

One of the central premises of social psychology is the power of the situation. The very definition of social psychology reflects this, pointing out the influence of others on thoughts, feelings, and actions. In this discussion, we will consider contextualization by evaluating the fundamental and far-reaching role of culture.

To inform your thinking on this topic, begin by reading "Toward a Psychological Science for a Cultural Species" (Heine & Norenzayan, 2006), "Lessons Learned from a Lifetime of Applied Social Psychological Research" (Ross, 2004), and "Reflections on the Stanford Prison Experiment: Genesis, Transformations, Consequences" (Zimbardo, Maslach, & Haney, 2000).

Then, locate a peer-reviewed empirical article (see [Scholarly, Peer Reviewed, and Other Credible Sources](#) (Links to an external site.)Links to an external site.) describing a research study that examines a psychological phenomenon from a cultural perspective. Discuss the research, considering the various elements of a critical review (see [Using a Scientific Journal Article to Write a Critical Review](#) (Links to an external site.)Links to an external site.) with reference to/explanation of the more broad social-psychological domain (social thinking, social relations, social influence). Appraise the role of culture in our psychological understanding of this phenomenon. Assess the relevance of one "lesson" of applied psychology (Ross, 2004) to your selected study.

Your initial post should be 500-1000 words in length and must contain a minimum of one scholarly, peer-reviewed reference, in addition to required course resources as applicable. Additional credible references are encouraged.



Using a Scientific Journal Article to Write a Critical Review

Writing a critical review of a journal article can help to improve your research skills. By assessing the work of others, you develop skills as a critical reader and become familiar with the types of evaluation criteria that will be applied to research in your field and thus your own research.

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You are expected to read the article carefully, analyse it, and evaluate the quality and originality of the research, as well as its relevance and presentation. Its strengths and weaknesses are assessed, followed by its overall value. Do not be confused by the term critique: it does not mean that you only look at the negative aspects of what the researcher has done. You should address both the positive and negative aspects.

If your lecturer has given you specific advice on how to write a critical review, follow that advice. If not, the following steps may help you. These steps are based on a detailed description of how to analyse and evaluate a research article provided by Wood (2003) in her lab guide.

This guide is divided into two parts. The first part, "Researching the Critique," outlines the steps involved in selecting and evaluating a research article. The second part, "Writing your Critique," discusses two possible ways to structure your critique paper.

A. Researching the Critique

The questions listed under many of the subheadings in this section may provide you with a good place to begin understanding what you are looking for and what form your critique might take.

1. Select a Topic

[Specific Types of Papers](#)

[Close Reading](#)

[Research Synthesis Reviews](#)

[Using a Scientific Journal Article to Write a Critical Review](#)

[Writing An Annotated Bibliography](#)

[Writing Lab Reports or Research Reports](#)

If your lecturer does not assign a topic or a particular article for you to review, and you must choose a topic yourself, try using a review article from your field. Review articles summarize and evaluate current studies (research articles) on a particular topic. Select a review article on a topic that interests you and that is written clearly so you can understand it.

2. Select a Research Article

Use the review article to select a research article. This can be very useful in writing your critique. The review article will provide background information for your analysis, as well as establishing that the research paper you are critiquing is significant: if the paper was not so highly regarded, it would not have been selected to be reviewed.

When choosing a research article, examine the Materials & Methods section closely and make sure you have a good grasp of the techniques and methods used. If you don't, you may have difficulty evaluating them.

3. Analyse the Text

Read the article(s) carefully. As you read the article(s) use the following questions to help you understand how and why the research was carried out.

- What is the author's central purpose? Look at INTRODUCTION.
- What methods were used to accomplish this purpose (systematic recording of observations, analysis and evaluation of published research, assessment of theory)? Look at METHODS.
What were the techniques used? and how was each technique performed?
What kind of data can be obtained using each technique?
How are such data interpreted?
What kind of information is produced by using the technique?
- What objective evidence was obtained from the author's efforts (observations, measurements etc.)? What were the results of the study? Look at RESULTS.
How was each technique used to obtain each result?
What statistical tests were used to evaluate the significance of the conclusions based on numeric

or graphic data?

How did each result contribute to answering the question or testing the hypothesis raised in the introduction?

- How were the results interpreted? How were they related to the original problem (author's view of evidence rather than objective findings)? Look at DISCUSSION.

Were the author(s) able to answer the question (test the hypothesis) raised?

Did the research provide new factual information, a new understanding of a phenomenon in the field, a new research technique?

How was the significance of the work described?

Did the reported observations/interpretations support or refute observations or interpretations made by other researchers?

(Adapted with permission of Professor Susan Lollis, Family Relations and Applied Nutrition, University of Guelph. Source of questions in each section Wood, 2003)

4. Establish the Research Context

Once you are reasonably familiar with the article, it is important to gain an understanding of the research context, both societal and intellectual. To establish the research context, questions such as the following should be addressed:

- Who conducted the research? What were/are their interests?
- When and where was the research conducted?
- Why did they do this research?
- Was this research pertinent only within the authors' geographic locale, or did it have broader (even global) relevance?
- Were many other laboratories pursuing related research when the reported work was done? If so, why?
- For experimental research, what funding sources met the costs of the research?
- Was the selection of the research topic influenced by the source of research funding?
- On what prior observations was the research based? What was and was not known at the time?

- How important was the research question posed by the researcher?

For more detailed information on how to answer these questions, see Labs 4 and 5 (Wood, 2003).

5. Evaluate the Text

After you have read the article and answered the questions in the previous section, you should have a good understanding of the research undertaken. You can now begin to evaluate the author's research. Making judgements about someone else's work is often the most difficult part of writing the review. Many students feel that, because they are new to a discipline, they do not have enough knowledge to make judgements of other people's work.

The following checklist may assist you:

INTRODUCTION

- Read the statement of purpose at the end of the introduction. What was the objective of the study?
- Consider the title. Does it precisely state the subject of the paper?
- Read the statement of purpose in the abstract. Does it match the one in the introduction?
- Check the sequence of statements in the introduction. Does all the information lead coherently to the purpose of the study?

METHODS

- Review all methods in relation to the objective(s) of the study. Are the methods valid for studying the problem?
- Check the methods for essential information. Could the study be duplicated from the methods and information given?
- Check the methods for flaws. Is the sample selection adequate? Is the experimental design sound?
- Check the sequence of statements in the methods. Does all the information belong there? Is the sequence of methods clear and pertinent?

RESULTS

- Examine carefully the data as presented in the tables and diagrams. Does the title or legend accurately describe the content? Are column headings and labels accurate? Are the data organized for ready comparison and interpretation? (A table should be self-explanatory, with a title that accurately and concisely describes content and column headings that accurately describe information in the cells.)
- Review the results as presented in the text while referring to the data in the tables and diagrams. Does the text complement, and not simply repeat, data? Are there discrepancies between the results in the text and those in the tables?
- Check all calculations and presentation of data.
- Review the results in light of the stated objectives. Does the study reveal what the researcher intended?

DISCUSSION

- Check the interpretation against the results. Does the discussion merely repeat the results? Does the interpretation arise logically from the data or is it too far-fetched? Have the faults/flaws/shortcomings of the research been addressed?
- Is the interpretation supported by other research cited in the study?
- Does the study consider key studies in the field?
- Are there other research possibilities/directions suggested?

OVERVIEW

- Reread the abstract. Does it accurately summarize the article?
- Check the structure of the article (first headings and then paragraphing). Is all the material organized under the appropriate headings? Are sections divided logically into subsections or paragraphs?
- Are stylistic concerns, logic, clarity and economy of expression addressed?

(adapted from Kuyper, 1991)

6. Establish the Significance of the Research

Finally, it is important to establish whether the research has been successful – has it led to new questions being asked, new ways of using existing knowledge? Are other researchers citing this paper?

The following questions should be answered:

- How did other researchers view the significance of the research reported by your authors?
- Did the research reported in your article result in the formulation of new questions or hypotheses (by the authors, by other researchers)?
- Have other researchers subsequently supported or refuted the observations/interpretations of these authors?
- Did the research make a significant contribution to human knowledge?
- Did the research produce any practical applications?
- What are the social, political, technological, medical implications of this research?
- How do you evaluate the significance of the research?

To answer these questions look at review articles to find out how reviewers see this piece of research. Look at research articles to see how other people have used this work; what range of journals have cited this article? For more detailed information on how to answer these questions, see Lab. 8 (Wood, 2003).

B. Writing your Critique

Two possible approaches

You have completed your analysis and evaluation of the journal article. How do you then put all this information together? If your instructor has not provided a format for your critique, there are two possible ways you might present it.

Approach (A)

If your instructor is concerned that that the article be clearly situated within the social and intellectual research context, then you might present it in the following way:

Introduction

In the introduction, cite the journal article in full and then provide the background to this piece of research, establishing its place within the field. Use the answers to the questions in Establish the Research Context to develop this section.

Body

Follow the structure of the journal article. Evaluate each section of the article — Introduction, Methods, Results, Discussion — highlighting the strengths and weaknesses of each section. Use the answers to the questions in Evaluate the Text to develop this section.

Conclusion

In this section, sum up the strengths and weaknesses of the research as a whole. Establish its practical and theoretical significance. Use the answers to questions Establish the Significance of the Research to develop this section.

Approach (B)

Another common way to structure a journal article critique is the following:

Introduction

In the introduction, cite the journal article in full and provide a summary of the journal article. Use the answers to the questions in the section Analyze the Text to develop the summary.

Body

Follow the structure of the journal article. Evaluate each section of the article – Introduction, Methods, Results, Discussion – highlighting the strengths and weaknesses of each section. Use the answers to the questions in Evaluate the Text to develop this section.

Conclusion

In this section, sum up the strengths and weaknesses of the research as a whole. Establish its practical and theoretical significance. Use the answers to questions Establish the Significance of the Research to develop this section.

References

Kuyper, B.J. (1991). Bringing up scientists in the art of critiquing research. *Bioscience* 41(4), 248–250.

Wood, J.M. (2003). Research Lab Guide. MICR*3260 Microbial Adaptation and Development Web Site. Retrieved July 31, 2006, from http://www.uoguelph.ca/mcb/teaching/micr3260/research_lab/guide.shtml

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Toward a Psychological Science for a Cultural Species

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ABSTRACT—*Humans are a cultural species, and the study of human psychology benefits from attention to cultural influences. Cultural psychology's contributions to psychological science can largely be divided according to the two different stages of scientific inquiry. Stage 1 research seeks cultural differences and establishes the boundaries of psychological phenomena. Stage 2 research seeks underlying mechanisms of those cultural differences. The literatures regarding these two distinct stages are reviewed, and various methods for conducting Stage 2 research are discussed. The implications of culture-blind and multicultural psychologies for society and intergroup relations are also discussed.*

Before we inquire into origins and functional relations, it is necessary to know the thing we are trying to explain. (Asch, 1952/1987, p. 65)

Humans are a cultural species. Cultural learning, or the ability to acquire behaviors from other individuals, is evident in a variety of different species (Lefebvre & Giraldeau, 1994; Rendell & Whitehead, 2001; Whiten et al., 1999). However, humans are unique in the extent to which cultural learning accumulates rapidly over generations, radically alters the ecology in which humans live, and pervades their full repertoire of thoughts and behaviors (Richerson & Boyd, 2005; Tomasello, 1999). Therefore, a rich understanding of how humans' minds operate would be facilitated by a psychological science that is able to study how specific cultural experiences shape and express universal biological potentials.

Few people would dispute that culture is relevant to psychology. Yet for much of the history of their field, most psychologists have sought to discover and explain human thought and behavior in terms of universal principles that are applicable

to all people (at least all non-brain-damaged adults without clinical disorders) regardless of the cultural and historical contexts in which their minds develop and operate. Granted, assumptions of universality are sometimes empirically examined in developmental research and in gender comparisons that attempt to disentangle effects of innate structures and maturation from those of experience or socialization. But it has been the primary goal of cultural psychology to transform this assumption of universality into an empirically testable hypothesis. Cultural psychology, and cross-cultural comparisons more broadly, has enjoyed tremendous growth over the past two decades, and has moved from the margins of psychology to the central theories and findings of the field.

Clearly, there are many possible ways one can approach a project as ambitious and complex as the study of how psychological patterns are manifested across cultures, and even within cultural psychology there are different views and lively debates. Here we offer our own view of the field. The centrality of cross-cultural comparisons to progress in all areas of psychology is discussed, and recent advances in cross-cultural research are outlined. We consider some outstanding issues and critiques and recommend avenues for future research. A central theme in our article is that cultural psychology, as is the case with any other scientific field, advances in two overlapping but distinct stages of inquiry. Each stage has its own logic and priorities, an issue to which we now turn.

TWO STAGES OF SCIENTIFIC INQUIRY

Most scientific inquiry proceeds through two stages. In the first stage, new theories that facilitate the observation and discovery of interesting phenomena are proposed, and various methodological confounds are ruled out. In the second stage, the inner workings of phenomena are more precisely explained, and underlying mechanisms are identified. The first stage continues while the second is under way, because scientific explanations critically depend on the expansion of the database to novel domains and the discovery of additional phenomena. Philosophers and historians of science, although disagreeing about the extent of the role of a priori theories in guiding observation, say that most sciences seem to mature in

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this sequence (Hempel, 1965; Salmon, 1984). Consider Darwin's theory of evolution by natural selection. Darwin developed his theory of natural selection and embarked on decades of systematic cross-species observations and meticulous documentation of features of various organisms and the ecological peculiarities of their habitats (Darwin, 1859/1958). His theory hinged critically on the idea that biological properties are inherited, yet the mechanisms of inheritance were unknown at the time, and his proposal for how inheritance worked was ultimately flawed. One of Darwin's influential critics, Fleeming Jenkin, correctly pointed out that if inheritance were the result of taking the average of the features from the parental contributions, as Darwin proposed, then in each generational transmission, variation would be cut in half. In a few generations, there would be little variation left for inheritance, and natural selection would falter (Boyd & Silk, 2003). Only decades later was it understood that parental genes remain discrete entities in reproduction, and Darwin's theory became grounded in the principles of Mendelian genetics, which then ushered in the modern synthesis between evolutionary theory and genetics, forming the basis of modern biology (Dobzhansky, 1962).

Much of psychology also operates this way (for discussions, see Cronbach, 1986, and Rozin, 2001). Theories are proposed and revised in the first-stage process of predicting and discovering interesting phenomena, but the precise mechanisms underlying theoretical claims are often poorly understood prior to the second stage of investigation. We agree with Rozin (2001) that Stage 1 research is a key element of scientific progress in any growing science, and that unnecessary constraints on this type of research can damage the prospects of a discipline to develop into a mature science. As more and more interesting phenomena are discovered, Stage 2 research is initiated; scientists begin to offer competing explanations for them, presumed mechanisms eventually become the subject of debates, and competing accounts for mechanisms are advanced, animating scientific discovery for long periods of time. These debates, in turn, may lead to additional discoveries of interesting phenomena. Only with time and patience are controversies resolved successfully; paradigms sometimes shift, and scientific consensus regarding mechanisms emerges.

Research in cultural psychology can also be broken down into these two stages (see Atran, Medin, & Ross, 2005, for a similar observation). Stage 1 research typically proposes theories that predict cultural differences in particular psychological processes, whereas Stage 2 research typically seeks to more precisely explain the observed cultural differences by identifying the critical variables that account for them. In the following sections, we articulate how this distinction is useful for understanding how cultural psychology can contribute to psychological science in general.

STAGE 1 CULTURAL PSYCHOLOGICAL RESEARCH: IDENTIFYING CULTURAL DIFFERENCES

The most straightforward goal of Stage 1 cultural psychological research has been to investigate the extent to which people from

different cultures vary in psychological processes. Thus far, the majority of cultural psychological research has been conducted at this stage. Such research is of critical importance to scientific progress in the field, as we explain next.

Stage 1 Research and External Validity

Psychology has long been criticized for ignoring issues of generalizability of findings, the most prominent criticism being that its restricted database may limit the external validity of its findings (e.g., Gergen, 1973; Medin & Atran, 2004; Rozin, 2001; Sears, 1986). Social psychology has been especially vulnerable to such criticisms; it investigates questions regarding how people perceive, understand, and respond to the (culturally variable) social world, yet most social psychological research has been conducted within the social environment of middle-class college students. However, nowhere are the limits of the restricted psychological database more problematic than when it comes to cultural representation. A recent review found that 92% of studies published in the *Journal of Personality and Social Psychology*, the most influential international journal in these fields, were conducted in North America, and a full 99% of the studies were conducted in the West (Quinones-Vidal, Lopez-Garcia, Penaranda-Ortega, & Tortosa-Gil, 2004). This problem would not be severe if the publications in such journals did not make the implicit or explicit claim that their findings are applicable broadly to humanity at large, rather than to the Western subpopulations from which participants are selected. That a similar inattention to cultural variability has been found in other areas of psychology as well (Norenzayan & Heine, 2005) underscores how much of the psychological database renders researchers ill prepared to speak confidently of the extent to which many psychological processes are universal.

In many research programs, there are trade-offs between maximizing internal validity and maximizing external validity. The tendency for researchers from a number of psychological disciplines to primarily conduct studies with convenience samples of Western college students, who are disproportionately of European descent and of middle-class background, suggests that psychologists are often inclined to privilege the maintenance of internal validity. That is, studies conducted with convenience samples afford opportunities for researchers to more easily conduct rigorous and systematic series of studies that can address competing hypotheses and rule out methodological artifacts. Although a heavy reliance on convenience samples facilitates the construction of sound theories that are capable of making reliable predictions, the incumbent sacrifice of external validity becomes untenable when researchers raise questions regarding human nature. The limited psychological database raises a cloud of doubt regarding the generalizability of many findings. How can researchers know whether they are studying a phenomenon that is characteristic of humans everywhere or whether they have identified a cultural product that emerges from participating in Western middle-class culture?

This distinction cannot confidently be made until appropriate cross-cultural research tactics are used to test whether the phenomenon meets the criteria of various levels of universality (for a review, see Norenzayan & Heine, 2005).

The question of the generalizability of research findings is a challenge for science more generally, and perhaps ensuring culturally representative sampling is an onerous technicality that is unnecessary for psychology. For example, it would hardly seem reasonable to say that a reliably observed phenomenon such as social facilitation or transfer-appropriate processing might not be a universal feature of humankind because no one has ever investigated it among, say, the Trobriand Islanders. Such a claim would be dubious because there is no theoretical basis for anticipating any differences in social facilitation or transfer-appropriate processing in this population. Were it the case, however, that one did have compelling *a priori* theoretical reasons to anticipate that either of these processes would be different among the Trobriand Islanders, psychologists' understanding of that process would potentially be in need of revision if it were indeed found that this population performed reliably differently on relevant tasks.

Stage 1 Research Identifies Cultural Variation in Psychological Processes

Recent theoretical and empirical developments in cultural psychology have brought the field to the point where researchers need to be mindful of the generalizability of North American, or more generally Western, findings to other cultural contexts. There are a number of rich theoretical models that allow for predictions about the extent to which various models will replicate in other cultural contexts (e.g., D. Cohen & Hoshino-Browne, 2005; Heine, 2001; Kim, 2002; Markus & Kitayama, 1991; Medin & Atran, 2004; Nisbett & Cohen, 1996; Nisbett, Peng, Choi, & Norenzayan, 2001; Shweder, Much, Mahapatra, & Park, 1997; Triandis, 1989). Furthermore, in the past 20 years, since the field of cultural psychology reemerged as a significant discipline, the great extent of documented cultural variation in psychological processes has been rather unexpected, even for cultural psychologists. For example, pronounced and theoretically meaningful cultural differences have been found in fundamental psychological processes, such as eye movements for scanning inanimate scenes (e.g., Chua, Boland, & Nisbett, 2005); attention (Miyamoto, Nisbett, & Masuda, 2006); perception of color, space, and time (e.g., Boroditsky, 2001; Levinson, 1997; Roberson, Davies, & Davidoff, 2000); numerical reasoning (e.g., Gordon, 2004); unspoken thinking (e.g., Kim, 2002); preferences for high subjective well-being (SWB; e.g., Diener, Diener, & Diener, 1995); the manifestation of psychological disorders such as depression (e.g., Kleinman, 1982; Ryder et al., 2005) and bulimia nervosa (e.g., Keel & Klump, 2003); the need for high self-esteem (e.g., Heine, Lehman, Markus, & Kitayama, 1999); and preferences for formal rea-

soning (e.g., Norenzayan, Smith, Kim, & Nisbett, 2002). Research programs in these areas have demonstrated that culture is implicated at a much more fundamental level of psychological processing than what was previously considered, and these findings are forcing researchers to conceive of these phenomena differently than they had before.

Predicted cultural differences have also emerged in a diverse array of phenomena, including how people handle contradiction (e.g., Peng & Nisbett, 1999), prevention and promotion orientations (e.g., Lee, Aaker, & Cardner, 2000), self-concepts (e.g., Cousins, 1989), moral intuitions and reasoning (A.B. Cohen & Rozin, 2001; Miller & Bersoff, 1992), tendencies to make situational and dispositional attributions (e.g., Choi, Nisbett, & Norenzayan, 1999; Morris & Peng, 1994), preferences for choices made by oneself or by others (e.g., Iyengar & Lepper, 1999), the nature of friendships and enemyships (e.g., Adams, 2005), cognitive dissonance (e.g., Heine & Lehman, 1997b; Kitayama, Snibbe, Markus, & Suzuki, 2004), memories for focal and background objects (e.g., Masuda & Nisbett, 2001), motivations for uniqueness (e.g., Kim & Markus, 1999), certain kinds of category-based inductive reasoning (e.g., Medin, Ross, Atran, Burnett, & Block, 2002), daily variability in affective experiences (Oishi, Diener, Napa Scollon, & Biswas-Diener, 2004), the importance of romantic love in marriage decisions (R. Levine, Sato, Hashimoto, & Verma, 1995), the pace of life and time perspective (R.V. Levine & Norenzayan, 1999), preferred decisions in the ultimatum game (e.g., Henrich et al., 2005), feelings of control (e.g., Morling, Kitayama, & Miyamoto, 2002), and predilection for violence in response to insults (e.g., Nisbett & Cohen, 1996), to name several. Systematic cultural differences have also been found in early childhood (e.g., Grossmann, Grossmann, Spangler, Suess, & Unzner, 1985; Imai & Gentner, 1997; Tardif, 1996), underscoring just how embedded psychological life is within cultural experiences.

Furthermore, many of these cultural differences are pronounced in magnitude. Meta-analyses reveal large effects (average $d > .80$) for the difference in the magnitude of self-enhancement motivation between East Asians and Westerners (Heine & Hamamura, 2006), moderate to large effects for cognitive differences between East Asians and Westerners (average $d = .60$; Miyamoto, Kitayama, & Talhelm, 2006), and smaller effects for cultural differences in self-report measures of individualism and collectivism between Asians and Americans (average $ds = .39$ for individualism and $.24$ for collectivism; Matsumoto, 2006; Oyserman, Coon, & Kemmelmeier, 2002). In general, the cultural differences tend to be more pronounced in studies that compare behaviors that reflect implicit psychological tendencies and less pronounced in studies that compare explicit self-reported cultural values on subjective Likert scales (for discussion, see Heine, Lehman, Peng, & Greenholtz, 2002; Kitayama, 2002).

Stage 1 cultural psychological research is an ongoing project as more and more theories are developed and psychological

phenomena are tested in a growing array of cultures. As it progresses, this enterprise will paint an increasingly detailed picture regarding the kinds of processes that are most affected by cultural influences, and those that operate the most independently of cultural context. It is difficult to know a priori which psychological processes are most susceptible to cultural variation, so there is no alternative to solid, programmatic Stage 1 research. For example, growing research indicates that attentional processes, initially believed to be fixed and universal, are in some respects highly responsive to cultural experience (e.g., Chua et al., 2005). Conversely, some core aspects of reasoning about other peoples' mental states (or *theory of mind*), initially believed to be a folk theory that is culturally malleable to a large degree, appear to develop in remarkably similar ways across cultures (e.g., Callaghan et al., 2005).

One important component of Stage 1 research has been to identify the specific situations in which some cultural differences in psychological processes are made manifest. Cultural differences in various processes are often fluid and do not emerge uniformly as main effects; they often are evident only when certain contextual variables are present. For example, people participating in cultures of honor are not more aggressive than other people across all situations; rather, their aggression emerges specifically in situations in which their honor has been slighted (Nisbett & Cohen, 1996); the Protestant work ethic does not encourage an overall more detached attitude toward relationships, and cultural differences emerge only when Protestants and non-Protestants are engaged in a work task (e.g., Sanchez-Burks, 2002); East Asians do not always prefer intuitive reasoning strategies more than Westerners, but show the same preferences and skills for formal reasoning when completing abstract tasks (e.g., Norenzayan et al., 2002). In sum, much Stage 1 cultural psychological research has targeted the sensitivity of various psychological processes to situational variables and investigated how cultural differences often appear only in specific contexts.

