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Belief Formation: A Cultural Evolutionary Lens

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ABSTRACT

This paper investigates changes in belief and their evolution in relation to the paradigm of cultural evolution. It underlines the interaction of the environmental factor with the social dynamic. The model proposed herein is extremely widespread and involves the creation, maintenance, and diffusion of beliefs that afford a perspective on how such processes influence individual and collective psychological constructs. By synthesizing theories in the fields of biology, anthropology, and psychology, this research will argue that cultural evolution is one key mechanism able to explain both diversity and variability in human belief.

The examination suggests that beliefs cannot be cast solely as some sort of passive variant of personal cognition; instead, they are actively generated by cultural dynamics and social learning techniques such as imitation and instruction.

It is a book that places more emphasis on the role of political ideology in accepting scientific evidence and shows how directed reasoning leads to the perpetuation of noxious beliefs.

It then investigates transfer biases supporting the reproduction of cultural traits across successive generations, hence affecting social structure and any effort of cooperation. This may lead to a nuanced grasp of how beliefs can be advantageous or disastrous, considering the prevailing social structures and ecology within which they live. Based on the wealth of research regarding under what circumstances beliefs arise and spread, this paper examines from a critical perspective psychological processes of belief systems and what they might portend for human behavior and social organization.

1. Introduction

Beliefs form the very foundation of human behavior and a sequence involved in the process of decision-making. They serve as certain main guidelines and influence our behaviors, interpersonal relations, and the meaning of the surrounding environment. Understanding how a belief is formed, maintained, and modified is central to a variety of disciplines, including psychology, sociology, and behavioral economics. This paper tries to explore how beliefs are formed according to cultural evolution and thus provides an extended framework for understanding the dynamics of beliefs at both individual and collective levels.

The cultural evolutionary perspective allows explaining the mechanisms through which beliefs are constructed. It underlines the processes that generate, maintain, and transmit beliefs in interaction with each other and with ecological and social ecologies. Thus, one can understand the diversity and flexibility which exist within human psychology, and the factors which enable the construction and proliferation of respective beneficial or harmful beliefs.

The paper further explores such things as content biases and personal circumstance in belief formulation: for the former, the cognitive predisposition that makes beliefs catchier and memorable, and with regard to the latter, personal goals, motives, and emotional states influence the acceptance and permanence of beliefs.

The holistic approach of this model allows the appreciation of the processes through which the beliefs might be challenged or changed; thus, it acts as a framework for interventions to achieve constructive belief systems.

It means much more than gaining theoretical insight. Understanding the way beliefs form can have a very strong effect on policy, education, and conflict resolution. The insight into belief systems-as was said-opens up windows through which policymakers and educators can design policies and programs that respond to communal values and beliefs for the betterment of societal wellbeing.

By this, it tries to explain complex mechanisms of belief formation within a wider, evolutionary perspective of culture that should also give an integrated framework within which beliefs, behaviors, and dynamics of cultures can be interpreted.

1. Neoteric Approaches on evolutionary psychology:

In the past few decades, evolutionary perspectives in the human social sciences have gained much attention and popularity(Smith 2000; Barrett 2020) which shows the significant impact of evolutionary biology as a framework for understanding the physiological and psychological characteristics of humans; Therefore, the power and success of this approach has been clarified and it can be introduced as one of the effective frameworks in modern science (Buss 2019; Pontarotti 2024; Sá-Pinto et al. 2025).

1.1) Standard Evolutionary Approach:

The evolutionary approach in the social sciences depends upon natural selection and principles of adaptation. For Darwin, these forming centerpieces of his theory stipulated that organic structure with a lifetime or reproductive advantage is better at propagating traits onto future generations. Beneficial traits spread in the population, leading to species evolution. Evolutionary psychologists argue that our physical and psychological traits stem from our evolutionary history (Buss 1995; Silberberg and Thyer 2024). These traits are evolutionarily developed from ancestral challenges and opportunities; therefore, they conferred adaptive advantages which would improve the chances of survival and/or reproduction (Sá-Pinto et al. 2025). Critics of "(standard) evolutionary psychology" hold that it is too reductionist, attempting to explain complex human behaviors in terms of their evolution alone. Such a perspective overlooks many aspects of

