed by compellence,<sup>12</sup> is conditional on the military capabilities of the PLA and Beijing's credibility. It is well known that China currently has Naval restrictions to consummate an amphibious invasion of the Taiwanese islands. Nevertheless, it is fully capable of carrying out interdiction and blockade operations against Taiwan. On the other hand, the Chinese political leadership does not lack the appetite to use violent means, especially in terms of the interests at stake. The coercive message, largely made explicit by diplomatic communication and official statements, is systematically toned down by shows of force and provocative military actions. It remains for Beijing to shoulder the costs of punishment in the face of Taipei's reluctance.

To identify Beijing's strategic options, the two basic strategic methods used at the national and military levels will essentially be considered – direct action and indirect action – noting that the method of indirect approximation is not contemplated in this reflection<sup>13</sup> and the nuclear method, these intrinsic to military strategy. As premises of analysis, the involvement of the United States and its allies in possible belligerence, in a limited way and without invasions of mainland China, as well as the prevalence of the nuclear interdict, even in tactical character, are considered plausible (HAMMES, 2012; KREPINEVICH, 2010).

First, the indirect action method will be discussed. According to the opinion of the authors and many international analysts, the aforementioned strategic method, in the national and military spheres, configures the priority option for the Chinese and most likely to occur (FRAVEL, 2008). This assertion is based on the reduced freedom of action (BEAUFRE, 1998) enjoyed by Beijing towards external public opinion and the international community, as well as the insufficiency of military forces in the face of the Taiwanese opposition strengthened by a presumed coalition led by the United States. However, the relevance of the political objective established by the Chinese leadership bases the use of armed violence, on a limited basis, on the hypothesis of failure of its purely coercive actions.

In the field of national strategy, in alignment with the aforementioned method, the use of the successive actions model is visualized, which implies the combination of indirect pressure, direct threat and military actions limited in strength<sup>14</sup>. In this case, the Chinese promote, preliminarily, demonstrations of military force materialized by amphibious assault exercises and naval maneuvers in the Western Pacific, actions merely supporting the political-diplomatic pressures, economic-financial coercion and psychological warfare undertaken by Beijing. In a second phase, currently underway, the indirect use of military power assumes a leading role through provocative military actions, with the purpose of escalating the crisis.

<sup>12</sup> A modality of strategic coercion, compellence constitutes an active threat to use force, coercing the opponent to change behavior contrary to the interests of the coercive State (SCHELLING, 1966).

<sup>13</sup> The lack of operational requirements, such as surprise and passability, contradicts the indirect approach.

<sup>14</sup> The strategic models cited in this work are direct threat, indirect pressure, successive actions, violent conflict and prolonged conflict (BEAUFRE, 1998).

In the final step, China would admit the direct use of its military apparatus through limited aggressive actions, such as interdiction operations associated or not with the establishment of a maritime and air exclusion zone around Taiwan. Analysts such as Carpenter (2021) also warn of the possibility of a limited offensive on the islands of Kinmen and Matsu, near the Chinese coast, for bargaining purposes at the negotiating table, a typical situation of *fait accompli*.

The combination, sequential or cumulative (WYLIE, 1967), of the strategies of interdiction, blockade and (limited) offensive,<sup>15</sup> as well as the dosage of the applied force, make operational art noticeable. Therefore, there are numerous strategic arrangements that can be employed based on the above method. As stated in the annual report to Congress, addressed to security issues involving the People's Republic of China, the United States Department of Defense reports the following:

PLA writings describe a joint blockade campaign in which the PRC would employ kinetic blockades of maritime and air traffic, including a cut-off of Taiwan's vital imports, to force Taiwan's capitulation. Large-scale missile attacks and possible capture of islands *offshore* the joint blockade, in an attempt to achieve a quick surrender of Taiwan, while at the same time air and naval forces would be positioned to carry out weeks or months of blockade operations if necessary (UNITED STATES, 2021a, p. 116).

On the other hand, the method of direct action peremptorily implies the invasion of Taiwan, in order to neutralize its armed forces and conquer its territory through the strategy of the offensive, unleashed on a large scale in the multiple domains of combat. According to Easton (2017), the geostrategic importance of Taiwan, the Chinese military culture, as well as the obstinate resistance of Taipei to Chinese compellence, constitute the main arguments for the intensive use of violence, despite the associated costs and risks.

