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## WALTZ ONLINE WITH NUKES: TOWARDS A DEFINITION OF "STRATEGIC" IN 21<sup>ST</sup>-CENTURY INTERNATIONAL POLITICS

### WALTZ ONLINE E COM ARMAS NUCLEARES: RUMO A UMA DEFINIÇÃO DE "ESTRATÉGICO" NA POLÍTICA INTERNACIONAL DO SÉCULO XXI

**ABSTRACT:** The thought of Kenneth Waltz has been the focus of attention in International Relations theory in the last four decades at least. Recently, Waltz's thought has been revisited in a number of ways. This paper aims at revisiting his work understanding his definition of threat, and who/what is the subject and the object of a threat in the international system. I turn to applying such a discussion to two realms of contemporary interest: that of nuclear weapons, about which Waltz discussed very lengthy; and to that of cybersecurity, which Waltz wrote nothing about. Understanding how force is used in each of these realms, I propose a reflection on the concept of "strategic" and how it can be derived from Waltz's theoretical thought.

**Keywords:** Theory of International Politics; Nuclear Weapons; Cybersecurity; Strategy; Threats.

**RESUMO:** O pensamento de Kenneth Waltz tem sido o foco das teorias de Relações Internacionais pelo menos nos últimos quarenta anos. Recentemente, o pensamento de Waltz tem sido revisitado de diferentes formas. Este artigo busca visitar seu trabalho, compreendendo sua definição de ameaça e quem/o que é o sujeito e o objeto de ameaças no sistema internacional. Eu aplico essa discussão posteriormente a dois campos de interesse atualmente: armas nucleares, sobre a qual Waltz discutiu muito; e o âmbito da cibersegurança, sobre a qual Waltz não discutiu. Compreendendo como a força é usada em cada um desses âmbitos, eu proponho uma reflexão sobre o conceito de "estratégico", e como isso pode ser derivado do pensamento teórico de Waltz.

**Palavras-chave:** Teoria da política internacional; Armas nucleares; Cibersegurança; Estratégia; Ameaças.

## 1 Introduction

Kenneth Waltz is undoubtedly one of the most influential authors in International Relations (IR) theory, having laid the groundwork for debating the discipline over the last 40 years (Goodin, 2011). Waltz's ideas are present either because of his theoretical contribution consolidated in his book *Theory of International Politics* (Waltz, 1979) or because of criticisms and attempts to complement it, such as the ones endeavored by Keohane and Nye (1987), Alexander Wendt (1999), and Nuno Monteiro (2014). Tim Dunne, Lene Hansen, and Colin Wight (2013) go as far as to state that, after Waltz, IR theory is a “footnote” to his theoretical construct.

However, the goal of this paper is largely unrelated to Waltz's debates with his critics and followers. It is rather to mobilize Waltz's ideas theoretically, aiming to widen their explanatory capacity (bearing in mind the length limit of this paper), as I apply them to contemporary themes in international politics. Namely, I argue that nuclear weapons and cybersecurity are key for understanding state competition after the end of the Cold War. Specifically, I aim to develop a preliminary understanding of the concept of “strategic” as presented by Waltz, by drawing on his concepts and definitions of state capacity. In short, what can be considered “strategic” for the state in the international system as conceived by Waltz?

By the end of this paper, I intend to have answered the following questions: a) how threats are constituted in Waltz's theoretical perspective, i.e., what the structurally imposed threats are, and why; b) how more recent themes of international security, namely nuclear weapons, and cybersecurity, are a political tool (lever) for international competition; so that I can finally answer, c) what can be understood as “strategic” in the theory proposed by Waltz. By starting with theory, I aim to establish a dialogue with the empirical realm so that the explanatory capacity of theory can be widened.

Mobilizing such a set of questions brings about the definition of threats for Waltz. Who are the threats in the international system? They are a threat to whom? These are different ways of approaching his *Theory of International Politics*, and one that has already been developed by other scholars (Walt, 2013). Knowing what the threats are, we can understand how violence can be deployed internationally: offensively, defensively, coercively, or dissuasively. This is key to comprehending how nuclear weapons and the cyber domain are linked in international politics to the survival of the state. Last, considering these discussions, it is possible to argue that despite the advances in forms of states exerting violence or

defending themselves thereof, there is persistently the concern of the survival of the state, which lends the contours to the definition of “strategic” I intend to outline (at least incipiently).

Methodologically, this paper is deeply rooted in Waltz’s *Theory of International Politics* as a theoretical benchmark. It clearly and deliberately focuses on relations of state as the most consequential actors in international politics. It is based upon a premise of Waltz’s theoretical development (Waltz, 1986, 1997b), according to which there is an unavoidable interdependence between theories and facts. Establishing a road that goes from theory to facts, and from facts back again to theory, it is possible to shed some light on new aspects of reality that the theory helps understand, widening the theory itself. Methodologically, I understand Waltz’s work as a unity, spanning from his *Man, the State, and War* (Waltz, 2001) to his most recent texts, having undergone a period of “methodological leap” (Bittencourt, 2025) with the development of his *Theory of International Politics*. By “methodological leap,” Bittencourt (2025) refers to a refinement of Waltz’s stances on theory building, which embraces what had already been theorized by him before. By drawing on Waltz’s writings, particularly the most recent ones, this paper mitigates the risk of theoretical eclecticism as a “methodological pathology” that hinders the development of theory into research strategies (Oliveira Filho, 1995).

