Cultural Individualism and Collectivism in relation to Socioeconomic Inequality from the Evolutionary Social Psychology Approach*

[English Version]

Individualismo y colectivismo cultural en relación con la desigualdad socioeconómica desde el enfoque de la psicología social evolutiva

Individualismo e coletivismo cultural em relação à desigualdade sócio-económica, na perspectiva da psicologia social evolutiva

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Abstract

Objective: This reflection paper proposes to analyze the relationship between the individualist-collectivist orientation of culture and socioeconomic inequality from an evolutionary approach. **Method:** Consists of a

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conceptual analysis based on a review of scientific literature, both classic and current, from which a critical interpretation was made. The paper begins with an introduction that places the subject in the context of evolutionary social psychology. After that, the distinction between biological and cultural evolution is raised. **Results:** Based on earlier conceptual references, cultural notions of individualism and collectivism are examined from an evolutionary social psychology perspective. Subsequently, an evolutionary view of inequality is presented and, finally, an overview is offered about cultural individualism-collectivism linked to inequality in the distribution of wealth, also from the perspective of evolutionary social psychology. **Conclusions:** General reflections derived from the previous analyses are postulated. These argue that the individualist-collectivist cultural orientation is a byproduct of society's evolution and can affect how societies are structured, organized, and distribute wealth. This can be understood in the context of the circumstances that people have encountered and how they have responded to those circumstances throughout their evolutionary history. The tendency for more collectivist societies to have greater inequality in the distribution of wealth could be permeated by a greater propensity to conformism, passivity, obedience, and submission to social hierarchies. This suggests that socioeconomic inequality, more than a purely economic process, is also a political-cultural and evolutionary process.

Keywords: cultural orientation; individualism; collectivism; socioeconomic inequality; evolutionary social psychology.

Resumen

Objetivo: en este artículo de reflexión se propone analizar la relación de la orientación individualista-colectivista de la cultura con la desigualdad socioeconómica desde un enfoque evolutivo. **Método:** consiste en un análisis conceptual basado en una revisión de literatura científica, tanto clásica como actual, de la cual se hizo una interpretación crítica. El trabajo comienza con una introducción que sitúa la temática en el contexto de la psicología social evolutiva. Luego se plantea la distinción entre evolución biológica y cultural. **Resultados**: con base en los referentes conceptuales anteriores, se analizan las nociones de individualismo y colectivismo cultural desde una perspectiva de psicología social evolutiva. Posteriormente, se plantea una visión evolutiva de la desigualdad y, por último, se ofrece una panorámica entre el individualismo-colectivismo cultural vinculado a la desigualdad en la distribución de la riqueza, también desde el enfoque de psicología social evolutiva. **Conclusiones:** se postulan algunas reflexiones generales derivadas de los análisis anteriores. Estas proponen que la orientación cultural individualista-colectivista es un producto evolutivo de las sociedades que puede influir en el modo en que estas se estructuran, organizan y distribuyen su riqueza. Ello puede ser entendido

en el contexto de las circunstancias que estas han enfrentado y la forma en que han respondido a las mismas a través de su historia evolutiva. La tendencia a que en las sociedades más colectivistas se presente mayor desigualdad en la distribución de la riqueza podría estar permeada por una mayor propensión al conformismo, la pasividad, la obediencia y el sometimiento a las jerarquías sociales, lo que sugiere que la desigualdad socioeconómica, más que un proceso puramente económico, es también un proceso político-cultural y evolutivo.

Palabras clave: orientación cultural; individualismo; colectivismo; desigualdad socioeconómica; psicología social evolutiva.

Resumo

Objetivo: neste artigo de reflexão propomos analisar a relação entre a orientação individualista-coletivista da cultura e a desigualdade sócio-económica a partir de uma abordagem evolutiva. **Método:** consiste numa análise conceitual baseada numa revisão da literatura científica, tanto clássica como actual, a partir da qual foi feita uma interpretação crítica. O artigo começa com uma introdução que situa o assunto no contexto da psicologia social evolutiva. Depois, é feita a distinção entre evolução biológica e evolução cultural. **Resultados:** com base nas referências conceituais acima referidas, as noções de individualismo e coletivismo cultural são analisadas de uma perspectiva de psicologia social evolutiva. Subsequentemente, é apresentada uma visão evolutiva da desigualdade e, finalmente, é oferecida uma visão geral do individualismo cultural - coletivismo ligado à desigualdade na distribuição da riqueza, também a partir de uma abordagem de psicologia social evolutiva. **Conclusões:** algumas reflexões gerais derivadas das análises acima referidas são postuladas. Propõem que a orientação cultural individualista-coletivista seja um produto evolutivo das sociedades que podem influenciar a forma como estruturam, organizam e distribuem a sua riqueza. Isto pode ser compreendido no contexto das circunstâncias que enfrentaram e da forma como responderam a eles ao longo da sua história evolutiva. A tendência para sociedades mais coletivistas terem maior desigualdade na distribuição da riqueza pode ser permeada por uma maior propensão para o conformismo, passividade, obediência e submissão às hierarquias sociais, sugerindo que a desigualdade sócio-económica, em vez de ser um processo puramente económico, é também um processo político-cultural e evolutivo.