In this context, the Chinese strategic modeling would include, in a crisis situation, the direct threat through the coercive use of military power in a protagonist character, reinforced by other instruments of national power, as previously exposed. The failure of the crisis maneuver would lead to the model of violent conflict, embodied by various military actions linked to the strategies of offensive (invasion), blockade, interdiction and pacification, such as: air and missile attacks, cyber attacks, establishment of exclusion zone, amphibious assault operations, offensive ground operations and operations against irregular forces, *inter alia*.

<sup>15</sup> The strategy of interdiction aims to degrade military capabilities and strategic assets of the opponent, through attacks and raids. The strategy of the blockade consists in disrupting the flow of people and goods at the ports, airports and border crossings of the rival party. The strategy of the offensive is characterized by armed actions in order to neutralize enemy resistance, conquer capital accidents and establish territorial control in an area of interest.

In addition to the previous methods, Beijing would adopt a defensive posture against the coalition of Taiwan's allied countries, backed by a strong anti-access and area denial (A2/AD) system.<sup>16</sup> (TANGREDI, 2013). The Chinese attitude of active defense could be combined with the strategy of interdiction, aimed at the degradation of strategic assets of its opponents in the conflict region. However, such interdiction operations against the territory of allied countries of the United States could justify the retaliation of its rivals against targets located in mainland China.

In any case, regardless of the method selected by the Chinese leadership, it does not seem that the resolution of the dispute on the screen will take place without some level of violence. As Mearsheimer (2005, 2013) asserts, Taipei will not allow itself to be coerced and Beijing will not give up on reintegrating Taiwan into its territory (CHINA, 2022). Given the configuration of the geopolitical chessboard and the balance of material capabilities of the countries involved (HEGINBOTHAM *et al.*, 2015), the strategic impasse is likely to be broken by force of arms at some future time. Confirming the previous assertions, the statement of President Xi Jinping is cited (*apud* GREER, 2018, n. p.), on the occasion of the 19th Congress of the Chinese Communist Party:

> We have firm will, full confidence and sufficient capability to defeat any form of Taiwan independence secession plot. We will never allow any person, any organization or any political party to split any part of the Chinese territory from China, at any time or in any form.

Indirect Approach	
Phase 1: <u>Indirect Pressure</u> (facing Taiwan and U.S./allies) - Presence and dissuasion (show of force)	
Phase 2: Indirect Threat	
<ul> <li>Facing Taiwan: presence and dissuasion (provocative military maneuvers)</li> </ul>	
<ul> <li>Facing the U.S. and allies: presence and dissuasion (show of force)</li> </ul>	Taiwan
Phase 3: Limited use of force	timeter
- Facing Taiwan: blockage, interdiction and/or offensive (limited - Kinmen and Matsu Islands) - Facing the U.S. and allies: defensive (A2/AD)	
Direct Approach	
Phase 1: Direct Threat	Autor
<ul> <li>Facing Taiwan: presence and dissuasion (provocative military maneuvers)</li> </ul>	
<ul> <li>Facing the U.S. and allies: presence and dissuasion (show of force)</li> </ul>	
Phase 2: Violent Conflict	Tanag
- Facing Taiwan: blockage, interdiction, offensive	Taiwan
(amphibious assault) and pacification	tanke (
- Facing the U.S. and allies: defensive (A2/AD) and interdiction (?)	

Source: the authors (2022).

<sup>16</sup> Joint active defense system, integrated by sensors, weapons and vectors, with the purpose of preventing or hindering the access of enemy forces to their advanced bases in the theater of operations (anti-access), as well as removing the freedom of action of these forces within said area, preventing them from projecting power (area denial) (UNITED States, 2017).

