



The Handbook of Culture and Psychology

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Living in a Changing World

The Change of Culture and Psychology

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Abstract and Keywords

Abstract: Over recent decades, massive socioeconomic development and accelerated globalization have led to substantial changes in human culture and psychology. In this chapter, the authors identify a general trend of human cultural change around the globe: individualism has been increasing whereas collectivism has been decreasing. This trend is manifested in diverse social indicators, cultural products, daily practices, and various domains of psychology including cognition, personality, attitudes and values, and human development. Cultural change, however, is not linear. Economic depression as well as other external forces such as disaster and pandemic may interfere with it; some aspects of cultural heritage may also endure over the course of modernization, and multicultural societies are burgeoning around the world. Our review highlights that culture is not a static construct but a dynamic process. Future studies may extend the content and scope of our current research, explore processes and mechanisms underlying cultural change, and examine how individuals, organizations, and governments cope with this change.

Keywords: cultural change, individualism, collectivism, cultural psychology

It is well known that sociohistorical changes may exert influence on human culture and psychology (Buss, 1975; Gergen, 1973; Riegel, 1972; Sampson, 1977; Vygotsky, 1978; see also Chapter 4 by Evert Van de Vliert and Dejun Tony Kong). Over the past decades, the world has undergone substantial socioeconomic changes (e.g., economic growth, urbanization, technology advancement, social transformations) with globalization as a salient feature of the current global community. Accordingly, human culture and psychology have also undergone pronounced changes. Although early cultural (or cross-cultural) psychology has mostly focused on national and regional differences (e.g., the West versus the Rest), temporal shifts of culture and psychology have received increasing attention in the past two decades. In this chapter, we first elaborate how existing findings delineate a basic trend of culture and psychological change and, in the meantime, highlight the complexities of cultural evolution. We then critically evaluate the methodologies employed in previous studies and suggest new directions for future research.

Increasing Individualism and Decreasing Collectivism

Over past decades, particularly the past two decades, psychologists have conducted numerous studies to examine cultural and psychological changes. Our review reveals a general trend of rising individualism and declining collectivism around the globe (for a review focusing on the United States and Japan, see Ogiwara, 2017). Individualism and collectivism are the most influential dimensions that have been used in cultural (or **(p.787)** cross-cultural) psychology (see also Chapter 3 by Peter B. Smith for an extended discussion of this and other cultural dimensions). Broadly speaking, individualism emphasizes individual autonomy, freedom, uniqueness, privacy, achievement, and equal opportunity, whereas collectivism emphasizes relatedness, in-group (e.g., family or religious organization) control, conformity, harmony, duty, and social hierarchy (Brewer & Chen, 2007; Hofstede, Hofstede, & Minkov, 2010; Oyserman, Coon, & Kemmelmeier, 2002; Triandis, 1995). Of note, both individualism and collectivism can be dissected into more than one dimension (e.g., the vertical-horizontal individualism and collectivism; Schimmack, Oishi, & Diener, 2005; Triandis & Gelfand, 1998) or more than one domain (e.g., Vignoles et al., 2016). The change of culture may happen in any of these dimensions and domains (e.g., Hashimoto & Yamagishi, 2016; Vignoles et al., 2016). Since our goal is to delineate an overall trend of cultural change, in reviewing the existing studies, we focus on the general changing pattern that manifests across different dimensions or domains as well as across different countries or societies.

In the following sections, we first review studies based on special proxies of culture; we then discuss studies focusing on specific psychological dispositions, processes, and behaviors. It should be noted that while some of these studies

have examined changes at the individual level, others have investigated changes at the societal level (Na et al., 2010).

Evidence from Research Based on Proxies of Culture

In assessing cultural change, many indexes of culture have been used, including social indicators, first-person pronoun word usages, and naming practices. Overall, these proxies reside “outside the head” because they are tangible and publicly visible (Morling, 2016).

Social indicators

Many social indicators that reflect loosened family relationships or weakened family cohesion have been used as indexes for increased individualism (vs. decreased collectivism; Triandis, 1995). These indicators include the divorce rate, proportion of adults living alone, proportion of older adults living alone, ratio of single-child families relative to multi-child families, ratio of three-generation households relative to single-generation households, and household size (Grossmann & Varnum, 2015; Hamamura, 2012). Grossmann and Varnum (2015) showed that, over recent decades in the United States, the divorce rate, proportion of adults living alone, proportion of older adults living alone, and ratio of single-child families relative to multi-child families have been rising, whereas household size and ratio of three-generation households relative to single-generation households have been declining. These results suggest that individualism has been increasing whereas collectivism has been declining in the United States (Grossmann & Varnum, 2015). Based on similar indicators (e.g., divorce rate and household size), **(p.788)** a parallel trend has been found in Japan (Hamamura, 2012; Ogihara, 2016; Ogihara, Uchida, & Kusumi, 2016) and also in China (Huang, Wang, & Cai, 2016; Lafraniere, 2009; Xin, Zhang, & Liu, 2010). In a recent large-scale investigation, Santos, Varnum, and Grossmann (2017) further replicated this trend across 71 societies, suggesting that individualism has been gaining more momentum around the globe.

First-person pronoun usage

Individualism emphasizes agency and cultivates people’s independence, whereas collectivism underscores communion and fosters people’s interdependence. Accordingly, first-person singular words (I, my, me, mine) and first-person plural words (we, our, us, ours) have been used to capture individualistic and collectivistic orientations, respectively (Oyserman & Lee, 2008). By examining shifts in the uses of first-person pronouns, we may infer how culture has shifted.

In the United States, Twenge, Campbell, and Gentile (2013) examined the uses of first-person pronouns in American English books available in Google Books published between 1960 and 2008. They found that the use of first-person singular pronouns was increasing, while the use of first-person plural pronouns was decreasing during that period. DeWall and colleagues (Dewall, Pond, Campbell, & Twenge, 2011) investigated first-person pronoun use in popular

American song lyrics and found a similar pattern: the prevalence of first-person singular pronouns is on the increase, whereas plural pronouns have been on the decrease (DeWall et al., 2011). In China, Xu and Hamamura (2014) investigated the relative use of first-person singular pronouns versus first-person plural pronouns in Chinese books available in Google Books. Their analyses revealed an increasing usage of first-person singular pronouns over the past two decades. Cai and colleagues (Cai, Feng, Shi, & Luo, 2014) examined Chinese popular song lyrics between 1970 and 2010 and identified a rise in the usage of first-person singular pronouns. During that same historical period, however, Cai et al. (2014) found that the usage of first-person plural pronouns in Chinese popular song lyrics has remained stable.

Beyond China and the United States, Nafstad and colleagues (Nafstad, Blakar, Carlquist, Phelps, & Rand-Hendriksen, 2007) examined the use of first-person singular pronouns in Norwegian newspapers between 1984 and 2005; they found a rising trend in Norwegian (Nafstad et al., 2007). Yu et al. (2016) examined the relative use of first-person singular pronouns versus first-person plural pronouns in Google books across nine languages (Chinese, American English, British English, French, German, Spanish, Hebrew, Italian, Russian). Eight of the nine languages (the exception being British English) revealed a rising trend between 1949 and 2008.