A second key focus of Stage 1 research has been to conduct systematic series of studies to rule out competing artifactual accounts of cultural differences. A particular challenge of conducting psychological research across cultures is that there are many unique methodological concerns that arise regarding the interpretability of findings (for reviews, see D. Cohen, in press; Greenfield, 1997; and van de Vijver & Leung, 2000). The wide array of methodological artifacts that are of concern to cultural psychologists has resulted in research on cross-cultural comparability developing into an enterprise in and of itself. Efforts to determine the validity of cultural differences constitute a large part of the studies that are conducted in Stage 1 cultural psychological research.

In sum, the range of identified cultural differences in psychological phenomena has expanded significantly in the past 20 years. Many of these findings have emerged in the wake of recent theoretical developments in cultural psychology, most notably

the distinction between independent and interdependent construals of self (Markus & Kitayama, 1991) and individualism-collectivism (Triandis, 1989). These theoretical developments, coupled with the burgeoning database of documented cultural variation in fundamental psychological processes, challenge psychologists to be hesitant in assuming that findings that emerge from a single population must necessarily be psychological universals (Norenzayan & Heine, 2005).

Stage 1 Cross-Cultural Research Informs Theories About Universals

Stage 1 cultural psychological research is as important in documenting robust similarities across cultures as it is in documenting variability. Such research allows psychologists to identify the extent to which psychological phenomena are culture-specific or are psychological universals (Norenzayan & Heine, 2005; Norenzayan, Schaller, & Heine, in press). We submit that the restricted database that has historically characterized psychological research has led researchers to inherit a sense of "culture-blindness" whereby observed findings in one's own culture are assumed to be universal. Furthermore, because some degree of universality is often a central assumption of evolutionary explanations, this culture-blindness is of particular relevance to evolutionary explanations, and greatly complicates efforts to articulate how particular psychological phenomena may have evolved.

For example, consider the question of whether a need for positive self-regard is a psychological universal. One way to approach this question is to conceive of positive self-regard as self-enhancement, which is usually operationalized as tendencies to dwell on and elaborate positive information about the self relative to negative information (Heine, 2005b). With this operationalization, it is clear that people from Western cultures are motivated to have positive self-regard, as across dozens of different methods, Westerners show consistent and pronounced self-enhancement (average $d = .86$). In contrast, the same methods have revealed an average d of $-.02$ for East Asians (Heine & Hamamura, 2006). Thus, a need for positive self-regard operationalized as self-enhancement appears to be far weaker, if not largely absent, among people participating in East Asian cultural contexts (see Heine, Kitayama, & Hamamura, in press, and Sedikides, Gaertner, & Vevea, 2005, for some disagreement about the evidence regarding this conclusion).

Given these findings, how might one consider the evolutionary origins of motivations for positive self-regard? On the basis of the consistent evidence for self-enhancement among Westerners, a variety of evolutionary accounts have been offered for the emergence of this motivation. For example, the self-enhancement motive has been posited to have been selected (a) as a gauge of changes in one's status within dominance hierarchies (Barkow, 1989), (b) as a barometer of the vulnerability of one's social relationships (Leary, Tambor, Terdal, & Downs, 1995),

or (c) to stave off the debilitating effects of existential anxieties arising from the awareness of one's impending death (Pyszczynski, Greenberg, & Solomon, 2004). However, these theories are rendered less compelling when one considers the relative lack of self-enhancement motivations that is evident among East Asians, especially as it seems that concerns with status, social relationships, and death are at least as strong in East Asia as they are in the West (e.g., Heine, 2001; Heine, Harihara, & Niiya, 2002).

We suggest that compelling evolutionary accounts for the origins of psychological processes need to consider the adaptive value of the processes at a level of abstraction where universality is more evident, or they need to specify the conditions under which those processes are operating (Norenzayan & Heine, 2005). For example, positive self-regard can also be considered in terms of strivings to be the kind of person viewed as appropriate, good, and significant in one's culture (e.g., Crocker & Park, 2004; Heine et al., 1999). At this level of analysis, a need for positive self-regard is a plausible candidate for a psychological universal, and we propose that the most compelling evolutionary accounts for this motivation will be targeted at this level (see Heine, Proulx, & Vohs, 2006). In sum, cultural variation identified by Stage 1 research programs serves to highlight the level of analysis at which evolutionary accounts might most successfully be proposed.

Future Challenges and Opportunities in Stage 1 Research

Over the past 20 years, Stage 1 cross-cultural research has enjoyed a period of tremendous growth. What might happen over the next 20 years? With the humility to recognize that predicting the future is best left to fortune-tellers and investment bankers, we venture to suggest some directions that we think would prove to be fruitful.

One striking shortcoming of Stage 1 cultural psychological research thus far is that the majority of the most influential research has been focused on comparisons of North Americans and East Asians. Perhaps it is understandable that North Americans specifically and Westerners more generally have usually served as the point of comparison in these studies, given that the majority of psychological theories have emerged from these samples. However, the focus on comparisons between these two cultural groups has resulted in a pronounced neglect of other cultures. We suggest that East Asians have been the primary target of comparison because recent cultural psychological research has built upon the ideas of Markus and Kitayama (1991), who proposed a model that was largely based on a contrast of Western and East Asian cultures. The richness of that model has allowed for a growing number of theoretical advances to be built upon this initial foundation, leading to a wide variety of predictions for specific differences in the ways that East Asians and North Americans are likely to differ in their psychology (e.g., D. Cohen & Gunz, 2002; Heine et al., 1999;

Nisbett et al., 2001; Norenzayan et al., 2002; Oishi et al., 2004; Suh, 2002). Furthermore, in many ways, cross-cultural comparisons between East Asians and North Americans have made for strong arguments for specific cultural differences, as the samples that are typically contrasted (university students in the two cultural regions) are similar in so many other respects (i.e., they tend to be from highly industrialized, middle-class, urban environments, and the participants tend to be highly educated and cosmopolitan) that there are fewer possible demographic and cultural variables that could potentially account for the differences than there are with many other kinds of cross-cultural comparisons. The emergence of reliable and pronounced differences between groups that share so many important societal and ecological features suggests that there should be at least as broad and expansive differences in other regions of the world that are less industrialized.

We call for cultural psychological research to grow beyond comparisons of East Asians and Westerners. At present, despite the growth of cross-cultural research, psychologists still know embarrassingly little about the psychological processes of the majority of cultures of the world. There appear to be many opportunities to identify important cultural differences for researchers enterprising enough to launch psychological expeditions into relatively unexplored terrain. In particular, we think the role of culture in psychological functioning should become especially evident when small-scale societies are studied. Although such research is methodologically challenging, it stands to greatly advance understanding of the ways that culture is implicated in psychology, given the multitude of theoretically important differences in cultural experience. There has already been much excellent and influential work conducted with such groups (e.g., Atran et al., 2005; Bailenson, Shum, Atran, Medin, & Coley, 2002; Cole, Gay, & Glick, 1968; Gordon, 2004; Henrich et al., 2005; Levinson, 1997; Medin & Atran, 2004; Segall, Campbell, & Herskovits, 1963), much of it having been done to make arguments for psychological universals (e.g., Barrett & Behne, 2005; Ekman, Sorenson, & Friesen, 1969; Levenson, Ekman, Heider, & Friesen, 1992). We hope that more researchers pursue the important questions that can be answered only by exploring such samples. Other fruitful but underexplored avenues of cross-cultural research include religious differences in the world today (e.g., A.B. Cohen & Rozin, 2001; Hansen & Norenzayan, *in press*; Sanchez-Burks, 2002; Shweder et al., 1997) and the extent to which findings from middle-class samples generalize to working-class ones (e.g., Snibbe & Markus, 2005). Given psychology's reliance on industrialized, highly secular, and middle-class samples, broadening Stage 1 research in these ways is critical for determining the generalizability of findings.

A second shortcoming of past Stage 1 cultural psychological research is that it has largely been limited to explorations of the extent to which theories and phenomena that have been developed and identified in the West generalize to non-Western

cultures. An initial impetus of Stage 1 research has been to test the generalizability of assumed universals originally documented in the West. However, it is likely that there are psychological processes that are common in other cultures but would not generalize well to the West, and the study of such processes would be equally informative in addressing questions regarding human nature. Such kinds of “indigenous” phenomena (meaning that they are indigenous to cultures outside of North America) have thus far been most saliently identified in work on psychopathology. For example, a number of psychological disorders, such as *koro* and *latah* in Southeast Asia (Ngui, 1969; Suwanlert, 1988), *taijinkyofusho* and *hikikomori* in Japan (Cousins, 1990; Sakai, Ishikawa, Takizawa, Sato, & Sakano, 2004), *dhat* syndrome in South Asia (Obeyesekere, 1985), *susto* in Latin America (Rubel, O’Neill, & Collado, 1985), and *malgri* among some Australian aboriginal groups (Cawte, 1976), are strikingly different from any conditions that have been identified in North America (see Kleinman, 1988; Tseng, 2001). Cross-cultural research on emotions has also identified a number of emotions that are central to the lives of people from other cultures, yet do not readily fit into any of the taxonomic schemes within the West (e.g., *liget* in Ilongot—Rosaldo, 1980; *amae* in Japan—Doi, 1971; *iklas* in Java—Geertz, 1959). Furthermore, even if a given phenomenon is recognizable in Western culture, it may be overlooked because it is not of central importance in Western samples. However, the same phenomenon could be of great importance in many other cultures.

We suggest that a shift from exploring whether Western-identified phenomena generalize elsewhere to exploring whether other indigenously identified phenomena generalize to the West would open up many fascinating and important avenues to explore, and would greatly advance understanding of cultural variation and universality of psychological processes. To cite an example, the notion of “face” is far more elaborated and takes on different meanings within East Asia than in the West, and this leads to specific psychological predictions that can be tested (e.g., Chang & Holt, 1994; Heine, 2005a). Likewise, a type of dialectical thinking that emphasizes constant change and, unlike the Hegelian dialectic, is tolerant of apparent contradiction likely would not have been investigated among Westerners if it had not first been identified among Chinese (e.g., Peng & Nisbett, 1999). We think psychological research would benefit in important ways if greater attention were directed toward the study of phenomena that are less familiar in the West.

We also suggest a third direction that we hope Stage 1 cultural psychological research will follow more in the coming years. One of the strongest arguments for the role of culture in shaping psychological processes is expressed in the Whorfian hypothesis (Whorf, 1956). Simply put, this is the hypothesis that language influences thought (the more extreme version of this hypothesis, the notion that language determines thought, has largely been demonstrated to be untenable). To the extent that this hypothesis of linguistic relativity is correct, one way that cultures shape

psychological functioning is through the languages that are spoken. Although the Whorfian hypothesis benefits from a certain intuitive appeal (e.g., consider the rationale behind politically correct speech), for the most part it was dismissed by linguists and psycholinguists in the latter half of the 20th century. One key reason for this dismissal can be traced to work on color perception by Berlin and Kay (1969) and Rosch Heider (1972), who found evidence of universal color perception across cultures with languages having highly divergent color terms. The evidence against linguistic relativity from these research programs was widely interpreted to generalize to any arguments made in support of the Whorfian hypothesis. Recent research, however, has called into question the findings from the key studies of Rosch Heider (Roberson et al., 2000; also see Lucy & Shweder, 1979), and new findings have demonstrated that color perception is significantly affected by a language’s terms for color (Roberson, Davidoff, Davies, & Shapiro, 2005; Roberson et al., 2000). Furthermore, other research has demonstrated how linguistic differences can dramatically affect people’s perceptions of and reasoning about space (e.g., Levinson, 1997), time (Boroditsky, 2001), and numerical quantities (Gordon, 2004; Pica, Lerner, Izard, & Dehaene, 2004). We anticipate that this recent renewal of interest in linguistic relativity will pave the way for a number of other important cross-linguistic and cross-cultural hypotheses to be tested, thereby opening up expansive new avenues for cultural psychological research.

STAGE 2 CULTURAL PSYCHOLOGY: EXPLAINING CULTURAL DIFFERENCES

Stage 1 cultural psychological research serves an important function in expanding the database of psychology and painting a more accurate picture of the contours of human nature. Arguably, however, it is Stage 2 research that makes the most significant contribution to the science of psychology. Stage 2 cultural psychological research seeks to explain how cultural differences in psychological processes are produced and sustained. Stage 2 research firmly hinges on Stage 1 research, as genuine cultural differences in psychological processes serve the important function of spotlighting potential psychological mechanisms. We agree with Matsumoto and Yoo (2006, this issue) that cross-cultural research exploring underlying mechanisms is critical in psychology because it is the best way—perhaps the only way—to disentangle the effects of multiple variables that tend to co-occur in a given culture but not across cultures. For example, Stage 2 cross-cultural research is needed to assess the relative effects of age-related growth versus schooling on cognitive development. Age and schooling are confounded in Western cultures, but not, for example, in small-scale cultures. By comparing children’s cognitive development in a Western culture with children’s cognitive development in a culture where children may or may not experience formal schooling, one can disentangle the relative contributions of these two variables (e.g., Stevenson, 1982).

A simple analogy of how cultural differences serve the function of identifying psychological mechanisms can be seen in the study of neuroscience. One endeavor that clarifies the functioning of normal brains to neuroscientists is examination of the functioning of brains that have been selectively impaired. For example, neuroscientists were able to greatly increase their understanding of how people forecast future events when Phineas Gage lost this ability, along with much of his medial prefrontal cortex. The difference between Gage's brain and the brains of other individuals, and the difference between his forecasting ability and that of others, spotlighted an obvious place to search for the neural foundation of forecasting skills. In this way, Gage's more unfamiliar mind deepened understanding of the intact minds that neuroscientists more frequently encounter.

Likewise, observed cultural differences in psychological processes (although of course not indicating damage or abnormalities!) provide an opportunity for gaining new understanding of those processes. When one finds that a certain psychological process identified in one culture is absent in another, or weaker or more pronounced, one knows that a key mechanism underlying that process is something that is differentially distributed between those populations. For example, the fact that people from Western cultures self-enhance in ways that East Asians do not (e.g., Heine & Lehman, 1997a) indicates that self-enhancement hinges importantly on a mechanism that is more prevalent in Western than East Asian cultures. Basing their reasoning on Markus and Kitayama's (1991) arguments that Western cultures are better characterized by independent construals of self than are East Asian cultures, Heine et al. (1999) hypothesized, and empirically demonstrated, that self-enhancement is critically tied to independent self-construals. The previously identified cultural difference in self-construals served as a useful starting point for making sense of the cultural differences in self-enhancement. Cultural differences thus serve to spotlight where the most productive efforts can be directed in searching for underlying mechanisms. Hence, findings from research with East Asian participants do not just deepen understanding of minds in East Asian cultures; they also deepen understanding of minds in general. In this way, cross-cultural research findings are relevant and important even for researchers who are not interested in the question of cultural influence per se. Stage 2 cultural psychological research provides an additional tool researchers can use to clarify what mechanisms are behind particular psychological processes. However, questions in Stage 2 are quite different from those of Stage 1. Appropriate research tools are needed in this second stage of research.

Methodological Strategies for Stage 2 Cultural Psychological Research

There are a few strategies by which underlying mechanisms of cultural differences can be explored in Stage 2 research. We describe them here.

Mediational Studies Involving Trait Measures

One Stage 2 strategy is to examine whether trait measures of relevant theoretical constructs mediate cultural differences. First, cultural differences are identified in one measure (e.g., embarrassability; Singelis, Bond, Lai, & Sharkey, 1999). Second, cultural differences are identified in a second measure (e.g., interdependent self-construals). Third, the data are analyzed to determine whether the two constructs (i.e., embarrassability and interdependence) are related in the predicted direction. If so, the fourth step is to examine whether the cultural differences in one construct (e.g., interdependence) mediate the cultural differences in the other construct (e.g., embarrassability). Variants on this strategy have been employed in a number of different research endeavors (e.g., the relations between individualism and high SWB, in Diener & Diener, 1995; between independence and self-enhancement, in Heine & Renshaw, 2002; between holistic thinking and judgments of causal relevance, in Choi, Dalal, Kim-Prieto, & Park, 2003; and between self-esteem and the similarity-attraction effect, in Heine, Foster, & Spina, 2005).

However, such efforts to identify mediators through the correlational strategies described (for more thorough procedural descriptions, see Baron & Kenny, 1986) are not always particularly effective. Spencer, Zanna, and Fong (2005) persuasively argued that in many situations, experimental strategies to detect underlying psychological processes are preferred to correlational strategies. Specifically, in situations in which it is difficult to confidently measure the theorized process, experimental strategies can provide a more effective means to identify the mediating variable. Because measurement of cultural constructs is compromised by a variety of methodological artifacts specific to cross-cultural comparisons (e.g., D. Cohen, in press; Heine, Lehman, et al., 2002), and often these measures do not show good evidence of measurement equivalence across cultures (van de Vijver & Poortinga, 2002), correlational attempts at mediation are likely to be less successful in many cross-cultural studies. We agree with Matsumoto and Yoo (2006, this issue) that measures of cultural constructs such as independent-interdependent construals of self are especially methodologically suspect (T.R. Levine et al., 2003), and we suggest that this diminishes their utility in mediational designs.

Furthermore, we emphasize that trait measures capture people's self-reflective awareness of their own thoughts and behaviors; however, much of people's mental processes lies distinctly outside of consciousness (e.g., Bargh, Gollwitzer, Lee-Chai, Barndollar, & Trötschel, 2001; Nisbett & Wilson, 1977). Verbal reports can be problematic because participants may not have direct introspective access to their own beliefs, values, or mental processes in general (Nisbett & Wilson, 1977), or they may (often unconsciously) distort or misrepresent their responses for cognitive and motivational reasons (see, e.g., Schwarz, 1999). This is problematic for the study of culture, because the cultural variables that are purported to influence psychological processing

(e.g., customs, scripts, lay theories) are typically tacit and outside of individuals' awareness. In the words of Kitayama (2002), echoing this point of the inherent opaqueness of cultural variables, "What culture is to humans is what water is to fish" (p. 90). For example, Americans tend to prefer unique shapes (Kim & Markus, 1999), and East Asians tend to rely more on family-resemblance cognitive strategies than Americans do (Norenzayan et al., 2002), but these tendencies are largely invisible to Americans and East Asians, respectively, and become apparent to them only through direct cultural contrasts. It is unlikely that self-report measures of people's preferences for unique shapes or reliance on family-resemblance cognitive strategies would reveal cultural differences as reliably, or to the same magnitude, as measures obtained through experimental contrasts. Therefore, efforts to measure cultural variables using trait measures will often be compromised by people's inability to accurately report on their cultural beliefs and practices. Next, we describe some experimental strategies that can avoid the problems inherent in trait measures (granted, experimental methods have their own unique set of weaknesses) in attempts to identify mechanisms underlying cross-cultural differences.

Priming Cultural Constructs

One strategy frequently used to explore mechanisms is to prime constructs hypothesized to vary across cultures and examine whether such priming can lead people from one culture to respond more like those of another culture. For example, growing experimental evidence indicates that temporarily inducing independent or interdependent self-orientation affects analytic and holistic processing in predictable ways (Kühnen, Hannover, & Schubert, 2001; Kühnen & Oyserman, 2002). In one series of studies, Kühnen and his colleagues first primed German participants with either independence ("think of how different you are from family and friends") or interdependence ("think of how similar you are to family and friends"). Subsequently, participants' responses on an unrelated perceptual task were measured. Results indicated that activation of independent self-construals led to more field independence and activation of interdependent self-construals led to more field dependence, demonstrating that independence and interdependence have a causal effect on the kinds of perceptual differences that have been identified in other cross-cultural research (e.g., Ji, Peng, & Nisbett, 2000). Many other studies have also utilized this priming method for articulating the mechanisms underlying cultural differences, showing, for example, the effects of interdependence on enemyship experience (Adams, 2005), on tolerance for financial risks (Mandel, 2003), on prevention motivations (Lee et al., 2000), and on collectivist social values (Gardner, Gabriel, & Lee, 1999). Other priming studies have demonstrated the effects of complex visual scenes on attention to the field (Miyamoto, Nisbett, & Masuda, 2006), of dialectical orientations on self-esteem (Spencer-Rodgers, Peng, Wang, & Hou, 2004), and of

distinctiveness on independent self-descriptions (Trafimow, Triandis, & Goto, 1991).

Other Experimental Methods

A variety of other experimental or quasi-experimental approaches have also been used to identify mechanisms underlying cultural differences. One approach is to identify key experiences that vary across cultures and measure whether greater exposure to these experiences leads to changes in psychological variables. For example, Koo and Choi (2005) hypothesized that training in Oriental medicine fosters a holistic way of thinking. They found that Korean students in Oriental medicine more strongly believed in a cyclic pattern of change and considered a broader range of explanatory factors (both hallmarks of holistic reasoning) than did comparable students who were not being trained in Oriental medicine. The data showed a chronological trend, with holistic tendencies becoming stronger the longer students were exposed to training in Oriental medicine, and this trend remained after age differences were accounted for. Similarly, Kitayama, Markus, Matsumoto, and Norasakkunkit (1997) reasoned that self-enhancing and self-improving tendencies emerge from participating in specific cultural situations that encourage such tendencies. They developed a situation-sampling technique to demonstrate that Americans became more self-improving when they imagined themselves in Japanese situations, and, likewise, that Japanese became more self-enhancing when they imagined themselves in American situations. Such a method can also be used to identify the specific features of situations or social experiences that are associated with particular psychological processes (e.g., Morling et al., 2002).

Using a different approach, Heine et al. (2001) tested the hypothesis that cultural differences in self-improving motivations are related to theories of abilities. They presented people with a task that contained instructions suggesting either that it measured abilities that were incremental or that it measured abilities that were entity based. The results indicated that incremental-abilities instructions led Americans to respond more like Japanese, whereas entity-abilities instructions led Japanese to respond more like Americans. By noting the kinds of information in the instructions that people responded to, Heine et al. were able to identify the default strategies that people in different cultures pursued.

Employing another technique, Heine, Takemoto, and Moskaleiko (2005) investigated whether self-critical motivations are related to objective states of awareness. They manipulated an objective state of awareness by placing people in front of a mirror and found that the mirror led Americans to show more self-critical motivations, like the Japanese, whereas Japanese remained largely unaffected by the mirror (suggesting that they were more chronically in a state of objective self-awareness; also see D. Cohen & Hoshino-Browne, 2005).

The experimental strategies in the studies just mentioned are similar in that they all involve manipulating or measuring the accessibility of ideas or experiences that are hypothesized to be more chronically accessible in one culture than in another. Another Stage 2 strategy is to decouple the presumed underlying cultural process (e.g., independence-interdependence) from the conventional populations of comparison (e.g., East Asian vs. Western). For example, if the differences between East Asians and Westerners in analytic versus holistic thinking are explainable in terms of degrees of independence-interdependence, then other cultures that differ in independence and interdependence should show parallel differences in analytic versus holistic processing. Kühnen, Hannover, and Roeder (2001) tested this hypothesis with participants in two individualistic cultures, the United States and Germany, and two collectivistic ones, Russia and Malaysia, and found results consistent with this hypothesis in the domain of perceptual processing. That is, Russians and Malays showed higher levels of holistic thinking than the other cultural groups, whereas Americans and Germans showed higher levels of analytic thinking than the Russians and Malays (also see Knight, Varnum, & Nisbett, 2005, for parallel differences between Western and Eastern Europeans and between Northern and Southern Italians). New research has gone beyond independence-interdependence to examine additional cultural affordances that may explain cultural differences in cognition. Miyamoto, Nisbett, and Masuda (2006) showed that (a) randomly sampled Japanese scenes are more visually complex than randomly sampled American scenes, judged by objective as well as subjective measures, and (b) both Japanese and American participants exposed to Japanese scenes were more likely to show holistic processing in a subsequent task than were participants exposed to American scenes.

Another useful approach is the *triangulation* strategy, proposed and discussed in Bailenson et al. (2002) and Medin and Atran (2004). This is a two-step process that is designed to shed light on the source of a cultural difference. In the first step, a psychological phenomenon is examined across two cultures, A and B, that are known to vary on a theoretically relevant dimension and are also predicted to vary in that phenomenon. In the second step, a third culture, C, that varies from B but not A on a second theoretically relevant dimension is included. Thus, cultures A and B differ on the first dimension, whereas cultures B and C differ on the second dimension. This strategy sheds light on the specific population variable that is implicated in the psychological difference between A and B. Studies on category-based induction in folk biological reasoning (Bailenson et al., 2002; see also Medin & Atran, 2004) have illustrated the usefulness of this strategy in facilitating explanations for cultural differences. For example, Medin and Atran (2004) demonstrated that unlike American college students, Maya villagers in Guatemala and Americans with biological expertise (park maintenance workers, who share aspects of American national culture

with American college students but share aspects of biological expertise with the Maya) do not typically use the *diversity* heuristic in inductive reasoning about plants and animals. The diversity heuristic is a widely replicated inductive reasoning phenomenon that relies on a coverage strategy—the more diverse the premise categories, the stronger is the inductive inference to a conclusion category that subsumes these premise categories. Medin and Atran's studies revealed that immersion in the biological world is a key factor that precludes the diversity heuristic, and instead leads to a preference for ecological reasoning, which, unlike the diversity heuristic, relies on knowledge about the interrelations among plants and animals and their habitats to make causal inferences about biological properties. It appears that in the absence of biological expertise, people, such as Western college students, revert to the diversity heuristic.