Exploring China's strategic options, it will be discussed the strategic posture of Taiwan and its allies, particularly the United States in coalition with countries such as Japan. Indeed, because of the insufficiency of Taiwanese military resources to decisively neutralize Beijing's military and economic might, only the method of indirect action will be examined. In this context, the Taiwanese government wishes to maintain the territorial *status quo* and its political-economic autonomy, adopting a behavior of stabilization of the geopolitical crisis (EASTON, 2017; MEARSHEIMER, 2013). At present, observing a model of indirect pressure supported predominantly in broad psychological campaign and foreign policy actions, Taipei intends to strengthen ties of cooperation and partnerships with friendly nations, as well as to make explicit the resolution of its people to preserve their self-determination and individual freedoms. In addition, in the military sphere, it develops the strategies of presence and deterrence, through the deployment of contingents of the armed forces on all its islands, regular military maneuvers with fireworks and periodic exercises of mobilization of reservists, in order to demonstrate military capabilities and permanent operational readiness.

However, in retaliation for acts of aggression due to the failure of deterrent actions, the Taiwanese will adopt a defensive attitude, possibly combined with the interdiction of Beijing's strategic assets, particularly its port infrastructure, in order to disorganize the strategic concentration of invading forces, make the amphibious landing unfeasible, erode rival offensive capabilities and raise the costs of the Chinese enterprise, impacting the rational calculation of the use of violence. In the eventual occurrence of successful amphibious operations and the conquest of Taiwanese territory by the Chinese war apparatus, a change in the strategic conduct of the dispute, on the part of Taipei, to the model of prolonged conflict, based on actions of resistance to the invading forces, is certainly expected. In this case, it is permissible to assume that native insurgent movements will promote irregular warfare in the mountains and large urban centers of Taiwan, causing marked physical and psychological wear and tear on the Chinese occupation troops.

Antagonizing the Chinese strategy, the Americans and their allies, allegedly, will opt for the strategic method of indirect action, since it will try to limit the scope of the conflict, prevent its escalation to a nuclear confrontation and, at the same time, impose unbearable costs on Beijing. Since the beginning of the crisis, the United States and its partners have sought to strengthen Taiwanese deterrence, establishing advanced presence and conducting recurring shows of force in the conflict region. However, in the event of a deterrent failure, the U.S.-led coalition would carry out military operations intrinsic to the strategies of blockade, interdiction and defense, in order to ensure free navigation in the Western Pacific, degrade Chinese national power and military forces, as well as guarantee the territorial integrity of allied countries, preserving, as much as possible, the limited character of belligerence. The authors assess that, throughout the conflict, diplomatic communication will be fundamental for the clear demarcation of "red lines", in order to mitigate the risk of a nuclear confrontation between the United States and China.

#### 3. OPERATIONAL ANALYSIS

In continuation of the strategic analysis, it is necessary to characterize, preliminarily, the operational environment of the conflict. In terms of demography and area, Taiwan has 23.5 million inhabitants and an approximate area of 36,000 km<sup>2</sup>. Focusing on the Taiwanese orography, it is possible to identify, from North to South, a mountain range distributed in the central-eastern portion of the territory and qualified by dense vegetation and peaks between 3,000 and 4,000 meters in altitude, which makes the eastern coast quite steep and promotes a demographic concentration in the plain of the western coast. This physiographic configuration greatly restricts the conduct of major air-ground operations, as well as making amphibious assaults on the eastern coast unfeasible. According to Easton (2017, p.145), "Taiwan's 770-mile coastline is notably unsuitable for amphibious operations. Approximately 75 percent of the island is covered by mountains and the rest is mostly terrain too urbanized or inhospitable".

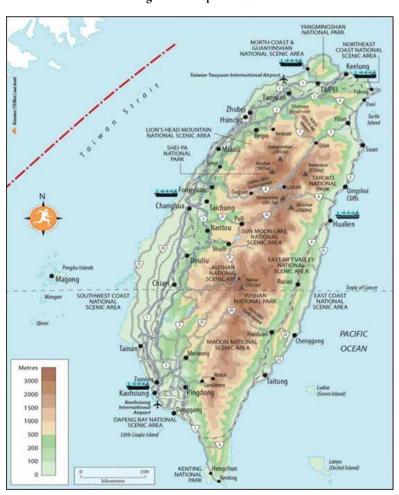
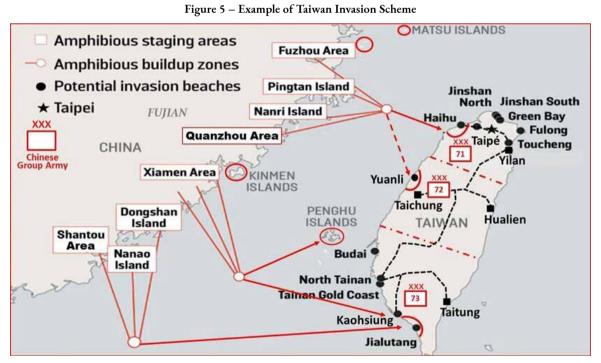


Figure 4 – Map of Taiwan

Source: Maps Taiwan (2022).