Palavras-chave: orientação cultural; individualismo; coletivismo; desigualdade sócio-económica; psicologia social evolutiva.

Introduction

Culture, from an evolutionary perspective, can be seen as the product of a collective adaptive response of human beings to the particular conditions and demands they have faced as a species (Boyer, 2018). Perhaps from the time when humans split off from their common ancestor with chimpanzees and decided to venture into the African bush to explore, they were faced to an increased need to work together in a way that was far more intense than what the known bush environment required (Buss, 2019). These increased cooperative needs were the demands that gave origin to culture, understood as an adaptation to new environments that demanded new skills and offered new opportunities, particularly in relation to social cooperation (Tomasello, 2019).

One of the most significant ways that cultures differ from one another is in the degree of individualist and collectivist behavior (Sapolsky, 2018). From an evolutionary perspective, this variation would be the expression of the diversity and adaptive flexibility of the human species, which is one of the few that can live in almost any part of the planet. In this way, it manifests the great power of the tool that is culture, and owes its origin and development to the ultra-social characteristics of the human being (Henrich & Muthukrishna, 2021).

In addition to being seen as a product and a consequence, culture can also be analyzed as a causal factor of human historical development, as is suggested by some theorists and empirical studies (Henrich, 2016). One such case is how individualist-collectivist variation in cultures can influence the degree of economic inequality in societies, which in turn can influence the cultural characteristics of societies (Chisholm & Burbank, 2001).

This paper proposes a theoretical discussion of how individualist-collectivist variation in culture relates to inequality from an evolutionary perspective. To that end, sources with conceptual content as well as more traditional and recent empirical studies that provide light on these complex interactions were reviewed.

Biological and Cultural Evolution

In the theory of evolution, Darwin (1996) argues that behaviors that increase an organism's chances of surviving and reproducing are adaptive, and as a result have a high likelihood of being passed on to the next generation. Contrarily,

behaviors that reduce chances of survival are maladaptive because they will not be passed on to future generations (Darwin, 1996; Pinker, 2009).

Although this process was understood at the individual level, it has since become clear that it can also be examined at the group level. This is being researched by sociobiology, a science that allows for a new perspective on natural selection that places more emphasis on the spread of the group's genes than the individual's (Wilson, 2000).

Complex capacities such as language, social behavior, and culture are not constructs that emerge from the brain simply because it is larger than that of other primates, such as chimpanzees —one of our closest evolutionary relatives—; rather, these capacities reflect specialized mechanisms that natural selection has built into human brains.

Individuals and groups within a species vary from one another, and if one of these variations results in a state of affairs that helps the brains make better decisions that contribute to reproductive success, then these abilities will survive (Gazzaniga et al., 2019).

Biological evolution poses a conundrum, since there has not been enough time for it to have created each of the cognitive abilities of modern humans to invent multiple tools and technologies, forms of symbolic and representational communication, and complex social organizations and institutions. Tomasello (1999) hypothesized that these astounding abilities, which are inaccessible to other species, are the product of a certain type of uniquely human social transmission mechanisms that enable the development of cultural evolution and outpace biological evolution. One of these unique social transmission mechanisms is symbolic communication, which is made possible by language, as well as other sociocognitive skills that support cultural learning, such as imitation, emulation, cooperation, and theory of mind.

The transmission of knowledge that can change people's behavior is what makes cultural evolution possible. People acquire this knowledge from other members of their species through education, imitation, cooperation, and other social transmission mechanisms. While biological evolution is passed down through DNA, cultural evolution is passed down through education and lifelong social learning (Richerson & Boyd, 2008).

While biological evolution is slow and measured in phylogenetic time, involving thousands and millions of years, cultural evolution is rapid and measured in ontogenetic and historical time —which occurs during the lifetime of the individual and from generation to generation— involving a time scale of decades and hundreds of years. While cultural evolution is a change in social information, biological evolution is a change in genetic information. That is to say, change is the only constant in evolution —both biological and cultural—. As

a result, it is clear that both genetic and cultural evolution have had an impact on human behavior.

Culture would not be possible without a series of psychological capacities that humans, and some other species, possess, such as imitation —or the capacity for social learning, in general— and communication (Gaviria & Fernandez, 2019), but which humans possess to a much more advanced and sophisticated degree. This is possibly due to a property called cultural intelligence (Herrmann et al., 2007). It consists of a set of species-specific socio-cognitive skills that emerge early in ontogeny and serve to participate in and exchange knowledge in cultural groups. These skills stem from a more fundamental ability known as shared intentionality, which enables participation with other people in cooperative activities with shared intentions.

