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Cultural Psychology: Beyond East and West

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Abstract

Research in cultural psychology over the last three decades has revealed the profound influence of culture on cognitive, emotional, and motivational processes, shaping individuals into active agents. While this work is based largely on comparisons between people of Western European and East Asian heritages, there is a growing interest in empirically examining other cultures to gain fresh insights into how culture shapes the mind. This article aims to show cultural psychology's promise in three key steps. First, we review four notable cultural dimensions believed to underlie cultural variations: independent versus interdependent self, individualism versus collectivism, tightness versus looseness of social norms, and relational mobility. Second, we examine how ecology and geography can shape human activities and give rise to organized systems of cultural practices and meanings, called ecocultural complexes. These complexes are believed to have evolved into various cultural zones that exist today. Outside of the Modern West, most of these cultural zones are based on a view of the self as interdependent with others. These cultural zones are highly variable, possess histories spanning several thousand years, and are likely reinforced by culturally selected genes. In turn, the ecocultural complex of each zone is instrumental in shaping a wide range of psychological processes, revealing a psychological diversity that extends beyond the scope of the current East-West literature. In the third and last step, we examine some of the non-Western cultural zones present today, including Arab, East Asian, Latin American, and South Asian zones, and discuss how these non-Western cultures may have played a significant role in shaping contemporary Western cultural zone, which endorses the view of the self as independent.

Cultural Psychology: Beyond East and West

The last few decades have seen substantial growth of the study of culture in psychology (Cohen & Kitayama, 2018; Gelfand et al., 2011; Hofstede, 1980; Markus & Kitayama, 1991; Nisbett et al., 2001; Schwartz, 2006; Triandis, 1995). The bulk of research conducted in this emerging field demonstrates various cultural differences in cognitive, emotional, and motivational processes, thereby calling for a thorough reconceptualization of human psychology as situated and realized through a complex of various cultural practices and meanings (Kitayama et al., 2022; Kitayama & Uskul, 2011; Markus & Kitayama, 2010; Muthukrishna et al., 2021, 2021). Each such complex is an adaptation to geographies and ecologies existing since the advent of human culture as we know it today for at least several thousand years. This new theoretical perspective has broadened the field's empirical scope. While traditionally focusing nearly exclusively on contrasting "East" and "West," the psychology of culture, now equipped with several theoretical components, is poised to explore various cultural zones in the remaining regions.

This exploration of the "Rest" is still in its early stages (Kitayama et al., 2022). However, it has already yielded data that challenge the two prototypes of interdependent, collectivistic East and independent, individualistic West. Most cultures outside of the East and West seem to fall in-between. The main objective of this article is to elucidate these findings, examine them in the context of prevailing cross-cultural dimensions and the evolution of cultures in the past 10,000 years, and provide a tentative integration that enhances the existing theoretical framework for understanding the human mind as an adaptation to diverse eco-cultural environments. This discussion will lead us to two primary conclusions.

First, it is evident that cultures exhibit systematic variations along the dimension of independent versus interdependent orientations (or equivalently, individualism versus collectivism). These cultural differences extend to how individuals perceive the self, construct social realities, and organize behaviors. Second, we depart from the existing literature by highlighting that there is no predefined set of universally applicable behavioral traits or tendencies that define these orientations. On the contrary, we draw upon the principle of human cognition known as the schematic principle, which suggests that the meaning of various parts depend on the larger context that encompasses them (Asch, 1946; Fiske & Taylor, 1991; Nisbett & Ross, 1980). Applying this principle to the current discussion, we propose that the overarching cultural orientations, such as independence and interdependence, act as interpretive frameworks (or a schemas) that define and clarify the meanings of different psychological and behavioral traits. Depending on the cultural and social context, these psychological tendencies can be indicative of either independence (or individualism) or interdependence (or collectivism). It is important to note that the formation of these behavioral meanings is a historical process (Bruner, 1990), unfolding over generations and influenced by geographic, ecological, economic, and other factors (Kitayama et al., 2022).

In this article, we will examine recent research that explores psychological tendencies related to analytic (versus holistic) cognition, emotional expression (versus moderation), and self-enhancement (versus effacement). A seemingly identical behavioral tendency, such as analytic cognition, emotional expression, or self-enhancement, can serve as a marker of independence when interpreted and defined within an independent cultural frame. However, within an interdependent cultural frame, the same tendency can easily be interpreted and defined as a marker of interdependence. As we delve into this research, we will observe that one emerging empirical focus within the field is to identify the psychological tendencies prevalent in specific cultures and ascertain whether these tendencies primarily serve the goals of independence or interdependence. This research agenda seeks to uncover the nuanced ways in which cultural contexts shape individuals' psychological tendencies and determine their broader functions.

We will proceed in three distinct steps to shed light on the promise of cultural psychology. First, we will examine the major theoretical perspectives that have shaped the field, including the independent versus interdependent self, individualism versus collectivism, tightness versus looseness, and relational mobility. Within these perspectives, we will highlight a few novel findings that have emerged, providing an updated overview of this vibrant area of research. Second, we will delve into the theoretical considerations regarding the emergence of various psychological characteristics over several thousand years of cultural evolution. By exploring the concept of cultural evolution, we aim to establish a framework for understanding how these characteristics have developed and transformed over time. This discussion on cultural evolution sets the stage for our third and final topic. We will focus on the 10,000-year period of cultural evolution, which plays a crucial role in understanding both similarities and differences across several non-Western cultural zones present today. We will observe that all non-Western zones, such as the East Asia, South Asia, the Arab world, and Latin America, have a foundation in the concept of the self as interdependent. However, it is important to recognize that interdependence takes on diverse forms within these cultural contexts. We propose that their distinct long-term ecological and geographic conditions influenced the development of cultural systems that foster specific psychological tendencies aligned with their respective forms of interdependence. Furthermore, we will explore how these non-Western cultural zones have likely contributed, to varying degrees, to the formation of the Modern Western independent cultural zone over the past several centuries. This analysis will provide insights into why some non-Western zones may superficially resemble the Western zone, while also highlighting the deeper differences that exist beneath the surface.

By traversing these three steps, we aim to enhance our understanding of cultural psychology, uncover the complexities of interdependence within different cultural contexts, and illuminate the intricate relationships between non-Western cultural zones and the Modern Western cultural zone.

1. Theoretical Perspectives

1-1. Independent versus Interdependent Self

One central concept that has emerged from the last three decades of research on culture in psychology is the recognition that the self, as an agent, can vary significantly across cultures. The distinction between independent and interdependent selves has provided a crucial theoretical framework for investigating cultural variations in psychological processes (Kitayama & Uskul, 2011; Markus & Kitayama, 1991, 2010). In Western societies, the prevailing perspective portrays the self or person as an independent entity composed of internal attributes such as personality traits, motives, goals, and attitudes. Individuals in these cultures draw on these internal attributes to guide their actions, exerting influence over others and events in their surroundings. While this view is pervasive and intuitive within Western cultures, it is not as widely prevalent in many other societies and cultures. As noted by Clifford Geertz (1975), “however incorrigible [this view] may seem to [those engaged in Western cultures, it] is a rather peculiar idea within the contexts of the world’s cultures” (page 45). This insight offers an explanation as to why individuals with Western traditions may be psychologically atypical and fall under the categorization of “WEIRD”¹ (Henrich et al., 2010).

In numerous non-Western societies, a distinct perspective on the self as interdependent with others in their ingroups is prevalent. The interdependent self is characterized centrally by relational attributes such as social roles and status, which defines one’s identity. In these cultures, each person’s internal attributes take a secondary role, particularly when they conflict with social expectations and norms. Rather than pursuing personal agendas and individual

¹ Henrich et al. (2010) used this acronym for “Western, Educated, Industrial, Rich, and Democratic,” and argued that societies characterized by these adjectives are outliers psychologically because of their emphasis on independence.

goals, individuals are motivated to adjust themselves to social expectations and norms. Over the last three decades, research on culture and the self has identified various psychological differences across cultures. While the existing literature has primarily focused on comparisons between East Asians and European Americans, it provides valuable insights into how culture can shape fundamental psychological processes such as cognition, emotion, and motivation.

Cognitive variation. Independent selves prioritize their personal goals, which encourage them to focus on goal-relevant objects while disregarding other contextual elements. In contrast, interdependent selves adopt a broader attentiveness to their surroundings. As a result, East Asians, compared to European Americans, exhibit a holistic cognitive style where their attention is more broadly distributed across the context, even when thinking about a specific object (Nisbett et al., 2001). For example, East Asians demonstrate heightened sensitivity to others' perspectives (Cohen & Gunz, 2002), allocate attention to a wider field or context when observing an object (Kitayama et al., 2003; Masuda et al., 2008), exhibit reduced spontaneous trait inferences (Na & Kitayama, 2011), and display a decreased dispositional bias in attribution (which refers to the tendency to explain another person's behavior based on their internal traits rather than situational factors—a tendency commonly observed in European Americans) (Choi et al., 1999; Kitayama et al., 2009; Masuda & Kitayama, 2004). Moreover, East Asians also demonstrate more intuitive or less categorical modes of inference (Ji et al., 2004). Scholars have proposed that the cognitive differences stem from social orientations of interdependence (versus independence), which is more prevalent and stronger in East Asia (Varnum et al., 2010). In support of this idea, scholars have also found that temporarily activating or “priming” interdependent self-construals can foster holistic cognitive (Oyserman & Lee, 2008; see also Grossmann & Jowhari, 2018).

More recent work has delved into the potential brain mechanisms underlying the observed cultural differences in cognitive style. One specific mechanism related to holistic attention involves the processing of visual scenes. Early in visual processing, the brain system differentiates the focal object from the surrounding scene (Epstein & Baker, 2019). Researchers have identified three distinct areas involved in scene processing: the hippocampal place area, the medial place area, and the occipital place area. Individuals from East Asian cultures, who tend to exhibit holistic cognitive styles, may rely more extensively on these scene-processing regions as they chronically engage in holistic processing. In contrast, European Americans, who tend to exhibit more analytic cognitive styles, allocate their neural resources primarily to object processing (Gutchess et al., 2006). Consistent with this notion, a study found that the grey matter volume of all three scene-processing regions was greater for East Asian college undergraduates than European American college undergraduates (Yu et al., 2021).