This paper is divided into four sections beyond this introduction, each one answering one of the proposed questions. The second section casts light on the constitution of threats in Waltzian theory, as the third section discusses nuclear weapons and the strategy of force employment they serve. The fourth section presents a discussion on cybersecurity, while the fifth attempts to synthesize these discussions under a (still preliminary) concept of “strategic” according to the Waltzian canon. A concluding section follows these discussions.

## 2 The theory of international politics and the constitution of threats

What can be grasped as a threat according to Waltz’s theory? A threat to whom? These are the first questions I address in this paper.

Perhaps the easiest way to answer these questions is to recap the fundamental elements of the constitution of the structure of the international system. From *Theory*, we are told that the international system has two components: units and structure<sup>1</sup>. Units are easily

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<sup>1</sup> This definition is not a consensus, though. For instance, Keohane and Nye (1987) focus on the “process” element of international system, while Buzan, Jones, and Little (1993) also point to a process element which is

identified as the states. The structure, on the other hand, is compounded by the ordering principle, the function of units, and the distribution of capacities across units (which, despite referring to the units, is a system-wide component) (Waltz, 1979, 1988).

The ordering principle of international politics is anarchy, contrary to hierarchy, which orders domestic politics. Anarchy is the “third image of international relations” according to *Man, the state, and war* (Waltz, 2001), and it engenders a particularly competitive behaviour, according to which it is each state's reach to achieve its goals. The most fundamental goal in international politics is the (political) survival of units (Waltz, 1979, 1975, 2001).

The second element of the structure of the international system is the function of units: in international politics (thus, in an anarchic realm), units are structurally undifferentiated, i.e., they will (or should) play the same roles. This means that some functions are bound to be duplicated because the system incentivizes units to avoid becoming hierarchical and thus specialize. It is this component that clarifies what the point of reference of Waltz's theory is:

states are not and never have been the only international actors. But then structures are defined not by all of the actors that flourish within them but by the major ones. In defining a system's structure one chooses one or some of the infinitely many objects comprising the system and defines its structure in terms of them (Waltz, 1979, p. 93)

Such a brief excerpt brings about a critical aspect of the theory under scrutiny. First, it brings forth the deliberate delimitation of Waltz's theory. Since he is concerned with developing a theory of international *politics*, his theory should focus on the most consequential international political actors. Such a delimitation, nevertheless, acknowledges that states are not the sole actors of international politics, as one reads. The passage also provides the first clue about the target of the threats: they are directed at the state.

The third component of the structure of the system is the distribution of capacities among states. *Functionally* undifferentiated, the difference across units is expressed through their lesser or greater ability to get tasks done: in other words, their capacities. Even though units can intentionally increase their capacities, its distribution across all units is a systemic factor. There is a difference between the individual actions of the state and its actions seen in an interactive realm populated by other similar units. It is worthwhile noting that international politics is an *interactive* realm, as stated by Rousseau (2003) and assimilated by Waltz as an

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not structural, but which cannot be understood as a domestic factor either. Wendt (1999), for his part, argues about the existence of micro- and macro-structures in a very close vogue to this discussion.

illustration of his third image. Such an interactive feature is responsible for the recurrence of the security dilemma, for example.

It is necessary to add an important note to the previous discussion. Booth and Wheeler (2008) conceive as a “security dilemma” a double-folded set of questions to the following problems: 1) the “other minds” problem, i.e., one can never be sure of the true intentions other actors have; and 2) how to act, once presumed what the other(s) will do. States, not knowing what others plan to do, fear their security may be jeopardized, thus increasing their capabilities. This is how states enter into a spiral of uncertainty, distrust, and insecurity. To this spiral, Booth and Wheeler call the “security paradox”: as states seek to be more secure, they end up becoming less so (Booth; Wheeler, 2008). What Booth and Wheeler call the “security paradox,” Waltz, following John Herz (1950), called the “security dilemma.” This means that, for Waltz, the international system is permeated by uncertainties since it is not possible to know what the plans of other states are<sup>2</sup>. Even though Booth and Wheeler (2008) correctly evaluate that such uncertainties are only implicitly present in Waltz’s theory, it is possible to note its presence through his discussion on Rousseau. According to the Rousseauian argument, we are told, states lean towards general will domestically, but they cannot do so internationally. In the international realm, since there is no such a thing as a general will, states lean towards their own general wills, which, systemically, is more similar to individual wills, each one leaning to a different preference (Rousseau, 2003; Waltz, 2001).

Such a discussion provides me with the tools to state that, for Waltz, states are not only the target of threats but also the subjects of such threats. States are threats to one another. And this is why balances of power tend to emerge: “balance-of-power politics prevail wherever two, and only two, requirements are met : that the order be anarchic and that it be populated by units wishing to survive” (Waltz, 1979, p. 121).