The idea of cultural intelligence is based on the finding that, although children and other primates have similar cognitive abilities to deal with the physical world, children have more advanced and sophisticated socio-cognitive abilities that manifest in early childhood to deal with the social world. These empower them to learn from others in ways that enhance their understanding of the physical world through language and other forms of educational interaction, so that, by adulthood, they will have broad cognitive abilities (Tomasello, 2019). As mentioned before, among these skills are imitation, emulation —which focuses only on the results of the action and not on copying the whole process— (Whiten et al., 2009), cooperation, and theory of mind. These begin to develop in humans throughout infancy and are gradually perfected during development.

These sociocognitive skills enable the selection and development of cultural content, such as beliefs, norms, values, and narratives, making the dissemination among the members of a society possible and passing cultural content down from generation to generation. Such abilities are based on and develop thanks to processes of social cognition (understanding and predicting the intentions of others), social motivation (interest in other people and being oriented toward them), and social interaction (relating, communicating, cooperating, and sharing) (Gaviria & Fernández, 2019).

Sociocognitive abilities depend crucially on the inherited biological conditions that predispose the human species toward sociability (Baker, 2009; Dunbar, 2009; Gintis, 2011; Sapolsky, 2018), but the development of this predisposition will only occur in culturally enriched contexts (Tomasello, 2019). For this, learning skills are also necessary. In this regard, Tomasello (1999) highlights three basic types of cultural learning: imitative, by repetition or emulation of the behavior observed in others; instructive, by receiving linguistically mediated guidelines; and collaborative, due to involvement in cooperation processes with other people. These forms of sociocultural learning are possible thanks to a special form of

social cognition, which begins with the intersubjective sharing of the infant in its first weeks of birth and their subsequent ability to understand their peers as beings that have mental and intentional lives like theirs. This ability emerges at approximately nine months of life, when the child begins to be able to understand that he himself and other people have intentions (Moll et al., 2021).

The specific beliefs, values, norms, and other components of any culture are, by definition, shared by its members. Since they do not appear in people's minds as an act of "magic," a sociocultural learning process is necessary (Gaviria & Fernández, 2019) that requires special cognitive abilities for which humans seem to be especially prepared. Therefore, although in physical cognition abilities, related to the management of space, quantities or causation, two-year-old children are indistinguishable from bonobos and chimpanzees —the primate species genetically closest to humans—, regarding social cognition skills, such as imitation, communication and prediction of intentions, children already show a wide differentiation from this age with respect to their primate relatives (Tomasello, 2019). This expanded repository of sociocognitive skills would open the doors to the breadth of human diversity in its various cultural expressions.

Thus, neither the existence of universal psychological processes excludes the possibility that adaptations are expressed in different ways in different populations, nor vice versa; that is, cultural diversity does not exclude the possibility of universal psychological processes, which would be made possible by a universal human tendency to build social norms, but which are expressed differently in various social groups (Kanngiesser et al., 2022; House et al., 2020). The human brain has evolved to adapt to the environment and function in social groups, responding to other minds present in that specific environment (Gaviria & Fernández, 2019). For this it requires the speed of cultural evolution, which has a certain level of cognitive flexibility and cannot be explained only by biological evolution, which is very slow.

Culture is responsible for the skyrocketing evolution of the brain since the advent of the species, allowing changes to spread and stabilize at a much faster rate than would be possible through genetic transmission. If human beings did not have culture, they would be much more similar to chimpanzees than to modern humans. One way to look at this is with a thought experiment: if a person could be born, survive, and grow up completely devoid of culture, which is virtually impossible; this person would probably be more chimpanzee-like than a modern human (Tomasello, 2019).

Human beings possess highly complex psychosocial characteristics that are made possible by the coevolution between genes and culture, so that the biological and the social realms cannot be understood separately but are in

constant interaction. In this way, culture is both constrained and promoted by the human genome, and human cognitive, affective, and moral capacities are the product of an evolutionary dynamic involving the interaction of genes and culture. This process is called dynamic gene-culture coevolution. Thus, genetically inherited individual fitness depends on the structure of social life (Gintis, 2011).

This coevolutionary process has endowed humans with preferences that go beyond the selfish concerns emphasized in traditional biological and economic theory, as well as the sociocognitive capacity that facilitates the exchange of intentionality between minds. Gene-culture coevolution is responsible for the prominence of such sensitive values as a taste for cooperation, justice, and retribution; the ability to empathize, and the ability to value character virtues such as honesty, hard work, mercy, or loyalty (Gintis, 2011); this relevance may vary from one society to another, but depends at its base on a genome that enables human sociability.

Individualism-Collectivism and Evolution

Although it is not a sharp or bipolar differentiation, one of the important forms of variation in the cultural orientation of societies is the one that occurs in their level of individualism and collectivism (Triandis, 1993; Hofstede, 2001; Kağıtçıbaşı, 2005; Markus & Hamedani, 2007; Triandis & Gelfand, 2012; Inglehart, 2019), which has to do with the way in which members of a society see and feel about themselves with respect to their social group. While in the individualistic orientation the person is seen as separate and independent from their social group, in the collectivist orientation the person is seen as fused and dependent with respect to the social group. Despite the fact that this conceptualization comes from the social and psychological sciences, recent research advances suggest that the roots of this orientation are related to biological factors, such as genes and the historical prevalence of infectious diseases (Thornhill & Fincher, 2014; Chiao & Blizinsky, 2010; Fincher et al., 2008).