behavior, they say. Some also claim that it is too speculative relying on the untestable and unsupported by sufficient empirical evidence to adequately explain human behavior (Gray et al. 2003; Bolhuis et al. 2011; Goldfinch 2015). The conventional framework of evolutionary psychology asserts that individuals possess a collection of inherent cognitive mechanisms, referred to as the "massive modularity" hypothesis (Barkow et al. 1995). According to this hypothesis, the human cognitive system comprises multiple distinct "modules," each designed to fulfill particular functions. Modules are cognitive mechanisms with distinct characteristics, including domain limitation, information isolation, innateness, inaccessibility, shallow outputs, and forced action (Fodor 1983). Most cognitive processes, including high-level reasoning, are believed to be modular. A module specializes in processing specific types of information and producing corresponding results, such as a face recognition module that identifies faces and their emotional expressions (Bendixen and Purzycki 2022). Supporters of the modular hypothesis believe that modular processes are more adaptable than non-modular processes. They state that these processes are faster, more efficient, more reliable, and more robust than multipurpose processes that depend on learning, experience, knowledge, or context (Carruthers 2003; Collins 2005; Samuels 2012).The modules or mechanisms that exist in our mind, operate in a specialized manner to process a limited range of information and produce psychological or behavioral results. These modules help us adapt to the challenges and opportunities we face in our daily lives. These challenges and opportunities can be left over from ancient times, when humans as an evolved species have spent most of their history. This era can be called "evolutionary adaptation environment" (Irons 1998; Kanazawa 2024). Undoubtedly, the founders of evolutionary psychology have played an important role in stimulating fruitful discussions about the roles of biology and culture in various fields of human social sciences; However, some researchers doubt the validity of the principles of the standard approach. Important questions arise: Does the "environment of evolutionary adaptation", as the term is often used, provide a realistic and effective representation of the ecological and social conditions that affected human societies in prehistoric times (Gray et al. 2003)?

1.2) Cultural Evolutionary Approach:

"Cultural evolution" is a scientific approach that studies changes and diversity in cultural traits such as beliefs, behaviors, and artifacts over time within human populations (Mesoudi 2011). It seeks to explain why certain cultural traits emerge and spread more than others (Sperber 1996) and how factors like group size, communication, and social learning impact cultural change (Cavalli-Sforza and Feldman 1981; Boyd and Richerson 1988; Creanza et al. 2017). This interdisciplinary domain integrates concepts from anthropology, psychology, economics, and biology to elucidate the mechanisms of cultural evolution. Cultural evolutionists utilize a range of methodologies, such as mathematical modeling, field studies, data analysis, and experimental research, to validate their hypotheses. They acknowledge the interrelated nature of cultural and genetic evolution, highlighting the myriad ways in which these processes interact with one another (Smolla et al. 2021). The interaction of culture and genetics would enlighten us more about how humans and their societies change through time. Cultural evolutionary psychology represents an interdisciplinary domain that synthesizes concepts from evolutionary psychology and cultural evolution, aiming to elucidate the mechanisms through which cultural practices and psychological characteristics evolve and transform over time. This framework asserts that human cognition and behavior are influenced by both genetic evolution and cultural transmission, which can result in considerable psychological adaptations. Cultural evolutionary psychology 's conceptual framework is based on the idea that while the processes of variation, selection, and retention parallel those of biological evolution in the development of culture, these mechanisms work within the social contexts that influence individual psychological processes (Kumar et al. 2020; Mesoudi et al. 2016).One of the premises of Cultural evolutionary psychology is that cultural practices may have feedback onto the psychology of the individual. Cultural norms and values are determinants of psychological characteristics and, in turn, influence cultural changes. An example of this mutual interaction is the way cultural contexts select for a set of cognitive abilities that also improve social learning and cooperation behavior (Henrich and Muthukrishna 2021; Henrich et al. 2015). The relationship between genetic and cultural evolution is accentuated by the principle of gene-culture coevolution, which