Naming Practices

Seeking uniqueness is one of the key features of individualism (e.g., Kim & Markus, 1999; Kim & Sherman, 2008; Oyserman et al., 2002; Taras, Steel, & Kirkman, 2012). Hence, **(p.789)** the practice of giving a baby a unique name as opposed to a common name qualifies as an indicator of individualism. In the United States, Twenge, Abebe, and Campbell (2010) investigated the prevalence of common names (the top 10, 25, and 50 most common names) for each year between 1880 and 2007, and found a decreasing tendency over these years. In Japan, research found that Japanese parents have become increasingly more likely to give a unique name to their babies (Ogihara, Uchida, & Kusumi, 2015) and even to their dogs (Ogihara, 2016). Cai and colleagues (Cai, Feng, Liu, Zou, & Jing, 2017) identified that Chinese parents tend to use increasingly more infrequent characters in naming their babies over the years 1950–2010, also suggesting an increasing preference for unique names in China.

In summary, previous research based on social indicators has indicated that family ties have been weakened in many countries over past decades. Likewise, people in many societies have become more likely to give their children unique names and use first-person pronouns in communication. These societal-level findings all pointed to an increasing societal trend of individualism.

Evidence from Changes in Values

Individualism and collectivism, as cultural syndromes, manifest in people's values. Research on changing values has been conducted around the world using data obtained from either "outside the head" (visible and tangible; e.g., cultural products reflecting values) or "inside the head" (invisible, intangible and subjective; e.g., reported values) or both (e.g., reported intersubjective norm) (Morling, 2016).

Studies Using an "Outside the Head" Approach

Series of studies have relied on various cultural products, including Google Books, TV programs, song lyrics, and newspapers. In the United States, Twenge, Campbell, and Gentile (2012b) investigated the relative frequencies of selected words (e.g., "independent," "individual," "unique," "standout") and phrases (e.g., "focus on the self," "I am special," "I am the best") reflecting individualistic values in American English books published between 1960 and 2008. They discovered that both of these individualistic usages increased over that period. Greenfield (2013) analyzed American English books published between 1800 and 2000 and demonstrated that words reflecting individualistic values (or adaptive values in urban environments) (e.g., "choose," "unique," "self," "individual") became more prevalent, whereas words reflecting collectivistic values (or adaptive values in rural environments) (e.g., "obedience," "authority," "belong," "pray") became less dominant. DeWall, Pond, Campbell, and Twenge (2011) examined shifts in using individualistic (self-focus words) and collectivistic (other-focus and social-interaction-related words) words in popular American song lyrics; they found that individualistic terminologies have been increasing over collectivistic words that in contrast are on the decrease. Uhls and Greenfield (2015) showed that television shows between **(p. 790)** 1967 and 2007 aiming at 10- to 12-year-old children propagandize more and more individual achievement and fame but less and less community feeling. Beyond the United States, Nafstad and colleagues (2007) identified that words in Norwegian denoting individual rights ("freedom to choose," "optional") have appeared more frequently in local newspapers between 1984 and 2005, whereas words about collective values ("common/communal/shared," "duty-obligation") have appeared less frequently (Nafstad et al., 2007). In China, Zeng and Greenfield (2015) examined language related to individualism and collectivism ("choose," "compete," "get," "autonomy" versus "obliged," "give," "obedience," "communal") in Chinese books available in Google Books Ngram Viewers between 1970 and 2008; they noted an increasing prevalence of all words reflecting individualism and a decreasing trend for most words reflecting collectivism (except for "obliged" and "give"). Overall, at the societal level, these studies indicated a clear increase in the prevalence of individualistic values and a decrease in the popularity of collectivistic values.

Studies Using an “Inside the Head” Approach

This line of studies has relied foremost on self-reported measures. Yang (1996) extensively examined the changes of reported values among Chinese respondents, detecting a decline in many collectivistic or traditional values including loyalty, modesty, obedience, self-control, saving face, and the primacy of relationships. In contrast, he observed an increase in many individualistic values such as power, freedom, autonomy, assertiveness, competition, and independence. Hamamura (2012) examined both American and Japanese samples over the past decades; he concluded that while Japanese place increasingly less emphasis on following tradition and more on independence and personal commitments, Americans put increasingly less weight on social contributions and obedience in the socialization of children. In Mexico, Manago (2014) pointed to an increase in the endorsement of independence relative to interdependence across generations (see also Greenfield & Quiroz, 2013). Inglehart and Baker (2000) examined changing values in 38 societies along two dimensions: traditional versus secular-rational and survival versus self-expressive. The majority of societies that have experienced economic growth exhibited a pronounced shift from the endorsement of traditional and survival values (associated with collectivism) to the endorsement of secular and self-expressive values (associated with individualism). Likewise, Santos and colleagues (2017) examined people’s endorsements of three values (importance of friend vs. family, independent children, and preference for self-expression) tapping into individualism as opposed to collectivism. At the societal level, they found an increasing trend of individualism in 37 out of 51 countries over the past several decades. Taken together, these findings suggested that at both individual and societal levels there is a rising trend toward individualism and a declining trend toward collectivism.

(p.791) Studies Using Both the “Inside the Head” and “Outside the Head” Approaches

These studies have primarily examined changes in intersubjective or perceived culture. Xu and Hamamura (2014) surveyed perceived societal values change in China between 1980 and 2008 and, at the societal level, discerned increasing importance in many individualistic values (e.g., freedom, individuality, rights) but declining importance of many collectivistic values (e.g., reserve, loyalty, obedience). Similarly, Zhou and colleagues (Zhou, Yiu, Wu, & Greenfield, 2017) found that, in China, perceived child autonomy, curiosity, and self-expression have increased but perceived child obedience and shyness have been decreasing across generations. In a Mexico’s Maya community, at the individual level, Manago (2014) found a generational increase in perceived societal endorsement of individualistic values such as choice, exploration, self-fulfillment, expanded norms for behavior, and gender equality relative to traditional values. Kashima and colleagues (2009, 2011) examined “folk theories of social change” (FTSC) in Australia, China, and Japan. They found that people in all three societies believe that, at the societal level, societal changes are associated with an increase in the

citizen's agentic competence but a decrease in the citizenry's communal warmth; compared with those in the past, people in these societies were thought to have become more competent but less warm. Since individualism emphasizes agentic competence more than communal warmth, findings on FTSC also offer evidence that individualism has been rising and collectivism has been weakening in Australia, China, and Japan.

In summary, across studies conducted in different countries and based on different methodologies, there were consistent and converging findings suggesting that people's values and attitudes have been more favoring of individualism as opposed to collectivism; this trend has been observed in both historically individualistic countries (e.g., United States and Norway) and traditionally collectivistic countries (e.g., China, Japan, and Mexico), in studies measuring values "inside-the-brain" (e.g., those revealed by self-reports) or "outside-the-brain" (e.g., those reflected in cultural products such as Google Books and song lyrics), in surveys assessing subjective values (e.g., personally endorsed independence) or intersubjective values (e.g., perceived societal changes in people's values), and in analyses at the individual level or at the societal level.