Emotional variation. Independent selves view their self-worth based on their internal attributes, including feelings, and often seek to maximize feeling positive. A study comparing American and Japanese participants provided an illustrative example of these cultural differences. Participants were asked to list features of happiness and the responses revealed contrasting patterns. American participants predominantly listed emotionally positive features, whereas Japanese participants generated responses that were more ambivalent (Uchida & Kitayama, 2009). Japanese participants included not only positive features, such as “having a good time with family members,” but also negative ones, such as “inviting envy of others” and “not lasting long.” Moreover, when asked to report the frequency of various emotions experienced, American participants reported a higher frequency of positive emotions compared to Japanese participants (Kitayama et al., 2000). Likewise, self-evaluations tend to be more positive among Americans than among East Asians (Heine et al., 1999). European Americans also place a greater value on high-arousal positive emotions compared to East Asians do (Tsai et al., 2006).

Building on these previous findings, Hsu and colleagues (Hsu et al., 2021) examined whether cultural differences in the valued emotions may explain the spread of fake news on

social media. Recent analysis suggests that social media platforms are predominantly characterized by positive affective content. As a result of this normative positivity, highly arousing negative tweets are relatively infrequent. Consequently, when such negative tweets are posted, they tend to attract more attention and have a higher likelihood of being retweeted (Crockett, 2017; Vosoughi et al., 2018). Since fake news often contain highly negative and arousing content, this mechanism could contribute to its spread. Hsu et al. (2021) conducted a comprehensive analysis of numerous tweets in both U.S. and Japan. Their findings revealed a substantial emotional climate difference between the two countries, with the American social media space being far more positive than the Japanese space. Moreover, in line with the divergent base rates of positivity in social media, Americans were influenced more by negative highly arousing posts by others, which aligns with the current theory of fake news spread on social media. Conversely, Japanese were more influenced by others' highly arousing positive posts. These findings from Hsu et al. (2021) suggest that the prevalence of fake news on social media may be less common in East Asia. Alternatively, the mechanisms underlying the spread of fake news, as postulated in the current literature, may not apply in the same way to East Asia.

The prevalence of the norm for positivity in the U.S. can have various consequences, including on health and wellbeing. Because of the cultural norms emphasizing positivity, negative emotions may be perceived as more threatening and have a greater deleterious impact on the health and wellbeing of European Americans. Supporting this notion, research has shown that European American adults in midlife who reported higher intensity of negative emotions “over the 60 days” demonstrated poorer biological health among European American adults. In contrast, a comparable sample of Japanese did not exhibit the showed effect (Miyamoto et al., 2013; Park et al., 2019).

Motivational variation. Independent selves are motivated to uphold and enhance positive aspects of themselves, whereas interdependent selves may not prioritize such self-enhancement. This reasoning is supported by research indicating that individuals in Western cultures often perceive themselves as better, smarter, and more important than others (Heine et al., 1999). Further, they exhibit various strategies to maintain their positive self-views, such as devaluing the significance of a test if they fail it. Self-enhancement tendencies are commonly observed in Western samples, while this evidence is less prevalent in East Asia.² A particularly striking cultural difference was revealed in a study by Kitayama et al. (1997). American and Japanese participants were asked to recall situations in which they experienced success or failure and then rate how strongly each event increased or decreased their self-esteem. The results demonstrated that Americans reported greater increases in self-esteem from successes compared to decreases from failure. This finding aligns with the notion of self-enhancement, as it suggests that Americans place more weight on positive outcomes. In contrast, Japanese reported that failures had a stronger negative impact on their self-esteem than successes had a positive impact. This effect reflects self-effacement or criticism tendencies, as it indicates that

² A lively debate unfolded between Heine and colleagues and a group of scholars led by Sedikides, who argued that self-enhancement is pancultural (Sedikides et al., 2003). The debate centered around a specific version of a paradigm designed to demonstrate so-called better-than-average effect. The version in question employed the term “average” and ask participants to judge whether they were better than “average others.” Under this condition, both Westerners and East Asians indicated that they were better than “average.” Sedikides and colleagues used this evidence to support their pancultural self-enhancement thesis (Sedikides et al., 2007). Heine and colleagues raises a valid point by highlighting that the term “average” carries negative in connotation, which could potentially obscure existing cultural difference (Heine et al., 2007). In other paradigms, East Asians have consistently shown less self-enhancement compared to Westerners.

Japanese individuals assign more significance to negative events.

Building on the Kitayama et al. (1997) evidence, Salvador and colleagues (2021) investigated whether Americans spontaneously link their own successes to self-knowledge and discount failures (Salvador et al., 2021). They drew on previous electroencephalogram (EEG) literature, which has shown that alpha-band power serves as a reliable marker of attention allocated to internal processes, including internal thoughts (Knyazev, 2013; Kraus et al., 2021). When individuals are prompted to think about the self, the relevant internal thoughts involves the processing of self-knowledge. Based on this premise, Salvador et al. (2021) hypothesized and found that among Americans, exposure to personal success events was associated with a particularly strong alpha band power, indicating increased attention allocated to internal thoughts, specifically self-knowledge processing. In contrast, this effect was missing among a group of East Asians from Taiwan. Furthermore, the cultural difference in the alpha band power explained why Americans, compared to Taiwanese, perceived successes would a greater impact on their self-esteem than failures.

1-2. Individualism versus Collectivism

The concepts of individualism and collectivism (I-C) are closely linked to the independent versus interdependent self. Individualism refers to a cultural orientation that prioritizes individual goals and desires over collective welfare, fostering the development of independent selves. On the other hands, collectivism represents a tendency to prioritize collective welfare over individual goals, thereby promoting the development of interdependent selves. These two cultural orientations are often conceptualized as opposite ends of a single continuum.

Three pillars. A pivotal moment of the individualism versus collectivism literature was the ground-breaking survey conducted among numerous IBM workers across international offices worldwide (Hofstede, 1980). In this survey, Hofstede utilized factor analysis to examine eight attitudinal items assessing workplace values and formed the basis of the I-C dimension. These items aimed to capture the perceived importance of various workplace attributes in an ideal job. Upon closer examination of the items used to assess the I-C dimension, one might observe certain instances where face-validity may appear lacking. For instance, one attribute defining the individualism end of the I-C dimension was “sufficient time for both self and family.” The rationale behind why devoting time to family is considered an indicator of individualism remains unclear. Similarly, the availability of "training opportunities for one's skills" was used to define the collectivist end of the dimension. The reason for associating personal skill development with collectivistic values is not immediately apparent.

Given these and other ambiguities, it may initially seem surprising that the I-C scale was able to successfully differentiate between Western and non-Western societies. However, it did reveal distinct cultural patterns. Western countries, including Western European countries and their extensions in North America (the U.S. and Canada) and various other continents, such as South Africa, Australia, and New Zealand, tend to score high on individualism (or low on collectivism). Conversely, countries in Africa and Latin America tend to score low on individualism (or high on collectivism). It is plausible, and in line with a broader thesis that the meaning of behaviors is contingent on the dominant cultural framework, that the items used by Hofstede carried specific meanings that justified the scale in the context of the U.S.-based international technology company from which the survey data was collected. However, the precise nature of these meanings remain uncertain.

Similarly successful in distinguishing cultural variations was the World Value Survey (WVS), designed by Inglehart, a political scientist with a focus on various attitudes and beliefs in policy-related domains. Through a factor analysis performed on a select set of items from the WVS, Inglehart and Baker (2000) identified two orthogonal dimensions. The first dimension encompassed a diverse range of traditional and conservative values, including stances on issues such as abortion, attitudes toward authority, national security, and religious beliefs. The second of the two dimensions pitted survival values against self-expression values. A higher

inclination toward survival values was characterized by a lower quality of life, reluctance to sign petitions, anti-homosexuality attitudes, and general mistrust of others. While these items may not overtly appear as direct measures of survival values or opposition to self-expression, they successfully differentiated various world regions. Western societies tend to score high on self-expression values, while many countries outside the West, including ex-communist countries, South Asia, and Sub-Saharan Africa, exhibit low self-expression values or a strong emphasis on survival values. Interestingly, the self-expression versus survival dimension shows a significant correlation with the I-C dimension identified by Hofstede.

Although the two surveys mentioned above have been highly successful, they also leave room for ambiguity regarding the meaning of the identified dimensions. Fortunately, cross-cultural psychologist Schwartz addressed this limitation through a different approach (Schwartz, 1992, 2006). Schwartz began by compiling a comprehensive set of 65 values that were identified across many cultures and societies. Grade-school teachers and college undergraduates from over 60 countries were then asked to indicate the importance of each value as a guiding principle in their lives. Using this data, cross-correlations among all the values were examined, indicating the psychological distance between them. Subsequently, the values were mapped onto a multidimensional space using a technique called multidimensional scaling. Through this analysis, Schwartz and his team identified several categories of values that were systematically organized in a circular fashion. Adjacent value categories were highly compatible, with values such as independence and freedom (self-direction values) being compatible with values like having a varied life and excitement (stimulation values). Compatibility decreased as the distance between value categories increased, and value categories placed on opposite ends of any given diagonal were considered incompatible. Within this map of values, Schwartz (1992, 2006) identified two overarching dimensions. One of these dimensions is the dimension of autonomy and embeddedness, which has shown a high correlation with Hofstede's I-C dimension and Inglehart's self-expression versus survival dimension.