posits that cultural behaviors can generate selection pressures that affect genetic evolution, and conversely (Birch and Heyes 2021; Heyes 2019). This intricate interaction implies that a holistic understanding of human psychology necessitates an integrated perspective that encompasses both cultural and biological dimensions (Heyes, 2020; Laland, 2016). Furthermore, the Cultural Evolutionary Perspective underscores the significance of social learning processes, including imitation and instruction, which play a vital role in cultural transmission. These processes are not solely passive; rather, they are influenced by evolutionary forces that select for individuals adept at learning from their peers (Heyes 2020). For example, the ability to imitate and understand social cues enhances an individual's ability to navigate complex social environments, thereby supporting both cultural maintenance and innovation (Gabora and Steel 2017; Griffiths et al. 2008). This ability for cultural learning is considered a key factor differentiating humans from other animals that allows for the development of complex societies and technologies (Chang et al. 2011). Furthermore, the Cultural Evolution Project investigates the manner in which cultural narratives and practices, including folklore and conspiracy theories, transform and adjust through various temporal contexts. These cultural components offer valuable perspectives on the psychological foundations of belief systems and social conduct, demonstrating the influence of cultural evolution on both individual and collective psychology. The examination of cultural evolution from a psychological perspective prompts inquiries regarding the cognitive mechanisms implicated in the transmission of culture, as well as the influence of environmental elements on the development of these mechanisms (Birch and Heyes 2021; Heyes 2019). In all, cultural evolutionary psychology gives a broad framework in which to interpret the relationship between culture and psychological processes. By studying the ways in which cultural practices influence psychological traits and the reverse influences, researchers can gain a deeper understanding of human behavior and cultural change. This interdisciplinary approach not only increases our understanding of cultural processes but also highlights the adaptive nature of human cognition concerning cultural risks and opportunities.

2. Importance of Belief Formation

Beliefs are mental representations about ourselves, others and the world around us. Such beliefs can vary in many areas, including content, structure, power, scope, and function. Beliefs have a wide influence on our emotions, feelings, motivations, behaviors and even our well-being. Beliefs are highly organized cognitive structures that summarize one's knowledge and evaluation of his or her surrounding world. These are usually shaped by cultural, social, and personal influences. They tend to have strong influences on behavior, the process of decision-making, and interpersonal relationships. Beliefs are fascinating phenomena that have a profound effect on human behavior and culture. But the question is, how are these beliefs formed, how do they remain stable and how do they spread in human societies? Also, why do some of these beliefs seem helpful, while others are neutral or even harmful and destructive?

The Necessity of Awareness Towards Belief Formation Process:

The explanation of belief formation is important for a number of significant reasons, especially in relation to its consequences for psychological operations and political contexts.

1. Influence on Behavior: Beliefs are at the core of human behavior and act as a guiding force for many decisions and actions taken during one's life. By shedding light on the mechanisms of belief formation, the prediction and influencing of behavioral outcomes become highly possible. This is particularly important in psychology, in which interventions can be engineered to change negative beliefs or foster positive ones. In behavioral economics, by understanding belief formation, strategies can be initiated that help consumers make positive behaviors.

2. Conflict Resolution: Most social conflicts arise out of issues in belief systems, often aggravated by misunderstanding and lack of proper communication. A deep understanding of how beliefs come into being would enhance conflict mediation techniques and foster healthy dialogue between groups holding opposite beliefs. This especially becomes imperative in political contexts where steadfast beliefs can give rise to polarization and stalemates. By addressing the very mechanisms of belief formation, parties to a

conflict can work toward bridging gaps and fostering cooperation(Alaei Ardekani 2023).

3. Cultural Understanding: Beliefs are deeply enshrined in cultural structures, which in turn forge social norms and values. A study of the dynamics involved in the emergence of beliefs furthers one's understanding of cultural pluralism and makes them aware of how cultures change. This further helps interdisciplinary research in anthropology and cultural psychology by offering a better perspective on how belief systems interact with cultural narratives. Moreover, in a global context, comprehending cultural beliefs can improve diplomatic initiatives and enhance international relations.

4. Psychological Operations: Understanding belief formation is one of the key factors in PSYOPS in military and strategic contexts. It refers to operations using information dissemination to influence target populations' beliefs and behaviors, often in very dire circumstances. By applying knowledge on belief formulation and change, the PSYOPS message can be crafted to strike a chord with the target audience in order to achieve a strategic outcome. This underlines the role of psychological insights in shaping the narratives that will eventually alter public perception and behavior in significant ways.