Based on the previous discussions, it is possible to claim that the ordering principle of the international system’s structure is anarchy. It is also possible to assert that survival is the most useful theoretical notion for making sense of Waltz’s theory: whatever the goals of the state, it will seek to survive in order to reach it, making survival a necessary and preliminary goal. Balance of power emerges, therefore, as a way for states to counter a stronger state or a coalition of stronger states because powerful states are always a threat. It is also because of these features that the security dilemma (or security paradox) arises: states fear what others can do to them.

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<sup>2</sup> In Game Theory, we could call it a game with imperfect information.

Ranked together, state capacities can be understood as the power of the state (Bittencourt, 2018). In its Hobbesian sense (Waltz, 2001), power is the capacity to produce a desired effect. Such an effect can be more readily comprehended in terms of the state's survival. Greater or lesser capacities ensure the political survival of the state within the system, i.e., it remains an undifferentiated unit with the capacity to decide on its own how to address its domestic and foreign issues. After assuring its own survival, the state can (and in most cases will) seek to achieve other ends, but survival is a logical imperative for it to happen:

Obviously, the system won't work if all states lose interest in preserving themselves. It will, however, continue to work if some states do, while others do not, choose to lose their political identities, say, through amalgamation. Nor need it be assumed that all of the competing states are striving relentlessly to increase their power. The possibility that force may be used by some states to weaken or destroy others does, however, make it difficult for them to break out of the competitive system (Waltz, 1979, p. 118–119).

Capacities are not only about *military* ones. It is essential to note that states typically have various levers that can be employed to pursue their preferred policies internationally (Waltz, 1986). Military force is only one of them. States rank towards one another depending on “how they score on *all* of the following items: size of population and territory, resource endowment, economic capability, military strength, political stability and competence” (Waltz, 1979, p. 131). These aspects, therefore, not only serve to inform about the power of states vis-à-vis one another, but they are also fundamental for the survival of the state. In this paper, military force is understood as a way of exercising violence, with consequences that extend to all other elements, even though it is not the only one.

The distribution of capacities is what differentiates structures. In other words, depending on the polarity of the system (i.e., the number of consequential units), one finds a bipolar, tripolar, or multipolar system<sup>3</sup>. Multipolar systems are those with more than three poles with roughly similar capacities. It characterizes the international system from the Westphalian Peace to the end of World War II. From 1945 until the end of the Cold War, the system was bipolar. With the demise of the Soviet Union and the end of bipolarity, it is possible to see a great imbalance of power, with the United States as the sole pole of the system. Until his latest writings, Waltz maintained that the American power would be balanced sooner or later: “unbalanced power, whoever wields it, is a potential danger to

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<sup>3</sup> Unipolarity is also a systemic configuration, even though it is not, strictly speaking, a *balance* of power. See Hansen (2011), and Græger et al. (2022).

others. With benign intent, the United States has behaved and, until its power is brought into balance, will continue to behave in ways that sometimes frighten others” (Waltz, 2000b, p. 28). The argument goes:

in the light of structural theory, unipolarity appears as the least durable of international configurations. This is so for two main reasons. One is that dominant powers take on too many tasks beyond their own borders, thus weakening themselves in the long run. (...) The other reason for the short duration of unipolarity is that even if a dominant power behaves with moderation, restraint and forbearance, weaker states will worry about its future behaviour (Waltz, 2000a, p. 1).

The duration of unipolarity has been subject to debate, with differing views on its configuration and the implications for analyzing the current international system<sup>4</sup>. The end of the Cold War and the “unipolar moment” of the United States gave rise to new research agendas moving beyond the delimitation of Waltz’s theory, such as the issue of international terrorism. Terrorism, for Waltz, despite its importance, is not a threat to the survival of the state, even though it is capable of inflicting considerable damage and irreparable human losses (Sagan; Waltz, 2010). Indeed, it is a threat that emboldens and empowers the state, putting into action policy agendas that tend to increase the power of the state<sup>5</sup>.

Some aspects of international politics are not significantly altered by terrorism. First, terrorism does not put an end to the power imbalance that characterized the post-Cold War world. Contrary to Nye, for whom the United States needed the support of other states in the world for its international policies (Nye, 2003), Waltz claimed that the United States in fact had such power to *go it alone*, undoing the paradox of the American Power. Second, terrorism had not modified the underlying structure of military relations among nuclear states. Third, the United States, stretching its superpowers, would unavoidably enmesh in international crises (Waltz, 2002). Indeed, the “War on Terror” allowed the US to overstretch its presence to different places around the world. And this is the problem of the unipole in a unipolar world: “the vice to which great powers easily succumb in a multipolar world is inattention; in a bipolar world, overreaction; in a unipolar world, overextension” (Waltz, 2000b, p. 13). All the “vices” mentioned by Waltz are related to the state in its relations with other states. Eighteen years later, Mearsheimer (2018) would restate the same point.

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<sup>4</sup> See, as a matter of instance, Hansen (2011); Monteiro (2014); Mearsheimer (2018); Tunsjø (2018); and Græger et al. (2022).

<sup>5</sup> Some evidence for this argument can be found in Gould and Klor (2010).



Perhaps the easiest way to grasp how states threaten one another is through the exercise of force. According to Waltz, force can be used for offense, defense, deterrence, and coercion (Waltz, 1981).