The I-C dimension matters. The convergence of the three lines of work on values discussed above has provided a solid foundation for defining the I-C dimension. Where the Hofstede and Inglehart surveys left interpretive questions, the evidence from Schwartz's research has offered much-needed conceptual clarity and empirical rigor. In combination, these lines of inquiry have firmly established that societies and cultures exhibit variation along the I-C dimension, which is defined by the relative emphasis placed on individual autonomy versus collective welfare. In recent decades, there has been a noticeable shift toward individualistic values in many regions. However, it is important to note that the shift appears to be observed in most countries (Ogihara et al., 2015; Santos et al., 2017), and consequently, the relative cultural differences along this dimension remain unchanged.

Two recent extensions of this work have provided valuable insights. First, the prioritization of personal freedom over collective welfare in individualistic cultures may have implications for behaviors benefitting the collective at the expense of personal liberty. Lu and colleagues (2021) showed that individualism strongly predicts a lower likelihood to wear a face mask across 67 countries during the first year of the COVID-19 pandemic (Lu et al., 2021). This finding aligns with the idea that individualistic values may be associated with a decreased inclination to engage in collective behaviors that require personal sacrifices. Second, collectivism is associated with stronger norms for external behaviors, such as "not smiling in a funeral" and "staying quiet in a library" (Gelfand et al., 2011). Conversely, individualism may be linked to stronger norms for internal states, particularly in relation to emotional experiences. This point has been addressed for emotional states. Hochschild, a sociologist, has highlighted the prevalence of feeling rules in the U.S., which are cultural guidelines dictating which emotions are appropriate in different social settings (Hochschild, 1979). Building on this previous work, Vishkin and colleagues (2022) assessed the strength of emotion norms by examining the

concordance between each person's emotional experience and the national average of these experiences.³ Their findings indicate that individualism positively predicts the strength of emotion norms, suggesting that individualistic cultures may have more pronounced expectations regarding emotional states (Vishkin et al., 2022). These recent studies, among others, continue to support and reinforce the generative and explanatory power of the individualism-collectivism construct.

Self-construal and I-C. The two approaches reviewed above represent very different research traditions. The literature on culture and the self relies primarily on experimental methods, focusing on exploring cultural diversity in psychological processes. In contrast, the I-C research relies on survey methods to capture and summarize cultural values. Despite these methodological differences, the convergence of the two lines of work is encouraging. The constructs of independent versus interdependent selves are closely related to the I-C dimension. The independent culture of European Americans is more individualist, whereas the interdependent culture of East Asians is more collectivist. Thus, the two pairs of constructs could be used interchangeably. For instance, one could argue that mask wearing was more common in collectivistic (versus individualistic) cultures (Lu et al., 2021) due to the emphasis on interdependence of the self with others. Similarly, individuals with independent (versus interdependent) orientations are more concerned with the normative appropriateness of their internal attributes, including their feelings, leading to greater conformity to the typical emotional profile of their societies (Vishkin et al., 2022).

Notably, the two approaches are complementary. The I-C work, with large-scale surveys, provides broad coverage of countries but may not delve deeply into specific psychological mechanisms. Consequently, the exploration of the psychological processes that constitute individualism or collectivism has been relatively limited in the I-C research. On the other hand, the self-construal approach often utilizes elaborate experimental methods to investigate specific psychological mechanisms. However, due to the nature of such methods, it is challenging to simultaneously test multiple cultures. As a result, this line of work has predominantly focused on comparisons between "East and West." Hence, it is essential to integrate the two approaches to shed new light on cultural variations in mentality. In the third section of this paper, we will turn to this issue.

Apparent anomalies and theory refinement. As we move forward, it is crucial to acknowledge that certain phenomena may appear to challenge the theoretical framework. For example, it is well-established that Americans often exhibit high levels of prosocial behavior, actively seeking and providing social support to others (Rhoads et al., 2021). Furthermore, non-Western collectivist societies generally exhibit lower levels of general trust compared to Western individualist societies (Schulz et al., 2019; Yamagishi & Yamagishi, 1994). Additionally, the phenomenon of ingroup commitment or tribalism is commonplace in individualistic societies (Iyengar et al., 2019; Weidman et al., 2020). In some cases, this commitment can be highly passionate, leading to various intergroup behaviors, including instances of violence, as seen in

³ The notion of norms for emotions may initially seem paradoxical, as emotions are often perceived as genuine and authentic when they arise spontaneously and without external constraints. However, one hypothesis suggests that norms for emotions serve to regulate the responses of others to individuals displaying specific emotional expressions. In this view, when a person exhibits an emotion that aligns with the cultural norms for emotions, others are more likely to provide positive feedback, thus reinforcing the emotional response. Through repeated occurrences of this feedback, the mechanisms underlying the emotion display will become spontaneous and automatic, producing genuine and authentic emotional experiences that are congruous with the emotion norms. In the next section (about cultural evolution), we will argue that this reinforcement-based social process plays a central role in cultural acquisition (Kitayama & Salvador, 2017).

numerous riots observed in the Western world, including the storming of the U.S. Capitol on January 6, 2021.

At first glance, these phenomena would seem counter-intuitive and challenging to reconcile with the existing theoretical framework. However, they present an important opportunity for theory-refinement and deeper exploration. To illustrate this, consider theories of intergroup behavior. One prevailing theory explaining tribalism in the current literature is social identity theory, which suggests that individuals are motivated by social identity when it is linked to their personal identity (Tajfel & Turner, 2004). According to this theory, the primary motivational force for tribalism is personal in nature, stemming from the need for self-enhancement or high self-esteem. Recent instances of political polarization in the U.S. have been explained by using the social identity construct (Iyengar et al., 2019). However, it is important to acknowledge that the personal motive for self-enhancement or high self-esteem may be culturally dependent. Thus, as Brewer and Yuki (2007) argued, “processes consistent with [social identity theory may turn out] most applicable to intergroup situations involving people from Western cultures” (page 310) (Brewer & Yuki, 2007). More work is needed to clarify non-individualistic psychological mechanisms for tribalism, which may be expected more dominant in non-Western regions. Nevertheless, it is essential to recognize that the observation that ingroup favoritism or any other group-oriented behaviors does not necessarily indicate collectivism at the level of underlying motivations.

Likewise, it is important to recognize that people in collectivistic societies may exhibit behaviors that seem individualistic on the surface. For instance, a recent study shows East Asians are far more vigilant against sabotage by ingroup members compared to European Americans (Liu et al., 2019). A similar form of vigilance against others' sabotage and wrongdoings, known as enemyship, has been identified in West Africa, another collectivistic context (Adams, 2005). These analyses are also consistent with a recent observation that many collectivist cultures, particularly in Africa and Latin America, exhibit a strong inclination to protect self-interests (Vignoles et al., 2016). These phenomena observed outside of the Western context are not yet well understood. However, it would be premature to use these observations to challenge the hypothesis that non-Western cultures tend to be interdependent or collectivistic. Instead, more specific theories are needed to understand the underlying psychological concerns that motivate seemingly individualistic behaviors. Following this line of reasoning, Adams (2005) argued that interdependent social relations in West Africa foster enemyship. These relations can be highly binding, to the extent that the individuals feel unable to leave their group even when exploited. This social reality may sensitize them to the importance of protecting their self-interests. Just as individual motives can drive collective behaviors (as explained by social identity theory in intergroup contexts), individualistic behaviors can also emerge from collectivistic social relations and the sense of the self as interdependent.

Norm Tightness versus Looseness

One construct that is related, but distinct from I-C dimension is the concept of tightness versus looseness of social norms. Proposed by Gelfand and colleagues (2006), this framework suggests that cultures vary in the overall strength of their norms and the extent of punishment for deviant behavior. Tightness refers to cultures with strict social norms and high levels of punishment for nonconformity, while looseness refers to cultures with more relaxed norms and lower levels of punishment (Gelfand et al., 2006). The idea behind tightness versus looseness is that historical threats, such as pathogens and wars, have led to a need for social coordination and the development of strict social norms in some societies. Gelfand and colleagues (2011) used self-report measures of tightness versus looseness and show a systematic variation across 33 nations. Importantly, while tightness is related to collectivism, they are distinct constructs, as evidenced by the finding that certain Latin American societies are high in collectivism but low in tightness.

The construct of tightness versus looseness has been validated through various

measures (see Gelfand et al., 2017, for a recent review). For example, Jackson and colleagues (2021) showed that high ecological threat and greater cultural tightness predict a higher prevalence of punitive god beliefs, using both historical data and experiments, which are supplemented by agent-based modeling (Jackson et al., 2021). In another notable study, Jackson et al. (2019) investigated the longitudinal change of tightness and its consequences. Through text analysis of historical documents, they assessed the longitudinal change of tightness of social norms in American society over the past 20 years and found evidence of a gradual loosening of social norms. This loosening was associated with various societal indicators, including increased creativity as measured by registered patents and unique baby names (Jackson et al., 2019).

1-3. Relational Mobility

Another construct that is related, but distinct from the I-C dimension is relational mobility, which refers to the level of openness in a community to form new relationships and freely choose friends (Yuki & Schug, 2020). A large-scale online survey study conducted by Thomson et al. (2018) identified variation in relational mobility across 39 countries, with lower relational mobility observed in many collectivist cultures, including East and Southeast Asia, and the Middle East. This pattern is consistent with the notion that collectivistic cultures prioritize stable, closely knit communities where social relations are often ascribed rather than chosen (Schug et al., 2010). However, it is worth noting that Latin American societies disrupt this association, as they tend to exhibit high relational mobility despite their collectivistic tendencies. We will return to this puzzle in the third section of this paper.

Recent work shows that relational mobility predicts various outcomes across cultures. For example, a study by Awad et al. (2020) tested moral decision making using different versions of the trolley problem, a scenario involving sacrificing one person to save several others. The study found that individuals in relationally stable societies were less likely to endorse sacrificing one person, regardless of the version of the problem, compared to individuals in relationally mobile societies. This association remained significant even after controlling for the I-C dimension. The authors suggest that, especially in relational stable societies, people may be more reluctant to commit the arguably unpopular act of killing someone, even though this act would save several lives and thus “make sense” on a utilitarian basis alone. Conversely, people in relationally mobile societies may be more “rational” or utilitarian and be willing to balance costs and benefits from a detached third-person perspective.