5. Politicking and Electioneering: On the political level, the generation of beliefs is a high-order issue. Political figures often try to shape public opinion through the use of certain messages that appeal to either existing beliefs or that are intended to change them. Understanding the psychological dynamics that form beliefs makes political advertising more effective and helps candidates to communicate to citizens on a deeper level.
Furthermore, this increase in misinformation and propaganda shows the need for an in-depth examination into the way in which beliefs can be manipulated for political gain, thus making it particularly important to devise strategies that will reduce such influences (Hamzepour 2024).

6. Education and Learning: The knowledge of belief formation can enlighten educational methodologies on how best to handle misconceptions by educators, while developing critical thinking skills in students. Such deeper learning and intellectual resilience could be developed through insights on belief construction, providing educators with means to allow the encouragement of questions in students in relation to reworking their beliefs.

7. Social Change: Understanding how beliefs change contributes to the preparation of strategies for social change by developing methods of communication and persuasion targeted at different groups of people. This is far more relevant in cases of campaigns relating to social justice, a sustainable environment, or public health. The psychological and cultural factors regarded here would definitely help the advocate in modifying ways of effective community engagement and mobilization.
8. Public Policy: Knowledge of the belief formation processes can be used by policymakers to design programs and policies that conform to the more general values and beliefs held in different communities. This understanding significantly expands the scope of public policies and programs, especially within the contexts of health care, education, and social services. By addressing those beliefs that underlie public attitudes on policy issues, policymakers have the potential to foster greater acceptance and compliance on the part of the general population. In summary, sophisticated understanding of the process through which beliefs are formed is central to the advancement not only of knowledge in various fields but also of interpersonal and societal relations, enhancing individual welfare, and aptly dealing with the complex interrelation between psychology and politics. This could enable different parties involved to devise more effective ways of engaging, intervening, and bringing change in various contexts by recognizing the complex dimensions of forming beliefs (Moghimi, Alaeei Ardakani 2013; Alaei Ardekani, 2023).

3. The Cultural Evolutionary Aspect of Belief Formation

This approach has significant differences compared to the traditional assumptions that have formed the background of similar studies. Cultural evolution seeks to provide a new perspective for understanding

beliefs in an evolutionary framework. The new approach to studying beliefs from an evolutionary perspective, unlike previous methods that are based on common assumptions, does not rely. The purpose of this new approach is to reveal new ways to explore the origin and development of beliefs in human societies; In addition, the proposed method emphasizes that the complex interaction between biological and cultural factors in shaping human cognition and behavior should be considered. This system understands the dynamics and complexity of beliefs and acknowledges that these beliefs are not only influenced by biological factors, but also by the socio-cultural environment in which they are formed. This alternative model, like a magic camera, takes us to an unknown world. With a penetrating new lens, this camera enables us to travel into the unknown depths of the complex and multidimensional relationships between biology and culture. Using this camera, we can explore the complex and multiple textures of human societies and examine how beliefs are formed, shared and changed; Also, while exploring the fascinating and challenging realm of human beliefs, this alternative model, "evolutionary (cultural) psychology," shows us the beauty of the complexity and adaptability of the human mind as a powerful witness.

3.1) A New Framework for Understanding the Cultural Evolution of Beliefs

Cultural evolution as mentioned before is a broad interdisciplinary field that uses diverse perspectives and methods from different disciplines such as anthropology, psychology, economics, and biology. This field seeks to understand how cultures evolve and change over time. Cultural evolutionists use various tools to check their hypotheses and theories. These tools include mathematical models, fieldwork, database analysis, and even laboratory studies. These methods help them to examine the process of cultural evolution in detail; In addition, cultural evolutionists understand that cultural and genetic evolution are not two separate processes, but these two are related to each other and influence each other in different ways (Smolla et al. 2021). Such an understanding of the interplay between culture and genetics helps us better understand how humans and societies change over time.

