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International Systems and Cognitive Dissonances: beyond rational agents

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Understanding decision-making and strategy in international relations is enriched by an approach that takes into account different historical scales. Big History, which delves into the interplay of cultural, evolutionary, and cosmological processes, serves as a valuable tool in elucidating the strategic behavior of political actors. In a systemic setting where anticipatory capability stands as a paramount asset, this approach aids in pinpointing potential sources of disorder within the international arena. When policymakers seek to understand an interconnected web of actors, make informed decisions, and anticipate the actions of others, they draw on a complex set of mental tools. These tools combine cultural information with ethological cognitive archetypes, shaped by millions of years of natural selection in primate species and hardwired into the human collective unconscious. Cultural information, stemming from these archetypes, has the capacity to either augment or suppress the expression of these innate structures. At an unconscious level, the formation of ingroups is a socio-cognitive process enabling human agents to frame their relationships with ingroup members in prosocial and non-lethal terms. It acknowledges the presence of conflict for status and

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influence among ingroup members, yet ethological suppression mechanisms work to minimize the potential for lethal aggression, thereby preserving group cohesion. Hence, we posit that when systems of international relations are crafted to maintain the *status quo* between parties while simultaneously being founded on principles and institutions suggesting solidarity and cooperation, human policymakers may experience marginal cognitive dissonance at an unconscious level. Such cognitive dissonance, arising from these mixed signals, could incline policymakers to pursue policies contravening the terms of the system. While this phenomenon alone cannot solely account for systemic failure at the international level, it likely contributes to it. We suggest that policymakers engaged in diplomatic initiatives such as the Concert of Europe (1814-1815), the Washington Naval Treaty (1922) and the Nuclear Non-Proliferation Treaty (since 1970, and still in force), were (and continue to be) susceptible to this cognitive phenomenon on a regular basis.

Introduction: How Realistic is Realism in International Relations?

The introduction to this work may certainly sound provocative, but its proposition is far less critical than it might appear. The approach we suggest here does not aim to challenge all the most elementary principles of realism, especially because there is no shortage of critical perspectives, with which we can always agree in part but never in whole (marxists, liberals, structuralists, constructivists—all have something to say but hardly seem capable of a definitive word). Actually, realism and its more contemporary variations serve as the necessary backdrop for this research, allowing us to comprehend the dynamics of competition, cooperation, power, and

violence among human collectives, including modern nation-states but not limited to them.

However, what motivates our call for a deepened analysis is the understanding that realism fails, and continues to fail, in two themes not always valued but crucial to its entire theoretical structure. These themes relate to the following questions: 1) how are decisions made in the international system? 2) what is, in fact, the decision-making unit in the international system? Answers to these questions have been attempted by many schools (Hagan 2001), but none of them appears entirely satisfactory, especially as they attempt to navigate around the limits of realism through reasoning confined to the humanities and social sciences (Rosenau 1990).

Let's address the first issue: the decision-making process in the international sphere. Few branches of realism appear committed to breaking free from the centripetal force still exerted by Hans Morgenthau's thinking. Even when they attempt to do so, they often fail to distance themselves enough to achieve a privileged standpoint. As commonly known in the field of international relations, Morgenthau (1948) presupposed that nation-states, as human collectives, act in a stereotyped manner due to an immediate transmission of the behavior of their constituent parts (human beings) toward the more general expressions of collective behavior. This is why the theme of human nature emerges as decisive in the explanatory structure of classical realism (Rösch 2013). Contrary to what one might expect, my criticism is not based on the old-fashioned argument that human beings have no nature - something criticised by Pinker (2004) -, but on what classical realists base themselves on when they try to identify supposed universals of human behavior.

How would human nature manifest itself for Morgenthau? Assuming, in this case, that human behavior is by definition rational (Snidal 2013), the rationality of "natural" human behavior would imply the ability to freely choose between different courses of

action, with the same weights and measures, seeking to optimize the payoff of decisions in an attempt to achieve a particular goal (with lower costs and greater benefits). Flirting with rational choice theory, classical realists largely disregard the problem of informational asymmetry, believing that rational decisions are theoretically made based on perfect information, freely manipulated by agents. Moreover, cultural and economic considerations would not be able to decisively disturb the rational decision-making process, meaning that opposing a rising power or bandwagoning with an already established power would be decisions with equal valence, determined only by the rational evaluation of costs and benefits.

Classical realists have a rather narrow conception of the objectives that nation-states seek to fulfill. The expansion of the relative power of states, their autonomy, influence, and security vis-a-vis other states would be the final expression of a chain of decisions based on the supposed "selfish" human nature that all policymakers would share by virtue of their biological circumstances. Selfish behavior would not be divorced from a strategic vision, implying that the pursuit of self-interest should take into account the decisions and strategies of other agents, who would also seek to achieve similar objectives, with similar precautions.

I do not intend to contest the entire empirical validity of the behavioral innatism thesis to which classical realists refer, given that I do not believe it to be the main problem (in contrast, incidentally, to much of the constructivist critique, steeped in the standard social sciences model - SSSM). What this research contests, among other things, are the paths taken by classical realism and its variants to arrive at these now obsolete arguments, as well as the conclusion that "selfishness" sums up human behavior (Williams 2005).

Undoubtedly, the reliance on rational choice as the central feature of human decision-making is also obsolete. Not that human

agents are incapable of pragmatically comparing the costs and benefits of two or more possible actions. In fact, this competence of rationalizing choices from pre-established goals to maximize returns is perhaps the most fundamental cognitive competence shared by all species in the biosphere. Contrary to the anthropocentric ideas that marked much of 19th and 20th century social thought, the potential for rational choice seems to be far from an exclusive characteristic of *Homo sapiens*. Human behavior is much more susceptible to multivectoral determinations than any other living species. These vectors include cultural and ethological biases (Eibl-Eibesfeldt 1979; Kingstone et al. 2008; Schmitt et al. 1997), which can be irrational from the point of view of maximizing a specific outcome. This would imply that, considering previously determined objectives (cultural, ethological), humans may be further from effective rational maximization than any other species, contradicting the common belief that non-human animals are irrational.

Morgenthau bequeathed to classical realism the notion that, despite the existence of ethical and moral issues, their role was merely secondary in decision-making. This would imply that, ultimately, the pragmatic pursuit of maximizing the returns would predominate in policymaking. However, a decision can only be considered rational to the extent that it maximizes results in light of a previously established objective. Classical realism understands these objectives homogeneously and from a reasonably stereotyped perspective (security, influence, power). From a critical perspective, this certainly opens the door for ethical and moral questions to enter the pre-decisional phase, influencing the nature of the objectives to be achieved by foreign policy. Ultimately, the rationality of the decision depends on the objective to be achieved and, as classical realism circumvents the problem of determining objectives by assuming them in a stereotyped way, it simultaneously ignores the sociological, political and, dare I say it, ethological complexity of formulating these objectives. Although the

pursuit of power, wealth and security are evident as frequent objectives in interstate relations, this triad can undoubtedly have multiple nuances, depending on various determining factors.