In sum, in recent years, building upon the findings from Stage 1 research, as well as extending the earlier theoretical foundations that had been developed (e.g., Markus & Kitayama, 1991; Nisbett et al., 2001), a variety of different methods have been used to search for mechanisms underlying cultural differences. Although still in its infancy, this Stage 2 research has deepened researchers' understanding of psychological mechanisms in ways that would have been less likely to emerge had researchers never considered samples outside of Western culture.

Explanations for Group Differences

Theoretically, psychological differences among human groups can be accounted for in three distinct ways (after methodological artifacts have been ruled out): (a) Exposure to different local ecological conditions may cause underlying psychological mechanisms to be expressed differently (evoked culture); (b) people may acquire psychological tendencies through social learning processes that are biased in favor of learning from in-group members (transmitted or epidemiological culture); or (c) population differences in gene frequencies may be associated with particular behavioral tendencies (noncultural genetic variation). Next, we briefly examine each possibility.

Evoked Culture

Human groups occupy vastly different ecological niches (Edgerton, 1971) that may evoke different cognitive tendencies to solve the same problems of human existence, resulting in divergent psychological tendencies (D. Cohen, 2001). There are two variants to this claim. Evoked culture could emerge because different environments select different psychological processes or because the same psychological process is expressed differently in different environments. Tooby and Cosmides (1992; see also Fessler, in press, for discussions) proposed that behavioral variation may emerge when different local environmental triggers act on the same underlying psychology. To illustrate how evoked culture operates, Tooby and Cosmides discussed how the

same food-sharing mechanism can lead to different cultural norms depending on the degree of variability in foraging or hunting success. Where foraging or hunting success is highly variable across time, egalitarian norms for food sharing and sanctions against hoarding are strong; this is not the case when the supply of food is relatively stable. Similarly, Gangestad, Haselton, and Buss (in press) drew on evoked culture as the explanation for cultural variation in mate preferences. They argued that the same underlying preference for mates exhibiting indicators of health interacts with an ecological cue to produce cultural variation—features signaling health are more valued in potential mates where parasite prevalence is high than where it is low. Evoked culture is also a partial explanation for cognitive differences between East Asians and North Americans, as indicated by recent findings (Miyamoto, Nisbett, & Masuda, 2006) on the effects of visual environments—Japanese visual scenes evoked holistic cognitive tendencies even among Americans.

Transmitted or Epidemiological Culture

We propose that the complex cognitive capacities that enable cultural transmission, such as various forms of social learning, are the primary engine that produces the bulk of stable variation across groups (Henrich & Boyd, 1998; Richerson & Boyd, 2005). Transmitted or epidemiological culture is prototypically what most social scientists and cultural psychologists consider culture (Nisbett, 2003; Norenzayan, in press; Richerson & Boyd, 2005; Sperber, 1996). It refers to the fact that genetically similar people living in similar environments may possess strikingly different beliefs, practices, and psychological tendencies that they acquire from others in their group. Culture emerges when information is transmitted socially through social learning mechanisms such as imitation and instruction (Tomasello, Kruger, & Ratner, 1993); it is also a by-product of communicative processes such as gossip, conversations, and telling of stories (Schaller, 2001). People acquire and transmit substantial amounts of information that subsequently alters their behavior in profound ways. Most cultural differences examined by cultural psychologists are due to transmitted or epidemiological culture, although there have been relatively few direct investigations of how transmission processes give rise to cultural differences.

It is useful to distinguish evoked and transmitted culture as explanations of cultural differences, yet in actuality these two processes reflect a continuum rather than a dichotomy. That is, psychological structures may vary in degree between being entirely innately prepared, at one extreme, and being entirely reliant on socially transmitted mechanisms, at the other. Mechanisms at the former extreme are activated in individuals by the mere presence of an appropriate ecological cue; those at the latter extreme require substantial social transmission (including processes of imitation and instruction) for their activation (Fessler, in press). Many psychological structures fall in between these two extremes. Furthermore, these two processes

work in tandem to produce and maintain cultural diversity (Norenzayan, in press). Nisbett and Cohen's (1996) work on the culture of honor illustrates this point. The U.S. South has a tradition of honor, in which toughness and aggressive response to insults are prized, in a way that they are not in the North. The origin of this difference is a story of evoked culture: Where wealth is easily stolen, as in ecologies supporting herding economies, men stand to benefit by maintaining their honor or developing a reputation for toughness. The South was settled by Scotch Irish herders, whereas the North was settled mostly by European farmers; as a result, a tradition of honor is more prevalent in the South than in the North. But cultural differences persist even when the original economic conditions disappear. The culture of honor continues to flourish in industrialized parts of the U.S. South, even though herding is a thing of the past. The best explanation for the persistence of honor cultures is social transmission, and indeed, a variety of evidence supports this view (D. Cohen, Vandello, Puente, & Rantilla, 1999; Nisbett & Cohen, 1996). One possibility is that ecological differences evoke initial responses that vary adaptively across different environments, but then these responses are picked up by processes of transmitted culture, amplified, and perpetuated even when the initial conditions are no longer present (see D. Cohen, 2001).

An important question for future Stage 2 cross-cultural research concerns the relative contributions of evoked and transmitted culture to cultural variation. Richerson and Boyd (2005) proposed the ideal "common garden" thought experiment for this purpose: Take two groups of individuals living in different environments and having very different cultures, and switch them around. Suppose some Inuits with a subsistence based on fishing move into the humid rain forests of the Amazon, and some Yanomamo hunter-gatherers move into the frozen arctic regions of Canada. According to the evoked-culture explanation, the arctic Canadian ecology will quickly trigger the Inuit way of life among the Yanomamo foragers, and as a result, they will cease to resemble their Yanomamo compatriots in the Amazon. According to the transmitted-culture explanation, they will remain more like their Yanomamo compatriots, and without the opportunity to adopt rapidly the cultural repertoire of arctic survival accumulated through thousands of years by the Inuit, they will likely suffer greatly from the harsh climate.

Cultural psychologists could take advantage of naturally occurring "experiments" to isolate the effects of transmitted culture, by comparing groups living in similar environments but with different beliefs and practices. The Amish of the U.S. Midwest, for example, live in the same ecological environment as neighboring German-ancestry farmers, but to this day have maintained beliefs and practices that are markedly different. The complementary strategy would be to measure the effects of a novel ecological variable on a group that shares the same culture; for example, one might examine how farmers in a farming community of the U.S. North differ from individuals who have

migrated from Northern farming communities to a new environment in which they adopt herding. An example of the former kind of study is one by Rice and Steele (2004), who compared the average SWB in European countries with that in U.S. ethnic groups whose ancestry was derived from those countries. Countries differ markedly in their average SWB, and Rice and Steele found that the differences in SWB across the European countries were mirrored by the differences across their corresponding American ethnic groups, although the magnitude was much smaller. Thus, cultural differences were preserved even after generations of living in the same country, under similar ecological conditions of American middle-class life. Given that group differences in SWB in these samples were likely not genetic, this finding supports the idea that an important psychological variable such as SWB is transmitted socially across generations and can persist for a long time even in a very different environment. Psychologists interested in cultural variation have been slow in adopting such research strategies that are ultimately important in isolating the mechanisms of cultural variation.

Genetic Variation

A controversial explanation for psychological differences between cultures is that they could derive from genetic differences. This possibility should be examined with care, given the unfortunate history of racism and conquest that has often accompanied biological explanations of group differences (for discussions, see Diamond, 1997, and Gould, 1981). Research in behavioral genetics reveals that within any human population, many psychological traits and tendencies are moderately to substantially heritable (e.g., Plomin, Owen, & McGuffin, 1994; Roy, Neale, & Kendler, 1995; Turkheimer, 2000). However, it is crucial to underscore that heritable differences *within* populations do not indicate heritable differences *between* populations (for discussion, see Richerson & Boyd, 2005, and Scarr, 1981). Human groups are overwhelmingly genetically similar to one another, and it is likely that although many behaviors are to some extent heritable within groups, most between-groups differences are overwhelmingly attributable to socially transmitted mechanisms. Nevertheless, a growing body of research continues to identify genes that vary systematically across populations. These include genes associated with distinct blood groups (Landsteiner, 1901), skin color (Jablonski & Chaplin, 2000), lactose intolerance (Beja-Pereira et al., 2003), and resistance to malaria (Allison, 1954). It is conceivable, then, that some differences that are identified between two cultural groups derive from differential frequencies of specific genes between the two populations.

To the extent that group-level psychological differences are associated with group-level genetic differences, selection pressures must have diverged in different populations. Cavalli-Sforza and Cavalli-Sforza (1995) argued that one should see the greatest differential selection pressures on traits that have had

powerful consequences for fitness and that have occurred consistently over long periods of time, such as those related to thermal regulation, pathogen resistance, and diet. Most psychological traits and tendencies are unlikely to meet these criteria, unless genes associated with these traits and tendencies also have yet-to-be-identified psychological side effects, or spandrels. Most large-scale societal changes that separate cultures today—with the possible exception of the agricultural revolution that occurred in some societies 10,000 years ago—have very short time frames that minimize the impact of differential selective pressures on the gene pool in different groups. Cultural practices are fluid, and often change quite dramatically over generations, making it unlikely that many specific cultural practices have persisted long enough to have significantly influenced the genome.

Perhaps the best way to empirically address the question of whether variation in genes or in cultural practices underlies group differences in psychological processes is to contrast groups in which race is held constant but cultural context is varied. Immigrants and their descendants provide practical samples that afford this kind of investigation. Empirical results typically show that immigrants and their descendants exhibit psychological processes intermediate to those of members of their heritage culture and their compatriots in their host culture—evidence consistent with a cultural, rather than genetic, explanation for group differences. For example, Asian Americans exhibit psychological tendencies intermediate to those of Asians in Asia and Americans of European descent (e.g., Kitayama et al., 1997; Norenzayan et al., 2002); if anything, Asian Americans more closely resemble European Americans than they do Asians in Asia (Heine & Hamamura, 2006; Lydens, 1988; Miyamoto, Kitayama, & Talhelm, 2006). Furthermore, the longer people of Asian descent have been in North America, the more their psychological tendencies resemble those of European Americans, to the point that third-generation Asian Canadians are indistinguishable from Canadians of other cultural backgrounds (Heine & Lehman, 2004; McCrae, Yik, Trapnell, Bond, & Paulhus, 1998). At present, we know of no compelling empirical evidence to suggest a genetic basis for the group differences that have been identified in psychological studies. We therefore consider such group differences to be cultural differences, whether their primary origin is evoked or transmitted culture.

Proximal and Distal Explanations of Cultural Differences

In Stage 2 research, it is also important to distinguish between *proximal* and *distal* explanations of cultural differences. Both levels of explanations are important, and they are complementary for understanding how cultural differences originate and persist in populations. Distal explanations are historical analyses that involve social, economic, and geographic factors that may have given rise to culturally stable patterns of thought and behavior. Proximal explanations largely involve

individual-level psychological processes—including beliefs, knowledge, and experiences with the world—that have been shaped by these historical developments and could be directly implicated in cultural differences in psychology.

Distal explanations of cultural differences are inherently outside the scope of psychological research and require interdisciplinary methods or collaboration with historians, anthropologists, archaeologists, sociologists, and ecologists. These collaborations are not without their challenges, but they can provide fruitful insights into psychological patterns. A fascinating example of a distal account of cultural differences is Diamond's (1997) *Guns, Germs, and Steel*, in which he traces today's regional differences in wealth, technology, and political institutions to early geographic factors, such as the availability of domesticable plants and animals in a given region and to the shape of coastlines and dominant continental axes.

For a psychological example, consider again Nisbett and Cohen's (1996) work tracing the culture of honor that currently exists in the U.S. South back to the herding-based economies of the first European settlers in that region. Such kinds of distal explanations cannot be tested directly through psychological methods. However, evidence for distal explanations can be derived from investigations of proximal measures regarding how cultural patterns continue to persist even when the original ecological factors that gave rise to them are long gone (D. Cohen, 2001). For example, Cohen and his colleagues have identified a number of proximal mechanisms by which honor cultures are perpetuated. These include the socialization of boys for violence in the event of an insult (D. Cohen, 1998), behavioral rituals for regulating conflict (D. Cohen et al., 1999), men's participation in cultural activities that encourage toughness (D. Cohen, 1998; Nisbett & Cohen, 1996), the establishment of laws and cultural practices that sustain a culture of honor (D. Cohen, 1996), and pluralistic ignorance regarding the extent to which masculinity is perceived to be linked with honor (D. Cohen, Nisbett, Bowdle, & Schwarz, 1996). In sum, there is an important distinction between distal and proximal levels of explanation, and Stage 2 research is important for facilitating both levels of explanation.

IMPLICATIONS OF CROSS-CULTURAL RESEARCH FOR SOCIETY AND INTERGROUP RELATIONS

The study of culture and psychology has important social ramifications that extend beyond the psychological laboratory. Here we consider some broader implications of a psychological science that is attentive to cultural differences.

Cultural Psychology and Stereotyping

One concern that is sometimes raised regarding cultural psychology is that it smacks of stereotyping, for example, by leading to such conclusions as "Japanese have interdependent selves whereas Americans have independent selves." Is cultural psychology tantamount to stereotyping?

We suggest that, in principle, statements like the example just cited are not different in kind from how one describes other group differences or experimental effects in psychology. That is, they are not essentially different from, for example, statements about the rumination of depressives, the patriotism of people in a mortality-salience condition, the motivated cognitions of people who support a particular position, or, for that matter, aggregate-level phenomena that do not involve people (e.g., saying that the weather in California is warmer than the weather in Pennsylvania). However, these kinds of descriptions of group differences feel considerably less problematic than saying, "Japanese have interdependent selves." Why might this be? Perhaps perceptions of stereotyping are especially likely to arise when the group that is being referred to is one in which people tend to vest their identity. If people identify with their groups, then statements about those groups would seem to be directly applicable to them, in ways that are different from the ways that statements about other groups apply to them. People obviously identify a great deal with their culture, and as a result may feel pigeonholed when cultural differences are invoked.

Charges of stereotyping tend to be directed more often at cultural psychology than at other fields of psychology. This might be the case because of a belief that statements about cultural differences are essentializing and suggest, for example, that *all* members of a group have the same psychological characteristic, and that the cultural differences are fixed and immutable, allowing little room for social change. Within-group heterogeneity is an obvious fact of human behavior, and we do not know of any arguments of cultural homogeneity that have been made by psychologists. Perhaps the concern with stereotyping in cross-cultural research is merely linguistic, and therefore can be addressed by making greater efforts to report research findings with more extensive qualifying terminology (e.g., "on average, as a group, people who participate in Japanese cultural contexts are more likely than those who participate in American cultural contexts to display features of interdependent selves, although there is much variation within both cultures"). Whether or not the concern with stereotyping is largely linguistic, efforts to describe cultural differences in ways that take into account the heterogeneity of the samples can sensitize readers to the fact that cultural differences are statistical regularities, not absolute laws.

The concern with stereotyping may also originate from an implicit assumption that identified cultural differences are claimed to be immutable and unchangeable. Of particular concern is whether cultural differences examined by psychologists are perceived as immutable and essentialized because they reflect genetic differences across populations. As discussed earlier, there is no evidence that the group differences in psychology thus far examined by cultural psychologists reflect population-level genetic differences, and there is considerable evidence, derived from much Stage 2 research (e.g., studies showing that people who are primed with ideas more common in

another culture come to think in ways congruent with the norms from that culture), that they are socially transmitted (for further discussion, see Norenzayan & Heine, 2005). The perceived immutability of cultures may also derive from an implicit assumption that cultures are proposed to be entities that remain stable across time. As do many other cross-cultural researchers, we view cultures as statistical distributions of beliefs and behaviors across a group of minds, not as unchanging superorganic entities. The burgeoning literature on cultural evolution (e.g., Berger & Heath, 2005; Norenzayan et al., in press; Richerson & Boyd, 2005) supports this view, although we also recognize that there are fascinating arguments for the expectation that some cultural elements may persist over time—arguments that are also consistent with a distributional view of culture (e.g., D. Cohen, 2001; Nisbett, 2003). We suggest that misperceptions of the immutable nature of cultural differences help to sustain a concern with stereotyping regarding cultural psychological research, and this concern can be alleviated by the understanding that cultures are best construed as transmitted quasi-stable distributions of shared beliefs, not immutable structures.

Contrasting Culture-Blind and Multicultural Psychologies

Considerations of cultural diversity in psychological functioning place cultural psychologists in the crosshairs of another politically charged debate: What is human nature? The two sides of this debate are guided by competing ideologies regarding how to interpret human diversity. One approach is the culture-blind notion that people are the same wherever one goes. Of course, no one believes that any two people are *exactly* the same. Rather, this belief reflects the view that at some fundamental level, people share some underlying nature or essence (see Shweder, 1990, for an in-depth discussion of this perspective). This consideration of human nature, however well intentioned it may be, carries a significant cost. Maintaining the assumption that people everywhere think the same, when all one really can feel somewhat confident about is how people from one's own culture tend to think, requires the potentially ethnocentric projection of one's own cultural beliefs to understand those from other cultures. This is especially problematic for psychology, as the psychological database is largely based on findings from Westerners, particularly Americans. As a result, the starting point of reference from which the field of psychology considers intercultural relations is often American, or more broadly Western, culture—a practice not without costs. Is the highest level of moral reasoning around the world really one that privileges justice and individual rights above all else (e.g., Kohlberg, 1971; for dissenting views, see Miller & Bersoff, 1992, and Shweder et al., 1997)? Do people everywhere want more individual choice (Iyengar & Lepper, 1999; Schwartz, 2004)? Do people everywhere want high self-esteem or high SWB (Diener et al., 1995; Heine et al., 1999)? Is speaking up in class conducive to thinking everywhere (Kim, 2002)? The extent of the

documented cultural variation in these and other areas should encourage people to be cautious in inferring shared beliefs and desires across cultures, rather than reflexively assuming that what Americans or Westerners want reflects universally shared desires.

An alternative to the culture-blind approach is the multicultural notion that difference is not tantamount to deficit, and therefore diversity needs to be recognized and appreciated. One potential cost of this view is that it highlights group differences, making cultural membership a salient consideration, and thus making people more vulnerable to stereotyping. However, this approach also allows people to engage with others knowing that those others might not see the world in the same way that they do, and it provides people with a conceptual framework to understand how different life circumstances, assumptions, or experiences may affect thoughts, feelings, and behaviors differently. This is not a hypothetical argument. As reviewed earlier, there are real and significant cultural differences in the ways that people think and feel. Ignoring the reality of these differences would make people susceptible to ethnocentric projections and would only seem to breed ignorance and misunderstandings. We agree with Shweder (2000) that the best strategy for dealing with the thorny question of cultural variation in psychological processes is to be slow at judging other cultures, that is, to be cautious about making value judgments about how someone from a different culture might behave or think. This does not mean that criticizing specific practices of other cultures is unreasonable, but it does mean that criticism is most compelling and constructive when it is sensitive to the dangers of ethnocentric projections and takes into account cultural contexts.

The prejudice-reduction literature in social psychology has emphasized strategies, such as equal-status contact and superordinate goals, that are aimed at breaking down group boundaries and reducing perceptions of group differences. These strategies have been effective to some degree, but they are not without their costs. Their individualist and assimilationist slant leaves little room for cultural diversity, for people to remain different yet tolerant of the cultural other. This is a heavy price to pay in multicultural societies such as North America and Australia, and increasingly Europe. Cultural psychology offers an alternative. Perhaps if people had greater knowledge and appreciation of cultural differences, difference would breed not prejudice, but tolerance. We suggest that the consideration of people from other cultures as having equal status and the consideration of people from other cultures as potentially different are not incompatible, but rather are complementary. Intergroup contact, for example, may lead to greater appreciation of cultural differences as much as it may lead to the dilution of group boundaries. Cultural knowledge could be used in conjunction with individuating information to form culturally sensitive yet nonstereotypical judgments about the other.

In fact, some research indicates that this is indeed possible. Wolsko, Park, Judd, and Wittenbrink (2000) primed White

Americans with two alternative ideological messages. The color-blind message advocated a race-blind and culture-blind approach to improving interethnic relations ("we are all the same"); the multicultural message took differences as a given and advocated appreciation and respect for cultural differences. Subsequently, participants' attitudes toward Blacks and Hispanics were measured. The results showed that relative to no message, the color-blind and multicultural messages reduced in-group bias and interethnic prejudice about equally. Although the multicultural message increased perceptions of dissimilarity between the in-group and out-group, that perception did not translate into in-group favoritism or out-group hostility. Furthermore, the multicultural message increased stereotyping for both negative and positive traits, but it also increased stereotype accuracy for both types of traits and led to more favorable attitudes toward the out-groups. The results overall suggest that the culture-blind and multicultural strategies, although psychologically quite different, can produce favorable outcomes relative to doing nothing at all. It remains for researchers to explore under what conditions each strategy is more effective in increasing tolerance between cultural groups.

We further suggest that a culture-blind psychology exerts a significant cost on the science of psychology, in that it serves to marginalize psychological research from non-Western cultures. We have had a number of discussions with researchers from non-Western cultures who have informed us that they tried, and failed, to replicate a well-established Western finding. Some of those people have suggested to us that this "failure" led them to conclude that they were not as talented, as researchers, as Western psychologists. Indeed, if psychological processes are believed to be universal, and non-Western researchers have difficulty in replicating the findings that come out of the West, then a reasonable conclusion is that those researchers are lacking the acumen to detect these universally available phenomenon. In contrast, with the perspective of a multicultural psychology, the failure of a phenomenon to travel from one culture to another can suggest something meaningful. It can be an opportunity to locate previously unknown boundary conditions for the phenomenon, or to identify an indigenous phenomenon, and make a contribution that has significance to the whole field. The recognition of culture's role in shaping psychological processes should serve to importantly reduce the relative monopoly that Western researchers have had over the field of psychology (see Quinones-Vidal et al., 2004).

We anticipate that political sensitivities will continue to be part of cultural psychological research. Thus far, the majority of cross-cultural psychological research has identified cultural differences that are only mildly controversial, in that they tend to be rather evaluatively neutral and have been observed by comparing cultural groups that are for the most part not engaged in intense political struggles. We recognize that there is no guarantee that future cultural psychological research efforts will continue to focus on relatively uncontroversial topics or to

contrast groups that are not involved in emotionally charged political struggles. Indeed, it seems that some of the most important kinds of questions that cultural psychologists could investigate may be precisely those that can clarify how cultural factors are involved in real-world political conflicts or inequities. For example, consider the conflict between many Muslims and some Western journalists and their supporters regarding the publication of caricatures of Muhammad by a Danish newspaper and other Western newspapers in 2005 and 2006. Many complex issues are implicated in this conflict. However, an important element is a cultural divide centered on different conceptions of morality in these two cultural groups. For one, moral reasoning is based on a morality of autonomy that favors individual rights and freedoms; for the other, it is based on a morality of divinity that favors purity and sacredness (see Shweder et al., 1997). Greater understanding of cultural diversity in moral-reasoning strategies can raise awareness of the different moral sensitivities that are important in different groups, and might prevent such misunderstandings. Thoughtfully conducted research can illuminate the cultural differences that are implicated in intercultural conflicts and misunderstandings. Reducing intercultural conflict requires transcending differences. We suggest that to transcend differences, one must first understand what it is that divides people.

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Chapter 37

Cultural Psychology

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We are members of a cultural species. That is, we depend critically on cultural learning in virtually all aspects of our lives. Whether we are trying to manage our resources, woo a mate, protect our family, enhance our status, or form a political alliance—goals that are pursued by people in all cultures—we do so in culturally grounded ways. That is, in all our actions we rely on ideas, values, feelings, strategies, and goals that have been shaped by our cultural experiences. Human activity is inextricably wrapped up in cultural meanings; on no occasions do we cast aside our cultural dressings to reveal the naked universal human mind. To be sure, much regularity exists across humans from all cultures with respect to many psychological phenomena; at the same time, there remain many pronounced differences (for a review, see Norenzayan & Heine, 2005). Yet the point is that all psychological phenomena, whether largely similar or different across cultures, remain entangled in cultural meanings. The challenge for comprehending the mind of a cultural species is that it requires a rich understanding of how the mind is constrained and afforded by cultural learning. The field of cultural psychology has emerged in response to this challenge.