In this section, we argue that a cultural evolutionary perspective can provide reasoned and creative answers to the questions we mentioned before. Here we intend to show how cultural evolution serves as a powerful tool for analyzing beliefs in controllable and testable cultural processes. These processes include the stages of **"production", "maintenance"** and **"dissemination"** or **"transformation"** of beliefs. This section examines the details of these stages and analyzes their impact on individual and collective beliefs; In addition, we will explain how cultural evolution can explain the diversity and flexibility of human psychology. These explanations will include examining the complex interactions between beliefs and their ecological and social contexts. Finally, we will examine how cultural evolution can predict the conditions under which harmful beliefs are able to form and spread; We will also discuss how these beliefs can be challenged or changed. The cultural evolution perspective on beliefs allows us to examine and analyze the diverse cultural processes that influence beliefs and other cultural aspects in human society. These processes include three main parts:

- origin or production (how a belief originates)
- maintenance (how a belief is stable over time)
- diffusion (how a belief is transmitted from one person to another)

This view states that each of these processes can be influenced by a set of cultural evolutionary factors. These agents are solutions that respond to the specific "choice issues" that beliefs face; For example:

"Content biases" are elements that, based on their compatibility with individual or learned cognitive preferences, make certain beliefs more attractive and more memorable than other beliefs (Sperber 1996). These elements can help us understand how certain beliefs emerge in the first place out of the infinite number of possible ideas we can think of; Also, these elements are able to help us understand how certain beliefs are maintained or spread and how the probability of their recall or transfer increases; However, it should be noted that content biases are only one of the factors that influence beliefs.

"Individual circumstances" refers to the set of factors that influence our beliefs. These factors can include our goals, motivations, and even our personal emotions. Some people may find certain beliefs more useful based on their individual circumstances (Griffiths et al. 2008). These individual conditions can not only affect the preservation of our beliefs, but also play an important role in their expansion; In other words, individual circumstances can make beliefs seem more attractive or persuasive to some people.

"Social dynamics" as a concept refers to a set of factors that influence individual or group beliefs. These factors can be formed based on compatibility, credibility or even popularity of social groups; In other words, if a belief becomes popular in a social group, it may be imposed on another person or group (Boyd and Richerson 1992). Social dynamics can not only cause the selection and imposition of beliefs on an individual or group, but also plays an important role in maintaining and spreading them; In other words, beliefs that are influenced by social dynamics can be seen more widely in society and have a greater impact on people's behavior.

In the end, it can be said that "ecological conditions" are a set of factors that influence beliefs and change them based on the degree of adaptation to physical and cultural challenges; In this way, beliefs are adjusted in such a way that they become more harmonious and compatible with these challenges (Fogarty and Creanza 2017). Ecological conditions not only play a role in creating beliefs, but are also influential in maintaining and spreading them. These conditions shape beliefs in a way that makes them responsive and flexible to environmental changes; Therefore, beliefs are able to adapt to environmental changes and their survival is guaranteed. By considering these factors and various cultural evolutionary processes, we can achieve a deeper and richer understanding of how beliefs emerge and evolve in human societies; We are also able to test certain hypotheses about the interaction of these factors and the differences between different types of beliefs and contexts.

One of the compelling benefits of taking a culturally evolutionary perspective on beliefs is that it helps us understand the amazing diversity and plasticity of human psychology. New and interesting evidence that is available to us shows that many cognitive and perceptual biases that we previously thought of as universal are actually significantly different in different cultures (Mesoudi 2019); For example, Müller-Leer vision error is a type of vision error in which two lines of equal length appear to have different lengths depending on whether their arrowheads point inward or outward. A line with an outward arrowhead appears to be longer than a line with an inward arrowhead; However, this error of vision is not equally effective in different cultures. Interesting studies (Yiend et al. 2019; Chin et al. 2022) show that people who live in western cultures and are more familiar with rectangular shapes and modern buildings are more exposed to this vision error. On the other hand, people who live in non-western cultures and are more exposed to round or curved shapes and natural environments, are less likely to make mistakes with this vision error. These findings indicate that cultural factors, such as visual and environmental experiences, can have a significant impact on the way we understand and interpret visual stimuli.