Big History and International Relations

Modern studies on cognition, ethology, evolution, and neuroscience have converged to consider the idea of *tabula rasa* to be empirically inadequate for describing human mental architecture. This has allowed the classic theme of human nature to be revisited over the last thirty years from a differentiated epistemological, theoretical, and experimental perspective. Thus, my reservations about the postulates of classical realism lie less in the suggestion that human ethology is central to the behavior of political units in an interstate system and more in the sources on which it is based to characterize behavioral universals. The exclusive recourse to the history of civilizations over the last five millennia and Western political philosophy (especially the thought of Thomas Hobbes), while of great importance, now appears insufficient. Even political psychology, when accessed by classical realists, shows limitations due to its unidisciplinary nature. It is understood, therefore, that a renewal of the realist perspective requires a genuinely transdisciplinary outlook, taking into account international relations in the entanglement between different scales of time and space, from short-term and local realities to evolutionary macro-time and macrospaces. This is one of many tasks that can be accomplished by big history.

Big history is a transdisciplinary research program with aspirations to become a paradigm of convergence between the human sciences and natural sciences (Christian 2018; Spier 2008). It aims at the integrated study of the transformation and conservation of matter, energy, and information in the known universe. Stated this way, its objectives may sound cryptic, but

concerning the scope of this study, they translate into the following assumptions:

1. History, as a process of transformation and persistence, occurs simultaneously and entangled in various durations, from the short term to evolutionary and cosmological time.
2. Historical agents are not restricted to human agents and encompass everything that can undergo transformation and/or cause transformation.
3. The basic assumption that only humans are historical agents due to volition and free will fetishizes human agency and deliberately ignores the pre-conscious origin of decisions (Soon et al. 2008).
4. Subjects and objects of history include all regimes of empirically observable matter, energy, and information, ultimately making "natural" history and "human" history indistinct in a continuum.
5. Historical processes are caused by the entanglement between phenomena of short, medium, long, and extremely long duration.
6. Historical phenomena, processes, and events interact dynamically, and it is the result of this interaction that produces the traces and evidence from which history is investigated.

Within an investigation into the international system, the principles of big history prompt us to question the unidimensionality of human agency and the systemic condition of the interactions between state and/or non-state actors. Concerning decision-making and policy formulation, big history invites us to move beyond classical notions in the field of human sciences that presuppose culture, consciousness, rationality, volition, and free will as sufficient descriptive elements of human agency. As short, medium, long (Braudel 2009), and extremely long durations

(Christian 2005) overlap, human action becomes evident as entangled in a dense web formed by cultural, institutional, and biological determinants in complex interaction.

Thus, it is understood that actors in the international system make decisions under the weight of the interaction between multiple layers of historical causality, which involve:

1. Particular events (short duration) in which they are directly or indirectly involved;
2. The geopolitical and geoeconomic conjuncture (medium duration) that emerges from the interaction between short-term events;
3. Mentalities, economic and cultural systems (long duration) in which actors are immersed, most often unconsciously;
4. The cognitive architecture fixed by natural selection in the process of H*. sapiens* speciation in the last three hundred thousand years, shared by all humans regardless of their particular cultures (Mithen 2002).

A fifth level of causality involves the condition of complex objects in thermodynamic non-equilibrium demonstrated by certain physical, biological, and social systems, including the international system (or world-systems). This broader level of causality determines that the international system will be affected by the inexorable expansion of entropy (disorder, disruption, randomness) unless work and free energy are persistently employed to promote negentropic action (ordering) (Crumley 2006). In this text, however, I will not delve into the thermodynamic dimension of the international system (or world-system), even though it is important in an analysis from the perspective of big history. Due to the limitations of time and space, emphasis will be placed on the cognitive-evolutionary vector in decision-making. This does not overly imply asserting that this vector is determinant

over the others; an approach from big history seeks entanglements, interactions between levels of historical causality, rather than determinations of one level over another.

Neorealism opens doors to systemic complexity, yet falls short of reaching it

What about neorealism and all the works inspired by the thought of Kenneth Waltz? We know that neorealism, in its most original form, set aside the theme of human nature, fundamental to classical realism, and suggests as a hypothesis that international relations are determined by structural elements inherent in the constitution of the system itself, with its weights and counterweights, structural and institutional pressures (Waltz 2018). In this framework, these macro-elements operating together would be more than sufficient to contain the irrational deviations of human agents, caused by their cognitive limits, culture, and other factors. In summary, in this scenario, the actions of nation-states take on rational contours only because the structural determinants of the system produce a selective bottleneck that neutralizes a large part of irrational human actions.

Neorealism has a virtue, which is to open the doors to understand nation-states and the international system as complex objects (Waltz 1993). This would imply that the properties characterizing states and the system are emergent (Hodgson 2000): they only manifest because states and systems are, in truth, networks of agent interactions; and it is only through the functioning of interactions in the network as a whole that certain emergent properties become real and visible. Thus, agency in the international system would manifest conditions and properties distinct from agency at the intra-state level. This distinction might explain why human nature is largely considered irrelevant by neorealism.

From the perspective of big history, understanding political units and the international system as complex objects is fundamental. However, although neorealist literature provides room for the analysis of complex systems, it falls far short of being an integral part of the complexity approach. In the analysis of complex systems (a fundamental theoretical aspect of big history), it is entirely possible for some components or agents to have asymmetric power to interfere in the dynamics of the system as a whole. This is known as the presence of "critical agents" or "key nodes" in a network. These agents may play a disproportionate role in the dynamics and stability of the system. In a complex network of interactions, its topology and the individual characteristics of the agents play a crucial role in determining how the system behaves (Ebel et al. 2002).

Some agents may have stronger connections, influence over a large number of other agents, or a strategic position that gives them greater power of interference. Agents with greater power of interference can trigger cascading effects, significantly altering the dynamics of the system as a whole. This can result in abrupt changes, the emergence of new patterns, or even the transition of the system to entirely different states. These phenomena are known as "phase changes" or "phase transitions" (Grinin and Korotayev 2009).

If the international system is a complex system (and I am convinced that it is), this would imply that, beyond any predictability caused by structures, by the logic of the game between autonomous political units in an anarchic environment, there would be a persistent element of variation, innovation, and disruption of systemic functioning. This derives from the fact that, due to the topology of the system, the components demonstrate absolutely asymmetric power of agency. This applies not only to certain nation-states capable of disruptive action but also to agents at the intra-state level: complex systems are nested structures (like a Russian *matryoshka* doll) in which distinct layers of agency

overlap and influence each other, in top-down and bottom-up processes. And we must not disregard the fact that, ultimately, states do not make decisions; states are the emergent effect of the interaction between thousands or even hundreds of thousands of human and non-human, biological and non-biological agents. In the third decade of the 21st century, individuals, rather than states, predominantly hold the reins of decision-making. However, it is increasingly evident that a portion of decision-making and executive functions at the state level is now being delegated to non-human, non-biological entities, namely artificial intelligences.

The multi-layered interaction between determinants can lead us to the relationship between statesmen (and other critical intra-state actors) and the so-called *deep forces*. This relationship, theorized pioneeringly by Renouvin and Duroselle (1967), associates the actions of statesmen with short-term processes, while attributing long-term processes to the deep forces. Under big history, structural elements gain even greater depth, allowing us to consider how certain human actors, in the role of critical agents, influenced by the circumstances of conjunctures, mentalities, and economic systems, but also by their inescapable condition as social primates with an evolutionary history of millions of years, were able to decisively impact the parameters of operation of macrosystems of relations between political units.