Cultural psychologists share the key assumption that not all psychological processes are so inflexibly hardwired into the brain that they appear in identical ways across cultural contexts. Rather, psychological processes are seen to arise from evolutionarily shaped biological potentials becoming attuned to the particular cultural meaning system within which the individual develops. At the same time, cultures can be understood to emerge through the processes by which humans interact with and seize meanings and resources from their cultures. In this way, culture and

the mind can be said to be mutually constituted (Shweder, 1990). An effort to understand either one without considering the other is bound to reveal an incomplete picture.

Although psychologists have been studying culture at least since Wilhelm Wundt published his 10-volume tome *Elements of Folk Psychology* in 1921, the study of cultural psychology has had its most impactful influence on mainstream psychology over the past 20 years. Around 1990, several seminal papers and books emerged that articulated how cultural experiences were central to and inextricably linked with psychological processing (Bruner, 1990; Markus & Kitayama, 1991; Stigler, Shweder, & Herdt, 1990; Triandis, 1989). Since then, much empirical research has demonstrated the cultural foundation of many psychological phenomena that had hitherto been viewed largely as invariant across the species.

This chapter reviews various ways in which culture shapes people's thoughts and behaviors. The term "culture" is used in two contexts. First, culture refers to any kind of *information* that is acquired from members of one's species through social learning that is capable of affecting an individual's behaviors (Richerson & Boyd, 2005). Second, culture refers to *groups of people* who exist within a shared context, where they are exposed to similar institutions, engage in similar practices, and communicate with one another regularly. This chapter explores how culture is uniquely implicated in human nature; how researchers can study cultural effects on psychology; how people are enculturated as they develop; and how culture shapes people's self-concepts, personalities, relationships, motivation, cognition and perception, language use, emotions, and moral reasoning.

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HUMANS AS A CULTURAL SPECIES

Humans are unique in the extent of their dependence on culture. In this section, human cultural learning is contrasted with that of other species. Further, some implications of the cultural nature of humans are discussed in terms of generalizing findings from particular cultural contexts to the species at large.

One defining characteristic of humans is that they engage in cultural learning—that is, they acquire information from conspecifics through social transmission (Richerson & Boyd, 2005). Engaging in cultural learning, by itself, is not a uniquely human characteristic, as many diverse species show evidence for cultural learning; for example, rats (Galef, 1988), pigeons (Lefebvre & Giraldeau, 1994), and guppies (Lachlan, Crooks, & Laland, 1998) engage in some kinds of learning from conspecifics. In some species, such as chimpanzees (Whiten et al., 1999) and orcas (Whitehead, 1998), the degree of cultural learning is quite substantial. Humans are thus not unique in the animal kingdom for engaging in cultural learning, although they are unique in the fidelity of their cultural learning. No other species have shown the capacity to learn from conspecifics as well as humans do (Hermann, Call, Hernandez-Lloreda, Hare, & Tomasello, 2007).

The high-fidelity cultural learning of humans is fostered by two unique human capabilities. First, humans have unrivalled linguistic abilities (e.g., Pinker, 1994), which allow for precise communication and transmission of cultural ideas. Second, humans have a well-developed theory of mind (e.g., Tomasello, 1999), which allows them to consider the intentions of their compatriots and thus engage in true imitative learning. In imitative learning the learner internalizes the model's goals and behavioral strategies and works to reproduce them. Other species, such as chimpanzees, can also engage in social learning from conspecifics. However, because chimpanzees are less able to attend to other's perspectives or intentions, and in particular, have difficulties engaging in joint-shared attention, their learning is not fully imitative (Tomasello, Carpenter, Call, Behne, & Moll, 2005). Rather, the social learning of chimpanzees is better characterized as emulative, in which they attend to the affordances of the objects in the environment (e.g., they learn that termites will stick to twigs inserted in termite mounds) but do not attend to the goals of the model, and this significantly limits the fidelity of the information that can be learned (Tomasello, Kruger, & Ratner, 1993).

Humans' sophisticated cultural learning skills are surely the result of their large brains relative to other species—the encephalization quotient of humans is 4.6, which is almost double the value (2.5) for chimpanzees (the largest for

nonhuman primates), and the values for other species of primates are considerably larger than those for other mammals (Aiello & Wheeler, 1995). The unusually large brains of primates appear to be an adaptation to the complex social environments in which many species of primates live (Dunbar, 1993). In contrast to the social nature of many other primate species, humans appear to be “ultrasocial” (Boyd & Richerson, 1996). This is evident in experiments contrasting the cognitive capacities of human children with those of other great apes. Whereas chimpanzees, orangutans, and 2.5-year-old human children perform similarly on various cognitive tasks, the children significantly outperform both species of apes on social tasks involving communication, theory of mind, and in particular, social learning (Hermann et al., 2007).

Hence, although many species have cultural learning, no other species is able to learn as well from conspecifics as do humans. With the possible exception of various species of matrilineal whales (in which the extent of their cultural learning is not yet well understood; Whitehead, 1998), humans are the only species with evidence for substantial cultural evolution (Boyd & Richerson, 1996; Tomasello, 1999). Cultural learning in humans is of high enough fidelity that cultural information tends to accumulate over time (a process known as the ratchet effect; Tomasello et al., 1993), whereby cultural ideas are learned by an individual, they are subsequently modified, and the modified ideas are then learned by others, *ad infinitum*. This cultural evolution tends to accelerate over time, as there are a growing number of ideas that can be modified or connected, provided there is open communication among individuals (Henrich, 2004; Nolan & Lenski, 2004). Consequently, humans live in vastly more complex cultural worlds than any other species, and their experiences vary widely from culture to culture.

The point that humans are unique in having significant cultural evolution is important for understanding their psychology. Unlike other species, humans do not just inhabit physical and social worlds; they also exist within cultural worlds constructed on a foundation of cultural information that has accumulated over time (Luria, 1928). For example, contemporary American undergraduates (the sample on which most of the empirical database of social psychology is based; Arnett, 2008) live in a world that includes culturally evolved products such as technologies that they use (e.g., cars, fast food, and printed paper), institutions in which they participate (e.g., democratic governments, higher education, and medical care), and ideas that are championed (e.g., being unique, justice and individual rights, and freely entering and exiting casual relationships). Many shared ideas that constitute the cultural contexts of contemporary American undergraduates are relatively

unique in the context of world history, and these are paralleled by unique psychological tendencies (Henrich, Heine, & Norenzayan, in press). People are born into particular cultural worlds, and they are continually learning, and being influenced by, the shared ideas that constitute those worlds. Coming to understand why people behave and think in the ways in which they do means we need to also consider the kinds of cultural information that people encounter in their daily lives.

Cross-Cultural Generalizability of Psychological Findings

The cultural nature of humans makes it challenging to draw conclusions about psychological universals. What aspects of human psychology are common to all, and what aspects are specific to particular cultural contexts? This question is of great significance for many social psychological theories, although in many cases data to evaluate it are insufficient (Heine & Norenzayan, 2006).

Many social psychological phenomena do indeed vary significantly across cultural contexts and emerge at different levels of universality (see Norenzayan & Heine, 2005, for a framework to interpret cultural universals and variability). On the one hand, pronounced cultural variance has been identified in such fundamental psychological phenomena as perceptions of fairness (e.g., Henrich et al., 2005), approach-avoidance motivations (e.g., Lee, Aaker, & Gardner, 2000), the nature of unspoken thoughts (Kim, 2002), attention (Chua, Boland, & Nisbett, 2005), preferences for formal reasoning (e.g., Norenzayan, Smith, Kim, & Nisbett, 2002), the need for high self-esteem (e.g., Heine, Lehman, Markus, & Kitayama, 1999), and moral reasoning (e.g., Miller & Bersoff, 1992). At the same time, for many key psychological phenomena varying degrees of universality have been compellingly established, such as facial expressions of emotions (Ekman, Sorenson, & Friesen, 1969), some mating preferences (Buss, 1989), sex differences in violence (Daly & Wilson, 1988), and the structure of personality (McCrae et al., 2005). Some psychological phenomena manifest in more culturally variable ways than others, and it is typically not clear *a priori* which phenomena should be the most similar across cultures. Hence, data from an array of samples are needed to assess the universality of a particular phenomenon.

A major obstacle for assessing universality is the limited nature of the psychological database. For example, a recent review of all papers in the *Journal of Personality and Social Psychology* from 2003 to 2007 (Arnett, 2008) found that 94% of the samples were from Western countries, with 62% coming from the United States alone (also see Quinones-Vidal, Lopez-Garcia, Penaranda-Ortega,

& Tortosa-Gil, 2004). Moreover, 67% of the American samples (and 80% of the non-American samples) were composed solely of undergraduates in psychology courses at research universities. Similar proportions were found for other disciplines in psychology. Curiously, this American dominance of psychology is unparalleled by other disciplines—a larger proportion of citations come from American researchers in psychology than they do for any of the other 19 sciences that were compared in one extensive international survey (May, 1997). For the most part, psychologists simply do not know whether a given phenomenon is universal because the database rarely covers a sufficient range of cultural contexts (although several important exceptions exist).

What makes identifying the universality of psychological processes so problematic is that the results of studies conducted on American undergraduates are often outliers within the context of an international database for many key domains in the behavioral sciences. That is, the available cross-cultural data find that, for several fundamental psychological phenomena (e.g., some visual illusions, decisions in behavioral economic games, moral reasoning, self-concept, social motivations, analytic reasoning, and spatial perception), (1) people from industrialized societies respond differently than those from small-scale societies; (2) people from Western societies demonstrate more pronounced responses than those from non-Western societies; (3) Americans show yet more extreme responses than other Westerners; and (4) the responses of contemporary American college students are even further different from those of non-college-educated American adults (Henrich et al., in press). That is, discerning human universals is not just a challenge because psychologists tend to have focused on such a narrow sample; it is greatly compounded because psychologists have focused on such an *unrepresentative* sample (see Henrich et al., in press, for detailed discussion of this point). Gaining an understanding of the universal and culturally specific ways in which human minds operate requires that we collect meaningful data regarding how people compare across cultures in their thinking and behavior. However, collecting such data requires several important methodological considerations.

CONSIDERATIONS FOR CONDUCTING RESEARCH ACROSS CULTURES

Cultural psychology uses methods from virtually all areas of psychology; thus, it inherits the methodological shortcomings of each of those particular methods. However, many additional and unique methodological challenges

are involved when comparing psychological phenomena across cultures.

First, researchers studying participants who share their own cultural background are at a distinct advantage in being able to be relatively confident that the measures that they create will be interpreted by the participants in the ways in which the researcher intends. When participants' cultural backgrounds differ from that of the researcher, however, such confidence can be greatly weakened. For example, Patricia Greenfield (1997) reported on her experience of interviewing Zinacantan participants with a standard psychological instrument in which she asked her participants a set series of related questions. Although the instrument was well validated in Western contexts, her series of questions only annoyed and offended her Zinacantan participants, as the interview violated conversational norms of relevance. After offering a thoughtful answer to a question, the participants were surprised and offended that the researcher then asked them what seemed to be pretty much the same question, worded slightly differently, with apparently no regard to the answer that they had just provided. In sum, to be able to gather meaningful data from people of different cultural backgrounds, it is essential that some members of the research team have much knowledge and familiarity with those cultural backgrounds so that appropriate methods can be developed and responses can be meaningfully interpreted. Such cultural knowledge can be gained by reading rich and descriptive texts and ethnographies about the cultures under study. Better still, collaborators with much familiarity with the relevant cultures could be included in the project. Ideally, these collaborators should be intimately involved with the development of the study from the onset, thereby ensuring that the methods are culturally appropriate, rather than only distributing previously developed surveys. Even more cultural knowledge can be gained if primary investigators learn about the relevant cultures as anthropologists have done for more than a century—by immersing themselves in the culture for lengthy periods—such that the researcher is able to develop intuitions about the participants under study in ways similar to those achieved by people who study participants from their own culture. Some combination of these efforts would seem most likely to ensure that the research is culturally informed (see Shweder, 1997, for more discussion).

A second challenge faced in cross-cultural research is that often the cultures being compared differ in the languages they speak. One strategy for dealing with this is to only study people who have sufficient familiarity with the same language, for example, studying immigrants to the United States with English materials. A key downside of such a strategy is one of power. It is likely that immigrants

who learn English well enough to understand the materials as well as a native speaker have also learned associated psychological phenomena. Furthermore, much research on language priming finds that bilinguals show evidence for different psychological phenomena depending on the language that they are speaking (e.g., Ross, Xun, & Wilson, 2002). This means that when all participants are speaking the same language they are also being primed with similar cultural meanings, which would further reduce the magnitude of any existing cultural differences. Hence, it is quite possible that one would find no cultural differences between two divergent cultural groups assessed in the same language, whereas one could find pronounced cultural differences between the same cultural groups if they were assessed in their respective native languages.

The second strategy for resolving language differences is to translate the materials into the respective languages of the cultures being studied. Translations are challenging at the best of times, and the nuances inherent in many measures of psychological phenomena can be difficult to capture veridically in translation. If no member of the research team has sufficient familiarity with the languages of the cultures under study, then one should employ the backtranslation method (Brislin, 1970), where the original materials are translated into the other language by a translator, and then an independent translator translates the translation back into the first language, enabling the researchers to compare the similarities between the original and the backtranslated materials. Backtranslations are not ideal, however, as they can result in unnatural or difficult-to-understand translations, without that necessarily being evident to the researchers. Ideally, some of the investigators will have expertise in the respective languages and can go over the translations themselves to ensure that the materials are not awkward and capture all subtle nuances—this is the most commonly used translation method in professional translations (Wilss, 1982).

A third challenge in cross-cultural research emerges in that people from different cultures can maintain different response styles. For example, African Americans and Hispanic Americans are more likely to use the extreme points of Likert scales than are European Americans (Bachman & O'Malley, 1984; Hui & Triandis, 1989), who, in turn, are less likely to use the middle points of Likert scales than are East Asians (Chen, Lee, & Stevenson, 1995)—the former relative tendency is known as an extremity bias and the latter as a moderacy bias. Another example is that East Asians are more likely to show a relative acquiescence bias, and agree with a greater percentage of items, than are European Americans (e.g., Choi & Choi, 2002; Grimm & Church, 1999; Spencer-Rodgers, Peng, Wang, & Hou, 2004). A challenge with dealing with

these different response styles is that it is not always clear whether these represent stylistic differences in expressing one's thoughts that should be statistically controlled or whether they reflect "real" differences in ways of thinking across cultures that should be preserved (Hamamura, Heine, & Paulhus, 2008; Paulhus, 1986).

Another problem that is inherent in cross-cultural comparisons of subjective responses arises from people's tendencies to evaluate themselves by comparing themselves with similar others (Festinger, 1954). Because people from different cultures are surrounded by different people, with different norms and standards, such comparisons with others may be confounded, and the results reduce the size of any obtained cultural differences. This is termed the reference-group effect (Heine, Lehman, Peng, & Greenholtz, 2002; Peng, Nisbett, & Wong, 1997). For example, a man who is 5 feet 10 inches in height would be more likely to describe himself as tall if he lived in a culture where the average height for men was 5 feet 8 inches than in a culture where the average male height was 6 feet. The same height, attitude, or behavior can come to mean something quite different depending on how it compares with the norms and standards that surround a person (cf. Biernat & Manis, 1994). Some evidence for problems that emerge from the reference-group effect can be seen, for example, in that cross-cultural comparisons of self-report means of individualism and collectivism scales yield effects that are considerably smaller than those observed in cross-cultural comparisons of cultural products (e.g., television and magazine advertisements, newspaper articles, and public behaviors; see the meta-analysis by Morling & Lamoreaux, 2008). Likewise, whereas most cross-cultural comparisons looking at means of self-report measures related to lay theories of self yield null effects (e.g., Heine et al., 2001; Hong et al., 1999), studies with experimental manipulations, or items with more objective response options, yield more pronounced effects (Heine et al., 2001). Furthermore, studies employing people's concrete responses to behavioral scenarios, and studies that explicitly specify the referent group, yield better convergence with validity criteria than those that compare subjective means (Heine et al., 2002; Peng et al., 1997). The reference-group effect remains a pernicious challenge for interpreting the means of subjective responses across cultures.

In sum, various challenges are inherent in cross-cultural comparisons of subjective questionnaire responses. Many cross-cultural researchers aspire to ensure measurement equivalence of their constructs before they compare them across cultures (e.g., ensuring that the constructs have similar factor structures and item functioning; e.g., Poortinga, 1989; van de Vijver & Tanzer, 2004); however, such efforts hinge on the assumption that the construct under

study is cross-culturally universal—a question that is often the focus of the investigation. Given the various challenges inherent in comparisons of questionnaire responses across cultures, I recommend viewing any cross-cultural comparison of subjective Likert scale means with a grain of salt until convergent findings are demonstrated with other methods.

Experiments provide a powerful means to avoid many complications that plague cross-cultural comparisons of questionnaire responses. When an independent variable is manipulated within cultures, comparisons across conditions are often not affected by the issues discussed earlier because the conditions within each culture share similar response styles and reference groups. The experimental method thus allows meaningful comparisons to be made across cultures. In general, cross-cultural differences that are obtained with experimental measures appear to yield a more consistent pattern of results across studies than those obtained with cross-cultural comparisons of self-report measures (for discussion, see Heine et al., 2002). The success of the experiment in cultural psychological research may derive from the study of culture being in many ways similar to the study of the social environment. If culture is the social situation writ large, then it perhaps follows that the experimental methods applied by social psychologists would be most appropriate for studying many questions regarding how culture affects people's thoughts and behaviors.

HUMANS ARE ENCULTURATED AS THEY DEVELOP

This section reviews how humans accumulate cultural learning as they develop. It discusses some differences in cultural experiences that are evident among infants and young children, and it considers how cultural differences in various psychological processes often become more pronounced with age.

The central focus of inquiry for cultural psychology is the process by which biological entities become meaningful ones (Markus & Kitayama, 1998). That is, the field grapples with how mental capacities that are largely similar around the world (indeed, humans have far less genetic variability than do chimpanzees, underscoring how recently human populations diverged from a common ancestor; Boyd & Silk, 2006) become interpenetrated by diverse cultural meanings and thereby manifest themselves in different ways across cultures. The *universal mind* that is present at birth is expressed in *multiple mentalities* across cultural contexts (Shweder et al., 1998). In the words of Clifford Geertz (1973, p. 45), "we all begin with

the natural equipment to live a thousand kinds of life but end in the end having lived only one." People acquire particular cultural characteristics as the result of their enculturation experiences in the course of development.

People come to think in different ways across cultures, because their experiences differ, and they do so in many ways from a very young age. For example, whereas the most common sleeping arrangement for American infants is in a crib in a separate room from their mothers, this arrangement was not observed in any other society studied in a large-scale survey of 100 societies around the world (Burton & Whiting, 1961). Rather, in approximately two thirds of societies, infants sleep in the same bed as their mothers; in most other cases, infants sleep in the same room as their mothers but in a different bed (Whiting, 1964; also see Shweder, Jensen, & Goldstein, 1995). Likewise, American mothers chat with their babies in a different way than do Japanese mothers, with American mothers being more likely to elicit "happy vocals" and Japanese mothers being more likely to soothe "unhappy vocals" (Caudill & Weinstein, 1969). Similarly, Canadian mothers were shown to communicate nouns more effectively to infants, whereas Chinese mothers were more effective at communicating verbs (as evidenced by college students being able to guess what was being communicated in a silent video; Lavin, Hall, & Waxman, 2006). In sum, even the cultural experiences of prelinguistic children differ in various ways across cultures.

Cultural variation in the experiences of infants and children is paralleled by cultural variation in many psychological processes. One domain in which this is clearly evident is in attachment styles. The distribution of the three attachment styles varies significantly across cultures. For example, whereas the most common attachment style among Americans is the secure attachment (approximately 62% of mother-child relationships; Campos, Barrett, Lamb, Goldsmith, & Stenberg, 1983), in northern Germany the most commonly found attachment style is the avoidant attachment (approximately 48% of relationships; Grossman, Grossman, Spangler, Suess, & Unzner, 1985). Among children reared in Israeli kibbutzim, the anxious-ambivalent style is most commonly found (approximately 50% of relationships; Sagi et al., 1985). Furthermore, in some cultural contexts, researchers have not been able to identify all three attachment styles; for example, some researchers could not identify any avoidant attachments among Japanese (Miyake, 1993) or Dogon mother-child pairs (True, Pisani, & Oumar, 2001). It has even been questioned whether the assumptions underlying attachment theory (e.g., particularly the notions of dependence and autonomy) make sense in some non-Western cultural contexts (Rothbaum, Weisz, Pott, Miyake, & Morelli, 2000).

Another domain in which young children differ across cultures is language learning. Much research with English learners has revealed pronounced evidence for a "noun bias," where most new words that toddlers learn are nouns (e.g., Huttenlocher & Smiley, 1987). Early theories focused on the salience and concreteness of nouns, which were believed to make them more easily learned (Gentner, 1982; Gleitman, 1990). However, these accounts are challenged by findings that noun biases are not readily found in all cultures. For example, in one study Chinese toddlers were found to use more verbs than nouns (Tardif, 1996), and another showed no evidence of a noun bias among Korean toddlers (Choi & Gopnik, 1995). The kinds of words learned first by young children vary across cultural and linguistic contexts.

Because cultural information is acquired as children are socialized, it follows that cultural differences in psychological processes should become more pronounced with age and socializing experiences. Aside from phenomena that are delimited by an early sensitive window for their acquisition (Johnson & Newport, 1989; McCauley & Henrich, 2006; Minoura, 1992), adults should differ more in their ways of thinking across cultures than should children. Evidence for such trends has emerged in several domains. For example, (1) cultural differences in the tendency to make nonlinear predictions of the future become more pronounced in magnitude with age (Ji, 2008); (2) tendencies to make situation attributions increase with age among Indians, whereas tendencies to make dispositional attributions increase with age among Americans (Miller, 1984); and (3) cultural differences in social loafing become more pronounced with age (Gabrenya, Wang, & Latané, 1985).

SELF-CONCEPT

Research on culture and the self-concept has been central to the field of cultural psychology. This research has focused much on distinctions between independent and interdependent self-concepts and how these different self-views manifest with respect to self-consistency versus flexibility, insider versus outsider phenomenologies, and incremental versus entity theories of self. This section also discusses the psychological experiences of those with multicultural selves.

Independent Versus Interdependent Self-Concepts

Cultural psychology maintains that the process of becoming a self is contingent on people interacting with and seizing meanings from their cultural environments. Thus, the resultant self-concepts that emerge from participating

in distinct cultural contexts may vary considerably. For example, cultural variation in self-concept can be seen in studies that ask people to freely describe aspects of themselves using the Twenty Statements Test (Kuhn & McPartland, 1954). Such studies reveal that people from various individualistic cultural contexts, such as Australia, Britain, Canada, and Sweden, tend to describe themselves most commonly with statements that reflect their inner psychological characteristics, such as their attitudes, personality traits, and abilities. In contrast, people from various collectivistic cultural contexts, such as Cook Islanders, Native Americans, Malaysians, Puerto Ricans, Indians, and various East Asian populations, show a greater tendency, relative to Westerners, to describe themselves by indicating relational roles and memberships that they possess (see Heine, 2008, for a review). Such cultural differences are already evident among kindergarten-aged children (Wang, 2004). As one stark example of this cultural difference, a study that contrasted American college students and various samples in Kenya found that 48% of American self-descriptions consisted of statements regarding their psychological characteristics whereas only 2% of the statements of indigenous Kenyan tribes (the Masai and the Samburu) referred to such characteristics (Ma & Schoeneman, 1997). On the other hand, statements regarding roles and memberships constituted more than 60% of the statements by the Masai and the Samburu in contrast to only 7% of American self-descriptions. In sum, the ways in which people describe themselves vary considerably across cultures.

These different patterns of responses in self-descriptions suggest that people might conceptualize their selves in at least two different ways. One way, as evident in many statements made by the American students in Ma and Schoeneman's study, is that the self can largely derive its identity from its inner attributes—a self-contained model of self that Markus and Kitayama (1991) labeled an independent self-concept. These attributes are assumed to reflect the essence of an individual in that they are viewed as stable across situations and across the life span, they are perceived to be unique (in that no one else is expected to have the same configuration of attributes), they are viewed as significant for regulating behavior, and individuals feel obligated to publicly advertise themselves in ways consistent with these attributes. A second way that people can conceptualize themselves, evident in many statements of the Masai and Samburu, is to view the self as largely deriving its identity from its relations with significant others—this model is termed an interdependent self-concept (Markus & Kitayama, 1991). With this view of self, people recognize that their behavior is contingent upon their perceptions of other's thoughts, feelings, and actions; they attend to how

their behaviors affect others; and they consider their relevant roles within each social context. The interdependent self is not so much a separate and distinct entity as it is embedded in a larger social group.