In its offensive use, force can serve different purposes. First, it can help to conquer: a state can attack another one to annex a territory, as Russia has recently done with Ukraine (D'Anieri, 2023). Force can also be deployed offensively to ensure security, and then it can be used preventively or preemptively. Prevention occurs in a situation of force asymmetry, where the stronger party attacks the weaker party, aiming to prevent the latter from becoming as strong as the former. Preemption, in turn, does not consider the correlation of forces and is practiced when one supposes the other is going to attack; there is an incentive to strike first in this setting (WALTZ, 1981, p. 4). In its coercive use, force is in the ability not of its actual use, as in attack, but rather in its threat in order to compel one to behave in a certain way (Waltz, 1981, p. 5).

Lastly, defense and deterrence aim at dissuading the attack. Dissuasion is all about modifying one's intentions. Defense is about absorbing one's attack, denying the delivery of the attack. The message conveyed is that, even though they may not strike back, the target state will make the attack very costly (Waltz, 1981, p. 5). Defense provides no deterrence, though: it gives the state no condition to strike back. This is precisely the feature of deterrence: the importance goes not to the first strike, but rather to the second-strike capacity. The targeted state has such formidable ways of striking back that the first strike becomes virtually unthinkable. Deterrence provides no defense but conveys a message as well: the second strike will be so powerful that it will outweigh or cancel any potential gains achieved by the first strike. The capacity to punish is the core of the idea of deterrence, which operates through fear of how severe can be the second strike by the target (Waltz, 1981, p. 5).

Being secure depends on the capacities of the states, which coexist in an anarchic realm in which every other state is concerned with its own business. Nevertheless, states tend to emulate one another with their strategies, replicating those that have allowed other states to survive (Waltz, 1979). It means that states can replicate each other's weapons, so they do not depend on the goodwill of those who become more powerful. Furthermore, Waltz's theory presents a causation direction that flows both ways, from structure to units and from units to structure. Perhaps the clearest example of this is the development of nuclear weapons, about which the next section deals.



### 3 Nuclear weapons: the mutual impact of structure and units

The most crucial strategy nuclear weapons help with is deterrence: “Nuclear weapons are useless for fighting wars and even for threatening blackmail. Nuclear weapons have always formed part of the scenery of international politics, which is the appropriate place for weapons suited for deterring rather than for fighting” (Waltz, 1997a). In other words, the immense capacity of destruction and the facility to store and move them make these weapons prone to retaliatory threats, but with no incentives for their use in an attack strategy (Sagan; Waltz, 2010; Waltz, 1995a, 1981). How does all this relate to the structure of the international system, as discussed previously? How do nuclear weapons relate to the survival of the state, since they are not thought of as strategies for attack?

Nuclear weapons are vital in a competitive and interactive environment in which each unit must rely on its own capacities to ensure its survival. Despite not eliminating the competition for security and wealth, nuclear weapons remain an essential factor in stability in a unipolar world (Waltz, 1995b). The development of nuclear weapons has a marked reactive character, responding to external threats as presented by Sagan (1997). A brief side discussion is necessary here.

For Sagan (1997), at least three models explain the development of nuclear weapons. The first is the one based on external threats, which is clearly the model set forth by Waltz. There are, nonetheless, other sources of explanation for the development of nuclear weapons by the state. Some, even though facing pressing external threats, have not developed these weapons. And it gives room for a second model, according to which domestic pressure groups are capable of expediting, delaying, or hindering the development of these weapons. Last, a state may develop nuclear weapons due to its symbolism. According to this model, nuclear weapons both express and shape the identity of a state, and instead of its development be related to external pressure or domestic groups' preferences, it relates more closely to “deeper norms and shared beliefs about what actions are legitimate and appropriate in international relations” (Sagan, 1997, p. 73).

Sagan's study concludes by pointing to the multicausality of the development of nuclear weapons. Each model helps shed light on a specific part of the process, whether to explain why it occurred or why it did not. It is possible to bring Sagan's point close to Waltz's. The latter states that neither anarchy nor domestic politics is enough to explain international phenomena (Waltz, 2001). As we discussed above, the theory of international politics points us to two directions of causation: structure and units. The structure is ordered

upon the principle of anarchy. Units, on the other hand, are a second element comprising the international system (Waltz, 1979, 1988). Since structure and units mutually affect each other, international political outcomes should be explained in terms of both (Waltz, 1997b). Waltz's theory, then, *does* allow for domestic factors to sum in the explanation of results, as also the structure helps explain the pressures states are under.

Concentrating on the many reasons why states may wish to acquire nuclear weapons, there is a variation on the same theme: international security pressures. A state may want to develop nuclear weapons a) to counter the weapons of great powers; b) out of fear of an allied state not retaliating a possible aggressor; c) to counter its rivals; d) out of fear of conventional weapons its rivals possess; e) because nuclear weapons offer a cheaper option for assuring one's survival; f) because it intends to attack (what Waltz considers improbable); or, g) because it wants to enhance its position internationally (WALTZ, 1995b, p. 5-6).

Independent of the reasons presented by states or listed by authors, Waltz considered nuclear weapons an element of stability during the Cold War, alongside the system's bipolarity (Waltz, 1981, 1988). This is due to the weapons' dissuasive rather than offensive character. Furthermore, stability is clearly a result of the interaction of system- and unit-level variables, if it is understood as the maintenance of the anarchical principle and the number of central units within the system (the poles).