An important conceptual distinction is the one that has been made between allocentrism and idiocentrism (Triandis et al., 1985), which are the equivalents at the individual level, respectively, of cultural collectivism and individualism. These refer to group processes present in the inhabitants of societies. This differentiation is relevant because a person who lives in a society with a more collectivist tendency can be allocentric or idiocentric, just as a person can be idiocentric or allocentric in a society that tends more toward individualism. In

this sense, it is important to state that individualism and collectivism consist of cultural syndromes (Triandis, 1993) that are variable social tendencies and not rigid and generalizable bipolar categories in an absolute way, and that can change through historical time and the geographical-cultural space, in response to the needs and living conditions of individuals and groups.

It is important to note that, in the current context of globalization, it is difficult to speak of pure types of cultural orientation, since the great dynamics of migration, media influence, international economic interconnection and intercultural contact facilitate changes in cultural values (Inglehart , 2019) and the existence of intermediate or mixed types, such as autonomous relatedness (Kağıtçıbaşı, 2005)— which is a model resulting from the combination of autonomy and the relational self— where the needs for independence and interdependence coexist.

Another difficulty with the concepts of individualism and collectivism is the complexity of completely distinguishing them, since there are several related terms that are difficult to differentiate in a full sense. Thus, together with the conceptualization of individualism and collectivism is the image of oneself, combining autonomy and separation from the social group and from the interdependent self together with heteronomy and relationship with the social group (Kağıtçıbaşı, 2005). Added to this is the distinction between vertical and horizontal individualism and collectivism (Singelis et al., 1995), which add the normative element of whether it is culturally considered that the person should be subordinate (vertical relation) or not (horizontal relation) to the group. In the first case, relationships of equality are emphasized; in the second, those of hierarchy are emphasized.

The problem arises because these multiple dimensions can be confused and still be related to other categories. So, for example, although the dimensions of interpersonal distance and agency can be strongly correlated with each other in sociocultural contexts such as the United States —where being autonomous and separate from the group is highly valued—, this this is not the case in other contexts where being connected does not imply losing autonomy (Kağıtçıbaşı, 2005); hence, mixed categories emerge, such as the proposal of autonomous relatedness.

However, despite these problems, the individualism-collectivism continuum is still valid for studying cultural differences (Triandis & Gelfand, 2012; Tomasello, 2019; Inglehart, 2019, Sapolsky, 2018; Miyamoto et al., 2018), both because it allows for correlational analyses related to various highly relevant topics —such as thinking (Nisbett et al., 2001), education (Shimizu, 2016), parenting (Lamm et al., 2018) or economics (Gorodnichenko & Roland, 2013)— and because it shows distinctive neurocognitive patterns (Kim & Sasaki, 2014). Possibly, a more

appropriate approach would be to consider individualism and collectivism not as two islands completely separated from each other, but as a corridor crossed by various factors, through which cultures and people can move in response to circumstances and demands they face throughout their history.

A culturally crucial area where patterns more consistent with individualism and collectivism can be seen is in parenting styles (Keller, 2022). While any two human beings, healthy and under normal conditions, are born with similar general biological dispositions to acquire socio-cognitive abilities —such as language capacity, shared intentionality, theory of mind, cooperation, empathy (Tomasello, 2019)— they arrive in different physical and cultural environments that, consequently, will tend to produce different levels and types of socio-cognitive skills, which can be understood as particular adaptations to contexts that present diverse challenges and affordances. In this sense, one of the key differences that is manifested in parenting processes has to do with the degree of autonomy and individual attention given to the child.

Thus, while in more individualistic cultures parenting is more focused on the child's individual needs and expression, in more collectivistic cultures parenting is more focused on the needs of the group, so that the pressure is oriented toward molding the child's conformity to the needs of others. Lamm et al. (2018) showed this in a comparative investigation between parenting processes in middle-class urban German families (individualistic orientation) and those of a rural indigenous Cameroonian tribe called "Nso" (collectivist orientation). While in the first case parenting revolves around the child, his or her needs and individual expression; in the second case parenting is based on individual repression and the needs of the group.

These culturally differentiated forms of parenting are consistent with the distinctive way in which people are motivated to seek a positive view of themselves in individualistic and collectivistic cultures, manifested as "being a good member within their culture," either as an individual, in the case of individualists, or as a member of a group, if living in a collectivistic culture.

The search for positive self-esteem is a characteristic motivation of individualistic cultures, while in collectivist cultures (such as East Asian countries), the search for self-improvement is predominant. Hence, for an American it is more stimulating to be praised for successes and for a Japanese it is more stimulating to be criticized for failures (Kim & Sasaki, 2014).