Unconscious and Cognitive Biases in Strategy and Foreign Policy

Realism gives little consideration, if any, to the unconscious processes that influence the actions of decision-makers. In particular, the realist tradition offers minimal space for acknowledging the role of the unconscious in shaping the systemic architecture, its presumed rules and practices, its codes of conduct, and, notably, the objectives defined as "national interest." Nevertheless, there are ample indications that the entire domain of

international relations is susceptible to biases and behavioral archetypes.

A notable cognitive distortion is the confirmation bias (Kertzer et al. 2020). This phenomenon is characterized by the tendency of individuals to selectively seek out, interpret and remember information that aligns with their pre-existing beliefs, hypotheses or perspectives, while minimizing or rejecting information that contradicts these established convictions. This psychological bias suggests a predisposition in humans towards asymmetrical information processing, prioritizing the validation of one's existing convictions over the accommodation of conflicting information. This tendency may or may not align with a rational perspective, which seeks to maximize means for certain ends.

To illustrate, consider a scenario where two states, labeled A and B, are entangled in a border dispute. In this scenario, the authorities and citizens of State A may demonstrate a tendency to interpret the actions of State B as inherently hostile and threatening for reasons entirely unrelated to a pragmatic and rational defense of the most immediate national interests. At the same time, and with serious consequences, they may be inclined to underestimate or neglect conciliatory gestures or explanations offered by State B. Such conduct is attributable to a predisposition to perceive State B as a potential adversary, a bias that leads to the selective gathering of evidence that supports this premise, while disregarding information that could question this perspective (cherry-picking, or the fallacy of incomplete evidence).

Another example of unconscious cognitive bias is provided by the availability heuristic (Cohen 2017). This is a cognitive process whereby humans tend to judge the probability of an event based on how easily examples of that event come to mind. This means that the topography of information distribution in the decision-making system (involving deliberate actions such as propaganda, censorship, "narrative construction," etc.) has a significant impact on both the formulation and execution of foreign policy.

For instance, suppose a government is considering military intervention in a foreign country. Political leaders and policy-makers may be influenced by the availability heuristic by easily recalling (or being reminded of) previous cases where military intervention was successful and, therefore, believe that intervention is an effective option. Schools and newspapers in the Western world, at least since the 19th century (and social media in the 21st century), are powerful institutions in the production of heuristic bottlenecks capable of affecting an entire system of strategy formulation: not only do they contribute to the intellectual formation of policy-makers, but they also play a crucial role in shaping "public opinion" capable of reacting to foreign policy elements on the domestic front.

Thus, there seem to be no shortage of elements that disturb some of the central assumptions of realist theory, although never in the sense of fully delegitimizing them, but rather endowing them with greater depth and complexity. However, if decisions in the international sphere are affected by the unconscious mind, how do these framings, images, and involuntary biases originate? Although political psychology and behavioral sciences applied to international relations do not shy away from acknowledging the bioevolutionary nature of unconscious decision-making components, few works go beyond recognizing these components and engage in a transdisciplinary exploration of their deep history.

A Deep History of Sociopolitical Archetypes

The constructivist critique of realism is quite emphatic about the importance of culture, norms, and ideas, especially in the formulation of foreign policy objectives. Speaking, then, of sociopolitical archetypes may give the impression that I am merely reiterating a widely circulated idea. I believe that is not the case. It is true that constructivism rejects the idea of culture as radically indeterminate, implying that there are elements that produce it, and

that these elements can be known. Constructivists also believe that cultural norms are socially constructed and transform over time, creating a less static panorama for the objectives and practices of foreign policy than assumed by realism. I undoubtedly agree with these statements. However, as I will try to make clear, the supposed elements promoting culture far transcend the limits of the objects investigated by the human sciences.

The issues that stand out in a "critique of constructivist criticism" are the short-sighted understanding of historical time and a somewhat simplistic view of what is meant by the social construction of culture. It is not denied that cultural patterns impact international relations and can be the subject of intense variation and mutation in space and time. However, this dynamic aspect needs to be put into perspective since the problem of transformation and permanence is a function of the “game of scales” (Christian 2005) in which phenomena, processes, and historical events occur.

Viewed in their medium duration expressions, cultural manifestations seem to undergo intense transformation at the pace of succeeding generations, especially in the Western world since the 18th century. To Braudelian analysts, long duration cultural structures and mental frameworks, changing at a secular or even millennial pace, may seem part of an "immobile history." And, from a big history perspective, the evolution of the mental and cognitive architecture of H*. sapiens* produces a transformation dynamic even slower (measured on the scale of hundreds of thousands or even millions of years). On this time scale, all expressions of human culture in the last three hundred thousand years are understood under the aegis of the same set of innate cognitive structures, fixed by natural selection.

This is not a denial of cultural diversity. Human culture, far from being indeterminate and arbitrary, consists of socially conditioned manifestations of the same set of archetypal structures shared by all members of the *H. sapiens* species and produced by natural

selection in the very long term. Thus, if a short and medium-term analysis emphasizes the diversity and idiosyncrasies of cultural formations, a long and very long-term one will illuminate the repetitions, and the stereotyped content of various forms of cultural expression in time and space, as well as the causes of these repetitions. And these two dimensions, the specific and the general, exist simultaneously and are not mutually exclusive. Therefore, it is not a matter of deciding between variation and permanence; it is, in fact, investigating "variation in permanence".

Human political behavior, with its immense wealth of manifestations in time and space, stages a set of ethological processes fixed by natural selection since at least the last common ancestor between *H. sapiens* and the common chimpanzee (*Pan troglodytes*), six million years ago. Chimpanzees are the last living heirs of a long evolutionary lineage that separated from another lineage of great apes, which has humans as its last surviving member. The two species are linked by a molecular similarity that reaches 98% of shared genes; both species show convergent behaviors, differing from most other primates. And while chimpanzees are not the perfect proxy for formulating hypotheses about their last common ancestor with humans, they are the best reference we can get. Cognitive and ethological processes only leave marks in the fossil record—when they do—indirectly, making primatology an important ally in studying the foundations of political behavior and international relations (Barreiros 2021; Barreiros and Vainfas, 2020) [1].

[1] In the debate about the evolutionary origins of war, it is not uncommon to hear the claim that bonobos, a typically peaceful species, may be a more appropriate reference to the behavior of our last common ancestor than chimpanzees. (Parish et al. 2000). In this line of reasoning, the aggression and coalitional violence practiced by *P. troglodytes* would be a derived behavior. The human ability to establish peaceful relationships between individuals belonging to different groups would be a "proof" that humans are as peaceful as bonobos. However, we must consider that: 1) bonobos diverged evolutionarily from common chimpanzees 0.9 Ma (millions of years ago), while the first hominins diverged from common chimpanzee ancestors around 7 Ma (Hey 2010). Thus, it is more likely that the peaceful behavior of bonobos is an adaptation to the specific environmental conditions on the south bank of the Congo River, where they migrated and where they speciated. 2) It is clear that humans are

H. sapiens and *P. troglodytes* are species of social primates. Sociability among mammals is a behavioral trait that, in specific ecological circumstances, can positively impact the reproductive fitness of individuals living in groups. A socially organized group may be more exposed to predators, but the collective attention to environmental threats more than compensates for the exposure (attacking a group with many eyes watching and mouths ready to sound the alarm is not a simple task). If a species forms groups, and these groups engage in lethal violence against each other, demographic advantage can be decisive as a means of defense (The balance of power is the most powerful deterrent in the animal world, including humans).