The "standard evolutionary approach" challenges evolutionary psychology, which is based on the assumption that human psychology is largely shaped by innate, universal cognitive mechanisms that developed in ancestral environments. In contrast, the "cultural evolutionary theory" which is consistent with the available evidence, emphasizes that humans are cultural beings who learn from each other and adapt to their environment. This suggests that culture and cognition mutually evolve over time (Laland 2017; Boyd 2018), and this evolution leads to diverse and flexible psychological outcomes. Another important benefit of the cultural evolutionary perspective on beliefs is that it helps us understand how beliefs that harm individuals or groups are formed and spread in human societies. These harmful and destructive beliefs can affect people's health, well-being and cooperation. A scientific interpretation of beliefs can not only explain how beneficial or harmless beliefs are formed and persist, but also how harmful beliefs emerge and persist. At this point, we focus on explaining how collective beliefs form and spread, but evolutionary cultural psychology clearly predicts several different ways that harmful as well as helpful and harmless beliefs can spread. Despite the costs of adaptation, harmful beliefs can emerge and spread if their content is attractive; For example, some medical folk beliefs may be appealing to intuitive cognition, but at the same time harmful (Miton et al. 2015); Also, some extreme conspiracy beliefs may satisfy people's psychological needs, but in general, they are considered harmful (Douglas et al. 2019). Beliefs that are consistent with

social dynamics or with majority consensus (such as some beliefs that are related to social prestige) may not be of much benefit (Richerson and Boyd 2008); In addition, beliefs that are subject to an ecological spatio-temporal delay may be neutral or helpful in some contexts, but harmful in others. In standard evolutionary psychology, beliefs that are less than optimal are often explained by content attraction or a "mismatch" between contemporary and ancestral environments (Boyer and Petersen 2018; Bendixen 2019). These cases are roughly consistent with the content biases and ecological spatio-temporal delay in our cultural evolutionary framework; However, by ignoring individual circumstances and the dynamics of social learning, standard evolutionary psychology may lose important explanatory and predictive power in identifying harmful as well as beneficial and irrelevant beliefs. One of the clear examples of ecological spatio-temporal delay or mismatch between contemporary and ancestral environments is the consumption of processed foods. These foods have been denatured and altered by adding or removing ingredients such as sugar, salt, fat, preservatives, or artificial flavors. Processed foods are widely available and consumed in modern societies, but they differ greatly from the natural foods that humans evolved to eat in their ancestral environments. Some researchers believe that this mismatch between contemporary and ancestral diet can have negative consequences for human health such as obesity, diabetes, cardiovascular diseases and cancer (Fremier et al. 2013; Welsh et al. 2020); Because processed foods may stimulate or override physiological mechanisms regulating appetite, metabolism, and immune system function that have evolved to cope with scarce, varied, and nutrient-dense natural foods (Moarrab et al. 2021).

3.2) Cultural evolutionary forces:

"Cultural appeal", which is considered as a special feature like a belief system, is in many cases formed by its own content. This concept is known as "content bias" in the field of cultural evolution (Henrich and McElreath 2003; Richerson and Boyd 2008). "Content bias" refers to a psychological phenomenon in which humans naturally tend to believe beliefs that benefit them or are consistent with their cognitive mechanisms. This internal desire can be interpreted as a kind of "yield bias"; For example, people usually pay more attention to information that is socially relevant to them or leads to strong emotions or feelings. Fear and disgust are two negative emotions that can be rooted in cultural beliefs. Beliefs that include such elements are likely to be more attractive to people in society, and as a result, they are more likely to spread among people (Acerbi 2019).

However, the attractiveness of beliefs is different for different people. This difference depends on the psychological background of each person. Psychological background includes factors such as attitudes, values, worldviews, cognitive styles, needs and talents. These factors are sometimes known as "inductive biases" (Griffiths et al. 2008)and determine how to evaluate and accept new beliefs; In other words, some beliefs may be more compatible with some people (Henrich and McElreath 2003). The consequences of such variations for the cultural evolution of beliefs are not yet fully understood, but some recent studies have shown that they may have significant effects on the patterns and outcomes of cultural transmission (Rodriguez et al. 2016; Buskell et al. 2019; Yeh et al. 2019; Jansson et al. 2021).