Although acceptance by the group was crucial for the survival of our ancestors (Gaviria & Fernández, 2019), this is distinctively manifested in individualistic and collectivistic cultures; in the first, competing and excelling individually is encouraged, while in the latter, cooperating and serving the group.

Evolutionarily speaking, cultural characteristics do not have an absolute value, but rather their value is measured by how well they contribute to enhancing the survival of the group in a particular environment (Gazzaniga et al., 2019).

Can individualism and collectivism be understood as forms of cultural evolution, and what would be the evolutionary advantage of their development? Individualism and collectivism can be seen as cultural strategies that were transmitted and survived in some groups and not in others because they were reproductively successful. In this regard, the parasite stress theory of values (Thornhill & Fincher, 2014; Nikolaev et al., 2017) proposes that regional variations in infectious diseases influence the degree of cultural collectivism and individualism. These lead to valuing in collectivism, to a greater or lesser degree, interdependent behaviors, thoughts, and feelings, and in individualism, independent behaviors, thoughts, and feelings.

Fincher et al. (2008) suggest that specific behavioral manifestations of collectivism, such as ethnocentrism and conformity, may inhibit the transmission of pathogens from exogroups; they propose the hypothesis that collectivism, as opposed to individualism, will more often characterize cultures in regions that have historically had a higher prevalence of pathogens. Based on epidemiological data and findings from global cross-national surveys of individualism/collectivism, research results support this hypothesis: regional prevalence of pathogens has a strong positive correlation with cultural indicators of collectivism and a strong negative correlation with individualism (Nikolaev et al., 2017).

Why does this relationship happen? Several investigations show that when people are exposed to infectious diseases, they are more likely to display attitudes associated with ethnocentrism and the avoidance of individuals from exogroups (Navarrete & Fesler, 2006; Faulkner et al., 2004), which makes the development of traits associated with collectivist values more likely (Fincher et al., 2008).

Implicitly, in the nature of the individualism-collectivism contrast, there are marked differences in the morality of ends and means. Collectivist cultures are more comfortable than individualist cultures with using people as means to a utilitarian purpose. Moral imperatives in collectivist cultures tend to be about social roles and duties to the group, whereas in individualistic cultures they are typically about individual rights (Sapolsky, 2018), which from an evolutionary perspective, would be the adaptive result of a collective behavioral strategy to stop the spread of contagious diseases.

Additionally, cultures differ in the way moral behavior is reinforced. Collectivist cultures reinforce shame (Jacquet, 2016), while individualistic cultures reinforce guilt (Katchadourian, 2010). Shame is external judgment on the part of the group, while guilt is internal judgment on the part of the individual. Shame

requires an audience and is about honor. Guilt is for cultures that treasure privacy and is about consciousness.

Effective shaming requires a conformist and homogeneous population. Effective guilt requires respect for the law. To feel shame is to want to hide. To feel guilt is to make amends. The punishment for shame is expulsion from the group. The punishment of guilt is an internal burden (Sapolsky, 2018).

The externalization and emphasis of external control of shame is consistent with the dependent and merged view of collectivist cultures. The internalization and emphasis on internal control of guilt is consistent with the independent and atomized view of individualistic cultures.

As shown by several researches (Nisbett et al., 2001; Hedden et al., 2008; Chiao, 2009), when an object is presented within a complex context, people from collectivist cultures, such as China, tend to observe and remember contextual information better; whereas people from individualistic cultures, such as the United States, tend to observe and remember the object more. If people are asked to focus on the domain inconsistent with their culture they show greater activity in the frontal cortex, suggesting greater cognitive effort. Cultural orientation shapes how and where attention is focused in the world. This is a cultural effect more than genetic, as Asian-Americans —for example, children of Chinese parents born in the United States— exhibit the typical American pattern; that is, they tend to focus more on the object than on its context.

Thus, cultural individualism and collectivism can be understood as the adaptive product of relatively differentiated behavioral strategies, which obey social and biological pressures that may push more toward one side of this individualist-collectivist continuum than the other. This means that, from an evolutionary perspective, individualism and collectivism are not fixed or monolithic entities, but adaptive processes capable of changing as a group's adaptive response to the contextual conditions of the ecosystem in which lives change, the purpose of which is to promote the survival and reproduction of its members.

Inequality and Evolution

Why, if humans evolved, unlike other primates, to become ultra-cooperative (Hamann et al., 2011) and show a universal dislike of inequality in the distribution of earnings (Engelmann and Tomasello, 2019), are there such high levels of inequality in the world today? It is estimated that the poorest half of the world's population owns only 2% of total wealth, while the richest 10% have 76% of the world's wealth (Chancel et al., 2022).

Humans are a massively and flexibly cooperative species, besides the fact that in their childhood and across cultures there is a distaste for inequality and a preference for equality (Engelmann & Tomasello, 2019), so socioeconomic inequality in the world appears to be an evolutionary anomaly (Chisholm & Burbank, 2001). However, it is important to consider that evolution is not a linear and monolithic process, but one in which various factors operate, among which tendencies toward authoritarianism, social dominance, endogroup bias, and the desire for power also play a role, all of which push toward greater inequality in the distribution of wealth.