The last common ancestor between chimpanzees and humans is a species that remains unknown to this day. We can only ascertain its existence through molecular analyses, revealing that at some point between 8 and 6 million years ago, populations giving rise to our species and to chimpanzees began to differentiate from a common matrix. Many specimens have been suggested as representatives of the Last Common Ancestor (LCA), but the truth is that we will probably never know for certain. Nonetheless, indirect clues abound. The first clue lies in the fact that humans appear to be, to a large extent, more derived primates (possessing many morphological, physiological and behavioral characteristics that differ from those of ancestral species) than chimpanzees. Given this fact and considering that both *H. sapiens* and *P. troglodytes* are descendants of the LCA, it is presumable that the LCA resembled chimpanzees more than humans. If the two descendant species share behavioral traits, it is highly likely that these traits were also part of the repertoire of the last common ancestor.

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as capable of waging war as they are of establishing peaceful intergroup relations, but this is not due to a specific ethological inheritance, but rather to the way in which the human mind works. Chimpanzees are also capable of establishing peaceful relations, but only on an intragroup level. The cognitive fluidity of *H. sapiens* allows it to transpose behavioral algorithms shared with *P. troglodytes*, and used in the management of intragroup social relations, to the operation of intergroup social relations. This issue will be addressed later in this article.

Chimpanzees live in permanent groups of about sixty individuals (a number that varies according to the environment), but their structure differs from that manifested among other great apes. Chimpanzees live in fusion-fission groups; this means that, despite being part of the same community that interacts on specific occasions, and whose members maintain bonds of cooperation and conflict, individuals within this macro-group frequently separate into smaller units (affinity groups, task groups) to carry out different activities (foraging, territory patrolling, among others). This occurs only occasionally among gorillas and happens daily in all human societies, from hunter-gatherer communities to modern fossil-industrial societies (Lemoine et al. 2022; Feldblum et al. 2021; Samuni et al. 2021).

Chimpanzees possess a sophisticated theory of mind (Mithen, 2002). This implies that they are cognitively capable of imagining the mental states of other chimpanzees based on the analysis of body language, facial expressions, and vocalizations. Furthermore, they can record, process, and analyze information about social interactions among members of their own group, whether or not the observer is involved. This suggests that, like in a true "game of thrones," chimpanzees articulate their strategies for gaining status and privileges by taking into account alliances and enmities among third parties. To ascend the social prestige ladder, chimpanzees form alliances, from which they strive to displace other individuals from their status positions. Once victory is achieved, all alliance members gain in prestige, even though the relative positions among themselves remain unchanged (Enigk et al. 2020).

Social struggles among two or more chimpanzees are intense and often involve all members of a group, who act as supporting players in the interplay with the competitors. The prize for achieving a higher relative social position is unequivocal: greater opportunities for reproduction, privileged access to nutritionally valuable food resources, and protection against harassment from third parties. The contest between two or more individuals frequently escalates

toward physical violence, although most of the competitors' efforts revolve around increasing their support base through socialization and practices like *grooming* (cleaning and parasite removal from fur and skin, done in turns between two individuals). Stronger and more aggressive chimpanzees are not necessarily the most dominant; what determines the degree of dominance is the ability to mobilize a broad coalition around oneself.

What matters most in status conflicts among chimpanzees is that their intensity and agonism do not result in lethal violence, except in rare cases. In essence, there is nothing to prevent two chimpanzees from fighting to the death for a higher position in the status hierarchy. However, when the stakes involve social relations within the group (ingroup), ethological brakes come into play, significantly inhibiting behavior that leads to extreme physical aggression. This limits the occasions in which injuries resulting from violent contact are severe enough to result in death. The expression of prosocial behavior toward ingroup members then becomes a decisive element for resolving individual conflicts without a lasting impact on cooperative bonds or critical effects on population size. Except for pathological situations, cognitive algorithms that generate prosocial behavior toward recognized ingroup members will flourish and mature throughout an individual's ontogeny, stimulated by social experience. Acting prosocially toward conspecifics in the same group is not optional for chimpanzees: they are born and grow up knowing what to do, to a large extent (Ishizuka et al., 2020; Surbeck et al., 2017).

Thus emerge ethological control mechanisms among chimpanzees, and we have ample reason to assume that this behavioral portfolio has been transmitted from the last common ancestor to all species that descended from it, including not only *P. troglodytes* but also bonobos (*Pan paniscus*) and hominins such as *Australopithecus* spp., *Homo* spp., among others. Social ethology produces hierarchical ingroups (collectives of individuals united by kinship and/or cooperation), whose stability is ensured by a set of

innate mechanisms preventing intragroup lethal violence. Since the last common ancestor, hominini societies (including chimpanzees) have not been egalitarian in terms of access to energy resources and mating opportunities.. This is a function of an individual's status level as recognized by their peers. However, among chimpanzees, we observe that the competition for prestige does not result in a crystallized, inert status distribution structure: social hierarchies are volatile. This implies that there is turnover in status positions throughout the existence of a community. No status *loci* are permanent among chimpanzees, and we can presumably argue that this set of prosocial behavior operational rules is a primitive and shared condition for all evolutionary lineages derived from the last common ancestor, including modern humans.

However, primate social cognition has limits, fundamentally determined by the capacity to process simultaneous social relationships. In the case of chimpanzees (and presumably their last common ancestor with humans), this means that, under certain demographic pressure conditions, group members tend to be incapable of correctly processing information about the current status of others, their past interactions, alliances, and enmities. In summary, an excess of social information causes pathological behavior, as individuals become unable to correctly recognize the hierarchical position of some (or many) other individuals. In the event of an overload of information of this nature, the degree of internal conflict escalates, and mechanisms to prevent lethal violence begin to fail. Prosocial behavior (hierarchy + status fluidity + limits to physical aggression) is activated in the mind of a primate like a chimpanzee when interacting with a cognitively identified ingroup member. When this processing of social information functions anomalously, conflicts with lethal consequences become more likely.

This forms the basis for the disturbing behavior among chimpanzees (and, we believe, also in the last common ancestor with humans) that can be referred to as warfare. When prosocial

ethology fails, it is common for a social group to permanently fragment into two or more groups, which occupy separate territories over time. As time passes, social interactions between individuals belonging to different groups become increasingly rare, to the point of ceasing entirely. Regular patrols are conducted along the boundaries between the territories of two or more groups, and as soon as sensory signals of the presence of a "foreign" individual are detected, the patrol troop tends to attack with the sole aim of physically eliminating the opponent. Since the "foreigners" are no longer recognized by social cognition as part of the ingroup (and therefore no longer belong to the status distribution pyramid that regulates relations among members of the same group), innate mechanisms preventing lethal violence and establishing social hierarchies are not activated. This is how interactions between different chimpanzee societies either result in threats or in lethal attacks. There are no truces, mediation mechanisms, or "peace treaties" in the relations between different chimpanzee groups (De Dreu and Triki 2022; Brooks et al. 2021; Feldblum et al. 2018; Glowacki et al. 2020; Martinez-Iñigo et al. 2021; Massaro et al. 2022; Pusey 2022; Samuni et al. 2020; Sandel and Watts 2021).