Taking into account a scenario of limited war, the Chinese operational strategy associated with the hypothesis of armed conflict, resulting from the attempted invasion of the islands of Taiwan, will be detailed, as it is the most complex strategic option. In addition, the military opposition of the United States and its allies to the Chinese offensive will be assumed. Under this scenario, the Eastern Theater Command would conduct military operations from Fujian province, in all areas of the battlefield<sup>17</sup>, to reduce Taiwan's economic power and neutralize its armed forces, for the purpose of conquering and pacifying its islands. Moreover, it would maintain China's territorial integrity in its area of responsibility and degrade the military power of the opposing coalition, neutralizing, if necessary, its support bases around Taiwan.

Given the importance of landings for the Chinese victory, we will analyze the development of the campaign according to the Chinese doctrine of amphibious assault (UNITED SATES, 2021b), as well as the operational concept of anti-access and area denial (TANGREDI, 2013). In order to better understand the strategic interaction in question, the analysis considered the operational strategy of the United States and its allies. Based on the on-screen scenario, the military campaign of the PLA Eastern Theater Command was didactically preconceived in seven operational phases, namely: concentration of forces, missile interdiction, air and naval operations, amphibious operations, ground operations, pacification and demobilization. Because they are the product of conjecture, the aforementioned phases can effectively be unified or subdivided, according to the operational planning of the Chinese General Staff that comes to fruition.



Source: Adapted from Greer (2018).

<sup>17</sup> Generally speaking, five battle space domains are considered: land, sea, air, space, and cyber. Some strategists admit the existence of the informational domain, which covers psychological, cybernetic and electronic warfare actions (GOURÉ, 2019).

During the initial phase of concentration of forces for the invasion, military units from all branches of the PLA would be mobilized and moved to concentration sites in Fujian, Zhejiang, and Guangdong provinces, especially around the port cities of Fuzhou, Quanzhou, Xiamen, and Shantou. In parallel, special operations troops would be infiltrated into the Taiwanese islands, with the purpose of recognizing critical infrastructures, military installations, landing sites and the defensive device of Taipei. In this phase, the identification and selection of targets, whether installations or enemy forces, by diverse means of intelligence, play a central role in the conduct of kinetic and non-kinetic fires in later phases.

To be sure, a grouping of forces of this magnitude would not go unnoticed by Taiwan's intelligence system, which is based on undercover agents, surveillance radars, electronic warfare and early warning aircraft, as well as intelligence provided by the allies. Even if a military cover-up were attempted, such as a false dressage exercise, strategic surprise would be unlikely to be obtained by the Chinese. In turn, the concentration of a large assault force on the Fujian Coast would create a tempting opportunity for a preemptive attack by Taiwan, carried out by its ground attack missiles, which can be launched from air and ground platforms, for the destruction of fixed targets on the Chinese coast. According to Easton (2017, p. 91), Chinese military literature describes the pre-invasion situation as follows:

The enemy scrutinizes and monitors our coastal areas, which makes plans for the movements of army amphibious landing troops and their assembly difficult to hide. The enemy on the island has reconnaissance capabilities and electronic warfare capabilities that are constantly improving. Their long-distance, high fidelity, overlapping reconnaissance methods turn dark nights into bright days.