One interesting example of inductive biases is the influence of political ideology on the acceptance of scientific evidence. Political ideology is a set of beliefs and values that shape a person's view of social and economic issues. This ideology affects people's view of scientific information, especially in cases where this information is related to their political preferences or moral beliefs; For example, people with conservative views may ignore or downplay scientific evidence about climate change or the effectiveness of vaccines. In contrast, people with more liberal views are likely to put a stamp of approval on such scientific evidence. This phenomenon is known as "guided reasoning" or "identity-preserving cognition" (Kahan et al. 2017; Kahan 2017; Wischnewski and Krämer 2021). One of the prominent attractions in the study of cultural evolution is how humans learn cultural characteristics such as beliefs, behaviors and norms and transfer them to the next generations. In this context, the concept that stands out is "transfer biases" or "social learning strategies" (Crema et al. 2024). These immediate access strategies, developed during evolution, help humans understand when, whom, and what to imitate from their social environment (Boyd and Richerson 1988).

Such evolved strategies that humans have acquired over time allow them to gather the information they

need from the social environment with high flexibility and efficiency. These strategies are actually rules and instructions that help us to act better and more efficiently; For example, one of these rules says that when someone is difficult or unreliable to learn, it is better to imitate others than to engage in learning ourselves. This enables us to quickly and easily get the required information. Another rule states that we can imitate the majority of successful, trusted people or people who are similar to us. This enables the snake to benefit from the experiences and knowledge of others and learn from them; Also, we can imitate content that is emotionally or cognitively appealing. For more information and a more comprehensive review of this issue, you can refer to (Kendal et al. 2018), which comprehensively and accurately reviews such strategies. These social learning strategies have also been observed in different animals and it is assumed that they affect humans both genetically and culturally (Mesoudi et al. 2016).

According to researchers, during their evolution, humans have created a unique type of "norm psychology". This concept can include multiple cognitive features; including norm perception, which allows us to recognize and interpret the norms of a situation; internalization of norms, where norms are accepted as our personal values and beliefs; Norm-following, which shows our tendency to conform to the norms of our group; and also, norm enforcement, in which we tend to reward or punish others for conforming to or violating norms. These cognitive characteristics of ours can lead to the creation of symbolic systems and complex social sanctions that are able to stabilize cultural characteristics. Such systems are able to stabilize cultural characteristics regardless of their content; For example, humans can use a wide range of verbal and non-verbal cues to indicate their conformity or deviation from norms. These signs may be from simple things like the clothes we wear to more complex things like our body language; In addition, humans can use rewards or punishments to reinforce or discourage others from conforming to norms. Finally, these systems are able to help stabilize cultural characteristics, although we do not pay attention to their content (Richerson and Boyd 2008; Chudek et al. 2013).

Environmental factors in which people live play an important role in determining the cultural attractiveness of some traits. These factors include environmental features, diverse and accessible resources, as well as unexpected shocks and events such as natural disasters, epidemics, social instability, and wars. These social and ecological factors can be influential in determining the type of cultural characteristics that are compatible or more useful for people in different domains (Odling-Smee and Laland 2011; Varnum and Grossmann 2017; Hill and Boyd 2021). In a study conducted by Kaplan and his colleagues (Kaplan et al. 2009), the evolution of human social organization and its adaptation to different ecological and economic conditions were investigated. They believe that hunter-gatherers have a unique social organization that consists of four main characteristics:

1) The three-generation system of providing resources in families: in this system, grandparents, parents and children provide food and share it among themselves with mutual cooperation. It is a multi-generational cooperation model that helps to provide family resources.
2) Long-term bond between a man and a woman: In this structure, spouses work together to raise their children. This long-term bond forms the foundation of the family.
3) High levels of cooperation between relatives and non-relatives: In this structure, people exchange goods and services with others in their social network by forming alliances. This level of cooperation allows the creation of extensive and complex social networks.
4) Relatively equal social relations: In this structure, people have similar access to resources and avoid dominance and hierarchy. This feature helps to strengthen the sense of justice and equality in the society.

It can be said that human characteristics result from a framework of learning and skills that are determined by four ecological and economic factors:

1) Skill and production of resources: people reach their highest level of need at a young age, depend on their parents for a long time, and accumulate a large amount of embodied capital.
2) The complementarity of male and female inputs in production: the survival of children depends on the participation of both parents; Therefore, mating is valuable and sexual conflict is low.
3) Economies of scale of cooperative production and competition: cooperation in food preparation and risk reduction is beneficial, social capital is valuable, and intergroup violence is not so much.
4) The economic defense of physical inputs in production: ownership of resources and territory is low,

mobility and flexibility are high, and inequality and classification are low.