Evidence from Changes in Personality

Collectivism nurtures communal tendencies such as modesty, empathy, obedience, and conformity. In contrast, individualism fosters agentic characteristics like autonomy, assertiveness, self-positivity, self-expression, and masculinity. If individualism was on the rise but collectivism was on the decline, we should observe that personality traits reflective of individualism would be more prevalent, whereas those fitting of collectivism would be less prevalent. Narcissism, characterized by a high agentic but low communal orientation (**p. 792**) (Brown, Budzek, & Tamborski, 2009), is a typical individualistic personality trait. Twenge and her colleagues have conducted a series of cross-temporal studies to examine shifts in narcissism in the United States. Consistently, at the societal level, they found a salient increase in narcissism over the past decades (Twenge, Konrath, Foster, Campbell, & Bushman, 2008; Twenge & Campbell, 2010; but see analyses at the individual level by Trzesniewski, Donnellan, & Robins, 2008; Trzesniewski & Donnellan, 2010). Similarly, by using large Internet samples, Cai and colleagues (Cai, Kwan, & Sedikides, 2012) identified that Chinese who are only-children, young, affluent, and living in urban areas are more likely to be narcissistic than are those who have siblings and are older, poor, and living in rural areas. At the individual level, this cross-sectional finding may point to a rising tendency toward narcissism among Chinese over the course of modernization.

Other than narcissism, research also has identified a rising tendency of many other individualism-related traits in the United States including self-esteem (Gentile, Twenge, & Campbell, 2010; Twenge & Campbell, 2001; Twenge, Carter

& Campbell, 2017), agentic self-evaluation (Twenge, Campbell, & Gentile, 2012a), extraversion (Twenge, 2001a; Scollon & Diener, 2006; Smits, Dolan, Vorst, Wicherts, & Timmerman, 2011), conscientiousness (Smits et al., 2011), masculinization of women (Twenge, 1997; André, Lissner, Bengtsson, Hällström, Sundh, & Björkelund, 2010), self-focus (Roberts, Walton, & Viechtbauer, 2006), assertiveness (e.g., Duncan & Agronick, 1995; Twenge, 2001b), and, in China, self-evaluation (Zhang, Noels, Guan, & Weng, 2016) and the need for uniqueness (Cai et al., 2017). Across studies, researchers have discovered that many collectivism-related traits are on the decline over time, such as the need for social approval (Twenge & Im, 2007), obedience (Twenge, 2009), empathy, and perspective taking (Konrath, O'Brien, & Hsing, 2011).

Changes to the adaptive function of personality also suggest the rise of individualism and the decline of collectivism. In one study, Chen and his colleagues (Chen, Cen, Li, & He, 2005) examined the change of adaptiveness of shyness in Chinese children across 1990, 1998, and 2002. In 1990, shyness was thought to be desirable by peers and adults and was positively associated with peer acceptance, leadership, and school adjustment; in 2002, however, shyness was no longer considered desirable as indicated by a positive association with peer rejection, school problems, and depression; in the 1998 cohort, the results are mixed: shyness could be either good or not good. Together, the increasing malfunction of shyness across the three cohorts suggests that individualism has become increasingly influential in China.

In summary, research on the change of personality traits has indicated that across different countries many individualistic-related traits have become more prevalent whereas collectivistic-related traits have become less common, which suggests that individualism has been rising and collectivism has been declining. Notably, this pattern converges between analyses at the societal level (e.g., studies based on cross-temporal meta-analysis) and at the individual level (e.g., studies based on cross-sectional comparisons of sample means). (See also Chapter 13 by Jüri Allik and Anu Realo for more on personality.)

(p.793) Evidence from Changes in Religion and Sex-Related Attitudes and Behaviors

Individualism emphasizes autonomy and nonconformity. Hence, increasing individualism would lead to disobedience to traditional norms and taboos, which may manifest most saliently in beliefs and behaviors involving religion and sex. Twenge and her colleagues examined changes in religious orientation. In one study, observed that American youth are less religious than previous generations, as they are less likely to affiliate with any religious organization, to engage in any religious practice, or to endorse any religious beliefs (Tweng, Exline, Grubbs, Sastry, & Campbell, 2015). In a second study, they provided further evidence for the decline in religious participation and beliefs on the part of American adults, although substantial variations across gender, race,

education, and region exist (Twenge, Sherman, Exline, & Grubbs, 2016). Beyond the United States, Inglehart and Baker (2000) examined people's attendance at religious services around the world and found a declining trend across most advanced and industrialized societies (16 out of 20, e.g., Australia, Canada, the United States, Finland, Sweden, and Japan).

Research also has demonstrated the growing prevalence of traditionally unacceptable sexual behaviors. In one study, Twenge, Sherman, and Wells (2015) indicated that American adults have become increasingly more permissive in their sexual behavior based on the tendency to have a greater number of sexual partners, to engage in more sex with casual dating, and to be more tolerant regarding premarital sex, teen sex, and same-sex activities (see also Twenge, Sherman, & Wells, 2016, and Chapter 9 by Deborah L. Best and Angelica R. Puzio). In China, research also documented a rising prevalence of premarital sex and teen sex (Parish, Laumann, & Mojola, 2007); in the meantime, Chinese people have also become more tolerant of unorthodox sexual practices including premarital sex, same-sex relationships, and prostitution (Higgins, Zheng, Liu, & Sun, 2002; Xiao, Mehrotra, & Zimmerman, 2011; Zheng et al., 2011).

In summary, at both individual and societal levels, research on religious and sexual attitudes and behaviors suggests that people value autonomy and diversity more and more but conform to traditional norms less and less, pointing to a rising tendency of individualism and a declining trend of collectivism. (See also Chapter 22 by Vassilis Saroglou on culture and religion.)

Evidence from Changes in Childrearing and Human Development

Socioeconomic changes may exert important influence on childrearing practices and human development (Elder, 1974; Vygotsky, 1978). Individualistic values, particularly those of autonomy and independence, have become more important as socialization goals. In contrast, collectivistic values, such as obedience and interdependence, have **(p.794)** become less important. Keller and Lamm (2005) investigated changes in the parenting behavior of mothers across two cohorts in Germany: one prior to the new wave of individualization in 1977/78 and one in 2000. Results showed that the younger generation of mothers adopted more parenting practices that foster independence (i.e., face-to-face contingency and object play) and fewer parenting practices that encourage interdependence (i.e., bodily and facial/vocal warmth). Scheller (2005) examined the change of socialization goals in East Germany after the reunification with West Germany. Results showed that from the beginning of reunification to 2001, the proportion of East German parents who endorsed autonomy as a socialization goal has increased significantly, whereas the proportion that endorsed obedience as socialization goal has decreased significantly. Similarly, increasing emphasis on autonomy and independence as a socialization goal has been observed in Turkey (Kağıtçıbaşı & Ataca, 2005), Mexico (Greenfield, Maynard, & Childs, 2003), Japan (Hamamura, 2012), and China (Chen, Bian, Xin, Wang, & Silbereisen,

2010). In addition to these analyses at the individual level, at the societal level, Santos, Varnum, and Grossmann (2017) found that, across more than 30 countries, independence has become a more important goal for socializing people's children.