In the missile interdiction phase, ballistic and cruise missiles of the PLA Rocket Force would be launched, as well as non-kinetic actions by the Strategic Support Force, portrayed by cyber attacks and electronic attack measures. The purpose of such attacks would be to neutralize air and naval bases, disable command centers, block surveillance radars and disorganize the Taiwanese defensive system, as well as degrade strategic assets such as political-administrative centers, port and airport infrastructures, power plants, oil refineries, steel plants, scientific-technological poles and other high-value targets (CSIS, 2020). In addition, the Strategic Support Force would perform space operations in order to neutralize adversary satellites. The potential destruction caused by this interdiction operation would be overwhelming. However, it must be considered that the Taiwanese have been, for decades, in continuous preparation to resist a possible invasion, "hardening" their military facilities with underground shelters and depots, concrete-lined hangars, a tunnel system and bases embedded in mountains, *inter alia*. Taipei assumes a good survival rate of its protected military resources in the face of an eventual Chinese attack. Following the operations, taking advantage of the disorganization caused by the previous attack, the Chinese Air Force would seek to obtain air superiority, a necessary requirement for control of the maritime area in the Taiwan Strait and for carrying out the operations of aero strategic interdiction against the surviving targets of the previous phase. A no-fly and no-sea zone would most likely be established around Taiwan, enforced by a naval blockade and combat air patrols. The Chinese navy could additionally, with its fighters embarked on aircraft carriers and warships equipped with ground attack missiles, hit targets of interest of the Eastern Theater. In addition, special operations forces, previously infiltrated in the Taiwanese islands, would carry out direct commando-type actions against targets resistant to aerial and missile bombardment, of great relevance to the operational maneuver, including the beheading missions of civil and military authorities. In contrast, the aerial opposition of the Americans and allies would make Chinese air superiority questionable to say the least.

Once the necessary conditions were created, amphibious assault operations against Taiwan would be launched. At this stage of the campaign, international analysts consider some sequential variations in the assault on the Taiwanese islands. The traditional operational maneuver successively comprises amphibious landings in three stages: initially on the islands of Kinmen and Matsu, then on the Penghu Islands, and finally on the main island of Taiwan. According to Wood and Ferguson (2001, p. 56),

> The People's Liberation Army could realize a number of important advantages, should it invade Taiwan, by conducting the operation in three phases: seizing Quemoy (Kinmen) and other islands close to the mainland, capturing the Penghu Islands, and assaulting Taiwan's west coast. By attacking these objectives in succession, the Chinese could amass great numerical superiority against each one in turn and render the next object less defensible.

However, Easton (2017) points out the possibility of a simultaneous assault on the islands of Kinmen, Matsu and Penghu. Otherwise, it is plausible to consider the concomitant conquest of the Penghu Islands and Taiwan, or even a synchronous assault of all Taiwanese islands, in order to provide tactical surprise and speed to amphibious operations. In any case, it is almost unanimous the need to expel, at the very beginning of the amphibious operation, the islands of Kinmen and Matsu, since this action would neutralize the advanced defenses of Taiwan, providing security for boarding, crossing and logistical flow. In reinforcement of this thesis, Easton (2017, P. 115) points out that: "according to PLA studies, preliminary and rapid operations to neutralize Taiwan's outer islands are imperative due to local geography".

Amphibious assault operations require actions of military dissimulation, with the purpose of eluding the adversary and nullifying its ability to react, as well as strong fire, air and naval support, to neutralize resistances on the enemy coast. In this case, there is a limitation of favorable landing sites on the Taiwanese coast, making it very difficult to obtain the surprise. In fact, Taiwanese military studies identify only 14 beaches conducive to amphibious assault (EASTON, 2017). However, by associating them with other environmental conditions, such as the desirable proximity of a port<sup>18</sup> and the existence of an operational attractiveness,<sup>19</sup> this number becomes quite small. Thus, the specialized literature prioritizes two areas on the West Coast, considered more favorable to landing: the Northwest, near Taoyuan and the capital Taipei; and the Southwest, near the important port and industrial center of Kaohsiung (EASTON, 2017). However, in order to diversify the landing sites and facilitate concealment, a beach area in the Central-West region of the island, north of the Port of Taichung, of limited amplitude should be considered. Despite the physical restriction, this area meets the basic imperatives for amphibious assault, being a good alternative for the Chinese.

In parallel, consideration should be given to the long periods under hydrological and meteorological conditions unfavourable to amphibious operations in the Taiwan Strait, particularly between the months of November and March. In the period from May to September, typhoons and tropical storms are common. In fact, only the months of April and October are favorable for crossing the Strait and amphibious landing (EASTON, 2017). In view of the foregoing, it is clear how challenging it will be for Beijing to overcome the spatial and temporal limitations imposed by geography, although such restrictions are not hindering.