This distinction in self-concepts (which relates to individualism–collectivism; Triandis, 1989) has been related to widely varying psychological processes, such as motivations for uniqueness (e.g., Kim & Markus, 1999), self-enhancement (e.g., Heine et al., 1999), feelings of agency (e.g., Morling, Kitayama, & Miyamoto, 2002), kinds of emotional experiences (e.g., Mesquita, 2001), perspectives on relationships (e.g., Adams, 2005), and analytic versus holistic reasoning styles (e.g., Nisbett, Peng, Choi, & Norenzayan, 2001). This distinction presently stands as the most fruitful way of making sense of many cultural differences in psychological processes (Oyserman, Coon, & Kemmelmeier, 2002). Numerous other dimensions of cultural variation have been offered in the literature, such as power distance, uncertainty avoidance (Hofstede, 1980), vertical–horizontal social structure (Triandis, 1996), relationship structure (Fiske, 1992), intellectual autonomy (Schwartz, 1994), context dependence (Hall, 1976), social cynicism, social complexity (Leung & Bond, 2004), and societal tightness (Triandis, 1989). These are all interesting and important dimensions; however, thus far, none of these have had anything like the success of the individualism–collectivism construct in being linked to other kinds of psychological processes. The field will certainly benefit when researchers can demonstrate the unique predictive validity of other dimensions of cultural variability. At present, there appears to be something about individualism and collectivism that is more fundamental to human psychology than these other dimensions. Perhaps this centrality derives from the universal tension that arises from every human ultimately being a distinct individual, unique from everyone else, yet at the same time being a member of an ultrasocial species. The conflict between the pursuit of individual and social goals may prove to be the most fundamental aspect in which cultures differ in their psychology.

Self-Consistency Versus Flexibility

Several differences appear in the ways in which the self emerges across cultures that relate to the construct of independent and interdependent self-concepts. First, consider how the self is experienced across different contexts. The notion that people strive to maintain a consistent self-concept has been central to many seminal theories regarding the self (e.g., Festinger, 1957; Heider, 1958; Ross, 1989; Swann, Wenzlaff, Krull, & Pelham, 1992). However, much of this research has targeted cultural samples in which independent self-concepts predominate. This fact is of much

relevance because the independent self tends to be viewed as a relatively bounded and autonomous entity, complete in and of itself, that exists separately from others and the surrounding social context (Geertz, 1975; Markus & Kitayama, 1991). Because independent selves are perceived of as similar to objects in that they are viewed as whole, unified, integrated, stable, and inviolate entities (Shweder et al., 1998), core representations of the self tend to remain largely uninfluenced by the presence of others (although situations may activate different aspects of the working self-concept; Markus & Kunda, 1986). The independent self is experienced as relatively unchanging and constant across situations, and people are often willing to make rather costly sacrifices to preserve a semblance of self-consistency (Swann & Bosson, this volume). The premium placed on a consistent self is further evident in that several key theories have maintained that psychological health is associated with a consistent and integrated knowledge of oneself (Deci & Ryan, 2000; Jourard, 1965; Maslow, 1954).

In contrast, for people with interdependent views of self, an individual's relationships and roles take precedence over abstracted and internalized attributes, such as attitudes, traits, and abilities. Hence, changing situations find the interdependent self in new roles bearing different obligations, and these should lead to different experiences of the self. Indeed, much research with participants from cultures where interdependent selves are common reveals less evidence for a self-concept that is consistent across contexts compared with cultures where independent selves predominate. For example, Bond and Cheung (1983) found that Japanese respondents tended not to describe themselves by abstracting features across situations as much as did Americans. Other research has found that East Asians are more likely than Americans to describe themselves with reference to social roles or memberships, aspects of identity that are fluid with respect to the situation that one is in (Cousins, 1989; Rhee, Uleman, Lee, & Roman, 1995).

The cross-situational fluidity of the interdependent self has been demonstrated in various paradigms. Kanagawa, Cross, and Markus (2001) found that Japanese (but not American) self-descriptions varied significantly depending on who was in the room with them when they completed their questionnaires. For example, Japanese participants became significantly more self-critical in front of a professor than when they were alone. Similarly, Suh (2002) asked Koreans and Americans to evaluate themselves on numerous traits in several hypothetical situations. The Americans showed relatively little change in their self-descriptions across situations, whereas Koreans viewed themselves in highly variable terms. These cultural differences in consistency have also been observed in people's

affective experiences: European Americans show less variability in their emotions across situations than do Japanese, Hispanic Americans, and Indians (the latter difference only emerged for negative emotions; Oishi, Diener, Scollon, & Biswas-Diener, 2004).

East Asians also endorse more contradictory self-views than Westerners. For example, Chinese self-evaluations are more ambivalent (they contain both positive and negative statements) than are those of Americans (Spencer-Rodgers et al., 2004). Likewise, whereas measures of positive and negative affect tend to be orthogonal, or slightly negatively correlated, in North American samples, among Chinese these two measures show a slight positive correlation (Bagozzi, Wong, & Yi, 1999). Similarly, East Asians tend to endorse contradictory items about their personalities; for example, Koreans are more likely than Americans to state that they are both introverted *and* extraverted (Choi & Choi, 2002), and Japanese were more likely than Canadians to endorse both positively worded and reverse-scored items regarding the Big Five personality traits (Hamamura et al., 2008). Such contradictory self-knowledge is more readily available, and is simultaneously accessible, among East Asian participants than among Americans (Spencer-Rodgers, Boucher, Mori, Wang, & Peng, 2009). More generally, this tolerance for apparent contradiction (termed naïve dialecticism; Peng & Nisbett, 1999) extends to reasoning styles more generally. For example, when presented with two contradictory arguments, Americans tend to reject the weak argument in favor of the stronger one (and become even more convinced in the validity of the stronger one when the weaker argument is presented alongside it; also see Lord, Ross, & Lepper, 1979); in contrast, Chinese tend to accept both arguments and even come to view a weak argument as more convincing when it is paired with a contradictory stronger argument (Peng & Nisbett, 1999).

Whereas psychological consistency has been linked with well-being among Westerners, the benefits of being consistent across situations are less apparent for East Asians. Suh (2002) found that whereas consistency across situations was associated with greater degrees of well-being, social skills, and being liked by others for Americans, these relations were far weaker for Koreans. Similarly, Campbell et al. (1996) found a weaker correlation between Japanese participants' self-concept clarity (a construct that captures the consistency of the self across situations and time) and self-esteem than was found for Canadians. Well-being and positive feelings about the self do not seem to be as tethered to a consistent identity for East Asians as they do for North Americans.

The preceding studies converge in demonstrating that people from cultures characterized by interdependent

views of self have weaker tendencies for self-consistency than do those from cultures characterized by independent views of self (although this conclusion is weakened in that most data from interdependent cultural contexts have been limited to people from East Asian cultures; cf. Oishi et al., 2004). However, one alternative perspective is that people with interdependent selves have *different* kinds of consistency needs. For example, although little evidence indicates that East Asians strive to keep their attitudes and behaviors consistent (Kashima, Siegal, Tanaka, & Kashima, 1992) or to reduce dissonance to the extent Westerners do (Heine & Lehman, 1997b; Hiniker, 1969), East Asians do show some consistency motivations when others are involved. For example, Asian Canadians rationalize decisions that they make for others even though they do not rationalize the decisions that they make for themselves (Hoshino-Browne et al., 2005). Moreover, Kitayama, Snibbe, Markus, and Suzuki (2004) found that although Japanese would not rationalize their decisions in a standard dissonance condition, they showed pronounced dissonance when placed in a subtly activated interpersonal context. Similarly, Cialdini, Wosinska, and Barrett (1999) found that while the intentions of American participants were more consistent with their own past behaviors, Polish participants were more likely to be consistent with the behavior of others (also see Petrova, Cialdini, & Sills, 2007). In sum, these studies reveal that people from more interdependent cultures aspire for consistency when they consider themselves in relation to others.

There is another way in which the self-views of people from interdependent cultural contexts appear to be quite consistent. The studies with East Asians described earlier tended to find less self-consistency than did those with Westerners; however, this does not mean that the interdependent self is random or unstable across contexts. Rather, East Asians appear to develop several stable but context-specific self-views depending on the relationships and roles that are activated in a given context. English and Chen (2007) demonstrated that although East Asians describe themselves in less consistent terms than European Americans across relationship contexts (e.g., self with roommate vs. self with parents), they described themselves as roughly equal in consistency when they considered themselves across situations (e.g., at the gym vs. at the cafeteria). Moreover, the self-descriptions of East Asians in particular situations or relationship contexts remained as stable across time (i.e., 25 weeks apart) as did those of European Americans. These findings suggest that the self-concept of those with interdependent selves can best be understood as a series of "if-then" rules, where particular aspects of the self become accessible when particular roles are activated, and that these if-then rules

remain quite stable across time (e.g., Mischel, Shoda, & Mendoza-Denton, 2002).

Insider Versus Outsider Phenomenologies

Self-concepts also vary across cultures in terms of the perspective that people habitually adopt. People may prioritize their own perspective, thereby making sense of the world in terms of how it unfolds in front of their eyes. Alternatively, people may prioritize the perspective of an audience and attend to the world and themselves in terms of how they imagine it appears to others. Cohen, Hoshino-Browne, and Leung (2007) refer to these two perspectives as insider and outsider phenomenologies, respectively. In interdependent cultural contexts, where individuals need to adjust themselves to fit in better with the ingroup, it becomes crucial to know how one is being evaluated by others. In independent cultural contexts, in contrast, where people's identity rests largely on the inner attributes that they possess, the cultural imperative is to "know oneself" and to elaborate on one's unique perspective.

Much recent evidence supports this cultural difference in phenomenologies. For example, Cohen and Gunz (2002) demonstrated that East Asians were more likely to recall memories of themselves when they were at the center of attention from a third-person perspective than were Westerners. Apparently, East Asians' attention to an audience leaked into and distorted their memories of themselves. Similarly, Leung and Cohen (2007) demonstrated that East Asians were slower than Westerners to process social stories in which the story was told from their own perspective, whereas Westerners were slower than East Asians to process the stories when they were told from the perspective of someone else. Furthermore, East Asians outperformed Westerners on a visual task in which they needed to take the perspective of their partner, making fewer visual fixations on objects that were not visible to their partner (Wu & Keysar, 2007).

Cross-cultural research on self-awareness also identifies similar divergences in phenomenologies. When individuals are aware of how they appear to others, they are said to be in the state of objective self-awareness (Duval & Wicklund, 1972), and this leads to several predictable responses (e.g., people become more self-critical and are less likely to engage in counternormative behaviors; Diener & Wallbom, 1976; Fejfar & Hoyle, 2000). In a state of objective self-awareness, people are aware of how they appear to others (a "me") in contrast to the experience of being a subject (an "I"). It follows that to the extent that East Asians are aware of an audience, and are adjusting their behaviors to that audience, they should more likely be in a habitual state of objective self-awareness than North Americans. This

suggests that stimuli that enhance objective self-awareness (e.g., seeing oneself in front of a mirror) should have little effect on East Asians. Even without a mirror present, East Asians should be considering themselves in terms of how they appear to others. Some recent cross-cultural research corroborates this hypothesis: Whereas North Americans were more self-critical and were less likely to cheat on a test when a mirror was present compared with when it was absent, the presence of a mirror had no effect on Japanese for either dependent variable (Heine, Takemoto, Moskalenko, Lasaleta, & Henrich, 2008).

Incremental Versus Entity Theories of Self

Another difference in the nature of the self-concept that relates to independent and interdependent self-views is with regard to the perceived fluidity of people's traits and abilities. One way to conceive of the self is to view it as arising from a set of relatively fixed and innate attributes. This kind of "entity theory" (Dweck & Leggett, 1988) of the self reflects beliefs that the self is founded on an underlying stable essence (also see Chiu, Hong, & Dweck, 1997). As people with entity theories become older, their collection of attributes is viewed as staying largely the same. These theories are particularly likely among people with independent views of self, who perceive their identity to be largely grounded in a set of relatively context-independent inner attributes.

A second way of conceiving of the self is to view it as being malleable and ultimately improvable with efforts. This kind of "incremental theory" of self reflects a belief in the key role of effort underlying one's abilities and traits. The attributes that one possesses (e.g., one's soccer-playing skill, one's extraversion, or one's intelligence) are not seen to remain constant across one's life but are perceived as reflecting how hard one has worked on them. Incremental theories are more common among people from interdependent cultural contexts, which place greater emphasis on individuals adjusting themselves to meet group expectations (Heine et al., 2001).

The theory of self that one embraces is predictive of the amount of effort that one will make on a related task. For example, people with more incremental theories have been shown to respond to failures by focusing on their efforts and the strategies that they used (Henderson & Dweck, 1990) and taking remedial courses (Hong, Chiu, Dweck, Lin, & Wan, 1999). To the extent that abilities are a function of efforts, it follows that one should increase one's efforts when performance is lacking.

In contrast, people with entity theories of intelligence view their intelligence as a reflection of an underlying essence that remains largely removed from the efforts that they make. Rather than increasing effort on the same

task, people with entity theories tend to respond to failures by searching for an alternative task—one that better fits with their innate talents (Heyman & Dweck, 1998). Furthermore, to the extent that one's self is perceived to be founded on a set of relatively fixed, unchangeable, and consistent inner attributes, a motivation to see the self and its component features in the most positive light takes on increased importance. Discovering weaknesses in the self is especially debilitating if those are viewed as relatively permanent inadequacies.

People from different cultures do appear to differ in the extent to which they embrace incremental views of self. Indeed, it appears that North Americans are less likely to view their selves as incremental compared with people from some interdependent cultural contexts. For example, Japanese children are more likely than American children to believe that negative traits can become more positive with age, and they are more likely to attribute individual differences in traits to efforts (Lockhart, Nakashima, Inagai, & Keil, 2008). Mexicans and Filipinos are also less likely than Americans to view traits as stable across the life span (Church et al., 2005). Several studies have identified greater tendencies for East Asians compared with North Americans to attribute school achievement to efforts, not to abilities (e.g., Holloway, 1988; Stevenson & Stigler, 1992; Tobin, Wu, & Davidson, 1989). In one study, European Americans estimated that 36% of intelligence comes from one's efforts, whereas Asian Americans estimated 45% and Japanese 55% (Heine et al., 2001). Furthermore, experimental manipulations of incremental theories of abilities corroborate the cultural differences. Leading Japanese to believe that performance on an experimental task is enhanced by effort has no impact on their persistence after failure relative to a Japanese control group; they apparently endorse this belief in the absence of the manipulation. In contrast, leading Americans to believe that performance on a task is enhanced by effort leads to significantly greater persistence after failure than the results of a control group. Apparently, this manipulation provides novel information for Americans. The opposite pattern holds across cultures when participants are led to believe that the experimental task measures innate, stable abilities (Heine et al., 2001). In sum, much evidence indicates that people from interdependent cultural contexts are more likely to embrace incremental theories of the self (but see mixed evidence on cultural comparisons of Likert scale measures of malleability; e.g., Heine et al., 2001; Hong et al., 1999; Norenzayan, Choi, & Nisbett, 2002).

Multicultural Selves

Much cross-cultural research has also explored the self-concepts of those with multiple cultural experiences. If

culture shapes the self, how do people from multiple cultural backgrounds represent the self? There are two complementary perspectives on this. One perspective is that multicultural people have multiple self-concepts that are simultaneously accessible, and their typical thoughts and responses reflect a blending of these. Evidence for this can be seen in that Asian Americans, for example, tend to perform intermediately on many psychological tasks compared with European Americans and Asians in Asia (Heine & Hamamura, 2007; Iyengar, Lepper, & Ross, 1999; Tsai, Simionova, & Watanabe, 2004).

A second perspective is that multicultural people sequentially activate their different self-concepts, depending on situation or primes; this perspective is known as frame switching (Hong, Morris, Chiu, & Benet-Martínez, 2000). For example, Anderson (1999) describes how inner-city African American children quickly learn how to discriminate between the norms and unwritten rules that govern their schools and mainstream society and those that govern the streets. Much recent evidence shows that multiculturals engage in frame switching for various psychological processes. For example, in one study, researchers primed Hong Kong Chinese with Chinese, American, or neutral thoughts by showing them cultural icons (or neutral images) and asking them to write about them; they were subsequently asked to make attributions for the behaviors of computerized images of fish (Hong et al., 2000). Those who were primed with American icons made fewer external attributions for the fish's behavior than those who were primed with Chinese icons, with the attributions of those in the neutral prime condition falling between those results. Likewise, another study found that these same kinds of primes affected the cooperation of Chinese Americans in a prisoner's dilemma game. Those who saw Chinese primes came to cooperate more with a friend than those primed with American primes (again, the control condition was intermediate). In contrast, the primes did not affect people's cooperation toward strangers (Wong & Hong, 2005; for another recent priming example, see Wang & Ross, 2005). This kind of frame switching is not equally likely for all biculturals; people are more likely to frame-switch if they see their dual cultural identities as integrated than if they see them in opposition (Benet-Martínez, Leu, Lee, & Morris, 2002) and if they were second-generation as opposed to first-generation immigrants (Tsai, Ying, & Lee, 2000).

Although the preceding findings demonstrate that multiculturals often frame-switch, a question arises whether such frame switching is limited to those with multicultural experiences. The kinds of ideas that have been primed in frame-switching studies (e.g., thoughts regarding interdependence, external attributions, and cooperation with

ingroup members) are thoughts that are likely accessible to people from all cultures (they are existential universals; Norenzayan & Heine, 2005). To the extent that monocultural people have different knowledge structures associated with ideas such as interdependence from those with ideas such as independence, then people should not require experiences in more than one culture to frame-switch when different knowledge networks are activated. Indeed, in numerous demonstrations people with largely monocultural experiences also frame-switch in similar ways (Heine et al., 2001; Kühnen, Hannover, & Schubert, 2001; Mandel, 2003; Trafimow, Triandis, & Goto, 1991; for a meta-analysis, see Oyserman & Lee, 2008). For example, whereas much research finds that East Asians display more pronounced avoidance motivations than Westerners (e.g., Elliot, Chirkov, Kim, & Sheldon, 2001; Hamamura, Meijer, Heine, Kamaya, & Hori, 2009), priming European Americans with interdependent thoughts (i.e., asking them to think of a team's tennis performance in contrast to an individual's) led them to become more avoidant oriented as well (Lee et al., 2000). That is, interdependent-primed European Americans demonstrated similar motivations as nonprimed East Asians. This suggests that the relations between interdependence and avoidance motivations exist across cultural groups so that anyone, multicultural or not, who thinks interdependent thoughts also becomes more avoidant oriented. Frame switching thus does not appear to be limited to multiculturals. Nonetheless, multiculturals apparently do show more extreme degrees of frame switching than do monoculturals (Gardner, Gabriel, & Dean, 2004), suggesting that the knowledge structures of multiculturals regarding ideas such as independence and interdependence are more clearly demarcated than they are for monoculturals.

Another tendency for people with multicultural selves is that they appear to be more creative. People with experience adapting to different cultural environments need to adopt a flexible style in the way they approach problems, and this has been shown to be associated with enhanced creativity on several creative tasks (Leung, Maddux, Galinsky, & Chiu, 2008; Maddux & Galinsky, 2009). This is particularly true among those with higher levels of identity integration (i.e., those who perceive compatibility between their two cultural identities; Cheng, Sanchez-Burks, & Lee, 2008).

PERSONALITY

Culture is quite clearly implicated in people's self-concepts. What is the role of culture in their personalities? Several large-scale research programs have investigated questions

regarding the similarities and differences in personality structure and trait levels across cultures. These investigations have largely contrasted cultures on measures of the five-factor model of personality (McCrae & Costa, 1987). This research raises some interesting and important questions regarding personality across cultures: Is the five-factor structure something basic about human nature, something that we should find in the personalities of people in all cultures that we look at? Or, alternatively, does the five-factor model reflect ideas about personhood that are limited to the West, where most of this research has been conducted?

Apparent Universality of Personality Structure

Various measures of the Big Five (the NEO Personality Inventory; NEO-PI-R; Costa & McCrae, 1992) have been translated into several languages and have been distributed to thousands of people in dozens of cultures around the world. Early cross-cultural comparisons of the factor structure of the Big Five were promising: Four out of five factors (all except openness) emerged in Hong Kong (Bond, 1979), Japan (Bond, Nakazato, & Shiraishi, 1975), and the Philippines (Guthrie & Bennett, 1971), revealing considerable similarity in the structure of personality across these diverse cultures. More recent studies with some other cultures have fared even better: All five factors emerged in cultures as diverse as Israel (Montag & Levin, 1994), Korea (Piedmont & Chae, 1997), and Turkey (Somner & Goldberg, 1999). One large-scale study investigated people from 50 different cultures from all continents except Antarctica and had participants evaluate someone they knew well on trait adjectives that assessed the Big Five (McCrae et al., 2005). In most of the 50 cultures, the factor structure of the Big Five was replicated. In several developing cultures (e.g., Botswana, Ethiopia, Lebanon, Malaysia, Puerto Rico, and Uganda), the factor structure was not so evident. However, in these latter cultures the data quality was rather poor, suggesting that people may not have fully understood the questions or were unfamiliar with answering questions in that format (McCrae et al., 2005). To the extent that unfamiliarity with Western measures can account for the cultures where the data fit was poor, this is good evidence that the Big Five reflect the universal structure of personality (also see Allik & McCrae, 2004; Yik, Russell, Ahn, Fernandez-Dols, & Suzuki, 2002). Still, stronger support for universality would be found if convergent evidence emerged from studies of developing and small-scale societies (cf. Henrich et al., 2005).

It is important to note that the measures of the Big Five were initially developed through the exploration of English personality terms. The challenge with factor analyses is

that they only speak to the structure that emerges from the universe of items that were considered. It is possible that a different set of items, particularly those that were more meaningful in other cultural contexts, might reveal a different underlying personality structure. Indeed, explorations for personality dimensions among Chinese indigenous personality terms conducted by Cheung and colleagues (Cheung et al., 1996; Cheung, Cheung, Leung, Ward, & Leong, 2003) revealed an additional factor of "interpersonal relatedness" that was not correlated with any of the Big Five factors. Likewise, Church, Reyes, Katigbak, and Grimm (1997; also see Church, Katigbak, & Reyes, 1998) explored indigenous Filipino personality traits and found two additional factors to the Big Five: temperamentality and a negative valence dimension. Similarly, Benet-Martínez and Waller (1995, 1997) found that an investigation of Spanish personality constructs revealed seven underlying personality factors, although these did not map well onto the Big Five. Similarly, Saucier, Georgiades, Tsousis, and Goldberg (2005) found a six-factor solution emerged from indigenous Greek terms that was somewhat at odds with the Big Five. In general, investigations with indigenous traits reveal that although the Big Five personality traits appear to be reasonably robust across cultures, they may not be an exhaustive list of the ways in which personality can emerge in other cultures. When exploring personality structures from indigenous personality terms, some alternative dimensions have emerged, and future research is necessary to determine the robustness and universality of these other factors.

Cross-Cultural Variability in Levels of Personality Traits

Given the evidence that the Big Five model of personality appears to adequately capture the structure of personality traits in many cultures, researchers have recently begun to compare mean levels of personality traits across large samples of cultures (e.g., McCrae, 2002; McCrae et al., 2005; Schmitt et al., 2007). As of this writing, aggregate personality means from the NEO-PI-R (Costa & McCrae, 1992) have been reported for self-ratings from 36 cultures (McCrae, 2002) and for peer ratings from 51 cultures (McCrae et al., 2005), and a modified Big Five measure was used to collect people's perceptions of their national character in 49 cultures (Terracciano et al., 2005). Another popular measure, the Big Five Inventory (BFI; Benet-Martínez & John, 1998), has been used to collect self-ratings in 56 nations (Schmitt et al., 2007). Direct comparisons of self-report means in this hard-won wealth of data have found, for example, that according to the self-report means (McCrae, 2002), the world champions of

neuroticism are the Spaniards, the most extraverted people in the world are from Denmark, the nationality that is most open to new experiences is Austrian, the most agreeable people in the world are Malaysian, and the world's least conscientious nation of people is Japan.

However, considerable debate has occurred regarding the validity of cross-cultural comparisons of means on self-report scales (Hamamura et al., 2008; Heine et al., 2002; Kitayama, 2002) and for personality traits in particular (Ashton, 2007; McGrath & Goldberg, 2006; Perugini & Richetin, 2007). Some noted challenges have been made to the validity of these aggregate national personality profiles. First, the emergent rank orderings of countries are not very similar when compared across different assessment techniques. No significant correlations were found for any of the Big Five between measures of self-report and perceptions of national character (Terracciano et al., 2005). Likewise, correlations between the country scores for the self-report measures of the Big Five as assessed by the NEO-PI-R and as assessed by the BFI ranged from .22 to .45 (Schmitt et al., 2007), which are quite modest given that these are measures of the same constructs. Perhaps more disturbing, the country scores from BFI and those from NEO-PI-R measures correlate *more weakly* for the corresponding traits than they do for their noncorresponding traits in four of the Big Five traits (e.g., the BFI measure of *openness* correlates .73 with the NEO-PI-R measure of *extraversion* but only .27 with the NEO-PI-R measure of *openness*; Schmitt et al., 2007), which is in direct violation of the multitrait-multimethod matrix approach to validating personality traits (Campbell & Fiske, 1959). Furthermore, at least for the measure of conscientiousness, behavioral and demographic validity criteria show negative or null correlations with the self-report and peer-report measures of the Big Five (average r s ranged from $-.43$ to $.06$), although these same validity criteria demonstrated strong positive correlations with perceptions of national character (average $r = .61$; Heine, Buchtel, & Norenzayan, 2008). In sum, more evidence of validity would seem to be needed before we can identify which rank orderings of countries' personality profiles are the most accurate. However, comparisons of self-reported traits between regions within a single country, where people likely share similar reference groups, appear to have stronger correlations with behavioral and demographic criteria (e.g., Rentfrow, Gosling, & Potter, 2009).