The statesman as a social primate

To say that the statesman is a social primate may still offend the anthropocentric sensibilities of many international relations analysts. Many continue to be steadfast in their beliefs regarding human exceptionalism, as they have learned from Western moral and political philosophy since at least the 17th century. *H. sapiens* is indeed a unique primate, but, in the end, all species are unique in their own way. Human behavioral distinction must be discussed, but not without first recognizing that all symbolic culture, politics, science, and philosophy are the result of a cognitive architecture produced over millions of years of genetic variation, adaptation,

fixation, and replication, according to the principles of natural selection.

It may seem excessive to reaffirm this idea, but there is no alternative explanation - at least in scientific terms - regarding the mechanisms that produced the mind of *H. sapiens*. And if we are dealing with the evolutionary history of behavioral, morphoanatomical, or biochemical structures, we must first acknowledge that evolution by natural selection does not consist of erasing one design to sketch another; rather, it operates as a collage, in which new images are overlaid on old ones. Some old images remain in the background, while others are eclipsed. The product of the collage makes no distinction between what is new and what is old: the whole is, and needs to be, functional. Thus, the ethological mechanisms inherited by *H. sapiens* from its last common ancestor with chimpanzees, and shared with the latter, are far from being primitivisms (something, moreover, completely meaningless from the point of view of the evolution of species). Human social ethology is, above all, the foundation of political, moral and ethical phenomena.

But it is a fact that, in *H. sapiens*, ethological contents (innate, therefore) do not transform into behavior in the same way it seems to happen among chimpanzees. *H. sapiens* has what Mithen (2002) calls cognitive fluidity, something that I and some colleagues call a *transdominial mind* (Barreiros 2018; 2021; Barreiros and Vainfas 2020; Barreiros and Sá 2022). For the purposes of this article, it suffices to say that, unlike what happens among other primate species, ethological contents present in the human mind manifest as unconscious archetypes, rather than elements that lead directly to behavioral expression. These archetypes manifest intuitively and involuntarily as mental models, framing forms, and images, gaining specific meaning and significance from their entanglement with political, economic, social, and cultural phenomena. Myths, a fundamental object in C. G. Jung's thought (2015), may be an expression of this entanglement between ethology and culture.

The issue is that these unconscious archetypes, capable of framing (or even hijacking!) hermeneutic exercise, provide familiar frameworks capable of decisively directing courses of action deemed rational, conscious, volitional, and the product of free will. However, archetypes do not stereotypically determine mental processes but rather participate in them as information added to a complex cognitive system. This intuitive and innate information, involuntarily inserted into a circuit of cognition and decision, has substantial power to shape the products of human mental processes.

Unlike what happens among non-human primates, human ethology manifests as information applied to open contexts. Among chimpanzees, for example, ethological processes are specific in purpose and object. This means that certain innate cognitive algorithms are stimulated when the organism is exposed to a respective sensory or interoceptive content. For example, the chance encounter of a patrol group with a "foreign" chimpanzee will trigger a set of emotional reactions that will make the individuals in the group highly prone to lethal violence. The same does not happen, for example, if a baboon is encountered by the patrol; although certain baboon species may compete with chimpanzees for food, the reaction to them is less aggressive and certainly less lethal than the response produced by the identification of an "enemy."

In humans, innate cognitive algorithms can be activated in different circumstances and are sensitive to cultural variation. This would be the same as saying that *H. sapiens* has innate cognitive-behavioral models and algorithms in its mental architecture, many of them inherited from the last common ancestor with chimpanzees, but inserted as information into cognitive and decision circuits through diverse and highly sensitive cultural conditioning stimuli.

Hence, the array of cognitive processes that guided hominini species to exhibit prosocial tendencies within their ingroup,

concurrently restraining lethal aggression in their quests for social status, is embedded in the human mind as an "archetype of peace." Simultaneously, the manifestation of coalition-based behavior and the temporary suppression of innate inhibitions against deadly violence in intergroup encounters are imprinted in the minds of contemporary humans as an "archetype of war." As previously noted, these archetypes among humans can be triggered by various stimuli, subtly influencing cognition and mediating relationships across diverse contexts.

As an illustration, the unconscious emergence of the archetype of war is frequently observed in contexts unrelated to lethal conflicts between human collectives. For example, in public health initiatives, the metaphorical "battle" against a disease reflects the cognitive framing of an epidemic as a collective challenge that demands a coalition-based response, without any tolerance for an adversary. The goal is not to participate in a metaphorical "struggle" against a disease, as if it was a competition for social status; instead, the ethological expectation inherent in this archetype is the complete eradication of the perceived opponent. The intent is not to vie for status but to pursue the total elimination of the threat, embodying the archetype's instinctive response. The ethological processes that lead to lethal coalition violence among chimpanzees, on the other hand, are purpose and object-specific: they are activated only by a limited set of sensory and interoceptive stimuli.

We understand that policymakers act deeply influenced by the unconscious expression of the archetypes of war and peace. Therefore, we argue that the historical development of international institutions can lead to outcomes that are functional, but which may nevertheless conflict with the ethological expectations of the policymakers involved, reflecting an evolutionary mismatch (Li et al. 2018). Political psychology alone cannot explain the failure or success of international systems, but it certainly plays an important role.

Topics for an empirical research agenda

We believe that three major conjunctures in modern international relations are good candidates for detailed study in order to further evaluate the theoretical hypothesis of this article: the Concert of Europe, born out of the Congress of Vienna (1814-1815); the system of military containment, initiated by the Washington Naval Treaty (1922) and ended by the Second World War; and the system for the control of weapons of mass destruction, initiated by the Nuclear Non-Proliferation Treaty (1970) and still in force.

The Concert of Europe was a system of international relations grounded in the balance of power, establishing a period of relative stability among the major European powers until at least 1853, with the Crimean War. Austria, Prussia, Russia, and the United Kingdom sought to construct a regime of coercion and control aimed at preventing geopolitical transformations resulting from revolutionary processes or territorial conquests in disputes among European states. The Congress of Vienna established a series of principles and agreements that shaped the political and territorial order of Europe for many decades, employing the practice of "diplomacy by conferences": non-binding discussion and deliberation procedures among the four major European powers, held regularly. These agreements sought to restore monarchies, adjust borders, and create a balance of power to prevent the hegemony of a single major power (Kissinger 1994).

The Concert of Europe was described by the statesmen involved as the result of a "spirit of European solidarity" and as an expression of a "community of interests" among the nations of Europe (Elrod 1976; Ghervas 2015; Kissinger 1957; Nicholson 2000). Although it may sound like mere diplomatic rhetoric, these expressions might be symptoms of the operation of specific cognitive mechanisms in the conception and modeling of the system's architecture. They could be clues that statesmen and diplomats, due to the specific historical conditions in post-war

Europe, unconsciously framed intra-European relations within the bounds of the archetype of peace.