As a basic requirement, control of the airspace overlying the area of the amphibious objective must be achieved by means of air forces and/or ground-based air means. Taiwan's proximity to the Chinese coast provides both possibilities, considering the existence of PLA Air Force bases in the Eastern Theater, in addition to Beijing's two Navy aircraft carriers. Additionally, prior to the start of actions on land, it is necessary to control the maritime area adjacent to the landing area, which includes, in addition to airspace, the sea surface and the underlying liquid mass. For this purpose, naval surface forces are used, supported or not by submarines. To be sure, Taiwan's armed forces, reinforced by coalition means, will challenge Chinese control of the airspace and sea area considered, through fighter aircraft, submarines, fast attack ships, defensive mining, anti-aircraft systems and coastal anti-ship missile batteries.

<sup>18</sup> The main ports are located in Keelung and Taipei to the North, Kaohsiung to the southwest, Taichung to the Midwest, and Hualien to the east-central.

<sup>19</sup> Aspects of the operating environment, whether physical or human, that may motivate the execution of operations in this area (BRASIL, 2014a).

The amphibious forces of the PLA, whether Marines or army troops (UNITED STATES, 2021b), would have the mission to conquer and maintain beachheads,<sup>20</sup> in order to ensure the landing of ground forces for the continuation of military operations inside the island. In contrast to the assault, the Taiwanese have long fortified the few places available for amphibious landings. As part of this effort, they built concrete pillboxes and underground facilities for anti-ship missile launchers, artillery pieces, ammunition depots, and command centers. In addition, they planned the rapid launch of naval and land mines, steel hedgehogs and wire obstacles on the considered beaches. Given the complexity of the amphibious assault, compounded by the remarkable Taiwanese defensive effort, it is considered that this will be the most critical moment of the entire Chinese campaign.

After the consolidation of the beachheads, the Chinese army units would neutralize the remaining defenders and seek the conquest of Taiwanese territory. At first, the PLA Ground Forces would be forced to fight in the large urban centers of the Western strip of the island, and later they would have to operate in mountainous terrain, along the few existing axes, to control the central-eastern portion of Taiwan. At the end of the territorial conquest, the PLA forces would probably still be forced into a protracted struggle against insurgent movements, organized to resist the invaders. At this point in the campaign, Chinese special operations units would play a leading role in counterinsurgency actions (ABODO, 2021). It should be noted that the mountainous terrain, covered by dense vegetation, greatly favors the killing of guerrilla forces. In addition, the large cities of Taiwan constitute regions conducive to the clandestine action of the underground forces of the insurgency. In principle, the motivation stemming from nationalist sentiment and the support of the Taiwanese population will be the elementary ingredients for a long-lasting irregular combat and many casualties, testing Beijing's political determination.

Throughout all phases of the Chinese campaign, the anti-access and area denial system would be key to ensuring the territorial and patrimonial integrity of mainland China, preventing coalition interference during the invasion, as well as neutralizing allied military support for Taiwan. To achieve this intent, the Chinese system unfolds in layers, each incorporating, *inter alia*, naval means (submarines and warships), aircraft (fighters and bombers) and land platforms, capable of launching ground attack, anti-ship and anti-aircraft missiles, against fixed and mobile targets, in transit or situated in the Western Pacific. In addition, it has space resources (satellites for various purposes), surveillance radars, reconnaissance and attack drones, cyber assets and electronic warfare vectors.

<sup>20 &</sup>quot;Selected land area of the enemy coastline that contains the objectives of the Amphibious Task Force and The Landing Force and that, when conquered and maintained, ensures the continuous landing of troops and material, providing room for maneuver for operations on land" (BRASIL, 2014B, p. A-5).

Considering the region of the conflict, it is legitimate to assume that the advanced U.S. bases located in Guam, Yokosuka, Okinawa and Sasebo, among others, would constitute primary targets of the Chinese ground attack systems. The Sasebo and Okinawa bases lie within the coverage range of the Chinese short-range ballistic missiles DF-15 (900 km) and DF-16 (1,000 km). Yokosuka, in turn, is within range of CJ-10 ground-attack cruise missiles (1,500 km) and DF-17 medium-range ballistic missiles (2,000 km)<sup>21</sup>. The Guam base, on the other hand, can only be hit by DF-26 intermediate-range ballistic missiles (4,000 km) (CSIS, 2020).