RELATIONSHIPS

Central to the distinction between independent and interdependent self-concepts is the notion that culture shapes the ways in which people relate with others. This section

reviews how the self-concept is related to the way in which people distinguish between ingroups and outgroups, how people with more independent self-concepts tend to have more opportunities for forming new relationships and dissolving older relationships than do those with more interdependent self-concepts, and how this difference in relational mobility is associated with various aspects of people's relationships.

The interdependent self, as discussed earlier, is importantly sustained and defined by its significant relationships within the ingroup (Markus & Kitayama, 1991). This suggests that an interdependent individual's ingroup relationships represent a unique class of relationships within the universe of potential relationships that the individual might have. To put it succinctly, an interdependent self cannot be interdependent with everyone, and the self-defining nature of ingroup relationships suggests that these relationships should hold a particularly privileged position. In contrast, the independent self is a self-contained entity that remains relatively the same regardless of its interaction partners, and fewer consequences are associated with distinguishing between ingroup and outgroup members in many situations. As such, the demarcation of ingroups from outgroups should be more salient and stable in interdependent cultural contexts.

Much evidence supports this reasoning. For example, Iyengar et al. (1999) report the results of several studies contrasting ingroups and outgroups between East Asians and Americans. They found that whereas European Americans made a clear distinction between themselves and others in an actor-observer bias task (i.e., they viewed more traits to be descriptive of others than themselves), they did not differ in their evaluations of ingroup versus outgroup members. In contrast, East Asians did not show any difference between their evaluations for themselves and their friends but showed a more pronounced actor-observer bias for an outgroup member than they did for an ingroup member (i.e., they viewed more traits to be descriptive of an outgroup member than for an ingroup member). Iyengar and Lepper (1999) also found that whereas European Americans reacted negatively when choices were made for them by someone else, regardless of whether the choice-maker was their mother or a stranger, Asian American children only reacted negatively when the choice-maker was a stranger. When their mother had made the choice for them, they were just as willing to work on the task as when they had chosen it for themselves. As another example, whereas Americans showed evidence for social loafing regardless of whether they were working with ingroup or outgroup members, both Israeli and Chinese only loafed with outgroup members. In contrast, they showed evidence for social striving (i.e., working harder than they did as

individuals) when working with ingroup members (Barley, 1993).

Furthermore, an extensive review of studies using Solomon Asch's (1956) conformity paradigm reveals that the conformity of people from interdependent cultures appears to be more contingent on the nature of the majority group than it is for people from independent cultures (Bond & Smith, 1996). When in a situation with strangers, people from interdependent cultures conform to a comparable degree as those from independent ones or even show some evidence of anticonformity (e.g., Frager, 1970). However, when in a situation with their peers, people from interdependent cultures show evidence of heightened conformity; indeed, the largest amount of conformity in Bond and Smith's meta-analysis involved Fijian Indians and Japanese participants conforming to groups that included their peers (Chandra, 1973; Williams & Sogon, 1984; but see Takano & Sogon, 2008, for a critical review). In contrast, the degree of conformity for people from independent cultures does not appear to be contingent on the relationships between the subjects and those of the majority group. Likewise, Wong and Hong (2005) found that priming thoughts of interdependence increases the likelihood that one would cooperate more with a friend than a stranger, compared with neutral or independent primes. In a similar vein, Yamagishi and Yamagishi (1994) find that Americans have higher levels of general trust toward strangers than do Japanese (but see Yuki, Maddux, Brewer, & Takemura, 2005, for further complexities regarding ingroup and outgroup distinctions among Japanese). In sum, the distinction between ingroup and outgroup members varies in salience across cultures, and this raises the possibility that minimal group designs might be less effective at eliciting a sense of shared belongingness among people with interdependent self-concepts.

Relationships also vary across cultures in terms of the ease with which people can form them. Relationships among those in independent cultures are entered into, and are maintained, on a somewhat mutually voluntary basis. In such contexts, people have relatively high relational mobility (Yuki et al., 2009; also see Oishi, Lun, & Sherman, 2007), and individuals can seek new relationships or dissolve unsatisfying older relationships. Importantly, a relationship must in some way benefit the independent individual; otherwise, individuals would not devote the efforts necessary to cultivating it. Hence, people in such contexts actively seek positive and rewarding relationships and often will not devote much effort or resources to any relationship that does not appear to be beneficial or may allow those relationships to wither (Adams, 2005; Anderson, Adams, & Plaut, 2008; Heine, Foster, & Spina, *in press*; Schug, Yuki, Horikawa, & Takemura, 2009). The

Western social psychological literature on relationships tends to be focused largely on relationship formation and dissolution, suggesting that conditional relationships have thus far been the primary focus of inquiry—indeed, relatively few references have been made to less contingent relationships, such as those with kin (e.g., Lieberman, Tooby, & Cosmides, 2007).

In contrast, relationships among those from interdependent cultures are often viewed in less conditional terms. One is born into a relatively fixed interpersonal network, and over the course of a lifetime an individual subsequently joins a select few interpersonal networks that remain somewhat stable over the years. Relatively few opportunities appear to form new relationships or to dissolve any existing ones at any given point in time, and this holds true whether one's relationships are rewarding or not. As a consequence, people with more interdependent selves (particularly in West African contexts) tend to have more ambivalent feelings toward friendship (Adams & Plaut, 2003), are more likely to say that they have enemies (often from within their own ingroups) than those with more independent selves (Adams, 2005), and have a weaker relationship between physical attractiveness and positive life outcomes (Anderson et al., 2008). The lower relational mobility of people from interdependent cultures also is associated with people showing a weaker similarity-attraction effect (Schug et al., 2009), and weaker self-enhancing motivations (Falk, Heine, Yuki, & Takemura, 2009; Yuki et al., 2009; also see Oishi et al., 2007, for further implications of relational mobility).

Such cultural differences in the voluntary and conditional nature of relationships are also relevant to how people seek social support. Much research has documented the many health benefits that people receive from social support in times of distress (e.g., Cohen & Wills, 1985; Seeman, 1996); however, most of this research has been conducted in the United States. Indeed, much research conducted with East Asians and Asian Americans finds that these samples seek *less* social support than do European Americans, and the nature of their social support also appears to be different (for a review, see Kim, Sherman, & Taylor, 2008). The tendency for people from Asian cultural backgrounds to seek less social support than those from European American backgrounds appears to be primarily due to concerns that seeking social support would cause them to lose face and disrupt group harmony (Kim, Sherman, Ko, & Taylor, 2006; Taylor et al., 2004). However, people from Asian backgrounds appear to use more implicit social support strategies, where they turn to close relations for comfort, but do not explicitly disclose their stressful life events (Taylor, Welch, Kim, & Sherman, 2007). This observed cultural difference in social support

seeking has much relevance both for understanding how people cope with stress and for mental health professionals dealing with clients from varied cultural backgrounds.

MOTIVATION

Cultural experiences also importantly influence motivations. Much research has explored how some key motivations appear differently across cultures, including motivations for self-enhancement, approach-avoidance motivations, agency and control, motivations to fit in or to stick out, achievement motivations, and motivations for honor. Each of these is reviewed in the sections that follow.

Motivations for Self-Enhancement and Self-Esteem

The motivation that has been researched the most across cultures is the motivation to *self-enhance*, that is, a desire to view oneself positively. A great deal of research, from a diverse array of methodologies, reveals that Westerners apparently have a strong need to view themselves in positive terms. For example, most North Americans score much above the theoretical midpoint of self-esteem scales (Baumeister, Tice, & Hutton, 1989), show much evidence for unrealistically positive views of themselves (e.g., Greenwald, 1980; Taylor & Brown, 1988), and engage in various compensatory self-protective responses when they encounter threats to their self-esteem (e.g., Steele, 1988; Tesser, Crepaz, Beach, Cornell, & Collins, 2000; Wills, 1981).

This research reveals quite clearly that motivations for positive self-views are powerful and pervasive among Westerners. However, given that Westerners tend to endorse more independent views of self, and that much research has identified a pronounced positive relationship between independent self-construals and positive self-views within various cultures (correlations range between .33 and .51; e.g., Heine, 2003a; Oyserman et al., 2002; Singelis, Bond, Lai, & Sharkey, 1999), this research raises the possibility that such positive self-views will be more elusive in cultural contexts that are less characterized by independence.

Much research has investigated motivations for positive self-views in interdependent cultures, and overall, the evidence suggests that these motivations are less pronounced in such contexts. For example, Mexicans (Tropp & Wright, 2003), Native Americans (Fryberg & Markus, 2003), Chileans (Heine & Raineri, 2009), and Fijians (Rennie & Dunne, 1994) score lower on various measures of positive self-views than do Westerners. Indeed, in some

cultural contexts, most notably East Asian ones, evidence for self-serving biases is particularly weak (e.g., Mezulis, Abramson, Hyde, & Hankin, 2004). A recent meta-analysis on self-enhancing motivations among Westerners and East Asians found significant cultural differences in every study for 30 of the 31 methodologies that were used (the one exception being comparisons of self-esteem using the Implicit Association Test; Greenwald & Farnham, 2000; see also Falk et al., 2009; Kitayama & Uchida, 2003; Yamaguchi et al., 2007; cf. Szeto et al., 2009). The average effect size for the cultural differences across all studies was $d = .84$. Furthermore, whereas the average effect size for self-enhancing motivations was large ($d = .86$) within the Western samples, these motivations were largely absent among the East Asian samples ($d = -.02$), with Asian Americans falling between the two results ($d = .33$). Apparently, East Asians possess little motivation to self-enhance, and in many situations they instead appear especially attentive to negative information about themselves that allows for self-improvement (Heine et al., 1999).

Numerous alternative explanations have been offered to account for this cultural difference. One possibility is that East Asians are more motivated to enhance their group selves rather than their individual selves, and comparisons of people's individual self-enhancing tendencies thus obscure their group self-enhancing motivations. Despite the intuitive appeal of this account, the evidence in support of it is lacking. Studies have found that East Asians enhance their group selves more than their individual selves (e.g., Muramoto & Yamaguchi, 1997), but similar findings have emerged with Westerners (Heine & Lehman, 1997a). As of yet, no published studies find that East Asians enhance their group selves more than Westerners, whereas several studies find that Westerners show more group enhancement than East Asians (Heine, 2003b; Snibbe, Markus, Kitayama, & Suzuki, 2003).

A second possibility is that East Asians value a different set of traits than those explored in research thus far; if they were asked to evaluate themselves on traits that they viewed to be especially important, the cultural differences would likely be reduced. Although some evidence is in support of this alternative account, using the "better-than-average effect" paradigm (e.g., Sedikides, Gaertner, & Vevea, 2005, 2007), studies with other methodologies reveal that East Asians are *more* self-critical for especially important traits than they are for less important ones (e.g., Heine & Renshaw, 2002; Kitayama, Markus, Matsumoto, & Norasakkunkit, 1997). The most extensive meta-analysis on this topic finds no correlation between self-enhancement and importance for East Asians ($r = -.01$) in contrast to a positive correlation for Westerners ($r = .18$; Heine, Kitayama, & Hamamura, 2007a), but discussion has taken place regarding whether

studies should be excluded from this meta-analysis (Heine, Kitayama, & Hamamura, 2007b; Sedikides et al., 2007). The better-than-average effect appears to yield different results from other self-enhancement methodologies because of the difficulties that people have in considering distributed targets (e.g., the average person) in contrast to specific targets (e.g., the self or one's best friend; Chambers & Windschitl, 2004; Hamamura, Heine, & Takemoto, 2007; Klar & Giladi, 1997; Krizan & Suls, 2008).

A third alternative account to consider is that East Asians are presenting themselves self-critically but are privately evaluating themselves in a self-enhancing manner (or Westerners are privately more self-critical than they present themselves; Kurman, 2003; Yamaguchi et al., 2007). Evidence with implicit measures of self-esteem is largely consistent with this account in that there are few cultural differences with these measures (see Heine & Hamamura, 2007, for a review), although studies that employ hidden behavioral measures in anonymous situations reveal similar cultural differences to those that employ questionnaires (e.g., Heine et al., 2001; Heine, Takata, & Lehman, 2000). That the Implicit Association Test measure of self-esteem has thus far failed to show reliable correlations with other implicit or explicit measures of self-esteem, or external criteria (Bosson, Swann, & Pennebaker, 2000; Falk et al., 2009; Hofmann, Gawronski, Gschwendner, Le, & Schmitt, 2005), makes it difficult to evaluate the conflicting results from these studies (but see Banaji & Heiphetz, volume 1).

Variation in self-esteem has also been identified across historical periods. A meta-analysis from 1965 to 1995 of studies using the Rosenberg (1965) self-esteem scale with American college students found that self-esteem scores had increased substantially over that time ($d = .6$; Twenge & Campbell, 2001). These increases in self-esteem parallel increases in independence over the same period (as measured in terms of people's changing habits of interacting with others and belonging to groups; Putnam, 2000). However, another paper found no increase in narcissism (which correlates strongly with the Rosenberg scale) over that time among students at the University of California's Berkeley and Davis campuses (Trzesniewski, Donnellan, & Robins, 2008). One account for this null effect may be the increasing percentage of Asian-descent students on these campuses over that period (Twenge, Konrath, Foster, Campbell, & Bushman, 2008).

Approach and Avoidance Motivations

Similar to cultural differences in self-enhancement motivations between East Asians and Westerners, parallel cultural differences are found in approach and avoidance motivations. Given that both self-enhancement and

approach motivations reflect concerns about obtaining positive benefits for the self, and that both self-improvement and avoidance motivations entail attending to potential costs to the self, it is possible that these motivations might share a common basis (Heine, 2005; Higgins, 2008). Much research finds that, in general, East Asians show relatively more evidence for avoidance motivation, and relatively less evidence for approach motivation, compared with Westerners. For example, compared with North Americans, East Asians embrace more personal avoidance goals (Elliot et al., 2001), rate opportunities to lose as more important than opportunities to win (Lee et al., 2000), persist more on a task after failure and less after success (Heine et al., 2001; Oishi & Diener, 2003), perform better while attending to weaknesses or losses (Hamamura & Heine, 2009; Peters & Williams, 2006), are motivated more by negative role models (Lockwood, Marshall, & Sadler, 2005), recall events better if they contain prevention information, and view book reviews to be more helpful if those reviews contain prevention information (Hamamura et al., 2009). One account for these cultural differences is that "face" is a critical resource in East Asian cultural contexts, and because face is more easily lost than it is gained, people come to habitually attend to avoidance information (Heine, 2005).

Agency and Control

The ways in which individuals attend to their needs and desires are shaped by the theories that they embrace regarding where they can exert control. As discussed earlier, Dweck and colleagues (Dweck, Hong, & Chiu, 1993; Dweck & Leggett, 1988) discuss implicit theories that people have regarding the malleability of their selves: namely, incremental and entity theories of self. In addition, people have implicit theories about the malleability of the world. For example, people can see the world as something that is fixed and beyond their control to change (an entity theory of the world), or they can think of the world as flexible and responsive to their efforts to change (an incremental theory of the world). To the extent that people have implicit theories that the world is malleable but selves are stable, they have different experiences of control than people who view the world as largely impervious to change yet their selves to be quite malleable (Su et al., 1999). Those who tend to see the world as malleable and their selves stable are more likely to maintain a sense of primary control (Rothbaum, Weisz, & Snyder, 1982) in which they strive to shape existing realities to fit their perceptions, goals, or wishes. In contrast, those who are more likely to see the world as stable and their selves as malleable are more likely to engage in secondary control strategies. People strive to achieve secondary control by aligning themselves with existing

realities, leaving the realities unchanged, but exerting control over their psychological impact.

In hierarchical collectivistic cultures, such as in East Asia, the social world remains somewhat impervious to efforts by a lone individual to change things (e.g., Chiu, Dweck, Tong, & Fu, 1997). Power and agency tend to be concentrated in groups or are mandated by the role that an individual occupies; thus, many domains exist in which people are unable to exert much direct influence. Likewise, East Asians are more likely to have a flexible and incremental view of themselves (Heine et al., 2001; Norenzayan, Choi, et al., 2002). When the self is perceived to be more mutable than the social world, it follows that people would be quite willing to adjust themselves to better fit in with the demands of their social worlds.

In contrast, people from Western cultures tend to stress the malleability of the world relative to the self (Su et al., 1999). When people view individuals to be the center of experience and action, they accordingly look to individuals as a source of control. Moreover, the independent self is experienced as relatively immutable and consistent (Heine et al., 2001; Sub, 2002). This view that the self is an immutable entity, working within the context of a mutable world, sustains a perception of primary control.

Much research finds that people from different cultures differ in their tendencies to pursue primary and secondary control strategies (Morling & Evered, 2006; Weisz, Rothbaum, & Blackburn, 1984). For example, in one study, participants were asked to list occasions when either they had tried to influence people or objects that surrounded them (i.e., primary control experiences) or they had tried to adjust themselves to these people or objects (i.e., secondary control experiences; Morling et al., 2002). Americans were better able to recall influencing situations than adjusting ones, whereas Japanese remembered more adjusting situations than influencing ones. Furthermore, although both Japanese and Americans evaluated influencing situations as making them feel more powerful than did adjusting ones, suggesting that primary control might universally be experienced as powerful, Japanese reported feeling more powerful about their adjusting situations than the Americans did. Various other studies have found comparable cultural differences in experiences of control (e.g., Bond & Tormatzky, 1973; Chang, Chua, & Toh, 1997; Morling & Fiske, 1999; Seginer, Trommsdorff, & Essau, 1993).

In addition, East Asians appear to view groups as more agentic than do Westerners. For example, in their reporting of rogue traders in various stock scandals, Japanese newspapers are more likely than American newspapers to describe the scandal in terms of the organizations that were involved as opposed to the individual traders. Likewise, Chinese are more likely than Americans to explain deviant

animal behaviors as being due to the actions of a group (an unruly herd) than to the actions of an individual (a rogue cow; Menon, Morris, Chiu, & Hong, 1999).

Cultural differences in agency are also evident in the ways in which people make choices. In independent cultural contexts, people are less dependent on the actions of others than they are in interdependent ones. People in interdependent contexts should, on average, be more concerned with the goals of their groups, and, as such, be more willing to adjust their behaviors (and reduce their choices) so that they can coordinate the actions of the group toward those goals. One stark example of this cultural difference is that in many interdependent cultural contexts today (and perhaps in a majority of cultures several centuries ago) critical life decisions such as whom one would marry or what job one would pursue have been made by families rather than the individuals (e.g., Lee & Stone, 1980).

Examples of how perceptions of choice differ across cultures can be seen in several studies. As discussed earlier, Iyengar and Lepper (1999) found that Asian American children prefer tasks that are chosen for them by ingroup members, whereas European American children prefer tasks that they choose for themselves (children from both cultural groups do not prefer tasks that are chosen for them by outgroup members). Similarly, several studies have found that East Indians differ in their choice making from Americans, in that the Indians are slower to make choices, are less likely to choose according to their preferences, and are less motivated to express their preferences in their choices (Savani, Markus, & Conner, 2008). Cultural variation in choice making does not just differ between those from Eastern and Western cultural contexts—middle-class Americans, specifically, seem quite unusual in their high desire for choice (Schwartz, 2004). For example, in a survey of people from six Western countries, only Americans preferred making a choice from 50 ice cream flavors compared with 10 flavors. Likewise, Americans (and Britons) prefer to have more choices on menus from upscale restaurants than do those from other European countries (Rozin, Fischler, Shields, & Masson, 2006). Further, people from American working-class cultures are less protective of their choices (i.e., they do not seem particularly bothered when an experimenter denies them their original choice) compared with middle-class Americans (Snibbe & Markus, 2005). In sum, the ways in which people make choices, and express agency more generally, differ in several important aspects across cultures.

Motivations to Fit In or to Stick Out

People have competing motivations to fit in with others or to stick out from a crowd. Asch (1956) most famously

documented the motivation of Americans to conform with a unanimous majority in line-comparison studies. This conformity paradigm has been immensely influential, and it has been replicated well more than 100 times in 17 countries. A meta-analysis of these studies revealed one clear trend: Although Americans show a great deal of conformity in this paradigm, people from more interdependent cultures conform even more (Bond & Smith, 1996). Motivations to fit in appear to be stronger in cultural contexts that encourage people to maintain strong relationships with others (at least in studies like Asch's that target a normative influence for conformity—weaker cultural differences for informational influences for conformity are possible).

In contrast to a motivation to conform, we can consider people's motivations to stick out and to be unique. In general, it appears that people from independent cultural contexts evince a stronger motivation to be unique. For example, Kim and Markus (1999) found that, when considering an array of shapes, European Americans rated the unusual shapes as more desirable than the more common ones, in contrast to the ratings of East Asians. Moreover, when given a choice of pens, European Americans were more likely to choose a minority-colored pen whereas East Asians were more likely to choose a majority-colored pen. Parallel differences in pen preferences have also been observed in contrasts of middle- and working-class Americans (Stephens, Markus, & Townsend, 2007). Likewise, advertisements targeting East Asians and working-class Americans are more likely to emphasize themes of connection with others than are advertisements that target middle-class Americans, which are more likely to emphasize uniqueness (Kim & Markus, 1999; Stephens et al., 2007).

Religion and Achievement Motivation

Psychological research on achievement motivation has an interesting past, as much of it was inspired by a rather outlandish idea of a sociologist. In 1904–05, Max Weber published a highly influential and controversial series of essays titled *The Protestant Ethic and the Spirit of Capitalism*, in which he proposed the intriguing thesis that some key motivations for achievement, and the psychological foundation for capitalism more generally, were rooted in the Protestant Reformation. Weber maintained that some key features of Enlightenment-era Protestant thought, including ideas regarding individualism, a calling, and predestination, led to a moralized work ethic, where working on tasks related to one's unique calling acquired spiritual significance. Although some of these Protestant beliefs (particularly predestination) only lasted for a few generations, Weber argued that they were

around long enough to be converted into a more enduring secular code of behavior that included honesty, diligence, seriousness and focus at work, and thrifty use of money and time.

Evidence consistent with Weber's thesis comes from various disciplines. For example, some economists and historians note that power and wealth in Europe moved from places like Spain and northern Italy before the Protestant Reformation began in 1517 to Northern European Protestant centers in Germany, the Netherlands, and England, followed by its most colossal bloom in the 20th-century United States (e.g., Landes, 1999). Likewise, comparisons of per capita income worldwide have found that nations that were largely Protestant earned more than those that were mixed Protestant and Catholic and that these earned more still than those nations that were predominantly Catholic (e.g., Furnham, 1990), although gross domestic product (GDP) rankings have fluctuated since then. Jackson, Fox, and Crockett (1970) demonstrated that Protestants in the United States were more likely to enter high-status nonmanual occupations than Catholics of the same occupational origin, controlling for various other societal variables. McClelland (1961) also found that Protestant nations were far more industrialized than their Catholic counterparts.

Much psychological evidence also supports Weber's thesis. McClelland (1961) demonstrated that Protestant parents expected their children to become self-reliant at an earlier age compared with Catholic parents and that stories written by German Protestant boys had higher need for achievement scores than those written by German Catholic boys. Giorgi and Marsh (1990) found pronounced differences in the embracing of an intrinsic work ethic between Western European Catholics and mainstream Protestants (interestingly, the relation was clear both by contrasting individuals of different religions *within* countries and by comparing countries), as evident in a measure of work values. Furthermore, this relation was identifiable regardless of individuals' level of religiosity, suggesting that the work ethic has become secularized. The Protestant ethic has also been associated with negative attitudes toward laziness and being overweight (Quinn & Crocker, 1999) and a concern with self-esteem and self-deception (Baumeister, 1987; Crocker & Park, 2004).