This appears fitting and rational, given that the avowed objective of the Concert of Europe was to foster a robust balance of power and, consequently, deter military endeavors driven by separatist or annexationist motives. However, certain facets of the framework designed to uphold these objectives sharply contradicted the ethological expectations of the human agents engaged in the operation of the Concert. The conflict between these unconscious expectations arising from the activation of the archetype of peace and the actual evolution of relations between the European powers, influenced by causal factors that go beyond human ethology, probably increased, among statesmen and diplomats, the prevalence of emotional states characterized by uncertainty, insecurity and mistrust regarding the effectiveness of the terms outlined in Vienna and the subsequent conferences. I contend that the lasting impact of these psychological states, when considered within the realm of collective psychology, decisively shaped subsequent foreign policy decisions that successively undermined the stability of the Concert of Europe.

Let's now examine the evolutionary mismatch between the organizing principles of the balance of power in post-Napoleonic Europe and the unconscious archetypal contents involved. In broad terms, a mental simulation permeated the deliberations of European statesmen during the Congress of Vienna and subsequent conferences.

It envisioned the four major powers, victorious in the war against France, as individuals belonging to the same ingroup. In an act of anthropomorphizing imagined communities, statesmen from Austria, Prussia, Britain, and Russia unconsciously viewed their respective countries as entities akin to humans within a cooperative and enduring social collective. Certain aspects of the interactions among London, Vienna, Berlin, and St. Petersburg lend credence to the notion that the archetype of peace operated in the background,

within the depths of the collective unconscious of statesmen and diplomats:

a) Diplomacy and formal procedures seeking to overcome conflicts of interest: the acknowledgment of inevitable conflicts in the agendas of the states within the group of four powers was accompanied by a concerted effort to pursue a peaceful, non-military resolution to these disputes. This narrative framed the institutions and procedures characteristic of nineteenth-century Europe, especially in diplomatic practice, as symbolic proxies of an archetypal image. This image portrayed social life within an ingroup, marked by a delicate interplay of competition and cooperation, in which conflict resolution took place under the influence of ethological brakes to prevent escalation into lethal violence. In this context, interstate war is considered a symbolic proxy for intragroup lethal violence, although the two phenomena are sociologically and anthropologically different.

b) The establishment of semi-formal procedures in relations between states to avoid offending mutual patriotic sensitivities: national identities were unconsciously understood as a contouring factor for the constituents of the great powers' community and served as a proxy to simulate the "individual" condition of each of the states that made up the ingroup.

c) The notion that the four major powers formed a "special group of peers" defined around three identity axes: their condition as Europeans, Christians, and "civilized." Just as nationality was a contouring factor for the imagination of constituents of the community of powers, the three identity axes produced, at a more general level, the image of the community of powers itself as an ingroup composed of conspecifics, whose hierarchical positions are distributed in the same status pyramid.

So, why did the Concert of Europe and its diplomatic ramifications end up being an ethological failure? In the scope of the mental

simulation, where the four major powers are understood as individual agents in an ingroup, diplomatic mechanisms and procedures aimed at mediating conflicts functioned as triggers, as information potentially capable of activating prosocial framing for intragroup relations. Nevertheless, an element of institutional origin acted as interference, as a dissonant signal: the expectation that the goal of the "diplomacy by conferences" was to prevent any dispute over status between the major powers (which assumed, in social cognition, the image of individuals). Through the "policy of compensations," it was expected that any eventual territorial gains from one state over another, resulting from negotiations, should be compensated by territorial cession in the opposite direction, in favor of the initially disadvantaged state. This meant that the system's architecture was institutionally set up with the intention of preventing any changes in the relative status positions among the components of this ingroup.

Even though the declared goal was to balance power relations and ensure that no state felt unjustly treated to the point of resorting to retributive justice (in the form of revenge), the consequence for human agents operating the system was to produce something like cognitive dissonance (Festinger 1957; Cooper 2007). The archetype of peace produces the unconscious expectation that not only emotions and prosocial behavior will be directed towards peers in an ingroup, but also that social life among peers assumes the potential for fluidity and turnover of status positions. A system that crystallized the status *quo* among powers encountered considerable challenges in being cognitively reconciled within the framework of the archetype of peace; and in the absence of the mere possibility of status circulation, framing relations between powers within the framework of prosocial relations became almost impossible.

As is typical in cases of cognitive dissonance, agents perceive an incompatibility between their expectations (in this case, ethological) and the environmental reality, leading to mental or

emotional discomfort. Human beings frequently resort to coping mechanisms to mitigate such contradictions. While effective in the short run, this strategy often proves inadequate when confronted with persistent conflicts between expectations and reality over the medium to long term. Consequently, over time, with the impediment of status circulation, the coalition formed by the four major powers was increasingly less envisioned by policymakers as an ingroup. This erosion weakened their commitment to the diplomatic resolution of conflicts—a sociopolitical phenomenon that functioned as a proxy for prosocial behavior within that mental simulation. A system that aimed to prevent the relative mobility of status among its members faced difficulties in being understood as representing a true ingroup.

Similar issues may have influenced historical processes resulting from the Washington Naval Treaty of 1922. Born out of the aftermath of the Great War, the naval control system inaugurated by the Washington Treaty was an important act to promote naval disarmament and the containment of sea power. It is noteworthy that none of the Central Powers were part of it, especially since their naval capabilities were severely limited by the Treaty of Versailles (1919), the Treaty of Saint-Germain-en-Laye (1919) and the Treaty of Sèvres (1920). Communist Russia was not invited either, due not only to the circumstances of the Civil War (1917-1923), but also to the non-recognition of the Bolshevik regime and its subsequent ostracism in the international system. Consequently, the system established by the Washington Treaty was designed to control competition between nations that were allies in the First World War: the United States, Great Britain, Italy, Japan and France. No enemies, old or new, were part of the initiative. In fact, the Washington Naval Treaty aimed not to regulate, but to prevent any struggle for status in maritime capabilities between member nations of the same "community". This inevitably meant that, in order to ease tensions between peers, the solution sought was to crystallize relative status positions The signatories agreed to

maintain a ratio in the construction of battleships, cruisers and aircraft carriers that gave the United States and Great Britain a significant advantage over France and, above all, Italy and Japan (Asada 1993; Blatt 1981; Wheeler 1957). In a system of cooperation between members of an "imaginary" ingroup (the signatory nations), the congealment of their relative status positions may have caused uneasiness among Italian and Japanese policymakers from the outset, not only for strategic reasons, but also because of the incompatibility between the idea of belonging to a peer group and being prevented from competing to improve status.

Another fruitful example of a potential source of cognitive dissonance (driven by an evolutionary mismatch) can be found in the Treaty on the Non-Proliferation of Nuclear Weapons, or NPT. Discussed in the late 1960s and enforced in 1970, the Nuclear Non-Proliferation Treaty (NPT) stipulated that all signatory nations without nuclear weapons as of January 1st, 1967, must refrain from developing or acquiring such weapons, along with associated components or materials with potential military applications. The United States, United Kingdom, France, China and the former USSR, as Nuclear-Weapon States, were authorized to maintain their arsenals, but were obligated to pursue disarmament in good faith. By the terms of the treaty, all Non-Nuclear-Weapon States should have the right to develop nuclear technologies for peaceful purposes, and receive technological assistance for that purpose. Hence, the language of the NPT suggests envisioning a community where the advantages of peaceful technologies are shared, while also maintaining the fixed relative status positions of each member. It's widely recognized that the NPT faced rejection from previous signatories, such as the communist regime in North Korea. Similarly, Iran has ostensibly agreed to the terms of the NPT, yet there remains considerable controversy surrounding the extent of Tehran's adherence to its commitments. The elites of India, Pakistan, and Israel have consistently refused to sign the NPT and have rejected any association with an ingroup formed under its

provisions. India and Pakistan's nuclear doctrines are pivotal in their regional status dynamics, while Israel's presumed possession of nuclear weapons is believed to serve as a deterrent to potential adversaries, particularly in the event of a resurgence of hostile coalitions, such as those seen in the 1973 Yom Kippur War (Dunn 2009; Nye 1985).