Beijing's war apparatus, in the sense of approaching U.S. forces, can engage its naval task forces beyond the second island chain – first layer of A2 / AD – notably with longer-range military systems, such as the DF-26 intermediate-range ballistic missiles (4,000 km), in its anti-ship version. In addition, nuclear attack submarines (*Type* 091 and 093) and the H-6K strategic bombers (combat radius of 3,500 km), both armed with anti-ship cruise missiles. In a second layer, between the two island chains, the Chinese can employ all the preceding systems, reinforced by DF-21D medium-range anti-ship ballistic missiles (1,500 km) and JH-7 strike fighters (combat radius of 1,650 km) equipped with anti-ship cruise missiles.

In the third and final layer, between the Chinese coast and the first island chain, Beijing mainly uses shorter-range systems, such as: conventional submarines; naval mines; anti-ship cruise missiles YJ-12 (400 km), YJ-18 (540 km) and YJ-62 (400 km), launched from coastal batteries and warships; embedded and ground-based Anti-Aircraft Systems HQ-9 (300 km) and HQ-22 (170 km); as well as multirole fighter jets (J-10, J-11, J-15, J-16 and J-20). It is worth noting that China has military equipment of Russian origin,<sup>22</sup> as anti-aircraft systems and fighter aircraft, *inter alia*. In short, it can be deduced that the PLA's A2/AD system can be considered one of Beijing's centers of gravity.

Concluding the analysis of the Chinese campaign, it is necessary to consider the enormous logistical effort necessary to sustain military operations on Taiwanese soil, to be implemented basically by naval and air means, crossing the Taiwan Strait, under strong opposition from the military apparatus of the coalition led by the Americans. Perhaps this was one of the many justifications for the creation of the PLA Joint Logistics Support Force. On the other hand, the marked relevance of information operations to victory, from any perspective, cannot be overlooked. Psychological, cyber and electronic warfare operations constitute vital instruments for any military enterprise.

<sup>21</sup> Missiles equipped with hypersonic glider vehicles (HGV).

<sup>22</sup> China, in addition to its indigenous missiles, employs the S-400 anti-aircraft system, of Russian origin, with a range of 400 km.

Contrary to Beijing's goals, The Washington-led coalition would carry out military operations inherent in the blockade, interdiction, and defensive strategies. According to this reasoning, the coalition's operational strategy could combine, in time and space, sequentially or cumulatively, maritime interdiction operations, denial of the use of the sea, aero strategic interdiction, naval bombardment, ground defensive operations, aerospace and coastal defense, as well as escorting the sea traffic of allied countries. Reinforcing this thinking, Grossman and Meyers (2019, P. 106) synthesize U.S. military options: "in response to this shift in the military balance, the debate over U.S. military strategy towards China has solidified around three strategies: attacks on the mainland, blockade away, or maritime denial".

Hammes (2012), examining the geographical features of China's strategic environment, recommended the application of a remote blockade – maritime interdiction operations – at the strategic bottlenecks of China's maritime communications lines, notably in The Straits of Malacca, Sunda, Lombok and other links to the Indian, Atlantic and Arctic oceans. In these specific locations, outside the second chain of islands, maritime area control would be exercised. In this way, the threat posed by the powerful A2/AD Chinese system is avoided, especially within the first island chain, but it becomes possible to suffocate the Chinese economy and therefore impact its war effort. Considering that it is unlikely to control maritime areas within the first and second island chains, it would seek to deny the use of the sea in these regions, which would be performed by attack submarines against military and merchant vessels, offensive mining of enemy ports, as well as air attacks and anti-ship fires from coastal batteries, from regional bases. Surely, this strategy strikes at another important center of Beijing's gravity: its maritime trade.