Similar evidence can also be found in the domain of child development. A study examined children's development of cooperation and competition in San Vicente, Baja California (1970–2010) and Veracruz (1985–2005) (García, Rivera, & Greenfield, 2015). At the individual level, results showed a striking decrease in levels of cooperative behavior but a significant rise in competitive behavior along with sociocultural transformations.

In summary, at both individual and societal levels of analyses, research on childrearing and human development reveals a rising trend of individualism and a declining trend of collectivism. (See also Chapter 7 by Harry W. Gardiner and Chapter 8 by Heidi Keller for extended discussions of culture, development, and attachment.)

Evidence from Changes in Cognition

Abundant research has demonstrated the influence of socioeconomic changes on human cognition. Greenfield and colleagues (Greenfield et al., 2003; Maynard, Greenfield & Childs, 2015) examined the generational changes of cognition in Zinacantec Mayan children in Mexico. They learned that when the socioeconomic environment changed from a subsistence-agricultural economy to a cash-commercial economy, people became more skilled in independent learning, abstract representation, and innovation in comparison with traditional interdependent learning, concrete representation, and imitation. Similarly, Beach (1995) and Saxe and Esmonde (2004) found that as villagers in Nepal and Papua New Guinea engaged in commercial activities and school learning, their mathematical reasoning changed from processes based on a concrete, context-specific system (e.g., indigenous 27-body-part counting system) to processes based on a more abstract, decontextualized system. Luria (1976) determined that during the former **(p.795)** Soviet Union's radical restructuring of its political and economic systems, as villagers shifted from a rural society to collectivist economy, they manifested more mediated and abstract thinking but less concrete and practical thinking. Gauvain and Munroe (2009) compared children from four communities with differing levels of modernization (the Garifuna in Belize, Logoli in Kenya, Newars in Nepal, and Samoans in American Samoa). By analyzing performances on various cognition tests including the Embedded Figures Test (EFT) and the test of exploration, Gauvain and Munroe found that both societal modernity and individual household modernity (e.g., the possession of economically advantageous resources) are associated with children's increased context-independent cognitive ability and willingness to explore novel objects. In summary, with socioeconomic development, people exhibit more autonomy in learning, think in more abstract and decontextualized

ways, and appear more open and skillful in dealing with novelties. This developmental pattern indicates a rise in individualism at the individual level.

In addition, changes in autobiographic memory also coincide with rising individualism. Wang, Leichtman, and White (1998) examined childhood memory in young Chinese adults and found that younger cohorts (high school students) possess significantly more private though less collective self-knowledge than older cohorts (college students), suggesting that Chinese culture has become increasingly individualistic. Moreover, they found that only-child participants have more self-oriented autobiographical memory and description than those who have siblings. Given that there are more only-children in China since the 1980s, at the individual level, this finding provides additional evidence for the rise of individualism in that society. (See also Chapter 11 by Qi Wang and Sawa Senzaki for extended discussion of culture and cognition.)

Evidence from Changes in Emotion

Socioeconomic changes may also affect emotion-related psychological phenomena. Supporting evidence, though indirect, for the rise of individualism and decline of collectivism can be located in both changes in emotion experiences and their determinants. Although variations exist, a basic finding about emotional changes is that, over recent decades, people have experienced more negative emotions such as anxiety and depression. In both the United States and China, substantial increases in anxiety and depression have been documented in survey data (Twenge, 2000, 2015; Xin, Zhang, & Liu, 2010). Also, in both nations, visible increases in other negative emotions such as sadness and anger have surfaced in cultural products such as popular song lyrics (DeWall et al., 2011; Cai et al., 2014). Interestingly, also in both nations, the increase in negative emotions has been linked to the increase in individualism as indexed by various indicators (e.g., divorce rate, first-person singular pronoun use) (Xin et al., 2010; Huang et al., 2017; Twenge, 2000). One potential explanation for this shift is that the rise of individualism may lead to the deterioration of interpersonal relationships (Twenge, 2000; Ogihara et al., **(p.796)** 2015). Another possible reason entails the link between increasing individualism and the heightened expectation of money, image, and status that finally lead to depression and anxiety due to the difficulty of achieving those goals (Deci & Ryan, 2000; Kasser, 2003; Twenge & Kasser, 2013; Twenge, 2015). (See also Chapter 12 by David Matsumoto and Hyisung C. Hwang for more discussion of culture and emotion.)

As to the determinants of emotion experiences, a shift from emphasizing external factors to internal ones has been documented. Some studies examined the change in the meaning of “happiness” itself at the society level (Delle Fave et al., 2016; Oishi, Graham, Kesebir, & Galinha, 2013). Results showed that, in the past, external factors (e.g., good luck and favorable contextual conditions) were more determinate of “happiness,” but today internal and personal factors (e.g.,

personal achievement) are more prominent. Another study examined changes in the determinants of fear at the society level (Lindfors, Solantaus, & Rimpelä, 2012). Results showed that in the 1980s and 1990s, Finnish teens noted war, terrorism, and environmental disaster as their greatest fears for the future. By 2007, teens were more likely to mention personal issues such as loneliness, personal failure, and school as their greatest fears. Since collectivism emphasizes external determinants but individualism underscores internal determinants, these findings also suggest the tendency of rising individualism and decreasing collectivism.

The Complexities of the Change

Based on an aggregate of pan-cultural evidence collected from various domains and societies with diverse indexes and methodologies, we have illustrated that there appears to exist a general trend showing an increase of individualism and a decline of collectivism around the globe. However, we by no means claim that this trend is linear or overdetermined. In this section, we elaborate on the complexities of how human culture may develop.

Change Is Not Linear

People may assume that the cultural change toward increasing individualism is linear. A plethora of existing research, however, suggests that this is not true. In fact, the advance of cultural change may be stagnated and even reversed. Both theories and empirical findings have suggested that a major driver of rising individualism is economic growth (Greenfield, 1999; Inglehart & Welzel, 2005; Ogihara, 2017). When an economy experiences depression, therefore, the rise of individualism should also pause or reverse. Inglehart and Baker (2000) examined the historical trends of traditional versus secular-rational values and survival versus self-expression values in 38 societies. Their results showed that while economic growth may facilitate a move toward greater secularism and self-expression, economic collapse in many former Communist countries (e.g., Russia, Belarus, Latvia, and Lithuania) has led to a regression back to traditional and survival values. Park, Twenge, and Greenfield (2014) examined shifts in adolescent values and **(p.797)** behavior during the Great Recession (2008–2010). They found that while the long-term declining trend of collectivistic orientation (e.g., concern for others and environments) is reversed from the pre-recession period to recession, the long-term increasing trend of materialistic orientation also is reversed to some extent. Additionally, Bianchi (2014) found that an economic recession tempers the level of narcissism among those entering adulthood during that period, although men are more likely to reflect this circumstance than women (Leckelt et al., 2016).