When the future is objectively risky and uncertain, the optimal reproductive strategy will often be to reproduce early and at a high rate. This may contribute to reproduce inequality, as people in the lower levels of the wealth distribution would tend to have more children, which would create a situation of fewer relative resources divided among more people. Early reproduction often leads to poor health and shortened lives, and because inequality is a major source of environmental risk and uncertainty, the use of evolutionary theory to understand inequality must also consider health, well-being, and social and cultural capital, along with the more structural aspects associated with social hierarchies and the distribution of economic and political power (Chisholm & Burbank, 2001).

When resources are limited, parents are more likely to kill their children, especially the weaker ones, in order to increase the chances of survival of their healthier descendants, since these limited resources would then be distributed among fewer mouths. Infanticide occurs in monkeys, lions, birds, and humans, among other species (Gazzaniga et al., 2019).

What is a fair society? Contemporary concerns about social justice and equality are based on the way economic interactions are understood. This question deals with who produce goods, have access to them, under what conditions, or to what extent the rules under which people interact with each other might create fair or unfair differences (Boyer, 2018).

This can be seen as a question of human evolution, because natural selection can contribute to explaining various aspects of what justice and equality mean in a society. Evolution can help understand why humans have a sense of justice and why it triggers intense emotions. Evolution can also help understand why humans cooperate, exchange and trade, and what capabilities make the giant systems of cooperation and exploitation of the modern economy possible (Boyer, 2018).

For example, is there a right to private property? To what extent? Is it right for the individual to deploy profit interests above other considerations or not? Is individual freedom more important than collective interest? These economic

questions are rooted in the cultural evolution of human groups and cultural values that have been collectively constructed and vary from place to place and from time to time. Perhaps the key point relates to the way in which cooperation is understood and developed.

Boyd and Richerson (1992) stated that people cooperate because they are following social norms that include an aversion to inequality and a preference for prosocial behavior in themselves and others. One of the ways in which these rules are reinforced in human groups is by punishment, as there is evidence that people punish those who do not cooperate ("nonconformists") and are willing to spend resources to diminish the profit of those who have not contributed in previous tasks. This is called "altruistic punishment" and emphasizes the fact that people are willing to lose resources to reinforce rules that benefit others (Fehr & Gächter, 2002).

Groups that cooperate to a greater extent can provide greater welfare to their members due to cooperation that achieves greater gains than non-cooperation, whereas groups with lower cooperative rules and less altruistic punishment of "cheaters" would be less successful. This would lead to an expansion of cooperative rules, as more supportive groups would outpace and absorb less cooperative ones, so that humanity would gradually shift toward increasingly collaborative populations (Boyer, 2018).

People, mostly groups, punish those who break the rules, but they do so mostly when they have been affected by the breach. In general, to the extent that people are not directly affected, they prefer to ignore those who break the rules of cooperation. In addition, this punishment would also have individual interest as those who punish can gain status and obtain resources (Baumard & Lienard, 2011). Thus, the reinforcement of cooperative rules would not only occur for altruistic motivations, but also for selfish reasons, as well as distal and proximal historical and ecological factors (Gelfand et al., 2011). This poses a complex interaction between individual, collective, historical, and ecological factors.

Human beings have evolved in groups and they can offer and receive cooperation from different individuals, so they have developed an intense interest in the affairs of others, so that the behavior of one person with another is transmitted beyond the interested parties. Thus, each person benefits from having a reputation for honesty and mutually advantageous behavior (Boyer, 2018).

Generous behaviors seem difficult to explain by narrow individual interest, but within the group context they would be a step in the construction of mutually beneficial arrangements. The possibility of choosing partners would explain that people are motivated to cooperate with individuals with whom they have the opportunity to return the benefit. When a defector is found, the simplest option is often to abandon any interaction with that person and seek others with

better provisions. In interactions with several peers, individuals can reward cooperation, punish defection, and acquire information about other individuals' past transgressions (Boyer, 2018).

Some experiments in Japan and the Turkana nomads in Kenya show that even five-year-old children have the intuition that rewards should be proportional to contributions. Clearly, people also take more than their fair share. It is universally considered abusive and people are motivated to avoid or run away from those who act this way (Chevallier et al., 2015).

If a partner becomes greedy and insists on an abusive exchange, then the other person can focus on others until he or she gets a better option, which would be close to half of the dividends. This seems to have deep ancestral roots, since hunter-gatherer societies have a clear correlation between proportional giving and receiving (Gurven, 2004).

So, what does it mean to be financially well off? How does one know if one is giving and getting the resources deserved? This response appears to be neither linear nor unidirectional, since after a certain threshold, the increased income does not predict increased welfare by itself.