Nuclear weapons will work as a guarantee that the vital interests of the nuclear state will not be jeopardized because there is no incentive for a first strike in a deterrence strategy (Waltz, 1995b). This is perhaps the leading utility of nuclear weapons. Nevertheless, despite assuring a certain degree of stability, the indiscriminate and fast proliferation of nuclear weapons is jeopardizing it, because units have no time to learn how to deal with similar nuclear units (Waltz, 1995a). If states are to develop nuclear capacity, it is preferable that they do so gradually, as has been the case (Sagan; Waltz, 2010, p. 95).

Miscalculations are one of the leading causes of war (Waltz, 1995a). This is one of the reasons why multipolar systems have historically been more war-prone, as there are intrinsic difficulties in estimating the capacities of the other parties (Waltz, 1979, 1988). Nuclear weapons, in turn, change the scenario once observed in a conventional world: since they are absolute weapons, they assure the maintenance of the vital interests of the state. Such arsenals can be reduced to small numbers, still "if they remain at or above the second-strike level, the military relations of states continue unchanged" (Sagan; Waltz, 2010, p. 92).

Even though nuclear weapons do not eliminate the possibility of war, they limit its occurrence to the peripheries of the system and to aspects that are not central to the survival of

the involved parties. One example is the war in Vietnam. For the United States, winning it would not mean the end of the Soviet Union; losing it would not lead to a Soviet domination of the world. The war, therefore, did not lead to a nuclear escalation.

Nuclear weapons also make political leaders more moderate internationally. Pointing to the “irrationality” of some governments as a reason not to develop nuclear weapons makes little sense, because governments are sensitive to the costs of their actions (Waltz, 1981, p. 11). It becomes even clearer for the author when he develops his argument in the context of Middle Eastern politics. Responding to the argument that the development of nuclear weapons by Arab states could bring along instability in the region, Waltz states that

A quarter of the Egyptian people live in four cities: Cairo, Alexandria, El-Giza, and Shoubra el-Kheima. More than a quarter of Syria's people live in three: Damascus, Aleppo, and Homs. What government would risk sudden losses of such proportion, or indeed of much lesser proportion? Rulers want to have a country that they can continue to rule. (...) We cannot expect countries to risk more in the presence of nuclear weapons than they did in their absence (Waltz, 2003, p. 14).

One example Waltz presents for the debate is Maoist China. According to him, it became “much less bellicose after acquiring nuclear weapons in 1964” (Waltz, 2012). This is so because states that develop nuclear weapons end up being potential targets for other states. If they do not moderate their behavior, then they can be accused of carrying out attacks they have not – it could, then, put their existence at risk, making them a target for a retaliatory strike of a first attack they have not carried.

The development of nuclear weapons is less costly for states than engaging in conventional arms races. The fact that some states still engage in this kind of arms race derives from a failure to appreciate the advantages nuclear weapons offer (Waltz, 1990). It is also the result of a long-term socialization of states within an international system, where a state's survival depends on its own capabilities and the reproduction and duplication of these capabilities.

As a final differentiation between deterrence and defense (both of which are dissuasion strategies), one can imagine two states, A and B. A carries a conventional attack against B. B uses its defensive strategy. B's defense depends on its own capacities but is triggered by A's attack. Now, one can imagine a nuclear attack carried out by A against B. A becomes entirely vulnerable for the second-strike capacity of B, and the intensity with which it decides to carry out its retaliatory attack: “deterrence depends on what one *can* do, not on what one *will* do. What deters is the fact that we can do as much damage to them as we

choose, and they to us. The country suffering the retaliatory attack cannot limit the damage done to it; only the retaliator can do that” (Waltz, 1990, p. 733).

The excerpt illustrates the issue of state survival and deterrence strategy. Nuclear weapons are acquired to get nuclear second-strike capability; however, bearing in mind that one cannot control the nuclear second-strike, the incentives for the first strike are low. States are incentivized to acquire nuclear weapons, not to use them. The search for developing nuclear weapons is what Waltz discusses in his article on the search for nuclear weapons by Iran: according to Waltz, the threats of regime change against Iran is a strong incentive for the Persian country to search precisely what the United States does not want it to, i.e., nuclear arsenal aiming at deterring the United States (SAGAN; WALTZ, 2013, p. 149; WALTZ, 2012),

To sum up and recap, nuclear weapons relate to the survival of the state exactly because acquiring them helps assure the survival of the state. The fact that they are not supposed to be used also relate to the survival of the state, though. This is because what matters after a first strike is carried with them is the second-strike capacity of the state aggressed – the intensity of the retaliation and how it will be conducted depends solely on the retaliator. It gives the nuclear weapons a deterrence character. Another security theme, which Waltz did not write about, is cybersecurity. It is possible to think of a theoretical structure that encompasses also this aspect of current international relations, and this is the object of the next section.