In addition to an economic recession, the process of cultural and psychological change may vary with a nation's initial economic condition (Gao, Qiu, Chiu, & Yang, 2015) and country size (Chiu, Kwan, Li, Peng, & Peng, 2012) and be interfered by numerous other factors, including climate change (Anderson,

Anderson, Dorr, DeNeve, & Flanagan, 2000; Bettinger, Barton, Richerson, Boyd, Wang, & Choi, 2007; Richerson, Boyd, & Henrich, 2010), natural disasters (Grossmann & Varnum, 2015), and epidemic diseases (Fincher & Thornhill, 2012; Hamamura & Park, 2009), as well as changes to one's subsistence style (Talhelm et al., 2014; Uskul, Kitayama, & Nisbett, 2008) and political system (Falomir-Pichastor, Staerklé, Depuiset, & Butera, 2005). For instance, consistent with the pathogenic perspective that the prevalence of parasites and contagious diseases would lead to a rise of collectivism in local culture so that in-group members can be protected from outside diseases, Fincher and Thornhill demonstrated that local biological pressure has remained a continuous shaping force even in contemporary times (2008a, 2008b, 2012). The existence of multiple moderators undeniably adds to the complexity of a cultural change.

Cultural Heritage May Endure

Given the extensive evidence for the rise of individualism and decline of collectivism, it is natural to question whether a nation's cultural heritage would ultimately vanish. Extant research, however, suggests that this possibility is minimal. First, research has shown that the cultural heritage of traditional belief systems—Protestant, Roman Catholic, Orthodox, and Confucian—still continue to exert influence on a society despite increasing secularism and individualism around the world (Inglehart & Baker, 2000; Huntington, 1993; Weber, 1958; see also Chapter 22 by Saroglou).

Second, an abundance of research has illustrated that certain facets of collectivism still endure. In Japan, research has revealed continuing emphasis on a group orientation (Caudill, 1973) and traditional values, such as filial piety, obedience to authority, and group solidarity (Flanagan, 1979; Trommsdorff, 1983). Recently, Shimizu, Park, and Greenfield (2014) found that mother-baby co-sleeping is still as prevalent today as it was in the 1960s and 1980s. Hamamura (2012) showed that despite the apparently increasing prevalence of individualistic values over time, some traditional values still endure (e.g., friendship and family love) and some even carry more weight (e.g., respect for parents, effort for success and social obligations).

In China, research also revealed that not all aspects of collectivism or traditionalism have declined. In an early review (Yang, 1996), after summarizing the extensive **(p.798)** change of culture and psychology among Chinese, Yang also listed considerable evidence demonstrating the coexistence of traditional and modern traits, such as the positive correlation between some traditional values (e.g. filial piety, fatalism, and ancestral worship) and some modern values (e.g. assertiveness, self-reliance, and social isolation). More recently, Xu and Hamamura (2014) found that the emphasis on centrality of family and friends has remained unchanged in China. Meanwhile, Zeng and Greenfield (2015) found that some Chinese collectivistic values have been rising (e.g., obligation, giving) or continuing (e.g., helping others) over time. Yang et al. (2016)

determined that the classic Confucian text *Zhongyong* (Doctrine of the Mean), a cornerstone of Chinese culture, is still relevant in contemporary China.

Even in the United States, a quintessential individualistic-oriented society, some collectivistic values are still intact. For instance, the importance of family life has remained relatively stable (Thornton & Young-DeMarco, 2001), and altruistic work values (e.g., helping coworkers) have endured (Twenge, Campbell, Hoffman, & Lance, 2010).

It is curious why some traditional values persist even as individualism has gained an increasing foothold on diverse societies. To understand this, we need to be cognizant of several facts. First, individualism and collectivism are multifaceted constructs, and cross-cultural differences in them may vary across domains. For instance, compared to Americans, Japanese are higher on rejection-avoidance but not lower on self-distinctiveness (Hashimoto & Yamagishi, 2016); compared to other countries, the United States is high on self-expression but not low on traditionalism (Inglehart & Baker, 2000). Likewise, different aspects of individualism and collectivism may not react to social change in similar ways (e.g., Bond & Lun, 2014; Vignoles et al., 2016). From this perspective, the rise of individualism and the decline of collectivism may only occur in some domains but not in others.

Second, and relatedly, both individualism and collectivism have unique adaptive values, and they can be functionally additive or dependent (Kağıtçıbaşı, 1996; Tamis-LeMonda, Way, Hughes Yoshikawa, Kalman, & Niwa, 2008; Allik & Realo, 2004). For example, at the individual level, to survive and to attain success, people require autonomy and competition on the one hand and relatedness and cooperation on the other hand (Kağıtçıbaşı, 1996). At the societal level, in-group collectivism is emphasized in non-Western countries and promotes group-bonding cooperation, whereas institutional collectivism is encouraged in Western countries and promotes group-bridging cooperation (e.g., Realo, Allik, & Greenfield, 2008). Taken together, different cultures may value different means and strategies to address the same challenges to human adaption (Becker et al., 2012; Hashimoto & Yamagishi, 2016; Schimmack et al., 2005). The rise of individualism in modern societies does not necessarily come at the expense of social virtues that are adaptive to modern lifestyle (Welzel, 2013).

Third, the endurance of cultural heritage may not necessarily indicate absence of cultural shifts given that motivations for endorsing the same values may change across time. For instance, relationality is important in both collectivistic/traditional and **(p.799)** individualistic/modern societies (Kağıtçıbaşı, 1997; Oyserman, 1993). But duty more likely drove it in the past, whereas voluntary choice is the spur for modern society (Allik & Realo, 2004; Kağıtçıbaşı, 1997;

Oyserman et al., 2002; Ridley, 1997). Future studies should investigate this issue in more depth.

Societies with Multicultural Coexistence Are Emerging

Evidence of the endurance of traditional culture in conjunction with the rise of individualism suggests that collectivism and individualism may coexist in a society, although the extent of this concurrence may vary across time and societies (Triandis, 1995). Research on globalization further poses that local culture together with foreign cultures or cultures with dual or multiple heritages may also coexist in the same society (Chiu & Kwan, 2016). The mixing of traditional with modern culture and local with foreign cultures suggests that a society with the coexistence of multiple cultures is becoming a reality (see also Chen, 2008). Considerable evidence supports this proposition. The first line of evidence issues from a large body of cultural priming studies (for a review, see Oyserman & Lee, 2008), indicating that more than one culture can exist in an individual's mind and that a cultural mindset can be switched in accordance with the situation. The second line of evidence lies in accumulating studies on culture mixing. These studies indicate that more than one culture can coexist in a society, simultaneously exerting influence on cognition, emotion, motivation, and behavior (Chiu & Kwan, 2016; for a review, see Chiu & Cheng, 2007).

Along with the emergence of multicultural societies, researchers have also observed the development of a global civic culture that promotes diversity and democracy in modern societies (Welzel, 2013; Welzel & Dalton, 2016; but see Twenge, Campbell, & Carter, 2014; Twenge, Campbell, & Freeman, 2012). For instance, Welzel and his colleague found that, over the past 30 years, civic individualism, as indicated by simultaneously embracing individual freedom, on one hand, and welcoming diversity and equality, on the other hand, has been rising in many countries around the world (Welzel, 2013; Welzel & Dalton, 2016).