According to the findings of Ed Diener's group (2002 & 2018), between the wealth of a country and the well-being of citizens there is no high correlation. In modern societies one can speak of a ceiling of around ten thousand dollars of per capita income, but, beyond that, the increase in per capita income no longer generates a parallel increase in welfare.

The increase in material standard of living —possession of goods and services— after a certain ceiling does not seem to translate into an improvement in people's well-being; on the contrary, there are signs of worsening, such as subjective perception of happiness, increased divorce, teenage pregnancy, and depression. Why are these paradoxical results? It is possible that the human capacity for adaptation and the desire for comparison play an important role in answering this question.

The evolutionary psychology states that there is a level of adaptation to refer to the tendency of human beings to evaluate their current experience, it compares with a neutral level defined by previous experience. People value their achievements more when they exceed the ones in the past, but they adapt quickly. Thus, higher achievements seem to lose value as they are achieved; what in the past was considered excellent now is just good and what was good becomes neutral. (Cuadrado et al., 2019).

The comparison is not only between what is achieved now and what was achieved in the past, but also with what is achieved by others in similar situations. What is known as relative deprivation, a phenomenon that can lead to social unrest and revolt, is no more than the experience from perceiving that what one

has or gets is less than what is considered reasonable or fair according to a given criterion. One of the criteria that people have has to do precisely with the results obtained by others when comparisons are made (Cuadrado et al., 2019).

Therefore, owning wealth is not something absolute, but it relates to the wealth of other people or similar groups. If the person could remove themselves from the relationships with others in the places they live in, in the community, in the city, in the country, they would evaluate with respect to some objective external criterion. As it does not happen, as there is a closed relationship with other people and groups and known incomes and life circumstances, there are comparisons used among them instead of an external criterion as standard of comparison for what these people or similar groups receive.

Thus why, if people show a tendency toward cooperation and a rejection of inequality, do the high levels of socioeconomic inequality that are seen today exist? As has been shown in this section, considering that evolution is not a linear, unidirectional, or monolithic process, but that it is influenced by several factors, along with processes that push toward greater inequality, such as the ones mentioned before, including tendencies toward authoritarianism, social dominance, endogroup bias and power desire is important. These are part of the broad human socio-cognitive repertoire (De Waal, 2006) and constitute pressures that favor greater inequality in the distribution of wealth, and that could take on greater force under conditions of resource scarcity (Inglehart, 2019).

Individualism-Collectivism, Inequality and Evolution

Individualist or collectivist cultural evolution —as a result of differential pressures to which human groups have been subjected through their history and geography— can be seen as an adaptive response to context, i.e., human groups can become more individualistic or more collectivistic depending on the circumstances they have faced over time and the characteristics of the environments they inhabit. For example, when resources are scarcer, groups may become more collectivistic because they become more interdependent to survive. On the contrary, when there are more resources, they may be more individualism-oriented as they feel more self-sufficient and less pressured by existential threats (Inglehart, 2019; Kraus et al., 2012).

Likewise, the Neolithic period's expansion in human groups and the agricultural revolution led to a demand for hierarchical organizations that would aid in social management. This fact reduced decision-making costs and created consensus time in larger groups, which resulted in different hierarchical levels

and created inequality in the allocation of resources because leaders used their influence to bias decisions in favor of their own interests (Perret et al., 2020). This social class hierarchy tends to promote attitudes of submission and conformism in lower-class individuals while fostering leadership, autonomy, and self-confidence in upper-class individuals. (Kraus et al., 2012).

Larger and more productive human groups move from distributed to centralized decision-making because, as they grow in size, coordination becomes more difficult. Hierarchy serves to limit the increase in organizational cost as group size grows, called scalar stress, which is defined as the ratio of time spent reaching consensus to the group size (Garfield et al., 2019).

Hierarchy reduces scalar stress by making group decision-making less time-consuming. This benefit arises because leaders and followers differ in their ability to influence each other which can drive the evolution of leader and follower behaviors and, finally, the transition from small to large hierarchical groups (Perret et al., 2020).

Political leaders inevitably emerge as a group expands to cope with the complexity of coordination. However, this allows such leaders to bias collective decisions in their favor, for example, in the distribution of resources or the use of armed force, which is an expression of the complexity of conflicts between individual and collective interests (Frank, 1998).

Sanfey (2003), Bandyopadhyay et al. (2013), and Engelmann and Tomasello (2019) have found that, contrary to the expected utility theory, people do not only consider individual gain criteria when relating to others, but they are also influenced by moral factors, such as the sense of justice, social factors, as hierarchy, or cultural factors, as well as the degree of individualism versus collectivism.

Are humans irrationally generous? It seems that people's behavior in economic games clashes with the idea of expected utility theory based on the idea of privileging self-interest in standard economic theory (Boyer, 2018).

In experiments with economic exchange games such as the *Ultimatum Game* —in which a responder can accept or reject the money offered by a proposer— if the offer is accepted, both the proposer and the responder receive the agreed amount but if the offer is rejected, nobody receives any money. The observed result is that proposers do not tend to maximize their gains; instead, they often offer half the money to the responder.