Relational mobility is also relevant to the spread of infectious diseases that transmit through human contact, as observed during the COVID-19 pandemic. Salvador et al. (2020) examined the growth curves of confirmed COVID-19 cases and deaths in the first 30 days of the outbreaks in 39 countries for which relational mobility scores were available. The study found that countries with high relational mobility, such as Mexico and the United States, experienced a faster spread of the virus compared to societies with low relational mobility, such as Japan and Hungary. Importantly, these effects persisted even after controlling for the I-C dimension and norm tightness.

1-4. Interim Summary

Evidence indicates that dimensions differentiating various world cultures include independent versus interdependent self, individualism versus collectivism, tightness versus looseness of social norms, and relational mobility. They are related and yet distinct and, taken together, have revealed psychological diversity across the globe today.

2. Cultural Evolution

Understanding the cultural variations in mentality requires a better understanding of how different cultural zones have been formed, while the East and West are commonly discussed, there are numerous other cultural zones that contribute to global diversity. The origins of these cultural zones can be traced to ancient times, even though it is relatively recent in terms of human evolutionary history. Homo sapiens evolved in Africa more than 200,000 years ago

(Cann et al., 1987) and subsequently migrated “out of Africa” around 50,000 to 70,000 years ago. During this period, their subsistence primarily relied on hunting and gathering. Approximately 12,000 years ago, the advent of agriculture and animal husbandry occurred in the fertile crescent regions, encompassing modern-day Syria and adjacent areas. This transformative development rapidly spread across the Eurasian continent and eventually beyond. To understand the differentiation between the East and West, it is crucial to examine the time span of at least 10,000 years. Psychological research informed by an analysis of this historical period has begun to emerge (Kitayama et al., 2022; Muthukrishna et al., 2021). To make further progress, it is important to consider how contemporary cultures may be both constrained and enabled by ecology and geography on the one hand and genetics in the other hand.

2-1. Eco-Cultural Complex for Adaptation

Ecology and geography. When examining cultural and societal development from a macroscopic perspective, there is no question that geography and the associated ecology play decisive roles in determining the emergence, flourishing, and characteristics of different cultures and societies (I. Morris, 2010). As Jared Diamond outlined in his book “*Guns, Germs, and Steel*,” ecological conditions tend to be more similar across the horizontal axis of the Earth rather than the vertical axis (Diamond, 1999). This geographic reality had significant implications for the spread of technical innovations and cultural inventions prior to the advent of modern transportation systems. Hence, before trains or trucks, let alone large container ships or cargo jets, various technological innovations and cultural inventions traveled primarily on the horizontal axis. This consideration may explain the rapid spread of agriculture, which originated in the Fertile Crescent, to the Mediterranean region.

A closer examination of specific cases reveals that the effects of geography are intertwined with socio-historical contexts. For example, the British Isles historically were considered on the periphery of civilization. However, their access to the ocean provided a significant advantage during the 16th and 17th centuries, when European powers were competing to expand their colonies using naval power (I. Morris, 2022). In this historical context, geography played a crucial role in shaping Britain’s maritime strength and its colonial pursuit.

Expanding on these insights, we may propose that understanding the differentiation between East and West on the Eurasian continent over the last 10,000 years requires considering the interplay of geography, ecology, socio-historical factors, and cultural developments (Kitayama et al., 2022; I. Morris, 2010). In particular, one key factor contributing to the East-West differentiation lies in the availability of crops suitable for domestication, influenced by geography, climate, and various ecological conditions. Wheat, a major crop that thrived in the Western half of Eurasia, was domesticated in the Fertile Crescent approximately 8,000 years ago and quickly spread to the Western regions of the continent. However, this spread was hindered in East Asia due to geographic and climatic conditions. The highly humid and warm climate in East Asia made wheat cultivation challenging. Instead, rice emerged as a staple crop in central China, where it was suitable for the local geography and climate. Compared to wheat, rice cultivation requires higher degrees of social coordination and cooperation due to the regulated use of water and the need for irrigation technologies. Successful rice farming necessitates active cooperation among members of the farming community to ensure equitable access to water for individual rice paddies (Uchida et al., 2019). This cooperative nature of rice farming creates strong pressures to conform to community rules and norms, fostering interdependence and collectivist tendencies.

Talhelm and colleagues (2014) proposed that rice, rather than wheat, serves as a distal factor that fosters highly collectivistic social values and institutions. In support of this proposal, Talhelm and colleagues have shown systematic regional variations within China. Specifically, people from traditionally rice-growing regions exhibit a more holistic cognitive style, a more interdependent sense of the self, stricter social norms, and a higher propensity toward self-

effacement (Talhelm et al., 2014, 2022; Talhelm & English, 2020). This evidence suggests a broader hypothesis that cultural zones encompass a combination of beliefs and practices shaped by the unique geographies and ecologies over thousands of years. In other words, each zone represents a complex interplay of these interconnected constituents, forming an ecocultural system.

Eco-cultural complex. At first glance, our emphasis on ecology and geography may seem reminiscent of the notion of “evoked culture” commonly discussed in evolutionary psychology (Tooby & Cosmides, 1992). This idea suggests that objective ecological conditions existing in contemporary cultural environments (e.g., sex ratio) are sufficient to foster (and thus “evoke”) specific psychological tendencies (e.g., varying levels of aggression in society) (Sng et al., 2018). A preferred heuristic in this body of work is to observe non-human animal behaviors as a function of objective environmental conditions and develop analogs in human behaviors. For example, researchers might first establish an association between sex ratio and aggression in nonhuman animals (e.g., fruit flies, Bath et al., 2021), develop a hypothesis proposing a similar association between sex ratio and the prevalence of various violent crimes, such as rape, across societies, and subsequently test it (e.g., Diamond-Smith & Rudolph, 2018). While this approach is potentially valuable, it is merely one heuristic and has its limitations.⁴

The central aim of the evolutionary approach is to establish connections between human behavior and the natural world. This disciplinary orientation might help explain why some proponents of the evoked culture perspective downplay the significance of cultural and social institutions, which often play a mediating, amplifying, and nullifying role in the evocative effects of ecology. However, the apparent reluctance to examine the role of cultural and social institution can be problematic. For example, consider the case of rice. Ecological conditions conducive to rice farming give rise to farming villages equipped with irrigation systems. These transformed ecological conditions are no longer purely “natural” or strictly “objective.” Thus, a complex interplay of eco-cultural conditions emerges, forming a “behavioral environment” (Hallowell, 1955). Human activities have already altered this complex by turning rice into a food source. Consequently, this eco-cultural complex encompasses various practices (e.g., water management conventions for rice cultivation) and carries diverse meanings (e.g., ideologies and religious beliefs). In turn, this complex of “rice-farming villages” shapes contemporary mentality (Talhelm et al., 2014; Uchida et al., 2019).⁵

With the exception of natural forces such as earthquakes, nearly all ecologies have been profoundly influenced by human activities in the previous generations. In a classic monograph published in 1935 (whose English translation published in Watsuji, 1988), Tetsuro Watsuji, a professor at Kyoto University, made an important observation that predates modern research on ecology and mentality. He observed, “Rather than merely being natural, ecology is no less than

⁴ To illustrate such limitations, consider a learning experiment involving a mouse that presses a bar to receive food pellets and consume them within a Skinner box. A researcher might develop an analogy from this observation to human eating behavior, suggesting that humans would order and consume a 5-course meal when placed in a Michelin 3-star French restaurant. However, such an analogy overlooks the cultural and social institutions that have historically shaped diverse culinary traditions, including those found in France. These cultural factors may in turn contribute to the shaping of different psychological orientations (Rozin et al., 1997, 2003).

⁵ Non-human animals also engage in niche construction (Odling-Smee et al., 2000), actively modifying the natural environment. Further, their behavioral characteristics, including morphologies, can adapt to the environment they create. This process is analogous to human culture. As in all analogies, including the one in the evoked culture construct under discussion, this analogy is useful, and sometimes illuminating, to a certain extent. However, it may also obscure the socio-cultural processes involved in the historical transformations that have given rise to the diverse cultural variations we observe today.

the mode of self-apprehension that is incorporated into [the residents'] mental structure." This implies that any psychological effects evoked and fostered by contemporary ecologies are inseparably intertwined with the cultural practices and meanings that have historically shaped these ecologies. In other words, as one interpreter of Watsuji noted, "space as a container, or environment considered as something without human subjects in it, is merely an abstraction (McCarthy, 2019, page 508)." The extensive shaping and radical transformation of behavioral environments through human activity have likely been ongoing since the emergence of the homo lineage, if not earlier (Tomasello, 2019). Notably, this process is assumed to have been particularly intensive over the past several thousand years as humans formed increasingly larger social units and institutions to adapt to their surroundings. This observation is consistent with numerous instances of diverse cultures emerging in a single region, despite sharing ostensibly identical "natural" ecologies (Graeber & Wengrow, 2021). It is hardly possible to overemphasize the significant role of historical transformations in understanding contemporary cultural variations in mentality (Kitayama et al., 2022; I. Morris, 2010; Muthukrishna et al., 2021).

2-2. Coevolution of culture and genes

Genetic determinism. The question of how genes might influence this process has been an important yet often contentious topic. Racist theories of culture have frequently relies on genetic differences to try to account for variations in contemporary economic or intellectual achievements (Gould, 1981). These theories assert that culture is primarily driven and shaped by genetic predispositions, with genes seen as the sole determinants of cultural characteristics.

Genetic determinism, when applied to culture, poses problems not only politically and culturally but also theoretically and empirically. Extensive evidence demonstrates that learning plays a crucial role in the acquisition and transmission of culture (Greenfield et al., 2003). This evidence strongly suggests that characteristics such as individualism and collectivism are highly unlikely to be genetically determined. Multiple cultural forms can emerge from the same set of genes, indicating that culture is not solely dictated by genetic factors. Therefore, it is essential to temper genetic determinism, acknowledging its limitations and introducing nuanced perspectives that modify it substantially. However, it would be overly simplistic to completely dismiss the influence of genes. There is an urgent need to develop theories that explore how genes contribute to, support, and facilitate various aspects of culture, even if they do not determine them outright. Recent research has proposed two viable possibilities in this regard.