Reflections on the Methodology

From the preceding review, we can see that researchers have employed many different methodologies to examine psychological changes. These methods can be qualitative or quantitative, cross-sectional or cross-temporal, or based on data residing “inside the head” or “outside the head.” To some extent, each method can provide information about the two primary manifestations of sociocultural change: cohort effect (generational differences especially associated with the particular period or year when people are born), time period effect (the societal effect occurring at a particular time period, affecting all age and cohort groups), or both. These two effects may be confounded with each other or with aging effect (temporal changes due to developmental growth). At this **(p.800)** stage, however, no single method available to us can completely disentangle the three effects. Here, we briefly summarize and evaluate major methods for inferring cultural and psychological change (for another review, see Kashima, 2014). A critical review of existing methods can help people better

understand each method's limitation as well as the limitation of the extant research, and also help cultural change researchers improve their future studies.

Qualitative Analysis

Some previous studies have employed qualitative methods to explore change (e.g., Manago & Greenfield, 2011). A qualitative study typically relies on a small number of subjects or cases and assumes that culture is a homogeneous rather than idiosyncratic construct for the target group (Greenfield et al., 2003). This approach allows for an in-depth understanding of the subjective meaning or experience of the cultural phenomenon of interest (Greenfield, 1997, 2000). But it ignores individual difference, and it cannot quantitatively differentiate the effects of aging, cohort, and time period. Furthermore, the limited sample size also reduces the generalizability of the findings.

Quantitative Analysis

Most studies have relied on quantitative analysis using either cross-sectional or cross-temporal design. *Cross-sectional design* allows inferences on the influence of socioeconomic change in a variety of ways. First, people can infer a cohort effect based on differences between different ages or birth cohorts/generations (e.g., Mayer, Trommsdorff, Kağıtçıbaşı, & Mishra, 2012). This approach is useful for providing information about a cohort effect, but it is limited in disentangling the cohort effect from the aging effect. Second, a time period effect may emerge through a regional or country difference. This approach assumes certain sequential stages of socioeconomic development in human societies, such that cultural differences between “underdeveloped” and “developed” regions/nations may suggest likely paths of cultural evolution (e.g., Greenfield, 2009; Inglehart & Baker, 2000). This kind of cross-sectional analysis can only provide indirect evidence for the time period effect. Moreover, differences caused by other irrelevant factors such as subsistence style may confound the results (Talhelm et al., 2014). Third, psychological influences of socioeconomic change may become evident in the correlation between respondents' sociodemographic characteristics, such as income and education, and psychology of interest (e.g., Cai et al., 2012). This approach is based on the assumption that correspondence exists between sociodemographic changes and socioeconomic shifts. Again, this approach can only provide indirect evidence. Moreover, aging, generation, and other irrelevant effects may confound the impact of societal change.

Cross-temporal analysis utilizes data gathered in different periods and examines the temporal trajectory of the target construct, thereby examining cultural change and its consequences more directly (Kashima, 2014). Diverse data and designs can be used in cross-temporal research. The most fundamental one is to employ survey data from **(p.801)** recurring cross-sectional surveys (e.g., the General Social Survey in the United States). This type of data can be analyzed in a simple way by first aggregating individual responses for each survey year and

then tracking the trend of cultural shift over a number of years (e.g., Bianchi, 2016; Twenge et al., 2014). This analysis may assess time period differences more directly, but aging and cohort effects can confound the results. In recent years, a multilevel modeling technique known as *age-period-cohort* (APC) analysis has been appropriated to disentangle the effects of aging, period, and cohort (Yang & Land, 2006, 2013). Based on repeated cross-sectional design (Yang & Land, 2013), APC analysis can estimate the aging effect independent of the time period and cohort effects. This mode of analysis has generated some intriguing findings for the psychology of cultural change (e.g., Hayward & Krause, 2015; Twenge et al., 2017; Twenge, Sherman, & Lyubomirsky, 2016). As a drawback, however, the APC model imposes some constraints on the dataset. Violation of these constraints may lead to erroneous conclusions (Bell & Jones, 2014).

The second cross-temporal approach is to do *cross-temporal meta-analysis* (CTMA) (Twenge, 2001a; cf. Taras et al., 2012). For this type of analysis, mean scores for construct of interest are aggregated across studies conducted in the same year or time period. Investigators then analyze temporal changes in synthesized data (e.g., Clark, Loxton, & Tobin, 2015; Taras et al., 2012). Cross-temporal meta-analysis usually uses samples that are similar in age so that the aging effect can be controlled. But this model cannot distinguish between the period and cohort effects.

A third cross-temporal approach is to run a longitudinal analysis (e.g., Orth, Trzesniewski, & Robins, 2010). If different cohort groups (same participants) are followed repeatedly over several time periods (cohort-sequential design), the aging, period, and cohort effects may be disentangled. Nevertheless, longitudinal analysis still suffers from temporal confounds (Little, 2013). More importantly, examining the period effect of societal change demands a long duration of time, making the longitudinal study less practical.

It is notable that, in addition data from “inside the head,” many studies have made use of data “outside the head” to study cultural and psychological changes (Morling, 2016). These data may be obtained from various cultural products such as song lyrics, Google Books, and TV shows (e.g., DeWall et al., 2011; Greenfield, 2013; Twenge, Campbell, Gentile, 2012c; Xu & Hamamura, 2014) or from special social indicators such as divorce rate (Grossman & Varnum, 2015). By examining the temporal change of cultural products and social indicators, we can infer how culture has changed at the societal level. These “outside the head” methodologies provide a special perspective to look at cultural change, although the cohort effect may be ignored or confounded with the effect of time period.

In addition to the limitations specific to each method just mentioned, some other methodological issues also demand special attention. First, most methodologies have relied on comparisons between different samples. In this case, the samples

may not be representative, and, moreover, different samples may not be comparable. For example, Trzesniewski, Donnellan, and Robins (2008) have challenged whether the college **(p.802)** student samples are representative in Twenge et al.'s studies (2008). Second, the surveyed constructs may not be comparable across time. For example, Oishi et al. have shown that "happiness" has different meanings depending on the era (Oishi et al., 2013). Third, the measures used in different situations may not be equivalent. For example, Smits and colleagues (2011) found that the Big Five personality measure is not completely equivalent across time periods.

In summary, there are different methods through which cultural and psychological changes can be studied. All of these methods have their merits. Each of them, however, has limitations involving the extent to which the aging, cohort, and period effects can be disentangled; the samples are representative and comparable; and the construct of interest is comparable in meaning and equivalently measured. These factors suggest that in order to understand existing research findings, we must remain aware of the pros and cons of the method based on which findings are obtained and, accordingly, interpret results with caution. For future studies, if possible, it would be better to examine an issue with multiple methods and draw conclusions based on the consistency of results, the elimination of alternative explanations, and the guidance of relevant theories (see also Costa & McCrae, 1982).