According to expected utility theory, responders should accept any offer greater than zero, which is their starting point, but they tend to reject offers that they perceive as unequal. This means that people do not act as expected by the idea of rational economic agents; as in this game, they privilege justice criteria over profit criteria (Boyer, 2018). This trend is a common pattern in diverse societies, from gatherers and farmers to industrialized societies. People generally justify

their generous offers and their rejection of unequal offers by saying that they are "not fair" (Henrich et al., 2001).

Following the idea of natural selection, if people tended to act only for their own individual benefit, they would pass these genes to the next generations. In this regard, prosocial behaviors would be extremely rare, and instead selfish behaviors would rule. However, cooperation does occur, indicating that selfishness does not explain these patterns of human behavior because it is not the only force at play (Boyer, 2018).

Cultural individualism and collectivism seem to be related to inequality via class stratification, as upper class tends to be more individualistic and lower class more collectivistic (Inglehart, 2019). Lower class individuals are more conditioned by threats, uncertainty, distrust, insecurity, and restrictions, as well as being more oriented toward conformism and obedience, whereas upper class individuals are more prone to developing self-confidence, leadership, agency, autonomy, freedom, control, and having more options to develop their initiatives (Kraus et al., 2012).

According to the parasite-stress theory of values, more collectivist societies have a higher prevalence of infectious-contagious diseases, leading to a preference for interdependence and endogroup fusion over exogroup closure and rejection as survival strategies. Whereas more individualist societies have a lower prevalence of infectious-contagious diseases, leading to a preference for independence and autonomy (Thornhill & Fincher, 2014). Interestingly, more collectivist societies show higher levels of economic inequality, while more individualist societies show lower levels of inequality (Nikolaev et al., 2017). This could be related to the fact that collectivism fosters obedience to authority and conformism, which would support the status quo and the unequal distribution of power and resources, while individualism fosters autonomy, individual rights, and respect for the law rather than arbitrariness, which would support a more conducive environment to equality (Gorodnichenko & Roland, 2013).

The coexistence of the humane orientation toward equality and unequal hierarchical structures seems to clash with each other, as hierarchies are opposed to equality. This could be psychologically balanced by the tendency toward collectivism among lower strata populations and, the tendency toward individualism among upper strata populations (Inglehart, 2018) in which balance would be preserved, if the majority of individuals believe that in the long term, they gain more resources than they lose by conforming to and obeying those with higher hierarchical positions (Perret et al., 2020). Hence, social conflict in the face of inequality would not be predicted solely by the mere existence of inequality, but rather by feelings about it. These, in turn, would be mediated by the positions of power and the degree of individualistic or collectivistic orientation (Kraus et al., 2012).

The fact that more unequal societies tend to produce higher levels of crime and violence and lower levels of trust can be interpreted as a consequence of the breakdown of this complex balance between the desire for equality and hierarchical efficiency. Additionally, making the distribution of economic resources more equal produces greater cooperation and trust, which means the achievement of socioeconomic equity tends to foster social balance through greater peace of mind for people (De Courson & Nettle, 2021) and lower levels of stress and anger (Sapolsky, 2018).

Conclusions

Humans, unlike other species, show greater capacities for cooperation, therefore they value equality more highly than other evolutionarily close species, such as chimpanzees and other large primates. However, the history of humanity is full of great inequalities that still persist, even in the most extreme forms, such as exploitation, trafficking, or slavery. Furthermore, from a macro-social perspective, humanity currently exhibits extremely high levels of inequality, with estimates claiming that only one percent of the population is significantly wealthier than the poorest half of the entire population. While the poorest 50% of the world's population have only 2% of all wealth, the richest 1% have 38% of the wealth; that is, this elite has 19 times more economic resources than the entire bottom half of the population structure (Chancel et al., 2022). How can this contradictory coexistence between cooperativeness, a sense of justice, and inequality be possible?

A possible explanation has to do with the fact that evolution is not a univocal or unidirectional force but rather entails the pressure of different factors that compete to define it and these vary from one group to another and from one epoch to another. Thus, just as human beings have developed a strong capacity for cooperation and the pursuit for equality and justice, so too have opposing forces, such as hierarchy orientation, desire for power, material ambition, authoritarianism, and social conformity, which have persisted throughout human history and are still very much part of today's world. These evolutionary trends are influenced by social hierarchies, because, while more individualistic attitudes are encouraged within the more powerful groups, in economic and political terms, more collectivist attitudes are favored within groups with less power.

This theoretical article states that the relationship between these forces is regulated by the individualist and collectivist cultural orientation, so that, although the sense of cooperation and equity has evolved everywhere, the tendency for more collectivist

societies to present greater inequality in the distribution of economic resources could be permeated by a greater propensity to conformism, passivity, obedience, and submission to social hierarchies. This suggests that socioeconomic inequality is more than a purely economic process; it is also a political-cultural, and evolutionary process.

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