Genetic mediation: Culture as a selection context. First, it is important to consider that the causal direction between culture and genetics may operate in reverse as well: culture can influence genetic selection. Across generations, ecological environments shaped by culture can serve as powerful contexts for genetic selection (Henrich, 2015; Laland et al., 2010; Richerson & Boyd, 2005). The specific genetic elements favored by culture may function to support and reinforce the very culture from which they have emerged. From this perspective, genes play a *mediating* role in the intergenerational transmission of culture.

Supporting this notion, evidence suggests that the rate of selection has accelerated in humans in the relatively recent evolutionary past, particularly over the last several thousand years. Numerous genes (somewhere between several hundred and 2000) display signs of this accelerated selection (Hawks et al., 2007). These genes may have co-evolved with culture, whereby culture acts as a context for genetic selection. Moreover, in certain cases, the selected genes can reinforce the eco-cultural complexes for which they have been selected, thus perpetuating them (Henrich, 2015; Laland et al., 2010). One most notable example involves genetic mutations that enable lactose digestion, which would be advantageous in regions where consumption of animal milk is crucial for survival (Richerson & Boyd, 2005). There is a tight relationship between the historical prevalence of milk production and the occurrence of such mutations across the globe. Once selected for milk consumption, these genes would contribute to the continuity of pastoral traditions in future generations.

Research on the alcohol dehydrogenase gene, specifically *ADH1B*, is relevant in

understanding East Asian collectivism. In the process of fermenting rice, which transforms it into rice wine, alcohol is produced. When alcohol is metabolized, it generates a byproduct called acetaldehyde. Higher concentrations of acetaldehyde in the body can lead to facial flushing, increased susceptibility to intoxication, and heightened hangover effects. A specific mutation of the *ADH1B* gene reduced the efficiency of acetaldehyde breakdown, causing a rapid buildup of acetaldehyde in the bloodstream upon alcohol consumption. This mutation is associated with decreased alcohol tolerance, commonly observed among East Asians, and is often referred to as “Asian flush.” Interestingly, this *ADH1B* mutation emerged approximately 8000 years ago in the southeast region of present-day China, predominantly in rice farming areas. Evidence indicates that the mutation was positively selected in these regions, with a higher prevalence of carriers closer to the epicenter of rice cultivation in ancient China (Peng et al., 2010). We may speculate that rice wine held significant value, and excessive consumption could impair one's ability to work effectively. Consequently, farmers who consumed excessive amounts of alcohol may have had reduced opportunities to find partners within tightly knit rice farming communities. In this scenario, the *ADH1B* mutation is precipitated by the cultural ethos of collectivism which prioritizes hard work dedicated to rice production. Further, the *ADH1B* mutation may have facilitated the industriousness required for rice farming within the collectivistic cultural context, thereby contributing to the stability of the eco-cultural complex across generations.

Genetic moderation: Genes for cultural learning. Second, specific genes may support increased efficiency of cultural learning and acquisition processes (Kitayama & Yu, 2020). This view implies that people with genotypes that support cultural learning will exhibit more pronounced adherence to cultural norms and patterns of behavior. In this view, genes *moderate* the impact of culture on mentality.

This view is based on the understanding that learning plays a decisive role in the acquisition of cultural practices and meanings. To this understanding, it introduces the insight that the mechanisms involved in learning are genetically regulated, suggesting a potential genetic influence on cultural acquisition. One gene that appears to be involved in this process is the dopamine D4 receptor gene (*DRD4*). The 7- or 2- repeat allele of *DRD4*, often referred to as the 7/2-R allele, is known as a plasticity allele since carriers of this allele are strongly influenced by parental quality (Belsky & Pluess, 2009). Recent research indicates that carriers of this allele exhibit heightened sensitivity to both rewards and their contingencies (Glazer et al., 2020). Hence, those carrying the 7/2-R allele of *DRD4* may display culturally typical mental and neural phenotypes, especially when raised in environments organized by cultural practices and meanings.

Yu et al. (2018) found that the volume of the prefrontal cortex, including the orbitofrontal cortex (OFC) and medial prefrontal cortex (mPFC), tends to be larger for European American college students compared to East Asian college students. This finding is consistent with existing evidence that mental functions associated with OFC (e.g., preference-based decision making) and mPFC (e.g., development of abstract self-representations) are more closely related to independence rather than interdependence. If this brain volume difference is a result of cultural learning, it might be more pronounced among carriers of the *DRD4* 7/2-R than noncarriers. Supporting this reasoning, Yu et al. (2018) tested Asian and European Americans college undergraduates in a U.S. university and found that the cultural difference in the prefrontal volume is statistically significant only among the carriers, but not among the noncarriers. Similar evidence has been found for another brain region, the temporoparietal junction (TPJ), which is involved in perspective taking and mind reading—mental functions likely associated with interdependence rather than independence. The TPJ brain volume was significantly greater for East Asians compared to European Americans, and again, this cultural difference was significant among the carriers, but not noncarriers (Kitayama et al., 2020; see Kitayama & Yu, 2020, for a review).

The current working hypothesis is that the 7/2-R allele of *DRD4* emerged over the last 50,000 years (Wang et al., 2004), and “turbo-charged” the acquisition of culturally sanctioned behaviors suitable for survival (e.g., interdependence in East Asian regions suitable for rice-farming) (Kitayama et al., 2016; Kitayama & Yu, 2020). It is important to note, however, that this “turbo-charging” could backfire since culture sometimes does require changes and innovations. Also, the 7/2-R allele of *DRD4* can entail adverse effects when its carriers are placed in “disorganized” and “chaotic” environments entailing random or near-random reward contingencies, accompanied by strong immediate rewards, such as drugs and sex (Sagvolden et al., 2005). For these reasons, this 7/2-R allele might be present only for 30-40% of both European Americans and East Asians.

A comment is warranted on the polygenic nature of numerous phenotypes, including those in social and cultural domains. The consensus in genetics research is that a multitude of genes influence nearly all phenotypes. For example, a large number of genes contribute to human height variation (Visscher, 2008). Based on this consensus, many behavioral scholars testing genetic effects have concluded that the influence of any single gene phenotypes is highly unlikely, resulting in a widespread rejection of single-candidate-gene approaches (Duncan & Keller, 2011). Indeed, as a general statement, there is no denying that single genes are unlikely to exert strong influences on phenotypes. However, exceptions to this rule do exist, and when they occur, they can provide valuable insights.

We may hypothesize that genetic selection by culture operates on pre-existing genetic networks and alters the parameters of their functioning. Hence, in the context of cultural adaptation, monogenic modulation may prove rather common, even though the phenotype at issue is fully polygenic. We have already discussed two such cases. Both lactose tolerance and alcohol intolerance are likely influenced by multiple genes (polygenic), but they are regulated by a single gene (monogenic). Despite being monogenic, these effects are sizable and consequential. It is evident that culture capitalizes on specific genetic variations that significantly influence the functioning of polygenic networks, resulting in phenotypes that enhance adaptation (i.e., survival and reproduction). In other words, through trial and error, culture identifies single genes that have a profound impact on the functioning of polygenic systems of digesting milk products, alcohol, and perhaps many more. The case of *DRD4* is analogous, although it does not directly impact behavioral outcomes. The *DRD4* mutation under discussion (the 7/2-R variant emerging in the last 50,000 years) upregulates the functioning of the pre-existing gene network of reward processing. Consequently, this monogenic upregulation of the polygenic reward processing system facilitates the acquisition of culture-typical phenotypes (thus, called genetic moderation). Under these conditions, single genetic mutations may be sufficient to produce significant effects on phenotypes.

2-3. Interim Summary

Over the last 50,000 years, particularly within the last 10,000 years of cultural evolution, humans gradually formed increasingly large and more elaborate eco-cultural complexes for adaptation and survival. These eco-cultural complexes represent organized systems of cultural meanings and practices that are influenced by ecology and geography. Moreover, specific genetic mutations may have played a role in fortifying and sustaining these complexes. Some of these mutations may have supported various cultural activities (e.g., herding). Further, the evidence indicates that certain genetic changes, including *DRD4* gene, during this period facilitated the acquisition of increasingly elaborate eco-cultural complexes through learning processes.

3. Beyond East and West

Up to this point, we have reviewed the available evidence demonstrating the variations among cultures along the dimension of independence versus interdependence or individualism versus collectivism. We also discussed the significance of other dimensions, including tightness versus looseness and relational mobility. We then presented evidence indicating that each

Table 1. Cultural variations in cognition, emotion, and motivation: Patterns of the empirical evidence available so far from five cultural zones.

	Westerners (e.g., North America and Western Europe)	East Asians (e.g., China, Korea, Japan, and Taiwan)	Arabs (e.g., Lebanon, Morocco, and Saudi Arabia)	Latin Americans (e.g., Chile, Colombia, and Mexico)	South Asians (e.g., India and Pakistan)
Cognition (reasoning style and focused vs. holistic attention)	<i>analytic</i>	<i>holistic</i>	<i>holistic</i>	<i>holistic</i>	<i>analytic in reasoning (although holistic in attention)</i>
Emotion (expression vs. moderation)	<i>expressive (of independence emotions)</i>	<i>less expressive (especially positive emotions)</i>	??	<i>expressive (of interdependence emotions)</i>	??
Motivation (self-enhancement/assertion)	<i>self-enhancing</i>	<i>non-enhancing</i>	<i>self-assertive (=enhancing)</i>	<i>less-enhancing</i>	<i>non-enhancing and sometimes effacing or critical</i>

cultural zone may have evolved over the last 10,000 years by developing its distinctive eco-cultural complex. In this section, we will integrate these two sets of evidence to illustrate how several cultural zones that exist today on the globe may have diverged and differentiated over this period.