#### **4 Understanding cybersecurity through Waltz’s lenses**

Over the last two and a half decades, cybersecurity has made significant advances in the field of international security. For instance, in 2015, the Obama Administration invested US\$1,8 billion in Fort Meade, Maryland, in issues related to cybersecurity (GOULD, 2015). The cyber dimension has become an important aspect of international confrontation. The Pentagon, for some time now, has considered it as one of the military dimensions, along with the land, sea, air, and spatial ones. The USCYBERCOM was created to defend the security interests of the United States. In the cyber context, the United Kingdom suffered a series of attacks that leaked patient data in 2017 and 2024 (CASEY, 2024; “NHS ‘could have prevented’ WannaCry ransomware attack,” 2017). Israel, for its part, was able to attack the Syrian system of radars in 2009, denying the Syrian army the capacity to detect the presence of Israeli airships in its airspace (Orend, 2019). The question resonates: How can cyber threats

be understood? The gadgets used in this context are best understood as offensive, defensive, or deterrent means?

Bearing in mind that “an understanding of the various lenses used to visualize cyberspace will help to predict better and analyze initiatives undertaken by all players within the cyberspace system” (Manjikian, 2010), I shall stick here to the state-focused limitation proposed by Waltz – again, not because they are the only actors in international relations (and in the cyberspace, more specifically), but because the cyberspace is compounded by interactions between states that relate more or less directly with the states in the international political system. Furthermore, the focus on the constitution of threats, as defined by Waltz and discussed in the first section, directs the efforts in this paper to this deliberate limitation.

Joseph Nye discusses cybersecurity and deterrence, stating that it is possible to deter in the cyberspace in four ways: through punishment, denial by defense, entanglement, and normative taboos (NYE, 2017, p. 54-55). Despite its differences to Waltz’s categorization, Nye’s is no less valuable for this paper. Nye argues that contrary to nuclear weapons, deterrence based on punishment does not have an important role in the cyber dimension because the identity of the aggressor is unknown. The number of adversaries is high, and ‘knowing what assets can be held at risk and for how long is unclear’ (Nye, 2017, p. 55). On the other hand, denial of access through robust defenses can be crucial for strengthening a network and reducing the likelihood of an attack (Nye, 2017, p. 56). As for the entanglement of the networks, it is related to the interdependence between the aggressor and the target, enhancing the costs of an attack for both, making a hostile action less attractive. The costs can also be found in the creation of norms, generating taboos that also decrease the incentives for attacks (Nye, 2017, p. 58–60).

All these possibilities of action and management of cyberspace fall under the category of “deterrence” for Nye, which is a stretching of the concept, as I have been referencing. Of the four strategies proposed, I focus specifically on two: “punishment,” which corresponds to the idea of “deterrence” in Waltz, and “denial of access through defense,” which corresponds to the Waltzian notion of “defense.” Since these interactions do not involve the use of physical force, it is legitimate to ask how much of the use of these categories is metaphorical. I argue that since the use of cyberweapons can bring an advantage to their deployer, it can be understood through Waltzian lenses. It is, therefore, not inappropriate to talk about attack, defense, dissuasion, and coercion with this kind of weapon.

The notion of deterrence appears to be inappropriate in the cyber environment. Deterrence, as Waltz argues, is based on the idea of delivering such a powerful retaliation that

the gains of a potential aggressor are inviable. In a purely deterrent strategy, the potential target may not have defensive means, but it can inflict unbearable damage to the author of the first strike. It is hard to imagine such an absolute situation that puts the aggressor in such a high risk that constrains its first cyber strike. It becomes evident when Joel Brenner (Brenner; Lindsay, 2015) argues that around 160 thousand malware become available every day (data from 2015). Which government would risk not protecting its sensitive data when such a quantity of weapons becomes available every day? It is more reasonable to consider a defensive strategy that, although not perfect, can effectively counter damage, given that governments are cost-sensitive. As Timothy Junio puts it, “it appears uncontroversial that, if cyber war happens, it will be highly costly even if not lethal” (Junio, 2013, p. 131–132).

Furthermore, deterrence relies on a fundamental aspect: identifying the aggressor. Problems in attributing the attack to the correct authors can generate retaliation against the wrong targets (JUNIO, 2013, p. 126). According to Nye, this makes deterrence slower. Other forms of confrontation in the cyber environment can also be considered.

Offensive strategies in cyberspace can be both attacking and the exploitation of information (Nye, 2017; Slayton, 2017). Exploitation relates to espionage techniques and is very common, as it involves leaking “confidential information against the wishes of the owner” (Nye, 2017, p. 47). Slayton (2017) clarifies, however, that the costs of such an attack can be very high, considering the complexity of the organization's cyber defense against a government that operates constantly, building hurdles against this kind of attack.

The cyberspace is a dubious space (Slayton, 2017): as operations cannot be easily distinguished between attack and exploitation, there appears a “cyber security dilemma”, “wherein network intrusions undertaken for defensive purposes are easily misunderstood as preparation for an attack, creating the risk of escalation and use of force” (Slayton, 2017, p. 73). The opacity of the international system that creates the security dilemma is also transplanted to the cyberspace of international politics.