Recently, Sanchez-Burks and colleagues (Sanchez-Burks, 2002; Sanchez-Burks et al., 2003; Sanchez-Burks, Nisbett, & Ybarra, 2000) investigated Weber's thesis in the laboratory. Sanchez-Burks (2002) was interested in exploring whether Protestants become entirely focused on their morally sanctioned work and thus maintain a rather impulsive attitude toward potential distractions, such as other people (Bendix, 1977; Hampden-Turner & Trompenaars,

1993; Weber, 1947). In one study, Protestant Americans engaged in a work task were found to be less attentive to their relationships with others (i.e., they were less likely to show unconscious mimicry of others¹) than they were when engaged in a casual task. In contrast, Catholic Americans were just as attentive to their relationships, regardless of the nature of the tasks. In addition, Americans (who are predominantly Protestant) maintain more separate personal and professional networks than do people from non-Protestant countries (i.e., Poland and India; Kacperczyk, Sanchez-Burks, & Baker, 2009).

However, fuelling the controversy in Weber's thesis are some cross-cultural studies that compare Likert scale means on various self-report measures of the Protestant work ethic that are not consistent with Weber's thesis. Indeed, studies that have compared the means on these scales reveal either no cultural difference in the Protestant work ethic or a weaker work ethic among nations of a largely Protestant background (e.g., the United States, Australia, and Britain) than among people from countries with little exposure to Protestant ideology (e.g., India, Malaysia, Mexico, Sri Lanka, Uganda, and Zimbabwe; Baguma & Furnham, 1993; Furnham, Bond, & Heaven, 1993; Furnham & Muhiudeen, 1984; Isonio & Garza, 1987; Niles, 1994)—findings that would seem to challenge the face validity of the measure. That is, the evidence for an association between Protestantism and achievement motivation is far more consistent in laboratory studies (e.g., Sanchez-Burks, 2002), and in studies that measure various cultural products (e.g., children's stories; McClelland, 1961), than it is in studies that use cross-cultural comparisons of means from self-report measures. Again, this is consistent with a growing body of evidence that comparisons of means of subjective Likert scale measures across cultures are often compromised by various response artifacts and yield results of dubious validity (Heine et al., 2002; Peng et al., 1997).

Motivations for Honor

Much cross-cultural research has investigated motivations for honor, particularly between the South and the North in the United States (Cohen, Nisbett, Bowdle, & Schwarz, 1996; Cohen, Vandello, Puente, & Rantilla, 1999; Nisbett, 1993; Nisbett & Cohen, 1996). Since the 18th century, the U.S. South has had a greater number of

lynchings, sniper attacks, feuds, homicides, duels, and violent pastimes than the North (Fischer, 1989; Gastil, 1989). Several explanations have been proposed for this, including the more uncomfortable hot temperatures, the greater poverty, and the longer history of slavery in the South. In contrast, Nisbett and Cohen (1996) proposed that the South's relatively greater penchant for violence is due to its maintenance of a culture of honor. A culture of honor is a culture where people (especially men) strive to protect their reputation through aggression. Nisbett and Cohen argue that cultures of honor are common in contexts in which people's wealth is vulnerable and those that have little institutionalized protection (e.g., in inner cities, various Middle Eastern herding cultures, and some small-scale African societies; Anderson, 1999; Galaty & Bonte, 1991). In the case of the U.S. South, this state of affairs emerged because herding was a key component of the South's early economy, herders have vulnerable wealth (livestock can easily be stolen), and the sparse population of herding lands made it difficult to police. The establishment of a personal reputation for aggressive revenge for insults, therefore, emerged as a method for preventing herd rustling. Although herding is no longer the primary economic activity of most Southerners, Nisbett and Cohen argue that these cultural norms have persisted as a culture of honor represents a stable equilibrium point (see Cohen, 2001).

Various kinds of data converge to support this thesis. For example, archival data reflect that the relatively greater amount of violence in the South is largely limited to argument-related violence (in which the defense of one's honor is often implicated), and this is especially common in the rural herding regions of the South (Nisbett & Cohen, 1996). Similarly, survey data reveal that Southerners are more likely than Northerners to offer violent solutions to problems, but only if those involve a threat to an individual's or family's honor (Cohen & Nisbett, 1994). Experimental evidence further reveals that when Southerners are insulted they are more likely than Northerners to be angry, show heightened cortisol and testosterone responses (these hormone levels tend to increase with aggression), and act more physically aggressive (Cohen et al., 1996). Likewise, field studies reveal that Southerners, compared with Northerners, are warmer toward someone who committed violence in defense of their honor (but not for other kinds of violent acts; Cohen & Nisbett, 1997). Further, compared with Northerners, Southerners have maintained more institutional practices consistent with honor motivations, such as having more laws that allow for (1) more freedom in defending one's home, (2) corporal punishment in the schools, and (3) capital punishment by the state; at the same time, Southerners have fewer laws mandating punishment for domestic violence incidents (Cohen, 1996).

¹The effects for Protestants were limited to Protestant men. Protestant women remained relationally attuned in both work and casual settings, perhaps reflecting a heightened relational sensitivity among women than among men (see Sanchez-Burks, 2002, for discussion).

Much evidence thus converges on the notion that the U.S. South maintains more of a culture of honor than the U.S. North (also see Vandello & Cohen, 2003, for further explorations of behavioral correlates of a culture of honor).

COGNITION AND PERCEPTION

Many psychologists assume that research from the area of cognition and perception targets the most basic and fundamental psychological processes. Given this perspective, it is interesting that cross-cultural research on cognition and perception reveals some of the clearest evidence for cultural variation. Research contrasting analytic and holistic ways of thinking reveals much cultural variation in how people attend to objects and fields, in how they reason, and in how they explain the behavior of others.

Analytic Versus Holistic Thinking

Richard Nisbett and colleagues (Nisbett, 2003; Nisbett et al., 2001) have investigated whether various cognitive and perceptual tasks explained under the labels of analytic and holistic thinking varied across cultural contexts, particularly between North American and East Asian cultures. By analytic thinking they mean a focus on objects, which are perceived as existing independently from their contexts and are understood in terms of their underlying attributes. These attributes are further used as a basis to categorize objects, and a set of fixed abstract rules are used for predicting and explaining the behavior of them. In contrast, by holistic thinking Nisbett and colleagues are referring to an orientation to the context as a whole. This is an associative way of thinking, where people attend to the relations among objects and among the objects and the surrounding context. These relations are used to explain and predict the behavior of objects. Further, holistic thinking has an emphasis on knowledge that is gained through experience rather than the application of fixed abstract rules. Dozens of studies have been conducted that demonstrate how cultures vary in these two ways of thinking (for a review, see Norenzayan, Choi, & Peng, 2007). In general, analytic thinking is especially common in Western cultures, whereas holistic thinking is more normative in the rest of the world, particularly in East Asia, where most of the cross-cultural research has been conducted. This distinction between analytic and holistic thinking has been studied in several ways.

Attention to Objects and Fields

Various experimental paradigms have revealed that Americans and other Westerners attend less to the background (i.e., are

more field independent) than are people from other non-Western societies, with the likely exception of migratory foragers. The first evidence for this cultural difference came from cross-cultural comparisons of Rorschach ink blots, where it was found that European Americans were more likely than Chinese Americans to focus their responses on a fraction of the card rather than attending to the entire image (Abel & Hsu, 1949). Dozens of years later, using evidence derived mostly from the Rod and Frame Test and the Embedded Figures Test, Witkin and Berry (1975) summarized a range of evidence from work with migratory and sedentary foraging populations (Arctic, Australia, and Africa), sedentary agriculturalists, and industrialized Westerners and found that only Westerners and migratory foragers appeared at the field-independent end of the spectrum. Recent work among East Asians in industrialized societies using the Rod and Frame Test (Ji, Peng, & Nisbett, 2000) show Westerners as more field independent than East Asians (also see Kitayama, Duffy, Kawamura, & Larsen, 2003). Research using the Embedded Figure Test comparing Americans, Germans, Malaysians, and Russians (Kühnen, Hannover, & Schubert, 2001) shows Americans and Germans to both be more field independent than Malays and Russians. Norenzayan (2009) found that Canadians showed less field-dependent processing on the Group Embedded Figures Test than Chinese, who in turn were less field dependent than Arabs. Integrative cognitive styles, which is similar to field dependence, are more pronounced among Middle Easterners than European Canadians (and exposure to a Western-style university education was found to lead to less integrative thinking among the Middle Easterners; Zebian & Denny, 2001). More recently, studies find that Americans show significantly more focused attention in the Framed Line Test than do people from other European countries (Britain and Germany) or from Japan (Kitayama, Park, Sevincer, Karasawa, & Uskul, 2009), and middle-class Americans show more evidence for object-focused attention than do working-class Americans (Na, Grossmann, Varnum, Kitayama, & Nisbett, 2009). These studies raise the possibility that Americans, particularly the college-educated Americans that make up the bulk of the psychological database, are unusual with respect to their analytic perceptual styles.

Further evidence for a greater attention to objects can be seen in studies where people were asked whether they have seen a focal object before in scenes in which the background has been switched. East Asians' recall for the objects is worse than it is for Americans if the background has been replaced with a new one (Masuda & Nisbett, 2001), indicating that they are attending to the field. This difference in attention toward the field has also

been found in the eye movements of people as measured with eye trackers in both social and nonsocial scenes (Chua et al., 2005; Masuda, Akase, Radford, & Wang, 2008; Masuda, Ellsworth, et al., 2008). In these studies, the attention of Americans rarely leaves the focal object, whereas, after an initial 1,000 ms or so of attending to the focal object, East Asians are more likely to shift their gaze to the background.

Moreover, distinct neural activation appears to be associated with these different attentional styles across cultures. In the Framed Line Test (Kitayama et al., 2003), Westerners tend to do better on absolute judgments, whereas East Asians are superior on relative judgments. When asked to make absolute judgments (the more difficult task for East Asians), Asian Americans showed greater activation in regions of the left inferior parietal lobule and the right precentral gyrus—regions that are associated with attentional control. In contrast, European American participants showed greater activation in these same regions when they were asked to make relative judgments (the more difficult task for Westerners; Hedden, Ketay, Aron, Markus, & Gabrieli, 2008). That is, people from both cultural groups showed increased attentional control when engaged in tasks that were not preferred in their respective cultures. These differences were further associated with the degree to which individuals embraced independent values or had acculturated to the United States. In addition, when looking at pictorial scenes, Americans show more activation of brain regions that are implicated in object processing (e.g., the bilateral middle temporal gyrus, left superior parietal or angular gyrus, and right superior temporal or supramarginal gyrus) than do East Asians. In contrast, few cultural differences were found in regions associated with background processing (Gutches, Welsh, Boduroglu, & Park, 2006; also see Goh et al., 2007).

This cultural difference in attention to the field is further evident in different artistic traditions between the West and East Asia, where Western paintings tend to have a horizon that is approximately 15% higher than it is in East Asian paintings (the higher horizon calls attention to the depth of the setting and allows for the different objects and places in a scene to be seen in relation to one another). Western portraits also include focal figures that are approximately three times as large as those in East Asian portraits. Further, when American college students draw a scene, or take a photograph of someone, they are more likely to draw a lower horizon, include fewer objects in their drawings, and zoom in to photograph a larger focal figure than are Japanese students (Masuda, Gonzalez, Kwan, & Nisbett, 2008). In sum, these findings converge to show that Westerners perceive the world in

some importantly different ways than do those from other cultural contexts.

Reasoning Styles

Westerners are more likely to group objects on the basis of categories and rules, whereas people from many other cultural groups are more likely to group objects based on similarity or functional relationships. For example, Ji, Zhang, and Nisbett (2004) found that Chinese were more likely to group objects that shared a functional (e.g., pencil–notebook) or contextual (e.g., sky–sunshine) relationship. Americans were more likely to group objects if they belonged to the same category defined by a simple rule (e.g., notebook–magazine). Similar cultural differences were found between Northern and Southern Italy (Southern Italians gave more holistic responses; Knight & Nisbett, 2007). In a similar vein, Norenzayan and colleagues found that Chinese were more likely to group objects if they shared a strong family resemblance, whereas Americans were more likely to group the same objects if they could be assigned to that group on the basis of a deterministic rule (Norenzayan, Smith, et al., 2002). Norenzayan, Henrich, and McElreath (2009) examined classification among the Mapuche and Sangu subsistence farmers in Chile and Tanzania, respectively, and found that their classification resembled the Chinese pattern, although it was more exaggerated toward holistic reasoning. These cultural differences in reasoning appear to be a product of social interdependence; even within the same linguistic and geographical regions of Turkey, farmers and fishermen, who have more socially connected lifestyles, showed more evidence for holistic reasoning on this same task (and on other related tasks) than did herders, who are more isolated (Uskul, Kitayama, & Nisbett, 2008).

Other cultural variation in reasoning has been demonstrated in experiments exploring a “belief bias” in deductive reasoning. A belief bias exists where more plausible conclusions are judged as more logically valid than less plausible ones (Revlín, Leirer, Yop, & Yop, 1980). This bias was found to be greater for Koreans than for Americans, but only for valid arguments (Norenzayan, Smith, et al., 2002)—although, importantly, this difference was not due to any difference in abstract logical reasoning ability between the two cultural groups. This belief bias was also compared among student samples of Canadians, Chinese, and Arabs, and the bias was most pronounced among Arabs, followed by the Chinese and then Canadians (Norenzayan, 2009).

Further, as discussed earlier, pronounced cultural differences occur in reasoning with respect to how people reason about contradiction. A holistic orientation suggests

that everything is perceived to be fundamentally connected and in flux, which suggests that real contradiction might not be possible. The Aristotelian law of contradiction, in which *A* cannot equal *not A*, is not as compelling if *A* is connected with *not A* and if *A* and *not A* are always changing. This naïve dialecticism is more common among East Asians and is associated with a greater tolerance for contradiction compared with Westerners across various tasks (Peng & Nisbett, 1999). The fluid and contradictory nature of East Asian beliefs is also reflected in their predictions of future changes. Whereas Westerners tend to make rather linear future predictions for change (e.g., if the stock market has been dropping over the past year it will probably continue to drop next year as well), East Asian future predictions are considerably more nonlinear (Ji, Nisbett, & Su, 2001). Moreover, this cultural difference in predictions about change is already evident in childhood and becomes more pronounced with age (Ji, 2008). This less linear view of the future may be due to East Asians perceiving events as having a broader net of consequences compared with Westerners (Maddux & Yuki, 2006). It remains to be seen whether people from other cultures view contradiction in ways more similar to East Asians or to Westerners.

Explaining the Behavior of Others

Given the previously described cultural differences in attention and reasoning, we might therefore expect that Westerners would be inclined to explain events by reference to properties of the object, whereas non-Westerners would be inclined to explain the same events with reference to interactions between the object and the field. Several classic studies, which were initially conducted exclusively with Western participants, found that when asked to explain the behavior of others, people tend to largely attend to the person's disposition as a means for explaining the behavior, even when compelling situational constraints are available (Jones & Harris, 1967; Ross, Amabile, & Steinmetz, 1977)—a tendency robust enough that it has been termed the “fundamental attribution error” (Ross et al., 1977). However, research in non-Western cultures often reveals a somewhat different pattern. Geertz (1975) described how Balinese do not tend to conceive of people's behaviors in terms of underlying dispositions but instead see it as emerging out of the roles that they have. Shweder and Bourne (1982) found that Indians tended to eschew trait descriptions of others' behaviors but rather would explain their behaviors in descriptive terms. Building on this idea, Miller (1984) found that Indian adults tended to favor situational information over dispositional accounts. More recently, several studies conducted with East Asians and Americans reveal that whereas Americans attend to dispositions first, regardless of how compelling the situational

information may be (Gilbert & Malone, 1995), East Asians are more likely than Americans to infer that behaviors are controlled by the situation (Norenzayan, Choi, et al., 2002) and to attend to situational information (Miyamoto & Kitayama, 2002; Morris & Peng, 1994; Van Boven, Kamada, & Gilovich, 1999), particularly when that information is especially salient (Choi & Nisbett, 1998). Similarly, East Asians are less likely than Americans to use trait adjectives when describing someone's behaviors (Maass, Karasawa, Politi, & Suga, 2006). Furthermore, in an investigation of people's lay beliefs about personality across eight cultures, Church et al. (2006) found that people from Western cultural backgrounds (i.e., American and European Australian) strongly endorsed implicit-trait beliefs, such as the notions that traits remain stable over time and predict behavior over many situations. In contrast, they found that those from non-Western cultural backgrounds (i.e., Asian Australian, Chinese Malaysian, Filipino, Japanese, Mexican, and Malay) more strongly endorsed contextual beliefs about personality, such as ideas that traits do not fully describe a person as well as roles or duties and that trait-related behavior will change from situation to situation. In sum, while stronger tendencies to consider dispositional information over situational information tend to be found cross-culturally, the fundamental attribution error appears to be attenuated in non-Western cultures (Choi, Nisbett, & Norenzayan, 1999; also see conflicting evidence regarding whether East Asians automatically consider situational information before dispositional information; Knowles, Morris, Chiu, & Hong, 2001; Lieberman, Jarcho, & Obayashi, 2005).

LANGUAGE

One of the most salient markers of cultural groups is language. It permeates all activities and thoughts, is learned early in life, and in addition to the obvious linguistic differences among languages (e.g., variations in lexicon and grammar), different cultural groups vary in many ways with regard to how they use language. This section reviews research regarding how language and psychology are related, including studies that assess the relation between thinking and talking, implicit and explicit communication, language priming, and studies that test the linguistic relativity hypothesis.

Relationship Between Thinking and Talking

One way that language use can vary across cultures is in terms of its relation to unspoken thoughts. When people think to themselves, are they talking silently to themselves,

or are they thinking in nonverbal terms? One instance of the latter can be seen in facial perception. People do not recognize faces by verbally describing them. Research on verbal overshadowing, for example, demonstrates that verbalizing one's thoughts about faces interferes with facial recognition (Schooler & Engstler-Schooler, 1990).

Cultures also appear to differ in the degree that people verbalize their thoughts. Kim (2002) explored this question by having Asian Americans and European Americans solve two sets of IQ items. Participants first attempted to solve the initial set of items while remaining silent. Then, participants were assigned to one of two conditions: In one condition, people were asked to talk aloud as they solved the next set of items. In another condition, people recited the alphabet as they solved the next set of items. The results indicated that the European Americans performed about as well on the items that they completed in silence as those that they completed while talking aloud. In contrast, the Asian Americans performed significantly worse when talking aloud than when solving them silently. Apparently, saying one's thoughts aloud disrupted the thinking of the Asian Americans. On the other hand, the performance of the European Americans was significantly worse when they recited the alphabet than when they were silent. In contrast, reciting the alphabet did not significantly affect the performance of Asian Americans. These results suggest that the unspoken thoughts about the IQ items vary across these two cultural groups. Apparently, the Asian Americans are processing the IQ items in a holistic manner, but when they are asked to say their thoughts aloud this forces them to arrange their thoughts sequentially, which is a more analytic way of thinking. It is difficult to easily describe holistic thoughts, as they entail multiple interrelated parts. Hence, the problem solving of Asian Americans is disrupted when they verbalize their thoughts; however, they are relatively unaffected by the alphabet recitation task, as this easy verbal task did not interfere with their holistic thoughts about the IQ items. In contrast, European Americans appear to be verbalizing their thoughts so that thinking aloud is a straightforward task, whereas reciting the alphabet interferes with their verbal thoughts about the IQ items. In sum, the two cultural groups appear to be thinking about the same task in quite different ways. Other research has demonstrated that verbalizing one's thoughts is more effortful among East Asians than among Americans, as assessed through a heightened cortisol response (which indicates increased stress; Kim, 2008). Furthermore, verbalized thoughts are associated with more commitment among European Americans than among Asian Americans, demonstrating the relatively greater power of the spoken word among Westerners (Kim & Sherman, 2007).

Implicit Versus Explicit Communication

Another way in which cultures vary in their language use is in terms of the degree to which people attend to the explicit meaning of what is said. Edward Hall (1976) made a distinction between "high context" cultures, in which much shared information guides behaviors, and "low context" cultures, which have less shared information so that people have to communicate more explicitly. Japan and the United States, respectively, are exemplars of this distinction. One test of this hypothesized cultural difference in explicit communication provided Japanese and Americans with a Stroop task in which the literal meaning and the vocal tone of words were in conflict. For example, people would hear the word "failure" spoken in a happy, upbeat tone. Participants were either asked to attend to the literal meaning of the words or to the tone that they were spoken in. The findings indicated that Americans had a more difficult time ignoring the literal meaning of the words whereas Japanese had more difficulty ignoring the tone in which the words were expressed (Kitayama & Ishii, 2002), although the American effects may be limited to when they are in work contexts (Sanchez-Burks et al., 2003). Bilingual English-Tagalog-speaking Filipinos also showed the same pattern as the Japanese, even when speaking English, indicating that the results were not specific to features in the languages themselves (Ishii, Reyes, & Kitayama, 2003). Other evidence for cultural differences in explicit communication can be seen in how people use answering machines. Miyamoto and Schwarz (2006) find that Japanese are less likely to use answering machines than Americans because it is more difficult for them to communicate without receiving the nonverbal feedback that is present in a regular telephone conversation. In one study, Japanese participants performed worse on a cognitive task than Americans while trying to leave a message on an answering machine (but not in other conditions), apparently because leaving a message, in the absence of feedback, was more cognitively demanding for them. These studies converge to show that Americans do not need to attend as much to various implicit aspects of communication as do those from some other cultures (also see Ambady, Koo, Lee, & Rosenthal, 1996).

Language Priming

As reviewed earlier, various kinds of primes have been used to activate different aspects of the self-concept, both among biculturals and among monoculturals (e.g., Hong et al., 2000). The centrality of language to thought is evident in research that compares the responses of bilinguals

depending on the language in which they are tested. For example, Chinese Canadians were found to describe themselves in far more positive terms when they completed an open-ended questionnaire in English than when they completed it in Chinese (Ross et al., 2002). Other research has shown that bilinguals respond differently in their two languages when they make decisions (Briley, Morris, & Simonson, 2005), describe their self-concepts (Kimmelmeier & Cheng, 2004), make categorizations (Ji et al., 2004), or report on their personality (Ramirez-Esparza, Gosling, Benet-Martínez, Potter, & Penebaker, 2006). These studies demonstrate that speaking a particular language involves activating a broad network of thoughts that are less accessible in other languages.

Linguistic Relativity

The hypothesis that people's thoughts are bounded by the language in which they speak has been one of the more controversial research questions in psycholinguistics (e.g., Pinker, 1994; Roberson, Davies, & Davidoff, 2000; Whorf, 1956). The stronger version of this linguistic relativity hypothesis, that language determines thought, has been almost universally rejected. The weaker version of this hypothesis, that language influences thought, has sparked much research interest and controversy.

One domain that has been especially suitable for testing linguistic relativity has been color perception, as color varies on a continuum yet different languages parse up the color space in divergent ways (although a small set of solutions are relied on in every language for labeling colors; Berlin & Kay, 1969). A seminal series of studies was conducted by Rosch Heider (Rosch Heider, 1972; Rosch Heider & Olivier, 1972) to see whether the Dani of Irian Java, who had only two color terms, would perform differently on various color-perception tasks compared with English-speaking Americans. The evidence from these studies was interpreted as showing that the color perception of the Dani was identical to that of Americans. However, other researchers have called into question both the interpretation of these findings and the methodology that was used (e.g., Lucy & Shweder, 1979; Ratner, 1989; Saunders & Van Brakel, 1997). More recently, research by Roberson and colleagues (Roberson, Davidoff, Davies, & Shapiro, 2005; Roberson et al., 2000) has attempted to address some criticisms of Rosch Heider's earlier studies. Roberson's studies have investigated Berinmo speakers from Papua New Guinea and Himba speakers from Namibia. Both of these languages contain five basic colors, although their boundaries and focal colors vary. The results of these studies show that people perceive two colors that fall within the same color category as more

similar to each other than to a color from another color category, even if the colors are equidistant in terms of hue. Importantly, the categories that affect people's color-similarity judgments are those from their own language—their judgments are unaffected by the color categories from other languages. In sum, category labels do appear to affect people's perception of colors (also see Winawer et al., 2007, for parallel evidence between Russian and English speakers, but see Kay & Regier, 2007, for contrary views).

Spatial perception also appears to be influenced by language. Several languages lack words for relativistic directions (e.g., right of and in front of); instead, people communicate directions solely in absolute terms, using the cardinal points of a compass. When asked to arrange objects as they had seen them before, Guugu Yimithirr speakers from Australia, Tzeltal speakers from Mexico, and Hai//om speakers from Namibia (all of whom lack relativistic direction terms) arranged them in a geocentric pattern, meaning that they arranged them in a different order when they went to a room in which they faced a new cardinal direction, whereas Dutch speakers arrange them in an egocentric manner, preserving the order relative to themselves (Boroditsky & Gaby, 2006; Haun, Rapold, Call, Janzen, & Levinson, 2006; Levinson, 1997, 2003). The availability of language terms to express egocentric spatial arrangements appears to be associated with people's perceptions (but for a contrary view, see Papafragou, Hulbert, & Trueswell, 2008).