3-1. Cultural History Over the Last 10,000 Years

We already noted that anatomically modern humans evolved in the African continent more than 200,000 years ago (Cann et al., 1987; Reich, 2018). Subsequently, a small group of human ventured out of Africa around 50,000-70,000 years ago, embarking on a migration that likely took generations to complete. In the context of evolutionary timescales, this migration was rapid and unprecedented. The descendants of these individuals went on to populate the Eurasian continent, eventually reaching North and South America as well as Oceania. During this period, humans primarily relied on hunting and gathering as their way of life. Around 10,000-12,000 years ago, a significant transition occurred, with the emergence of farming and herding in the Fertile Crescent and neighboring regions. This transformative shift, often referred to as the “agricultural revolution,” had a profound impact on human societies. It led to a shift from nomadic lifestyle to settled communities centered around domesticated crops and livestock, enabling the development of sedentary and more complex social structures.

There is a widespread consensus that group affiliation is crucial for survival. Over the next several thousand years, early kinship-based bonds evolved into quasi-kin units like tribes and clans, which served as the foundation for larger feudal social institutions, including empires and kingdoms. The survival of individuals became intertwined with the survival of their respective social units (Wilson & Dugatkin, 1997). Consequently, the emerging values of these societies placed a greater emphasis on security, welfare, and cohesion within the ingroup, often at the expense of individual autonomy and freedom. This prioritization of collectivism over individualism prevailed for the majority of human history. It is only within the past 1,000 years that individualism began to take root as a defining principle of life in the Western regions of the Eurasian continent, giving rise to what is now known as the Modern West (B. Morris, 1991; Taylor, 1992). This development aligns with the evidence reviewed in the first section of this paper. However, preceding the emergence of the Modern West, various non-Western groups across the globe developed diverse eco-cultural complexes for adaptation depending on geography and ecology of different regions. Hence, the forms of collectivism or interdependence

in each region should vary from one another.

A significant portion of the evidence on cultural variations in psychological processes, as reviewed in the second section, has focused on comparisons between Western cultures (referred to as the West) and East Asian cultures (referred to as the East). However, in recent years, there has been a concerted effort to expand this research beyond the West and East, with a particular emphasis on exploring Arab, Latin American, and South Asian cultural zones. Although this work is currently ongoing, a pattern has begun to emerge and is summarized in Table 1 (Kitayama et al., 2022). As discussed in the first section of this article, Western Europeans and East Asians show markedly different psychological tendencies in cognition, emotion, and motivation. However, when the same tendencies are tested in other non-Western regions, the pattern seems to fall somewhere in between, as certain cultural zones display similarities to Western cultures in specific aspects. In the table, these tendencies are represented by a darker shade of blue than that used for the West, indicating the possibility that seemingly identical tendencies could still differ in significant ways. Conversely, certain aspects align more closely with the effects found in East Asia. Again, the apparent similarities between East Asia and some non-Western regions may also involve notable differences, denoted by a darker shade of red. This section will review the evidence supporting these observations and examine the cultural evolutionary processes that might account for this pattern.

At first glance, this review might appear to challenge the current “East-West” paradigm, and there may be a temptation to replace it with a new framework. However, upon closer examination, it becomes evident that these apparent anomalies actually serve to significantly broaden and enrich the existing paradigm rather than refute its fundamental premises.

3-2. Honor in Arab Regions and their Vicinities (Including the Mediterranean)

The Arab world today encompasses a diverse geographic region spanning from Western Asia to West Africa. Although marked by heterogeneity, these countries share Islam as a primary religion and Arabic as a common language. Additionally, there are some cultural similarities with adjacent countries in the Mediterranean (e.g., Spain and Turkey) and South/West Asia (e.g., Iran). The central construct traditionally used to characterize this broad region, potentially extending to the Mediterranean, is the notion of honor (Gilmore, 1987). Honor is a form of esteem conferred on individuals by others within the community. It can be asserted and validated through public demonstrations of skill, competence, and prestige. The honor code dictates a duty to respond aggressively to insults, even resorting to violence in some cases (Nisbett & Cohen, 1996) and exhibiting anti-social behaviors (Herrmann et al., 2008). Furthermore, honor encompasses adherence to sexual norms, particularly for women. Failure to attain and maintain honor can result in shame, which carries various social consequences, including public shaming, social exclusion, and, in extreme cases, suicide or homicide (as shown in “honor killing,” which involves killing a woman who has tarnishing the family honor by violating sexual taboos) (AlQahtani et al., 2022).

Uskul and colleagues (2023) conducted an extensive empirical investigation of two Arab countries, Lebanon and Egypt and five adjacent countries in the Mediterranean (Spain, Italy, Greece, Turkey, and Cyprus), testing the hypothesis that all these countries prioritize honor (Uskul et al., 2023). The researchers compared these countries with East Asian (Korea and Japan) and Western countries (the U.S. and U.K.), assessing college students from each country using various indicators of independence and interdependence based on prior work (Kitayama et al., 2009; Vignoles et al., 2016). While the pattern that emerged was complex, it is notable that the Arab/Mediterranean groups exhibited more similarities to Westerners rather than East Asians. For example, the reported intensity of experiencing socially disengaging emotions (e.g., pride, self-esteem, anger, and frustration) relative to socially engaging emotions (e.g., close feelings, feelings of connection, guilt, and shame) was high for Mediterranean groups, similar to Westerners.

Prior work has suggested that socially disengaging emotions are associated with the promotion of the self's independence from others, whereas socially engaging emotions foster interdependence with others (Kitayama et al., 2000, 2006; Uchida & Kitayama, 2009). This work suggests that disengaging emotions are independence-inducing. Hence, one could argue that Mediterranean groups are as independent as Westerners and more so than East Asians. However, it is important to note that the evidence linking disengaging (rather than engaging) emotions to independence (rather than interdependence) is based on comparisons between Westerners and East Asians (and, more recently, Latin Americans, as will be discussed shortly). In these cultures, disengaging emotions are a clear indicator of the self's independence. However, the association between disengagement and independence may not be universally applicable or extend beyond the East and West. In honor cultures, such as many of the Mediterranean and Arab cultures, the perception of disengaging emotions, such as pride and anger, may differ. In these cultures, expressing such emotions can be viewed as a display of one's honor, enabling individuals to gain public esteem and become integrated into the community. This dynamic may be relatively rare in East Asia. This may be the first instance of cases where the meaning of specific behaviors depends on an overarching cultural frame. Within the honor cultural regions in the Arabic and adjacent areas, disengaging emotions could be a signature of interdependence rather than independence.

Initial evidence supporting this possibility was found in the study by San Martin et al. (2018). In this work, the researchers employed a conventional priming method available in the literature to induce either independence or interdependence. Participants were asked to think about how they differ from other family members (designed to prime independence) or how they are similar to them (designed to prime interdependence). One of the studies tested Moroccan undergraduates in Morocco and showed that the intensity of experiencing disengaging emotions was greater in the interdependence priming condition than in the independence priming condition. This finding suggests that disengaging emotions can signal the self's resourcefulness, stature, and honor vis-a-vis relevant groups. Further, in the study by Uskul and colleagues (2023) discussed above, the intensity of experiencing disengaging emotions (a putative indicator of interdependence in the Arabic and adjacent regions) predicted social wellbeing, as assessed by satisfaction in one's relations and communities, for people in the Mediterranean and Arab regions, but not in either East Asian or Western countries.

The assumption that disengaging emotions form a signal of interdependence in Arabic and adjacent regions has been reinforced by another recent study (Atari et al., 2020). This study sought to validate the moral foundation theory (MFT, Graham et al., 2013) in Iran, a country presumed to share similarities with other countries in this region in terms of its emphasis on honor. MFT had primarily focused on the contemporary U.S. context. Converging evidence shows that two of the components (putatively "individuating," fairness and care) are higher in liberals (versus conservatives), whereas the remaining three (putatively "binding," authority, loyalty, and purity) are higher in conservatives (Graham et al., 2013). Atari et al. (2020) used a standard questionnaire assessing the five proposed foundations of morality (Graham et al., 2011) and examined network structures of the five morality components in the U.S. and Iran, using a computational procedure called adaptive LASSO algorithm (Borsboom et al., 2021). The procedure enabled them to identify the most parsimonious network among the five components. In the U.S. sample, two separate clusters emerged (fairness and care on the one hand and authority, loyalty, and purity on the other hand), thereby confirming the theory's validity in the U.S. However, in Iran, this clear-cut structure did not emerge. Instead, all the five components related to each other directly or indirectly, with loyalty serving as a central node uniting all the remaining four components. The authors suggest that Iranian morality is organized by "*qeir*at (or *gheirat*)," glossed as "honor," which is a culturally unique constellation of moral values that would protect "a loved/sacred thing against intrusion (page 369)." Another recent paper finds the concept of "*qeir*at" in Iran to be associated with romantic betrayal and intrusion by third persons

in addition to the need for protecting close others (Razavi et al., 2023). These descriptions amount to the hypothesis that the culture of honor found in this region may be fundamentally interdependent.⁶

One central insight from the growing research on honor in Arabic and adjacent regions is the possibility that self-enhancement or assertion of the self as reflected in, e.g., a show of disengaging emotions, can be a basis for interdependence that requires ingroup protection. This body of work challenges the assumption in East-West research that disengaging emotions are tied to interdependence rather than independence. The data based on the priming procedure (San Martin et al., 2019) and the association with social wellbeing (Uskul et al., 2023) have offered initial evidence to this cultural variation in the meaning of social disengagement as supportive of independence in East Asia and North America, while being associated with interdependence in Arab and related cultures.

3-3. Emotional Expression in Latin America

Latin American countries, including those in Central America and the Caribbean, share a common history of colonization by Spaniards and Portuguese in the 15th and 16th centuries. Numerous enslaved Africans were brought to the continent. The region is also home to various indigenous cultures. Unlike the U.S., Latin America experienced a high degree of interracial mixing during the colonial period, shaping its own unique identity influenced by Latin European culture (Martinez-Echazabal, 1998).