They provide an explanatory framework for understanding variation in social organization in human societies. This framework is based on interactions between these four important variables, and is used to explain the diversity in social and political organization in different societies such as hunter-gatherer, horticultural, animal husbandry, and agriculture. They concluded that human social organization is formed based on both evolutionary history and ecological context. To understand the origin and social diversity of humans, we need an interdisciplinary approach that integrates biology, anthropology, economics, psychology, and history. This approach provides a comprehensive and complete perspective to understand human societies.

For example, in a study (Barsbai et al. 2021), it was shown that different animals, including humans, behave in similar ways when living in a certain environment. These researchers believe that behavior is a way for living organisms to adapt to local conditions. They state that there may be only a limited number of behaviors that work well in any given situation. This group of researchers collected extensive data that included data from 339 groups of hunter-gatherers and 5,869 different species of mammals and birds from around the world. By carefully examining these data, the researchers reached an interesting conclusion: groups of humans and animals that live in a certain place, despite evolutionary differences or different roles they play in the ecosystem, show very similar behaviors. This similarity is more visible in behavior, especially in behaviors that are more influenced by the environment, such as storing food or moving to other places. In contrast, behaviors that are more dependent on social factors, such as group size or mate selection patterns, are less similar. Researchers believe that these findings show the common effect of environmental conditions on the behavior of different types of animals.

Another example of socio-ecological factors is the effect of climate change on cultural beliefs and practices. Climate change is a global phenomenon that has different effects on each region. Some areas may face drought, floods, heat waves, storms or rising sea levels. These environmental changes can affect people's daily life, health, safety and well-being. Due to these changes, people may change their cultural beliefs and practices. Some may adopt new ways to better cope with the changing environment. These new ways may include using new technologies or adopting behaviors that reduce environmental impacts. Another group may reinforce their current beliefs or behaviors to gain more psychological comfort or social support. This could include strengthening religious faith or social connections; Also, some people may challenge their current beliefs or behaviors that have caused or exacerbated environmental problems. These examples show how climate change can affect the cultural evolution of beliefs and practices in different directions depending on environmental conditions (Adger et al. 2011).

Conclusions:

Taking a cultural evolutionary perspective on belief development shows that it has deep implications for many aspects of the world. The following highlights summarize how important understanding belief formation is for:

The belief-forming processes need to be recognized both at personal and social levels. It is perhaps this awareness that will help in better management of misconception and build critical thinking skills, especially in schools. The awareness from belief-construction processes can be utilized by educators in the promotion of investigation and reevaluation of beliefs in a student body.

Conflict Resolution: Understanding belief systems in this way is bound to help deeper in the mediation of conflicts, as most social conflicts result from misunderstanding based on belief systems. The treatment of such mechanisms opens up healthy dialogue and cooperation for better conflict resolution.

Cultural understanding: Beliefs form part of the important bases of cultural frameworks, guiding social conventions and values. Examining the processes that lead to beliefs can further our insight into cultural pluralism and how cultures develop. This understanding goes a long way in fostering diplomatic growth and improvement in international relations.

Behavioral Consequences: Generally speaking, beliefs ground human behavior on which decisions and actions are based. Understanding how beliefs occur opens up possibilities for the potential to predict and

influence behavioral outcomes, which is, of course, appealing in both psychology and behavioral economics. Interventions may be developed with the aim of either altering negative beliefs or encouraging positive behaviors.

Psychological Operations: The process of belief formation is really important in military and strategic contexts for PSYOPS, including any operation that involves effective communication and the dissemination of information with the purpose of influencing belief and behavior in the target population.

This study of the cultural evolution of beliefs has many applications, ranging from the very practical questions of education, reconciliation, cultural diplomacy, and strategic operations, well beyond individuals. It will put a growing number of insights at our fingertips, forming a common understanding of belief systems in an ever more connected world, with contributions coming from so many varied disciplines.

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