Final considerations

While we entertain the hypothesis that the struggle for power between states in the international system may involve rationally conceived policies aimed at maximizing returns based on predetermined objectives, it is crucial to emphasize that, both in the execution and conceptualization of objectives, human agents manifest themselves in their multi-temporal entirety. This encompasses the unique histories of these agents, the political, economic, and social context in which they exist, as well as the mental and institutional structures and economic systems produced over the long term. In addition, the fact that humans are social primates with a long evolutionary cognitive history plays a fundamental role in shaping their perspectives. The cognitive and behavioral algorithms tied to social intelligence, and by extension, the practice of politics, have been shared across two extensive evolutionary lineages, encompassing species from the genus *Pan* and *Homo*. Within *H. sapiens*, these innate contents persistently operate in an unconscious background, universally shared among all humans, introducing involuntary signals into a complex circuit of cognition and decision-making that involves various facets of the mind-body. Our intent is to underscore the significance of this theme by revisiting the archetypal elements inherent in the conception of foreign policy and strategy. Simultaneously, we advocate for a transdisciplinary approach in international relations studies, striving for consilience and seeking to contribute to

narrowing the gap between the humanities and the natural sciences.

References

Asada, Sadao. 1993. “The revolt against the Washington Treaty: the Imperial Japanese Navy and naval limitation, 1921-1927”. *Naval War College Review* 46(3): 82-97.

Barreiros, Daniel. 2018. “Warfare, Ethics, Ethology: Evolutionary fundamentals for conflict and cooperation in the lineage of man.” *Journal of Big History* 2(2): 19-36. https://doi.org/10.22339/jbh.v2i2.2300

———. 2021. “Ecologia, Evolução e Paz Social.” In *Sobre a Paz*, edited by José Luís Fiori, 31-57. Petrópolis: Vozes.

Barreiros, Daniel, and Bernardo Sá. 2022. “A questão da propriedade e da troca: cognição, comportamento e evolução humana.” *Textos para Discussão do Instituto de Economia da UFRJ* 29: 1-25. https://doi.org/10.13140/RG.2.2.20338.58566

Barreiros, Daniel, and Daniel Vainfas. 2020. “Cognition, Human Evolution and the possibilities for an Ethics of Warfare and Peace.” *Social Evolution & History* 19(2): 47-67. https://doi.org/10.30884/seh/2020.02.03

Braudel, Fernand. 2009. *Escritos sobre a História*. São Paulo: Perspectiva.

Bredekamp, Horst. 2020. *Leviathan: body politic as a visual strategy in the work of Thomas Hobbes*. Berlim: De Gruyer.

Brooks, James, Ena Onishi, Isabelle R. Clark, Manuel Bohn, and Shinya Yamamoto. 2021. “Uniting against a common enemy: perceived outgroup threat elicits ingroup cohesion in chimpanzees.” *PloS one*, 16(2): e0246869. https://doi.org/10.1371/journal.pone.0246869

Christian, David. 2005. Macrohistory: the play of scales. *Social Evolution & History* 4(1): 22–59.

———. 2018. *Origin Story: a big history of everything*. London: Allen Lane.

Cohen, Michael. 2017. "Live and learn: availability biases and beliefs about military power." *Foreign Policy Analysis* 13(4): 968-985. https://doi.org/10.1093/fpa/orw050

Cooper, Joel. 2007. *Cognitive Dissonance: fifty years of a classic theory*. Londres: Sage.

Crumley, Carole. 2006. "Historical Ecology: integrated thinking at multiple temporal and spatial scales". In *The World System and the Earth System: global socioenvironmental change and sustainability since the Neolithic*, edited by In A. Hornborg and C. Crumley, 15-28. Walnut Creek: Left Coast Press..

De Dreu, Carsten K., and Zegni Triki. 2022. "Intergroup conflict: origins, dynamics and consequences across taxa." *Philosophical Transactions of the Royal Society B* 377(1851): 20210134. https://doi.org/10.1098/rstb.2021.0134

Dunn, Lewis A. 2009. "The NPT: Assessing the past, building the future". *Nonproliferation Review 16*(2): 143-172. https://doi.org/10.1080/10736700902969638

Ebel, Holger, Jörn Davidsen, and Stefan Bornholdt. 2002. "Dynamics of social networks." *Complexity* 8(2): 24–27. https://doi.org/10.1002/cplx.10066

Eibl-Eibesfeldt, Irenäus. 1979. "Human ethology: Concepts and implications for the sciences of man." *Behavioral and Brain Sciences* 2(1): 1-26. https://doi.org/10.1017/S0140525X00060416

Elrod, Richard. B. 1976. "The Concert of Europe: A fresh look at an international system." *World Politics* 28(2): 159–174. https://doi.org/10.2307/2009888

Enigk, Drew K., Melissa E. Thompson, Zarin P. Machanda, Richard W. Wrangham, and Martin N. Muller. 2020. "Competitive ability determines coalition participation and partner selection during maturation in wild male chimpanzees (Pan troglodytes

schweinfurthii)." *Behavioral ecology and sociobiology*, 74(7): 89. https://doi.org/10.1007/s00265-020-02872-7

Feldblum, Joseph T., Christopher Krupenye, Joel Bray, Anne E. Pusey, and Ian C. Gilby. 2021. "Social bonds provide multiple pathways to reproductive success in wild male chimpanzees." *Iscience*, 24(8): 102864. https://doi.org/10.1016/j.isci.2021.102864

Feldblum, Joseph. T., Sofia Manfredi, Ian C. Gilby, and Anne E. Pusey. 2018. "The timing and causes of a unique chimpanzee community fission preceding Gombe's 'Four-Year War'." *American Journal of Physical Anthropology* 166(3): 730-744. https://doi.org/10.1002/ajpa.23462

Festinger, Leon. 1957. *A Theory of Cognitive Dissonance*. Stanford: Stanford University Press.

Ghervas, Stella. 2015. "The long shadow of the Congress of Vienna: from international peace to domestic disorders." *Journal of Modern European History* 13(4): 458–463. https://doi.org/10.17104/1611-8944-2015-4-458.

Glowacki, Luke, Michael L. Wilson, and Richard W. Wrangham. 2020. "The evolutionary anthropology of war." *Journal of Economic Behavior & Organization* 178: 963-982. https://doi.org/10.1016/j.jebo.2017.09.014

Grinin, Leonid, and Andrey Korotayev. 2009. "Social macroevolution: growth of the world system integrity and a system of phase transitions." *World Futures* 65(7): 477–506. https://doi.org/10.1080/02604020902733348

Hagan, Joe. 2001. "Does decision making matter? Systemic assumptions vs. historical reality in international relations theory." *International Studies Review* 3(2): 5-46. https://www.jstor.org/stable/3186564.