Latin America stands out as a unique region characterized by a combination of collectivism, loose social norms, and high relational mobility. This represents a significant departure from the typical associations observed between collectivism, norm tightness, and low relational mobility in most cultures. While collectivism in many cultures emphasizes ingroup cohesion through the tightening of social norms and exclusion of outsiders, the collectivism found in Latin America appears distinct. It focuses on maintaining the viability of the ingroup by extending social networks and embracing diverse individuals from outside.⁷ This distinct pattern may be attributed, in part, to the subsistence traditions of Latin America, such as herding in high altitudes and wheat farming, which require large areas with relatively small populations. These factors likely made it challenging to sustain self-sufficiency within small, confined regions. As a result, Latin America may exhibit a type of collectivism or interdependence while remaining socially open and relatively loose in social norms.

The evidence is growing that Latin Americans value positive emotions. This propensity toward positive emotions appears quite strong, much stronger than among East Asians and Asian Americans, although it is not as strong as the propensity toward positivity among European Americans (Senft et al., 2020). The strong preference for positive emotions, evident among Latin Americans, makes them more like European Americans than East Asians in this

⁶ The culture of honor is also well-documented in the U.S. South (Nisbett & Cohen, 1996). However, it remains to be seen how interdependently or independently leaning the honor culture in the U.S. South might be. “Qeirat” and other honor constructs in Arabic and adjacent regions emphasize honor shared in a group. Hence, they are demonstrably interdependent. However, the notion of honor as realized in highly individualistic U.S. cultural contexts may focus more, if not exclusively, on the protection of personal property and safety, potentially reflecting a more independent perspective. Future work should examine the possibility that the notion of honor can vary in the degree of independence and interdependence associated with it. Whereas honor could be more interdependent in Arabic and adjacent regions, it could lean more toward independence in the U.S. South.

⁷ This propensity toward inclusivity may have been influenced, at least in part, by the Ancient Roman tradition of territorial expansion as a strategy for ingroup survival (Eckstein, 2007). Future work should examine ancient texts to seek insights to evaluate the validity of this conjecture.

dimension. Moreover, like European Americans but unlike East Asians, Latin Americans value high-arousal emotions (Ruby et al., 2012). The apparent similarity between European Americans and Latin Americans can be partly attributed to Latin Europe's influence on Latin America. Given this similarity, one might argue that Latin Americans are as independent as European Americans (Krys et al., 2022). However, it is important to note that the assumption linking emotional expression to independence and emotional moderation to interdependence has primarily been established through comparisons involving European Americans and East Asians. Therefore, the generalizability of this linkage beyond these comparisons remains uncertain.

Once again, the meaning of emotional expression becomes uncertain when considered outside of cultural contexts. Similar to the hypothesis proposed for Arabs above, the interpretation of emotional expression may differ for Latin Americans. Emotional expression may serve as a display of one's feelings and passion, signifying the self's independence for Westerners. However, for Latin Americans, it may signify something else. Campos and Kim (2017) argue that Latin Americans and Americans with Latin American heritage (Latinxs) are "convivial" and expressive of positive emotions (Campos & Kim, 2017). This argument is consistent with a core idiom of *simpatia*, common in Latin America, a term to describe a preference for interactions that are warm and positive (Triandis et al., 1984). Moreover, the existing evidence indicates that the emphasis on emotional expression historically depends on ethnic and linguistic diversity of a given region (Niedenthal et al., 2019). Latin America historically exhibited high levels of ethnic and linguistic diversity over the past several hundred years, which may have contributed to a greater utilization of emotional expression as a means of social communication.

In a recent study, Salvador et al. (2023) tested whether Latin Americans use emotional expression to connect with others and attain emotional resonance with them. They compared individuals from several Latin American countries (Chile, Colombia, and Mexico) with European Americans. Participants reported how strongly they would express various emotions in four situations that varied in valence (positive or negative) and the subject (personal or social) (i.e., something good/bad happening to the self/someone else). The researchers found two striking cultural differences. First, Latin Americans were highly expressive of positive socially engaging emotions (e.g., friendly feelings), which would promote interdependence. Interestingly, this effect was most pronounced when something bad happened to another person, indicating that the Latin American tendency to express positive emotions of friendliness and connectedness is contingent on others' setbacks and hardship. This evidence is consistent with the hypothesis that emotional expression is in service of building and maintaining interdependence in Latin America. This effect existed but was much weaker for European Americans. Second, European Americans were also highly expressive of positive emotions, but this effect was limited to socially disengaging emotions (e.g., pride), which would promote independence. Notably, this effect was most apparent when something good happened to the self, consistent with the hypothesis that emotional expression is in service of showing and affirming the self's positivity (which may be yet another case of self-enhancement). Although existent, this effect was much attenuated among Latin Americans.

One important insight garnered from the emerging work in Latin America is that emotional expression is a means to nurture and maintain social interdependence, which starkly contrasts with a common assumption in the current East-West paradigm that emotional expression is a means to promote independence. Initial evidence regarding what emotions people express in Latin and North America supports this proposition. However, more work is needed to explore further implications of the emerging thesis.

3-4. Argumentative Interdependence in South Asia

South Asia is located between East Asia and the Arab world, encompasses the Indian subcontinent and has historically served as a hub of trade and cultural exchanges between

Table 2. Four non-Western cultural zones and the Western zone: How the central cultural themes are similar (in terms of focal behavioral traits) and yet distinct (in terms of what the respective behavioral traits mean) between them.				
Non-Western zones	Behavioral traits of non-Western zones	Social and psychological functions	Behavioral traits of the Western zone	Social and psychological functions
East Asia	Self-effacement	Assumed conducive to social harmony	Not applicable	Not applicable
Arab	Self-assertion	Assumed conducive to ingroup protection	Self-enhancement	Assumed conducive to bolster the self's independence
Latin America	Emotional expressivity	Assumed conducive to relationship-building	Emotional expressivity	Assumed conducive to showing inner passion
South Asia	Argumentation	Assumed conducive to relations formed through negotiation and debating	Analytic thought	Assumed to anchor independent reason

Eastern and Western regions of the Eurasian continent. This rich tradition of interaction and negotiation across diverse cultures may have given rise to numerous ancient schools of thought in the region. Moreover, the importance of negotiation in business transactions may have contributed to the significance of debating in this cultural area. At present, debating is one of the most popular extracurricular school activities in India and Pakistan (Cambridge Assessment International Education, 2018). Similar to emotional expression, debating is typically regarded as a show of independent self in Western cultural contexts (Morling et al., 2002; Tsai et al., 2007). However, the meaning of debating may vary across cultures. In South Asian cultural contexts, debating may hold a distinctly different cultural meaning. It may serve the purpose of fostering interdependent social relations. Limited empirical evidence available supports this possibility. This evidence indicates that Indians do not engage in argumentation solely to influence others and impose their views on others. Rather, they argue with the intention of assisting others and ensuring that others benefit from their arguments. The style of argumentation in Indian debates tends to be more prosocial, contrary to the common assumptions associated with debating in Western contexts (Savani et al., 2011).

Recent evidence indicates that South Asians are argumentative (Lu, 2022; Sen, 2013). This cultural trait appears to contribute to the success of South Asian immigrants in business settings in the U.S. Lu and colleagues have begun to document that South Asians are more likely than their East Asian counterparts to assume leadership roles in both MBA courses in U.S. business schools and top U.S. companies (Lu, 2022; Lu et al., 2020, 2022). One major reason for South Asians' success is their propensity to make arguments. South Asians' strength only highlights a cultural mismatch that East Asians experience in the U.S. Typically, East Asians tend not to speak up in various settings, including business settings. Of note, argumentation requires logical, analytic reasoning. Hence, it is reasonable to assume that, unlike East Asians but more like European Americans, South Asians would demonstrate high proficiency in logical reasoning. If this holds true, South Asians may appear similar to European Americans in terms of being argumentative, expressive of their opinions, and inclined to justifying and defending them using logical reasoning. As we discussed earlier regarding honor cultures in the Middle Eastern cultures, this similarity may suggest that South Asians are as independent as European Americans. However, given the Gestalt principle that the meaning of part depends on the whole (Asch, 1946; Fiske & Taylor, 1991; Nisbett & Ross, 1980), the apparent similarity of behavior, such as argumentativeness, may conceal a deeper difference. Whereas argumentation and thus logical reasoning signify independence for Westerners, they could be part of the prosocial, interdependent orientation typical among people of South Asian heritage (Savani et al., 2011).

One crucial cultural insight from South Asia is that argumentation and the analytic cognition it fosters can be important facets of interdependent social relations. Even in the U.S.

and elsewhere, members of a debating club may enjoy debating because by doing so, they form social bonding and perhaps they can help each other improving their debating skills. Yet, argumentation is more typically used to defeat opponents in the debate, and analytic cognition is seen as a personal skill rather than a social resource. Future work must test the two modes of argumentation (and the resulting analytic cognition) in North America and South Asia. In particular, it is important to test whether people from these two cultural regions would show divergent social antecedents and consequences of argumentation and analytic cognition.

3-5. How Can We Make Sense of the Modern West?

Our discussion highlights the presence of distinct cultural themes in each non-Western cultural zone, as summarized in the right-hand side of Table 2. These themes include self-effacement for East Asians, self-assertion (or enhancement) for Arabs, emotional expressivity for Latin Americans, and argumentation for South Asians. These themes diverge from the East Asian cultural pattern and resemble the Western cultural pattern, as indicated by Table 1. However, it is important to recognize that these similarities at the behavioral level hide deeper differences at the level of cultural meaning, as noted in Table 2. To understand this pattern, we must consider geography, ecology, and the time course of cultural evolution. At the outset, we must note that Latin America today emphasizes emotional expression, which may have been influenced by the effects of colonization from Latin regions in Europe. With this assumption, we recognize that the three non-Western cultural zones (Arab, Latin, and South Asian zones) are closely related geographically, not only with one another but also with Western regions of the Eurasian continent over the last several thousand years. In this respect, the East Asian zone is different. It was separated from the rest of the Eurasian continent during much of this period, consistent with the ancient DNA evidence (Reich, 2018).