Conclusion and Future Directions

Summary

A large body of extant research has revealed a rising trend of individualism and a declining trend of collectivism. This general trend manifests in both traditionally individualistic-oriented societies and collectivistic-oriented societies (for a more focused review, see Ogihara, 2017), at both individual and societal levels of analysis, in different psychological domains (e.g., cognition and emotion), and across diverse cultural indexes (e.g., social indicators and cultural values). Compared with people in traditional societies, individuals today are more likely to divorce; live alone or in a family with fewer people and fewer generations; have a unique name and use first-person singular pronouns; endorse individualistic values, such as autonomy and independence; exhibit an individualistic personality, such as a narcissist or extrovert, but less a collectivistic personality, such as the need for approval or empathy; learn by trial-and-error and manifest abstract and decontextualized cognition instead of concrete and context-dependent cognition; be open to novelty and have private rather than collective self-knowledge; show secular and nonconformist behaviors such as disengaging from religion (less participation in religious activities and endorsement of religious beliefs) and engaging in unorthodox sex behaviors; adopt autonomy and independence as childrearing goals; and experience negative emotions and base their emotion experiences on internal factors rather than external and situational factors. Although this general trend is clear, it is

not linear. Reverse societal changes or accidental ecological changes may block, or even alter, the changing **(p.803)** process. Moreover, decreasing collectivism does not necessarily imply the disappearance of tradition; conversely, in many countries, certain cultural heritages still endure. In addition, societies where different cultures coexist and interact with each other are emerging around the world. Table 23.1 summarizes these major findings of our review.

Table 23.1 Culture and Psychology Change: Evidence at the Society and Individual Levels

Domains	Evidence at the society level	Evidence at the individual level
Social indicators & cultural practices	↑ divorce, people living alone, the use of unique names and first-person singular pronouns. ↓ family size, the prevalence of different generations living together.	
Values	↑ prevalence of individualistic values. ↓ prevalence of collectivistic values.	↑ endorsement of individualistic values. ↓ endorsement of traditional and survival values.
Personality	↑ narcissism, self-esteem, agentic self-evaluation, extraversion, conscientiousness, masculinization, self-focus, assertiveness, the need for uniqueness. ↓ need for social approval, obedience, adaptiveness of shyness.	↑ narcissism, need for uniqueness, self-evaluation. ↓ empathy, perspective taking.
Religious & sexual attitudes & behaviors	↑ practice and tolerance of traditionally unacceptable sexual behaviors, secular orientation. ↓ affiliation with religious organization, engagement in religious practice, endorsement of religious beliefs.	↑ practice and tolerance of traditionally unacceptable sexual behaviors.

Domains	Evidence at the society level	Evidence at the individual level
Childrearing & development	↑ independence.	↑ autonomy, independence, competition. ↓ cooperation.
Emotion	↑ anxiety, depression, sadness, anger, emphasis on internal factors as determinants of emotion (e.g. fear, happy). ↓ external factors as determinants of emotion (e.g. fear, happy).	
Cognition		↑ trial-and-error learning, abstract and decontextualized cognition, openness to novelty, private self-knowledge. ↓ imitation, concrete cognition, collective self-knowledge.

Note. “↑” and “↓” denote increasing and decreasing, respectively.

In understanding these findings, we must be aware of several things. First, cultural and psychological changes can happen at both individual and societal levels. To generate a complete picture of cultural change, examination at both levels is needed. Most existing research, however, examined changes only at one level (see Table 23.1). Sometime people infer societal change from findings based on individual-level analysis or make inferences **(p.804)** about individual change from societal-level analysis (e.g., Trzesniewski, et al., 2008), as often happens in cross-cultural research (Oyserman et al., 2002; Leung & Bond, 1989). This may not be appropriate because analyses at individual and societal levels may yield inconsistent findings (Na et al., 2010). In interpreting a specific finding, we must be cautious. Otherwise, ecological fallacy or individualistic fallacy may occur (Eckersley, 2010; Eckersley & Dear, 2002; Robinson, 1950).

Second, although some studies have investigated a wide range of countries around the world (e.g., Inglehart & Baker, 2000; Santos et al., 2017), most studies reviewed in this chapter have only examined one or a few countries. Caution is needed in generalizing findings that are not based on a global analysis.

Third, we identified a general trend suggesting that many aspects of human culture have shifted from collectivism to individualism. However, it is possible that some changes may occur within different domains of individualism or collectivism. For instance, people in many countries have become increasingly more supportive of income and gender equality (Welzel, 2013); this trend may have something to do with a shift from vertical collectivism to horizontal collectivism in addition to a surge of individualism.

Finally, culture does not operate in a vacuum. Formal institutions, such as economic and political institutions, may interact with culture to regulate human behavior. In this review, we only focused on the role of cultural change in shaping changes in human psychology. But readers need to bear in mind that cultural change may be the antecedent or/and the consequence of changes in other social institutions.

Despite limitations just identified, our review generates a clear message: human culture has been evolving, and this change has been shaping human psychology profoundly. In cross-cultural psychology, most research has treated culture as a static entity: different societies have different cultures, and different cultures cultivate distinct psychologies and behaviors. As a result, people in different societies psychologically differ from each other in many ways. Research on cultural and psychological changes, however, illuminates the dynamic nature of culture. Culture is constantly changing in response to changes in surrounding social and ecological environments. Hence, culture is better conceptualized as a changing process rather than a static entity (Greenfield, 1997; Oishi & Graham, 2010). Despite increasing concern about the replicability of psychological findings in recent years (e.g., Schmidt, 2009), this dynamic perspective suggests that failure in replicating a past finding may not necessarily indicate any errors in previous research because the cultural and psychological changes may have made exact replication less likely (Zhang et al., 2017).

Future Directions

Despite the richness of the existing findings, the unknowns are not insignificant. Here, we list some future directions that may advance our understanding of cultural and psychological changes.

(p.805) Broadening Research Content and Scope

Research content and scope about cultural and psychological changes may be extended in several ways. First, future research may extend its investigation to other cultural dimensions such as power distance, uncertainty avoidance, and tightness versus looseness (Hofstede, 1980; Gelfand, Nishii, & Raver, 2006; Harrington & Gelfand, 2014), examining how cultural changes in these dimensions are related to psychological and behavioral changes.

Second, extant research has involved only limited psychological domains and behaviors. Given that cultural differences revealed by cross-cultural research are extensive and many psychological phenomena have not been studied from a historic change perspective, future studies may explore more diverse psychologic phenomena. For example, research has revealed substantial cultural differences in attribution style, with dispositional and situational attribution associated with individualism and collectivism, respectively (e.g., Choi & Nisbett, 1998; Morris & Peng, 1994). Future research may examine cross-temporal differences in causality attribution.

Third, most existing studies have focused on the mean level changes of specific psychological constructs. However, the relationship between different psychological constructs may also shift with sociocultural changes. For example, Chen and colleagues (2005) found that the relationship between shyness and psychological adjustment in China has changed from positive to negative in the decade between 1992 and 2002. Since shyness is a collectivism-related disposition, the change revealed in its relation to adjustment offers a piece of extraordinary evidence for the increase in individualism and the decline in collectivism. Research of this nature is rare in studies of changes in culture and psychology. Thus, more research is desirable. For example, life satisfaction is correlated more positively with relationship harmony in a collectivistic society than in an individualistic one (Diener & Diener, 1995; Kwan, Bond, & Singelis, 1997). Does this relationship vary with time? Answers to many similar questions would unquestionably enrich our understanding about the impact of societal changes.

Fourth, the majority of existing research has involved a narrow sampling of societies (e.g., China, Japan, Mexico, the United States, and some European nations), with a few exceptions (e.g., the World Values Survey) that have covered many countries on all major continents. Given the accelerated process of globalization and modernization around the world, more global studies are needed to examine societal and psychological changes. Doing this would not only improve the generalizability of our findings, but also deepen our understanding of the scope and depth of cultural change.