Hey, Jody. 2010. "The divergence of chimpanzee species and subspecies as revealed in multipopulation isolation-with-migration analyses." *Molecular Biology and Evolution* 27(4):921-33. doi: http://doi.org/10.1093/molbev/msp298

Hodgson, Geoffrey M. 2000. "The concept of emergence in Social Sciences: Its history and importance." *Emergence* 2(4): 65–77. https://doi.org/10.1207/s15327000em0204_08

Ishizuka, Shintaro, Hiroyuki Takemoto, Tetsuya Sakamaki, Nahoko Tokuyama, Kazuya Toda, Chie Hashimoto, and Takeshi Furuichi. 2020. "Comparisons of between-group differentiation in male kinship between bonobos and chimpanzees." *Scientific Reports* 10(1): 251. https://doi.org/10.1038/s41598-019-57133-z

Jung, Carl G. 2015. *O Eu e o Inconsciente*. Petrópolis: Vozes.

Kertzer, Joshua. D., Brian C. Rathbun, and Nina S. Rathbun. 2019. "The price of peace: motivated reasoning and costly signaling in international relations." *International Organization* 74(1): 95–118. https://doi.org/10.1017/s0020818319000328

Kingstone, Alan, Daniel Smilek, D., and John D. Eastwood, 2008. "Cognitive Ethology: A new approach for studying human cognition." *British Journal of Psychology* 99(3): 317–340. https://doi.org/10.1348/000712607x251243

Kissinger, Henry. 1994. *Diplomacy*. Nova Iorque: Simon & Schuster.

———. 1957. *A world restored: Metternich, Castlereagh, and the problems of peace, 1812-22*. Boston: Houghton Mifflin Company.

Lemoine, Sylvain R., Liran Samuni, Catherine Crockford, and Roman M. Wittig. 2022. "Parochial cooperation in wild chimpanzees: a model to explain the evolution of parochial altruism." *Philosophical Transactions of the Royal Society B* 377(1851): 20210149. https://doi.org/10.1098/rstb.2021.0149

Li, Norman P., Mark van Vugt, and Stephen M. Colarelli. 2017. "The Evolutionary Mismatch Hypothesis: implications for psychological science." *Current Directions in Psychological Science* 27(1): 38–44. https://doi.org/10.1177/0963721417731378

Martínez-Íñigo, Laura, Pauline Baas, Harmonie Klein, Simone Pika, and Tobias Deschner, 2021. "Intercommunity interactions and killings in central chimpanzees (Pan troglodytes troglodytes)

from Loango National Park, Gabon." *Primates* 62(5): 709-722. https://doi.org/10.1007/s10329-021-00921-x

Massaro, Anthony P., Ian C. Gilby, Nisarg Desai, Alexander Weiss, Joseph T. Feldblum, Anne E. Pusey, and Michael L. Wilson. 2022. "Correlates of individual participation in boundary patrols by male chimpanzees." *Philosophical Transactions of the Royal Society B* 377(1851): 20210151. https://doi.org/10.1098/rstb.2021.0151

Mithen, Steven. 2002. *A Pré-História da Mente: uma busca das origens da arte, da religião e da ciência*. São Paulo: Unesp.

Morgenthau, Hans. 1948. *Politics among Nations: the struggle for power and peace*. Nova Iorque: Alfred A. Knopf.

Nicolson, Harold. 2000. *The Congress of Vienna: a study in allied unity, 1812-1822.* Nova Iorque: Grove Press.

Parish, Amy R., Frans B. De Waal, and David Haig, 2000. "The other 'closest living relative': How bonobos (Pan paniscus) challenge traditional assumptions about females, dominance, intra-and intersexual interactions, and hominid evolution." *Annals of the New York Academy of Sciences* 907(1): 97-113. https://doi.org/10.1111/j.1749-6632.2000.tb06618.x

Pinker, Steven. 2004. *The Blank Slate: the modern denial of human nature*. Nova Iorque: Viking.

Pusey, Anne E. 2022. "Warlike chimpanzees and peacemaking bonobos." *Proceedings of the National Academy of Sciences* 119(31): e2208865119. https://doi.org/10.1073/pnas.2208865119

Renouvin, Pierre and Jean-Baptiste Duroselle. 1967. *Introdução à história das relações internacionais.* São Paulo: Difusão Europeia do Livro.

Rösch, Felix. 2013. "The human condition of politics: considering the legacy of Hans J. Morgenthau for international relations." *Journal of International Political Theory* 9(1): 1-21. https://doi.org/10.3366/jipt.2013.0041

Rosenau, Pauline. 1990. "Once again into the fray: International relations confronts the humanities." *Millennium* 19(1): 83-110. https://doi.org/10.1177/03058298900190010701

Samuni, Liran, Catherine Crockford, and Roman M. Wittig. 2021. "Group-level cooperation in chimpanzees is shaped by strong social ties." *Nature communications* 12(1): 539. https://doi.org/10.1038/s41467-020-20709-9

Samuni, Liran, Alexander Mielke, Anna Preis, Catherine Crockford, and Roman M. Wittig. 2020. "Intergroup competition enhances chimpanzee (Pan troglodytes verus) in-group cohesion." *International Journal of Primatology* 41: 342-362. https://doi.org/10.1007/s10764-019-00112-y

Sandel, Aaron A., and David P. Watts. 2021. "Lethal coalitionary aggression associated with a community fission in chimpanzees (Pan troglodytes) at Ngogo, Kibale National Park, Uganda." *International Journal of Primatology* 42: 26-48. https://doi.org/10.1007/s10764-020-00185-0

Schmitt, Alain, Klaus Atzwanger, Karl Grammer, and Katrin Schäfer. 1997. *New aspects of human ethology.* New York: Plenum Press.

Snidal, Duncan. 2013. "Rational choice and international relations". In *Handbook of International Relations*, edited by W. Carlsnaes, T. Risse and B. Simmons, 85-111. Nova Iorque: Sage. https://doi.org/10.4135/9781446247587

Soon, Chun S., Marcel Braß, Hans-Jochen Heinze, and John-Dylan Haynes. 2008. "Unconscious determinants of free decisions in the human brain." *Nature Neuroscience* 11(5): 543–545. https://doi.org/10.1038/nn.2112

Spier, Fred. 2008. "Big history: the emergence of a novel interdisciplinary approach." *Interdisciplinary Science Reviews* 33(2): 141–152. https://doi.org/10.1179/030801808x259754

Surbeck, Martin, Christophe Boesch, Cédric Girard-Buttoz, Catherine Crockford, Gottfried Hohmann, and Roman M. Wittig. 2017. "Comparison of male conflict behavior in chimpanzees (Pan troglodytes) and bonobos (Pan paniscus), with specific

regard to coalition and post-conflict behavior." *American Journal of Primatology* 79(6): e22641. https://doi.org/10.1002/ajp.22641

Waltz, Kenneth. 1993. "The Emerging Structure of International Politics." *International Security* 18(2): 44-79.

———. 2018. *Man, the State, and War: a theoretical analysis.* Nova Iorque: Columbia University Press.

Wheeler, G. E. 1957. "The United States Navy and the Japanese 'enemy': 1919-1931". *Military Affairs 21*(2): *61*-74. https://doi.org/10.2307/1984526

Williams, Michael. 2005. *The Realist Tradition and the Limits of International Relations.* Cambridge: Cambridge University Press.