Attacks in such environment vary from the leaking of confidential information, as in the WikiLeaks episode, to those that blur the lines between the physical and the virtual, as in the “NotPetya” attack, which by invading the electricity distribution system in Ukraine, denied the access to electricity in many regions of the country in 2017 (Orend, 2019; “UK and US blame Russia for ‘malicious’ NotPetya cyber-attack”, 2018), or Stuxnet, that destroyed centrifuges of the Iranian nuclear program between 2009 and 2010 (“Iran ‘fends off new Stuxnet cyber attack’”, 2012; Slayton, 2017). These episodes highlight the potential of using cyber operations to complement and support physical ones, as seen in the Russian attack on

Georgia in 2008, which disoriented the Georgian army and facilitated the Russian advance (Orend, 2019).

Either as an attack or as a means of data exploitation, the cyber dimension presents significant challenges, particularly in the context of political calculation for decision-making, a recurring issue in Waltz's thought (Waltz, 1979, 1988). On the one hand, exploiting network information may provide access to data that can contribute to misperceptions due to its partial nature, thereby worsening the security dilemma. On the other hand, such attacks can be launched from various fronts, ranging from governments to individuals, including cybercriminals (Orend, 2019). Identifying the aggressors becomes as much of a problem as identifying who is a "cyber terrorist", a "hacktivist", or a "cyber soldier" (Tanczer, 2020).

Since cyberspace is a vulnerable field for different types of attacks, it is reasonable that its defense is prioritized. Slayton argues that the sources of defensive or offensive advantages in cyberspace "are determined not by technology alone, but by the organizational processes that govern interactions between technology and skilled actors—processes such as software updating, vulnerability scanning, and access management" (Slayton, 2017, p. 74). For her, a good cyber defense cannot do without the organizational complexity of defense. The attack has higher chances of succeeding in a poorly managed cyber defense because in this case the attack is less costly:

the relative advantages of offense or defense depend on the ways in which complex computer systems and skilled actors are integrated and organized. This is one reason that information security training institutes do not recommend security products, but best practices (...) Organizations with mature processes may not be able to keep attackers out, but they can increase the attackers' costs significantly (Slayton, 2017, p. 89).

The crucial factor in cybersecurity is the knowledge of the agent working in a defense agency. Maintaining this factor is essential for making attacks costly and unattractive. And it has little to do with deterrence; it is instead a defensive strategy. And, as it happens with defense, it is not unassailable; this is why it must be constantly undergoing processes of enhancement. Thus, especially for agencies dealing with cyber defense, success depends on good practices rather than good *products*. These processes are indeed in constant dialogue with the development of new technologies (Dunn Cavelty; Wenger, 2020). The development of these practices also happens in a competitive environment, where actors tend to emulate one another: the emulation of successful defense practices and technologies makes new practices and technologies emerge, in a process of constant upgrade of defense and attack



practices. Taking into account the costs of defense and attack, cyber operations can be considered more advantageous as defense strategies.

Cyber operations can jeopardize both the physical infrastructure of states, as in the case of “NotPetya” in Ukraine, and strategic interests related to the state's survival, as in the case of “Stuxnet” in Iran. They can also affect domestic issues, such as espionage. As Manjikian (2010) argues, cyberspace can be comprehended as a field in which there is the pursuit of more complete information (including information of national interest), which means that there are more incentives for the defense of cyberspace than for its use as an offensive, or even deterrent, strategy.

## 5 Towards a definition of “strategic” from Waltz’s theory of international politics

In the beginning of his sixth chapter in *Theory of International Politics*, Waltz clarifies how his theory depicts international phenomena:

among states, the state of nature is a state of war. This is meant not in the sense that war constantly occurs but in the sense that, with each state deciding for itself whether or not to use force, war may at any time break out. (...) The threat of violence and the recurrent use of force are said to distinguish international from national affairs. (...) If the absence of government is associated with the threat of violence, so also is its presence (Waltz, 1979, p. 102–103)

States conduct their relations under the shadow of violence. According to Waltz, it is possible to conclude that violence is a foundation of politics. It does not imply that violence occurs all the time, nor that its use is justifiable or legitimate. Violence, or, more accurately, the possibility of its breaking out, is present both when it does manifest itself (through wars and direct confrontations), as it is present in the ways states use to avoid violence being exercised against them. There are, obviously, different ways to address these issues domestically and internationally. An example is necessary to illustrate such an argument. According to Waltz, citizens of a state do not need ways to assure their security, because this is an attribute of the state, for which the state can deal: the state has a government whose task (among others) is to produce public policy for security issues. It is not necessary, then, that this function is duplicated within the state; such a function is delegated to the state that has the monopoly of the production of public policies through its governing system. Internationally, on the other hand, functions will inevitably duplicate, because one state cannot wait for its

security to be provided by other state(s): states are charged with the same tasks internationally, and they must perform as best as they can to get these tasks done.

In the anarchical environment in which states operate, whatever their goals, the most important of them is survival. Power, as a set of capacities of the states, is both what differentiates them and the means they have for survival. Taking capacities as listed above, the survival of the state depends on the size of its population and territory, its resource endowment, economic capacity, military strength, and political competence and stability (Waltz, 1979, p. 131). If these are means for states to achieve their goals, it is also not absurd to claim that, to achieve their goals, they should, first of all, survive. These capacities, therefore, are essential for the survival of the state. The effective survival will depend on a series of other factors, including the polarity of the system, but the capacities are part of such an equation.