Investigating the Processes and Mechanisms Underlying Change

Compared with the huge number of studies that attempt to examine changes in culture, research delving into its evolving process and underlying mechanisms is still rare. On (p.806) these issues, pioneering perspectives on cultural (or cross-cultural) psychology may be beneficial. Here, we elaborate on how some novel perspectives can facilitate our understanding about the processes and mechanisms underlying cultural change.

The first one is a poly-culturalist perspective. Persistent cultural changes and accelerated globalization have led to the emergence of societies where multiple cultures coexist. A culturalist perspective holds that different cultures are separate and that humans can only endorse and be influenced by a single culture at one time. Moreover, each cultural tradition develops in its own way. A poly-culturalist perspective (Kelley, 1999; Morris, Chiu, & Liu, 2015; Prashad, 2001; Rosenthal & Levy, 2010), in contrast, holds that different cultures are not independent of each other; instead, they interact with each other and people can endorse cultural components from multiple cultures and be influenced by them simultaneously. Future studies may examine how cultural change and endurance can happen via interactions (exchange and integration) among different cultures, a particularly important concern in a globalized world.

A second perspective is an intersubjective one. Culture may exist as either subjective norms, attitudes, and beliefs or as intersubjective norms, attitudes, and beliefs. Correspondingly, a culturally relevant behavior may be initiated either by personally endorsed cultural beliefs or by perceived cultural beliefs (Chiu, Gelfand, Yamagishi, Shteynberg, & Wan, 2010). For example, a person's modest behavior may be due to a personally endorsed modesty norm or due to a perceived modesty norm that is widely shared in a society. Cross-cultural research has shown that cultural differences in behaviors may not be caused by personally endorsed cultural values but by perceived cultural values instead (Zou et al., 2009). Similarly, according to an intersubjective perspective, cultural change may happen without changes in subjective cultural values. Rather, it may manifest as changes in intersubjective culture. Likewise, an observed change in behavior does not necessarily indicate any shift in subjective cultural beliefs because it may suggest changes in perceived cultural values and norms (Chen et al., 2010). Some preliminary studies have demonstrated the increasing tendency of individualism by investigating the perceived culture (Kashima et al., 2009, 2011; Xu & Hamamura, 2014; Zhang, Noels, Guan, & Weng, 2017). Minimal research, however, has examined how socioeconomic changes have influenced intersubjective culture and, in turn, influenced human psychology and behavior. Intersubjective culture may constitute a novel perspective to examine the manifestations, processes, and mechanisms underlying cultural and behavioral changes.

A third one is a cultural neuroscience perspective. Over the past decade, cultural neuroscience has opened as a new frontier in cultural (or cross-cultural) psychology. Research has established that cultural and biological factors, including genetic factors, neural activities, and physiological processes, interact to influence human psychology and behavior (for reviews, see Chiao, 2009; Kim & Sasaki, 2014). Ample evidence also exists showing that genetic and environmental factors may jointly exert influence on brain development (e.g., Lenroot et al., 2009; Stiles, 2008). Given this dynamic, in studying **(p.807)** cultural and psychological changes, many questions may be asked from a

cultural neuroscience approach: How do cultural and societal changes affect human brain function and physiology? How do genetic factors potentially moderate brain change in relation to cultural change? And so on. For example, previous studies have provided solid evidence that there are special neural substrates underlying cultural differences in self-construal (independent vs. interdependent) (Ma et al., 2016; Ng, Han, Mao, & Lai, 2010; Sui, Liu, & Han, 2009; Zhu & Han, 2008) and norm violations (Mu, Kitayama, Han, & Gelfand, 2015). As reviewed earlier, a substantial change in human culture is the shifting emphasis from interdependence to independence and from conformity to nonconformity. Thus, a pertinent question is whether there is any corresponding neural evidence for or mechanisms underlying these changes. (See also Chapter 21 by Joan Y. Chiao and Katherine D. Blizinsky for extended discussion of cultural neuroscience.)

A fourth one is an evolutionary perspective. Recently, researchers have also begun to study culture from an evolutionary perspective (e.g., Boyd & Richerson, 2005; Henrich, 2015; Nowak, 2006; Yamagishi, 2011). This perspective emphasizes the adaptive nature of cultural knowledge, practices, and institutions that evolve to help humans survive. This new methodology may benefit the psychology of cultural change in several ways. First, the gene-culture co-evolutionary theory (for reviews, see Boyd & Richerson, 2005; Henrich & Henrich, 2006) bridges the gap between genetic evolution and cultural evolution and, in turn, establishes a solid basis for applying cultural neuroscience to cultural change research. (See also Chapter 12 by Matsumoto and Hwang for discussion of Darwin and evolution.)

Second, an evolutionary perspective may help us to understand the dynamics and complexities of cultural evolution. For instance, in terms of classic modernization theory, it is perplexing that some cultural legacies of traditional society persist in the modern era (Inglehart & Baker, 2000). From the point of view of evolutionary psychology, however, the persistence of some collectivistic/traditional values is understandable because they have adaptive values across historical periods (e.g., Henrich & Henrich, 2006; Norenzayan et al., 2016). Future study may further examine the roles that institutionalized rewards and punishments have played in cultural change and persistence and how such rewarding mechanisms remain stable and change over time (Yamagishi, 2011).

Third, some novel methods for studying cultural evolution are useful for us to examine the process of cultural change. According to complexity theory, the properties of collective cultural phenomena are not derived from simple aggregations of the properties of individual persons. Simulation of massive social interactions may predict possible patterns of cultural emergence (Chiu & Qiu, 2014). Thus, with this agent-based model, we could apply a computer simulation method to examine cultural formation, maintenance, and change over a large time scale by exploring how macro-level social phenomena may be

generated by micro-level interactions between many persons over a long period of time (for reviews, see Epstein, 1999; Nowak, Sasaki, Taylor, & Fudenberg, 2004). In a recent study (Nowak, Gelfand, Borkowski, Cohen, & Hernandez, 2015), for instance, a simulation **(p.808)** of an evolutionary game over many iterations was conducted for a large number of players interacting with each other. The results shed light on why cultures of honor are adaptive to human survival and under what social environments (e.g., lack of effective policing) honor cultures may emerge and thrive. Similarly, future studies may use computer simulation to study how other cultural phenomena form as well as to identify potential moderators.

Examining How to Cope with Change

Massive societal and psychological changes pose both opportunities and challenges for individuals, organizations, and governments. For individuals, research showed that those who adapt well in the traditional/collectivistic culture may not be able to adapt well in an increasingly individualistic culture because the social competence fit for traditional culture may not suit the emerging new culture (Chen et al., 2005). For organizations and governments, similarly, those functioning well in a past circumstance may not function well with the changes due to outdated management strategies and administration practices. To adapt to the changing world, individuals, organizations, and governments all must adjust correspondingly. The questions remain, however, as to how individuals, organizations, and governments should cope with change so that individual well-being and management (and administration) efficiency can be maximized while, simultaneously, potential harm can be minimized. Surprisingly, little research has examined issues such as these, thereby calling for further investigation in the future.

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