By another approach, coalition forces could resort to aero strategic interdiction and naval bombardment, employing aircraft-and submarine-launched ground-attack missiles, to neutralize China's military targets and strategic assets, most notably its A2/AD system, its port infrastructure, and its energy industry. Such interdiction actions would increase the costs of belligerence and pressure on the Chinese leadership, accelerating the political settlement of the dispute or at least the achievement of a ceasefire agreement. The destruction of targets in mainland China will depend on the political limitations imposed on military power, which can be established in order to preserve, as far as possible, the nuclear interdict and the limited character of the dispute. Hammes (2012, p. 4) advises against attacking targets on the Chinese mainland and states: "the United States must accept that China's nuclear arsenal imposes restrictions on the manner in which American forces can attack Chinese assets". Under restrictive conditions, cyber attacks constitute a valuable alternative tool for interdicting enemy assets dependent on digital systems. In addition to the above, it is necessary to establish defensive measures in the territories of the allied countries, which should include: aerospace defense; coastal defense; anti-aircraft defense; physical and cyber security of critical infrastructures; as well as operations against amphibious landing. From this perspective, the coalition needs to consider landing ground troops on the island of Taiwan to reinforce its defense actions, provided if there is an opportunity. In addition, it is necessary to provide security to the maritime traffic of the allied countries, through the escort of their merchant convoys, ensuring access to the ports of their corresponding eastern coasts.

## 4. CONCLUSION

It is possible to infer that the current political-strategic crisis in the Taiwan Strait, involving China and the United States, as well as other actors implicated in the controversy, tends to be stabilized, at least at the present time, as already occurred in the crises of 1954, 1958 and 1995/1996. According to the rational calculation of costs, risks and benefits, it can be deduced that, in theory, Beijing will seek to achieve its political objectives, materialized by Chinese reunification, through the method of indirect action, with emphasis on political-diplomatic, psychological and economic coercive strategic actions, associated with limited military actions, in the form of threats or even in restrictive and/or offensive character. Of course, relevant events on the regional or global stage, domestic pressures and other factors can alter the strategic environment, propelling the Chinese government to use intensive violence to reintegrate Taiwan. In this context, a possible unilateral declaration of independence by Taipei, the deployment of alien military forces and the installation of nuclear weapons on Taiwanese territory are cited.

The Chinese strategic posture is basically justified by the absence of freedom of action with the international community and world public opinion, combined with the insufficiency of military capabilities<sup>23</sup> to conquer the Taiwanese islands and further neutralize the opposing coalition. The U.S. military apparatus alone represents considerable opposition to the Chinese offensive intent. Moreover, there is no urgency in the current geopolitical scenario that requires short-term solutions. However, should Chinese compellence fail, the possible use of military actions limited in force by the strategies of blockade and interdiction must be considered in the light of the importance of Beijing's political objectives and the magnitude of the interests at stake, concerning the sovereignty, territorial integrity and national security of the People's Republic of China.

<sup>23</sup> Currently, Beijing does not yet have the necessary naval resources to invade Taiwan, as there is a shortage of amphibious assault ships in the Chinese navy. Between 2025 and 2027, China may have full material capabilities for such an attempt. From 2019, China has produced powerful amphibious assault ships Type-075, which add substantial capabilities to those provided by landing ships Type-071 (IISS, 2022).

It can be deduced that there is a low probability of an invasion of Taiwan by Chinese amphibious and airborne troops. This assertion stems from geopolitical circumstances unfavorable to the use of violence, strategic factors that counteract direct action and operational complicators that hinder the development of military operations in Taiwanese territory. Added to the aforementioned aspects is the high risk of nuclear escalation in the course of the armed conflict, of calamitous consequences for both contending parties and for all nations of the world.

Finally, we highlight the enormous challenges of a large-scale amphibious operation, explained in the preceding sections, such as: restriction of areas suitable for landing, either by sea or air; limited time windows under favorable hydrological and meteorological conditions; mountainous orography of the island of Taiwan; population concentration on the West Coast; logistical support hindered by the maritime obstacle; air and naval contestation of a possible coalition led by the United States; probable resistance combat undertaken by the Taiwanese, *inter alia*.

It is lawful to conclude that China will continue to coerce the Taiwanese with the purpose of forcing them to accept reunification, preferably through a peaceful solution. Nevertheless, the use of violence, on a limited or large scale, cannot be ruled out, as explicitly attested by official documents from the Chinese state (CHINA, 2022). Despite the notable costs and risks of a Chinese invasion of Taiwan as an extreme resource, the phenomenon of war is, after all, a game of probabilities permanently shrouded in uncertainty. Moreover, strategy is a matter of choice, not always subordinated to the prevalence of rationality.

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