I argue that it is possible to understand as “strategic” the *aspects that have to do with the survival of the state*. Such a definition of strategic brings along both the polarity of the system, and the means to assure its capacities. It also involves the way that states exercise violence or avoid it being exercised against them. This final point is the one I have addressed throughout this paper, specifically in relation to nuclear weapons and cybersecurity.

Nuclear weapons are strategic in this sense because they control the intensity at which wars are fought and their frequency. If, according to Waltz, they are an important aspect of stability in a bipolar world and also responsible for limiting the escalation of confrontations, it is because they are capable of providing nuclear states with a second-strike capacity. They make a first strike very painful and costly for a potential first strike aggressor, which has little incentive to carry out such a strike. It is the guarantee that the nuclear violent action will be answered back also violently (and nuclearly), and the severity of such a response lies in the hands of the retaliator, being uncontrollable for the aggressor. It is perhaps strategic in the purest sense of the term as I have derived it from Waltz.

Cyberspace weapons are also strategic when used in complement to the exercise of violence (or avoidance thereof), such as in the destruction of critical equipment for a state (as in “Stuxnet” case). They can be strategic when, through the leaking of important information, states gain access to intelligence reports or classified documents that deal with vital national questions. States may be interested in fostering instability inside another state. It is noteworthy that since I have established that states are both the object and the subject of threats in international politics, the issue of confidential information of citizens may not be of

direct interest to a state and, therefore, may not be categorized as strategic as I have defined in this paper.

The international environment is a competitive one, as the theory depicts. It is reasonable to expect that the ways states perform their tasks will be emulated by other states, the more so as they successfully perform them. This is true for the exercise of violence through the weapons that states use. I feel compelled to argue that this is also true for the ways they set forth their domestic policies that strengthen the state, as is the case with democracy: if the democratic system is efficient for maintaining the state, it will be emulated by other states. International competition, then, makes competitors more and more alike due to the pressure of the competition itself: “Competitors, by the force of their competition, are made to become alike; the one less well equipped for the contest must imitate the other or fall by the wayside) (WALTZ, 1967, p. 13).

Technology provides new ways of assuring the survival of the state. This is why nuclear weapons spread to states more concerned with disputes that could cost their survival. When I say 'survival,' it should be noted that it refers to the maintenance of the state as an autonomous political unit that decides for itself how to address its domestic and foreign issues. Currently, cybersecurity is also a vital aspect that relates to the survival of the state, because cyberspace is used as a complement to physical attacks. They can also be carried in a manner that brings about physical consequences (Murphy; Tidy, 2024). New technologies are also created, emulated, and enter the state competition (Artaza, 2020; Baptista; Zhu; Potkin, 2025).

It takes me to the last point. After the end of the Cold War and the demise of the Soviet Union, the issue of the polarity of the system has been the object of many debates, as I have also discussed above. The definition of strategic that I set forth here leads me to conclude that, whatever the polarity of the system, and whatever configuration may come after unipolarity is over, the poles of the next international system will be atomic states. This will be so because these units are capable of deterring each other, and, thus, mastering the different ways force can be used internationally. Whether China balances the United States (Tunsjø, 2018), or Russia and India are poles of a multipolar order (Mearsheimer, 2018), the poles are not lacking symmetry in terms of their strategic weapons, and thus, they can inflict damage to one another to a degree no other unit can. The definition of strategic I developed in this paper provides the theoretical grounds for why this is so.

## 6 Conclusion

By the beginning of this paper, I outlined some questions that I planned to address throughout this paper. This concluding section aims to systematize the answers to these questions.

Waltz's theory of international politics emphasizes the state as a fundamental actor in international politics. By being the center of this theoretical discussion, the threats states pose to one another are also brought to the forefront. According to Waltz, the power struggle between states takes on special forms in each structural configuration, but states are able to inflict harm on each other to an extent that no other actor can. And these threats relate to the survival of the state, its survival as an independent political unit – this is a structural factor, and a way in which states feel threatened by each other.

It has a lot to do with how violence can manifest itself internationally. It is the *ultima ratio* in affairs of state, but they must always be ready for it to be deployed against them. It does not mean that states will always resort to violence in order to achieve their goals or be a threat to other states. They can resort to coercive diplomacy and coercive trade practices, among others. However, these factors have a significant impact on the capacity of states to achieve their goals independently. In other words, it is a trait of the power struggle that constitutes international politics.

Nuclear weapons and the cyber domain occupy a crucial role in this context of power. Nuclear weapons, as perceived by Waltz, serve as deterrent weapons, providing dissuasion through deterrence. Cyber-weapons, on the other hand, can be employed in both offensive and defensive manners. However, states must always be aware of their defense capacities in the cyber domain, because new weapons abound every day. A good defensive practice, then, is the best option, especially in a world where cyber-tools are an integral part of citizens' everyday lives.

With all this discussion in mind, the nuclear and cyber domains are strategic because they have significant implications for the state's survival. The calculations that states embark on in order to assure their survival, the strategies they emulate, and the innovations they pursue, aiming at increasing the capacities of the state to secure its survival, are strategic in the sense proposed by this paper. Despite the wide use of the term “strategic” for a series of events, the more so as state-to-state relations gain more attention in everyday discourse, a definition of strategic that has to do with the survival of the state, solidly grounded on theoretical explanations, is critical for the quality of the debate on international politics.

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