In addition to considering geographical and ecological factors, it is essential to acknowledge the time constraints that have shaped the cultural evolution of different regions. The emergence of the Modern West stands out in this regard, as it occurred relatively recently over the past thousand years in the Western edge of the Eurasian continent.⁸ Multiple factors contributed to the emergence of the Modern West, including herding (Uskul et al., 2008) and wheat farming (Talhelm et al., 2014), which have been associated with greater independence. Moreover, the Roman Catholic Church's prohibition of cousin marriages for an extended period played a significant role in weakening kinship networks and the feudal systems based on them (Schulz et al., 2019). These transformations gradually gave rise to the idea of the self as separate from the surrounding community, leading to the emergence of independence as a defining aspect of Western culture. The transformative events such as the Renaissance, the Protestant Reformation, and the Enlightenment movements of the 14th to 18th centuries further solidified and propagated the concept of an independent self within the Modern West.

In combination, the above considerations suggest that when the idea of the self as independent was emerging in the western corner of the Eurasian continent, residents in this region were extensively exposed to the Arab, Latin, and South Asian zones. During this period, contemporary Western Europe was still developing and held a relatively peripheral position in terms of economic wealth, political stature, and geographical location. It is important to acknowledge that cultural influences often flow from the rich, high-status, and powerful to the

⁸ The hypothesis developed here is consistent with the commonly discussed notion that contemporary Western civilization has roots in ancient Greek culture. However, it is essential to recognize that ancient Greek itself had its predecessors, including South Asian cultures, that made significant contributions to history. Moreover, it is worth considering the possibility of direct influences from non-Greek civilizations on the emerging Modern West, including influences from South Asian cultures. Acknowledging these possibilities can provide a more comprehensive understanding of the complex historical and cultural dynamics that have shaped the Modern West.

poor, low-status, and powerless. In this case, the residents of the emerging Modern West may have willingly embraced and “imported” various luxury items, including spices, drinks, musical instruments, and other cultural artifacts, from the Arab, Latin, and South Asian zones. These items and practices gradually became incorporated into the emerging new culture of the Modern West.

To this list of non-Western imports to the emerging Modern West, we may add the behavioral characteristics of the relevant non-Western zones, such as self-assertion observed in Arab culture, the emotional expression common among people of Latin heritage, and the tradition of argumentation prevalent in South Asian cultures. These non-Western imports signified wealth, status, power, and aspirations. However, as noted throughout this article, these behavioral traits do not carry fixed and universal meanings in and of themselves. The interpretation and meaning of these traits are context-dependent and subject to historical and collective processes. Applying this principle to the present case, we may suggest that the residents of the newly emerging Modern West (Westerners, in short) came up with new meanings for the imported behaviors. Westerners had no choice but to understand these behaviors by a model of the self they have developed for themselves, namely, the view of it as independent rather than interdependent. This change of the meaning process that supposedly unfolded in a broad historical timescale of several hundred years is illustrated in Table 2. We propose that the behaviors that were originally associated with interdependence in the three non-Western cultural zones became emblematic of independence in the Modern West. This transformation in the meaning of these behaviors reflects the cultural adaptation and reinterpretation that took place in the Western cultural context (Kitayama et al., 2022).

3-6. Interim Summary

Multiple forms of interdependence can be traced back for several thousand years. They include (i) self-effacing interdependence of the East Asian zone, (ii) self-assertive interdependence of the Arab zone, (iii) expressive interdependence of the Latin zone, and (iv) argumentative interdependence of the South Asian zone. The Modern West emerged with a radically new view of the self as independent and, in this process, incorporated self-assertion (or enhancement), emotional expression, and argumentation as signature features of this new, independent rather than interdependent, way of being.

Conclusions and Future Directions

This article has provided a comprehensive review of four key cultural dimensions and their relationship to cultural evolution. It then discussed several distinct cultural zones identified on the globe today. This discussion led us to propose that various non-Western cultural zones developed over several thousands of years, while the Modern West emerged more recently, influenced by preceding non-Western zones. Our analysis helps explain why contemporary Westerners are more independent and individualistic than non-Westerners, who are interdependent and collectivistic. It also highlights the apparent similarities between certain non-Western groups and the Western group in specific behavioral traits. However, these similarities mask underlying differences in the meanings assigned to these behaviors in different cultural contexts. For example, self-assertion or enhancement may signify allegiance to the ingroup for Arabs, while for Westerners, it represents a signature feature of independence. This reformulation emphasizes that cultures today vary in the degree of independence and interdependence, or individualism and collectivism. It also underscores the importance of recognizing that there is no single objective set of defining behavioral features for culture. Instead, the overarching culture of independence or interdependence serves as a cognitive frame or schema that shapes the interpretation and meaning of specific behavioral traits. Our work underscores the crucial significance of 10,000-year diachronic analysis of cultural evolution in understanding the spatial distribution of various behavioral traits and their meanings across the globe today.

Future work should further examine the change of the meaning hypothesis as it applies

to cultural behavioral traits. Ultimately, this hypothesis fosters a self-conscious effort to decenter the Western conception of the self as independent from the current psychological theories and reconsider these theories from non-Western, interdependent perspectives. This conceptual effort is indispensable in the current effort to globalize psychology. In terms of regions to investigate, it is imperative to include Africa, which has received limited attention thus far (Mughogho et al., 2023). Despite initial effort (Adams, 2005; Thomas et al., 2020), there is still much to be discovered about the diverse cultures and psychological processes in this region. Additionally, there is a need to explore Central Asia and Eastern Europe (Grossmann & Kross, 2010; Varnum et al., 2008), among other numerous local cultures that have been underrepresented in the discipline today. This effort would benefit from multiple methods, not only the traditional ones, such as survey and behavioral experimentation, but also neuroscience, genetics, and computational analyses of both cultural artifacts (notably including ancient texts) and ancient DNA. By combining these approaches, we can strive to develop a truly global psychology that is rooted in the experiences of people from all regions and backgrounds, both in the past and present.

Summary Points list

1. Independent versus interdependent social orientations are linked to individualism versus collectivism across cultures.
2. Independent or individualistic cultures are typically relationally mobile and normatively looser, except Latin America, which is interdependent or collectivistic even though it is demonstrably high in relational mobility and loose in social norms.
3. The dopamine D4 receptor gene was involved in undergirding the historically evolved eco-cultural complexes by playing a key role in cultural learning.
4. Although non-Western cultures are interdependent, there are substantial variations between them in the ways to promote and maintain interdependent social relations.
5. These non-Western cultural zones include East Asian zone (emphasizing self-effacement), Arabic zone (emphasizing self-assertiveness), Latin Zone (emphasizing emotional expression), and South Asian zone (emphasizing argumentativeness).
6. The Modern West emerged in the last 1000 years by numerous historical events reinforcing a view of the self as independent under heavy influences from preceding non-Western cultures.
7. The Modern West was least influenced by East Asia, due to geographic constraints, but influenced by other non-Western cultures which may explain the West shares similar psychological traits to non-Western cultures outside East Asia
8. We propose an emerging perspective that (i) individualism/collectivism differs across cultures and (ii) the psychological tendencies that make up individualism collectivism are culturally defined.

Future Issues list

1. It is important to spell out how the cultural ideas of independence and interdependence are defined in a culturally specific fashion.
2. It is also important to explore how seemingly identical behavioral tendencies serve different social functions across cultures.
3. It is important to examine how eco-cultural complexes are reinforced and undergirded by specific genetic variants selected in the emergence of the respective complexes.
4. It is important to explore genetic variants linked to cultural evolution.
5. It is urgent to test cultural zones other than the several under discussion, including Sub-Saharan Africa and Central Asia.
6. It is crucial to identify methods suitable in examining the historical development of distinct cultural zones. These methods include computerized analysis of ancient DNA and ancient texts.

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Terms and Definitions list

Independent versus interdependent orientations

The psychological tendencies afforded by holding a view of the self as independent or interdependent.

Individualism versus collectivism

A constellation of values in a culture prioritizing the personal self over collective welfare (individualism) or collective welfare over the personal self (collectivism).

Tightness versus looseness of social norms

Some societies and cultures are tighter (or looser) in that they have more (or fewer) social norms and enforce the norms with more (or less) severe punishments.

Relational mobility

The degree to which people freely choose their social relations or relations are ascribed.

Ecocultural complex

An organized set of cultural practices and meanings grounded in and promoted by the existing ecological, historical, and geographic conditions.

Co-evolution of culture and genes.

The process by which culture selects genetic variants, which in turn reinforce the culture from which they are derived. It has been accelerated over the last 50,000 years.

Genetic determinism

A view that genes influence, and often determine, human cultural traits. In its stringent form, this view lends itself to racism and the ideologies supporting it.

Genetic mediation

A view that culture is a potent selective context for genes, which in turn undergirds the culture from which they are derived.

Genetic moderation

The process by which genes augment cultural learning.

Cultural zones

Geographic areas associated with a given eco-cultural complex that emerged over time, typically over several thousand years.

East Asian cultural zone

A geographic area defined by an ecocultural complex highlighting social harmony and self-effacement, promoted by farming, typically rice farming.

Arabic cultural zone

A geographic area defined by an ecocultural complex highlighting self-assertiveness, promoted by harsh desert environments, either imagined or actual.

Latin cultural zone

A geographic area defined by an ecocultural complex highlighting emotional expression as a means for social interdependence, promoted by ethnic and linguistic diversity.

South Asian cultural zone

A geographic area defined by an ecocultural complex highlighting debate and argumentation as a means for maintaining commerce-based social relations.

Modern Western cultural zone

A geographic area defined by an ecocultural complex based on a view that the self is independent, emerging over the last 1000 years.