Numerical cognition also appears to be influenced by language. Members of the Piraha tribe of the Amazon do not have any numerical markers above the number two. In a series of studies, they appeared unable to represent numerical quantities for numbers much larger than two, although they estimated general quantities with reasonable accuracy (Gordon, 2004; for similar findings with another culture, the Mundrukuku of the Amazon, see Pica, Lerner, Izard, & Dehaene, 2004). These findings suggest that the lack of a counting system in the language affects numerical cognition (but for alternative accounts, see Everett, 2005; Gelman & Gallistel, 2004).

EMOTION

The relation between culture and emotional experience has attracted much research interest. Two aspects of emotions have received the greatest amount of study across cultures: facial expressions of emotion and people's subjective reports of their emotions, including people's reports of the intensity of their emotional experiences, emotion terms, and kinds of emotional experiences. Further, much study

has focused on the nature of positive emotional experiences, such as subjective well-being and happiness, across cultures.

Emotions and Facial Expressions

Charles Darwin (1872/1965) was one of the first scientists to consider seriously whether emotional facial expressions were universal features of the human species or were the products of cultural learning. He noted several similarities in the facial expressions of various primates and humans and proposed that these expressions should be shared by all humans. Paul Ekman and colleagues have done the most on following up on Darwin's hypothesis and have conducted several studies to investigate whether emotional expressions are universally shared. For example, Ekman and Friesen (1971) posed a series of photos corresponding to what they referred to as a set of "basic emotions" (viz., anger, disgust, fear, happiness, sadness, and surprise) to participants from Argentina, Brazil, Chile, Japan, and the United States, asking them to match the expressions with emotion terms. Whereas chance performance would have been 16.7% correct, participants tended to get between 80% and 90% of the questions correct, regardless of cultural background, indicating much universality in recognition of the expressions. In efforts to rule out the possibility that cultural learning had occurred across these different countries, the researchers posed the same kinds of expressions to the Fore of New Guinea, who had little exposure to Western culture; in general, the Fore also made similar judgments to the expressions (Ekman, Sorenson, & Friesen, 1969; but see Russell's 1994 critique of the inconsistency of the findings). This evidence, combined with findings that the same facial expressions made by adults are made by very young infants (Izard, 1994), including those who are congenitally blind (reviewed in Ekman, 1973), demonstrates that facial expressions for the basic emotions are innate. Proposals have been made that some other emotions, in particular, contempt, shame, embarrassment, pride, and interest, are universally recognized enough to justify being added to this set (e.g., Keltner, 1995). For example, a bodily posture associated with feelings of pride appears to be universally recognized and spontaneously produced across cultures (Tracy & Robins, 2008), including among those who are congenitally blind (Tracy & Matsumoto, 2008).

Although this research reveals that, regardless of culture, people are able to recognize the facial expressions of many emotions, some intriguing cultural differences have been found. For example, the success rates for identifying American-posed faces were better among English speakers than they were for other Indo-European language speakers (e.g., Swedish, Greek, and Spanish); these samples

performed better than those who spoke non-Indo-European languages (e.g., Japanese, Turkish, and Malaysian); and all of these groups performed better than those from preliterate societies (e.g., the Fore and Dani from New Guinea; Russell, 1994). All groups performed significantly better than chance, but Americans performed the best at identifying the emotions posed by American actors.

Building on this observation, a meta-analysis of all past research on cross-cultural recognition of facial expressions noted that, on average, people were about 9% more accurate in judging the facial expressions of people from their own culture than in judging those of another culture (with, on average, people showing about 58% accuracy overall; Elfenbein & Ambady, 2002). Moreover, the more people had been exposed to another culture, the more accurate they were at decoding facial expressions from that culture. Likewise, urban dwellers have been found to be more accurate at identifying facial expressions than people from rural communities, apparently because they have had contact with a more diverse array of people (e.g., Ducci, Arcuri, Georgis, & Sineshaw, 1982). Further, people are able to reliably distinguish among the nationalities of targets when they are making emotional expressions but not when they make neutral expressions. For example, American participants could reliably distinguish between Australian and American faces (Marsh, Elfenbein, & Ambady, 2007) and between Japanese and Japanese American faces (Marsh, Elfenbein, & Ambady, 2003), but only when they were expressing emotions. These findings suggest that the recognition of facial expressions for emotions are best categorized as functional universals (i.e., they serve the same function everywhere) and do not meet the criteria for accessibility universals (i.e., cultural variability appears in the extent to which people recognize particular expressions; Norenzayan & Heine, 2005).

Moreover, across cultures people appear to attend to different parts of the face when deciphering facial expressions. Yuki, Maddux, and Masuda (2007) proposed that in cultures with stronger cultural norms to regulate emotional expressions, such as Japan, people would be more likely to attend to those aspects of the face that were more difficult to regulate (i.e., the eyes). In contrast, in cultures with weaker norms for emotional regulation, such as the United States, people would attend to the largest visual cues (i.e., the mouth). Indeed, studies found that independent manipulations of the mouth and eyes in facial expressions affected Japanese and Americans differently—Japanese attended more to the eyes than Americans, whereas Americans attended more to the mouth than Japanese (Yuki et al., 2007).

While Ekman and colleagues have argued that the capacity to produce and recognize particular facial expressions

is identical across cultures, cultural variation is anticipated in the form of "display rules" (Ekman & Friesen, 1969). Display rules are the culturally specific rules that govern when, how intensely, and what facial expressions are appropriate in a given situation. For example, Darwin noted that his English compatriots were less emotionally expressive than were people from various other European countries (Darwin, 1872/1965). Several studies and ethnographical accounts provide evidence that cultures differ in the degree to which emotions are expressed. For example, in response to recalled situations in which participants report feeling the same amount of happiness, Hmong Americans are less likely to smile than are European Americans (Tsai, Chentsova-Dutton, Freire-Bebeau, & Prymus, 2002; also see Abu-Lughod, 1986; Briggs, 1970). Furthermore, in many countries around the world, particularly Old World countries in the Northern Hemisphere, people from southern regions of the countries are perceived by their compatriots to be more emotionally expressive than those from northern regions of the same countries (Pennebaker, Rimé, & Blankenship, 1996). The ways in which emotions are expressed can thus vary across cultures. This notion of display rules assumes that even though people in different cultures vary considerably in how strongly they express certain emotions, they may be experiencing the same underlying feelings.

In addition to governing the intensity with which emotions are expressed, display rules are also seen to shape the kinds of facial expressions that people might display. For example, often Indians express their embarrassment by biting their tongues, which is distinct from a prototypical embarrassment expression (Keltner, 1995), and the tongue bite is not reliably produced or recognized in many other cultures. This suggests that the tongue bite represents an expression that is voluntarily produced, rather than reflexively generated (Haidt & Keltner, 1999), and is termed an example of a ritualized display. The notion of display rules adds considerable complexity to the task of interpreting emotional expressions across cultures. It is not always obvious whether one is making a universal facial expression or enacting a cultural display rule. Furthermore, as people's facial expressions can affect their emotional experience (e.g., Strack, Martin, & Stepper, 1988), it is possible that cultures differ not just in their display rules but also in their emotional experiences.

Intensity of Emotional Experience

The preceding findings that Japanese appear to regulate their emotional expressions more than Americans raise the question of whether people differ in their emotional experiences across cultures. One study found that

Americans reported feeling their emotions longer and more intensely than the Japanese did (Matsumoto, Kudoh, Scherer, & Wallbott, 1988). Similarly, in a diary study Japanese participants were about three times as likely as Americans to report that they had *not* been feeling any emotions when prompted (Mesquita & Karasawa, 2002; for similar findings, also see Kitayama et al., 2000; Wang, 2004). These studies suggest that the cultural display rules governing the relative deamplifying and masking of emotions in Japan might be leading them to experience fewer and less intense emotions compared with Americans.

Suppressing some emotions (particularly anger) has been found to lead to less cardiac regulation of heart rate and thus a slower recovery of the heart rate following an initial angering event (e.g., Brosschot & Thayer, 1998). However, in East Asian cultural contexts, where inhibition of emotional expressions is more common, people appear to show quicker recovery of their heart rate following an angering event. This appears to be due to East Asian participants being more likely to reappraise events in a less anger-provoking way (Anderson & Linden, 2006; also see Butler, Lee, & Gross, 2007).

Emotion and Language

Although a set of basic emotions are recognized comparably around the world, considerable cultural variability exists in the terms that people use to describe their emotions (see Russell, 1991, for a review). On one extreme is the English language, which has more than 2,000 different emotion words. On the other extreme is the Chewong of Malaysia, who have only 8 emotion words (only 3 of which, anger, fear, and shame, map onto Ekman's basic emotions). Further, across cultures people categorize their emotions in very different ways. For example, the Buganda of Uganda do not make a distinction between sorrow and anger. Among the Gidjingali aborigines of Australia, they use one word (*gurakadj*) to express both shame and fear. Samoans use one word, *alofa*, to express both love and pity. The Utku Eskimos do not distinguish between feelings of kindness and gratitude. And the Ifaluk in Micronesia do not even have a specific word for "emotion" but instead lump all internal states together (Lutz, 1988). It largely remains an open question whether these cultural differences in emotion terms are mirrored by cultural differences in emotional experiences (for conflicting views on this point, see Pinker, 1994; Russell, 1991).

Kinds of Emotional Experiences

Independent and interdependent self-concepts provide a useful framework to make sense of cultural variation in

emotional experiences. The self-concept should shape how one appraises an emotionally relevant situation. Those with interdependent selves are more concerned with maintaining a sense of interpersonal harmony and thus should consider more about how events in the world affect close others, as well as themselves. Those with independent selves, in contrast, should focus more intently on how events affect themselves or how events might distinguish themselves from others. Mesquita (2001) contrasted those from a more interdependent culture (Surinamese and Turkish immigrants to Holland) with those from a more independent culture (mainstream Dutch citizens of Holland) and found that the Surinamese and Turks expressed having more relational concerns and attended more closely about how situations affected others compared with the Dutch. Moreover, the Surinamese and Turks were more likely than Dutch to ensure that others attended to the same events, thereby sharing the experience with the participants.

Along a similar line, Kitayama, Markus, and Kurokawa (2000) compared descriptions of daily emotional experiences among Japanese and Americans. People reported how often they experienced emotions that varied both in terms of their valence and in terms of the extent to which they were interpersonally engaged. The findings revealed that general positive feelings were especially correlated with the frequency that the person felt positive interpersonally engaged emotions (e.g., respect and friendly feelings) among Japanese, whereas general positive feelings for Americans were especially correlated with the frequency that the person felt positive interpersonally disengaged emotions (e.g., pride and feeling on top of the world). In sum, what makes people feel good varies across cultures (see Kitayama, Mesquita, & Karasawa, 2006, for similar findings).

Cultural Variation in Subjective Well-Being and Happiness

Is there variability in people's happiness and subjective well-being across cultures? One piece of evidence comes from the study reviewed earlier that compared Japanese and American daily emotional experiences (Kitayama et al., 2000). When comparing the frequency with how often participants reported feeling the different kinds of emotions, the two cultures showed an intriguing pattern: Japanese participants reported that they felt about the same amount of positive and negative emotions. In contrast, American participants reported that they experienced far more positive emotions than they did negative emotions. Similar kinds of cultural differences in subjective well-being are commonly found (also see Diener, Oishi, & Lucas, 2003; Plaut, Markus, & Lachman, 2002).

In general, the nations that score highest on this measure are Scandinavian and Nordic countries, much of Latin America, various English-speaking countries, and Western Europe. On the low end are the former Soviet republics, and some impoverished countries in Africa and South Asia (Diener & Diener, 1995; Diener, Diener, & Diener, 1995; Inglehart & Klingemann, 2000).

Many factors contribute to influence the overall satisfaction that people have with their lives. Wealth as assessed by GDP positively correlates with the overall well-being of a country. However, this relation is not linear; money and happiness are most closely connected at very low levels of wealth, where a little extra money can make the difference between surviving or not. For example, income and life satisfaction are correlated at .45 among respondents in the slums of Calcutta (Biswas-Diener & Diener, 2002). In contrast, above an average GDP of 40% of that of the United States, no pronounced relation remains between money and subjective well-being (Diener et al., 1995). In addition, human rights and overall equality of a country are associated with greater subjective well-being (Diener et al., 1995).

In addition, some factors predict life satisfaction differently across cultures. Suh, Diener, Oishi, and Triandis (1998) found that life satisfaction is more highly correlated with overall positive affect in individualistic cultures than in collectivist ones. On the other hand, people in collectivistic cultures showed a higher correlation between their life-satisfaction scores and being respected by others for living up to cultural norms compared with people from individualistic cultures.

Furthermore, the *kinds* of positive emotions that people desire also vary across cultures. Some work by Tsai and colleagues (e.g., Tsai, Knutson, & Fung, 2006) reveals that Americans seek out positive emotions that are high in arousal more than East Asians do, whereas East Asians prefer low-arousal positive emotions more than do Americans. Evidence for this cultural difference comes from various sources. For example, a comparison of facial expressions that were shown in characters in American and Taiwanese children's storybooks revealed that the American faces more often showed feelings of excitement and had significantly bigger smiles than the Taiwanese faces. Moreover, European American preschool children preferred the pictures of excited faces more than the Taiwanese preschoolers did; they also felt more similar to the characters who were engaged in high-arousal activities than did Taiwanese children (Tsai, Louie, Chen, & Uchida, 2006). Furthermore, a content analysis of classic Christian and Buddhist texts (the Gospels of the Bible and the Lotus Sutra, respectively), as well as contemporary Christian and Buddhist self-help books, revealed that high-arousal states were

encouraged more in the Christian texts than in Buddhist texts, whereas the low-arousal states were more encouraged in the Buddhist texts than in the Christian texts (Tsai, Miao, & Seppala, 2007). In sum, cultures vary in their happiness, in part, because they appear to have quite different ideas about what happiness is and what it is derived from (also see Falk, Dunn, & Norenzayan, 2009).

To summarize the cross-cultural research on emotions, much similarity exists across cultures with respect to facial expressions of emotions (although some important variability is found here, too). In the domain of emotional experience, in contrast, the evidence for cultural variation is more pronounced.

MORALITY

Much cross-cultural work has explored the way in which people's moral reasoning compares across cultures. This section reviews cross-cultural research targeting the moral ethics associated with justice (autonomy), community, and divinity; whether thoughts are judged to be moral concerns; and perceptions of fairness.

The most influential model of moral reasoning in psychology has been a framework proposed by Lawrence Kohlberg (1971). Kohlberg argued that people's abilities to reason morally hinge on cognitive abilities that develop as individuals matured and were educated. Kohlberg proposed that people everywhere progressed through the same three levels: (1) Young children started out at a pre-conventional level and view what is right or wrong based on the physical or hedonistic consequences of their actions; (2) children then progressed to a conventional level, where moral behavior is perceived to be that which maintains the social order of their group; and (3) some people would finally progress further to a postconventional level and view what is right and wrong on the basis of abstract ethical principles that emphasized justice and individual rights—the moral code inherent in the U.S. Constitution.

Much cross-cultural research has explored the cultural generalizability of Kohlberg's model. One review explored the 45 studies that had been conducted up until that point, which had investigated the levels of moral reasoning in 27 cultural areas from around the world (Snarey, 1985). The results indicated some universality in moral reasoning. All cultural groups had adults who reasoned at conventional levels, and in no cultural groups did the average adult reason at the pre-conventional level, although many samples of children revealed evidence of pre-conventional reasoning. This review suggests that Kohlberg's model might be universally applicable in explaining pre-conventional and conventional moral reasoning around the world. However,

evidence of postconventional reasoning—reasoning based on justice and individual rights—was not universally found. Although every urban Western sample contained at least some individuals who showed reasoning based on justice and individual rights, not one person from the traditional tribal and village folk populations that were studied showed such reasoning.

Furthermore, it is not just that formal education is necessary to achieve Kohlberg's postconventional level. Some highly educated non-Western populations do not show Kohlberg's postconventional reasoning. At Kuwait University, for example, faculty members score lower on Kohlberg's schemes than the typical norms for Western adults, and the elder faculty at the university scored no higher than the younger ones, contrary to Western patterns (Al-Shehab, 2002; also see Miller, Bersoff, & Harwood, 1990).

Research in moral psychology also indicates that non-Western adults rely on a wider range of moral principles than a morality of justice (e.g., Baek, 2002; Haidt, Koller, & Dias, 1993; Miller & Bersoff, 1992). Shweder, Much, Mahapatra, and Park (1997) proposed that in addition to a dominant justice-based morality, which they termed an ethic of autonomy, two other ethics are commonly found outside the West: an ethic of community, which viewed morality as deriving from the fulfillment of interpersonal obligations, and an ethic of divinity, in which moral decisions were based on the fit with a perceived natural order. These three moral codes appear to be associated with specific emotional states—anger signals violations of the ethic of autonomy, contempt signals community violations, and disgust is particularly salient in divinity violations (Rozin, Lowery, Imada, & Haidt, 1999). Moreover, Haidt and Graham (2007) further parsed the moral spectrum into five moral foundations: harm–care, fairness–reciprocity, ingroup–loyalty, authority–respect, and purity–sanctity. Initial evidence shows that Americans with liberal political values make their moral decisions largely on the basis of harm and fairness judgments, and do not give much heed to the other three foundations. In contrast, American conservatives (and, ostensibly, people from other non-Western contexts who attend to ethics of community and divinity), base their moral decisions on all five moral foundations.

People also vary in the domains that they view to be morally relevant. Christians and Jews differ in their beliefs about the moral standing of thoughts. Judaism tends to emphasize practice over belief, in that various traditional practices are to be observed (e.g., keeping kosher) and scant emphasis is placed on a person's feelings about these practices (e.g., one is still a good Jew if one craves a cheeseburger, as long as one does not eat it). Further, membership in Judaism is defined by descent and not belief.

In contrast, several passages in the New Testament emphasize that beliefs themselves have moral grounds. Spiritual purity in Christianity is attained by keeping pure thoughts, and membership into the church, particularly with some Protestant sects, hinges on one's personal beliefs (for a review, see Cohen, Siegel, & Rozin, 2003). Supporting this distinction, research by Cohen and Rozin (2001) found that whereas Protestants and Jews do not differ in their condemnation of immoral behaviors, Protestants hold more critical attitudes toward a target who engages in immoral thoughts. Moreover, they found that Protestants believe that thoughts are more under one's control, and believe that thoughts are more likely to ultimately lead to behaviors, than do Jews.

People from different cultures also vary in their perceptions of fairness, such as in the ways they distribute resources. Several studies find that Westerners are more likely to favor distributing resources on the basis of an equity norm (i.e., the ratio between inputs and outputs is held constant) than are people from some non-Western cultures. In contrast, Indians have been shown to prefer norms based on need more than Westerners do (Berman, Murphy-Berman, & Singh, 1985; Murphy-Berman, Berman, Singh, Pachauri, & Kuman, 1984), and Japanese tend to prefer equality norms in comparison with Westerners (Kashima, Siegal, Tanaka, & Isaka, 1988). These cultural differences also emerge in negotiation strategies. Whereas people from various non-Western cultures are more likely to prefer seeking compromises in negotiations, where both sides stand to gain or lose similarly (akin to an equality rule), people from several Western cultures tend to pursue adversarial strategies, in which they push for one side (their own side) to gain maximally over their opponents (e.g., Leung, Au, Fernandez-Dols, & Iwawaki, 1992; Leung, Bond, Carment, Krishnan, & Liebrand, 1990).

Perceptions of fairness also differ across cultures in other ways. For example, the Ultimatum Game is often used to study people's capacity for fair and punishing behavior, where one person is given the opportunity to distribute money between himself or herself and a partner and the partner has the choice of either accepting the money that is given or rejecting the offer, thereby ensuring that both players receive nothing. In this game, partners (who are typically from Western industrialized societies; Camerer, 2003; Fehr & Gächter, 1998) often reject offers to them that seem unfair—even though the rules of the game make it such that they would earn more money by accepting an unfair offer than by rejecting it. Nowak, Page, and Sigmund (2000) made sense of the seemingly nonrational behavior of people by proposing that they were concerned about maintaining their reputation and that this concern had seeped into the experiment, even though the one-shot anonymous circumstances of the Ultimatum Game

preclude any reputational information from being shared. A formal mathematical evolutionary model that included the variable of reputational information predicted people's behaviors as they typically unfolded and provided an argument for how fairness motivations evolved. However, results from many other cultures do not fit the model of Nowak and colleagues. Two unified cross-cultural projects have deployed the Ultimatum Game across 15 small-scale human societies, including foragers, horticulturalists, pastoralists, and subsistence farmers, drawn from Africa, Amazonia, Oceania, Siberia, and New Guinea (Henrich et al., 2004, 2005, 2006). Multiple experiments show that the experimentally measured behaviors of people in industrialized societies remain outliers in the distribution of all cultures studied using the Ultimatum Game. Notably, some populations from small-scale societies with only daily face-to-face interaction behaved in a manner reminiscent of the model of Nowak et al. (2000) *before* they added the reputational information. That is, these people made low offers and did not reject even the most unfair offers. Further, regression analyses of these behavioral data show that the degree of market integration (i.e., the proportion of calories exchanged in a market economy) and the population size of the settlements both independently predict higher offers and more punishment. Norms and institutions for dealing with and trusting anonymous others appear to have culturally coevolved with markets and expanding sedentary populations. In some cases, at least in their most efficient forms, neither markets nor large populations are feasible before such norms and institutions emerge (Henrich et al., 2006).

In addition, cooperation has been argued to have emerged because people evolved to engage in altruistic punishment—that is, people are willing to spend resources to punish free-riders and thus create a context where people have incentives to cooperate (Fehr & Gächter, 2002). However, again, this model of the evolution of cooperation was initially derived from people from Western industrialized societies. Recently, efforts to replicate people's willingness to punish free-riders have been conducted in various cultural contexts, including Australia, Belarus, China, Denmark, Germany, Greece, Korea, Oman, Russia, Saudi Arabia, Switzerland, Turkey, and the United States (Gächter, Herrmann, & Thoni, 2005; Herrmann, Thoni, & Gächter, 2007). These efforts have revealed that the initial patterns that emerged for Westerners (and most strongly with American samples) do not all generalize well to those from non-Western cultural contexts. In the non-Western cultures, the tendency was often for people to punish cooperators in addition to the free-riders. These non-Western findings call into question the arguments that motives for cooperation depended on altruistic punishment.

SUMMARY

Humans are a cultural species, and a rich understanding of how humans' minds operate would be facilitated by a psychological science that is attentive to people's cultural experiences. Research in cultural psychology has grown substantially, particularly in the past two decades. This growing database has revealed that many key psychological processes, some of which were hitherto viewed as psychological universals, manifest in distinct ways across cultures. Further, although some psychological phenomena appear in more invariant forms across cultures than others, it is often not clear which phenomena should be expected to vary the most. Pronounced cultural variation has been identified in many fundamental psychological phenomena; thus, it is crucial to seek cross-cultural data before one can confidently make inferences about the cultural generalizability of a phenomenon (Henrich et al., in press).

Such evidence for cultural variability in basic processes underscores how many psychological phenomena do not unfold reflexively, regardless of context, but are importantly shaped by engagement in the particular scripts, practices, and situations that each culture provides. In this way, psychological processes can be seen as entangled with "meaning"—and because particular meanings can vary substantially across cultural contexts, so must the psychological process (Bruner, 1990; Heine, Proulx, & Vohs, 2006).

The recent growth in cultural psychology over the past two decades has been built on a foundation of theoretical advances (particularly, ideas of the mutual constitution of culture and psyche and the distinction between independent and interdependent selves) and has benefited from the application of rigorous experimental methods. The study of culture and psychology appears to be more firmly established as a discipline than at any previous time in history. In what direction will the field go from here? With the humility to recognize that such prognostications are always wrong, here are a few thoughts regarding where the field may be heading.

A serious shortcoming of the cultural psychological database thus far is that a large portion of it is constituted by comparisons of North Americans and East Asians. While there have been good theoretical and methodological reasons to build on the differences that have been identified between these groups, much of the world remains largely unexplored territory. In particular, the role of culture in psychological functioning should become especially evident when small-scale societies are studied, which differ from the industrialized West in many profound ways. Already, much excellent and influential work has been conducted with such groups (e.g., Atran, Medin, & Ross,

2005; Bailenson, Shum, Atran, Medin, & Coley, 2002; Cole, Gay, & Glick, 1968; Gordon, 2004; Henrich et al., 2005; Levinson, 1997; Segall, Campbell, & Herskovits, 1963), much of it done to make arguments for psychological universals (e.g., Barrett & Behne, 2005; Ekman et al., 1969; Levenson, Ekman, Heider, & Friesen, 1992).

Attention to other cultural samples will likely uncover some psychological phenomena that are less familiar to Western psychologists. For example, the notion of "face" is far more elaborated and takes on different meanings within East Asia than in the West, and this leads to specific psychological predictions that can be tested (e.g., Chang & Holt, 1994; Heine, 2005; Ting-Toomey, 1994). Likewise, a type of dialectical thinking that emphasizes constant change and is tolerant of apparent contradiction (distinct from the Hegelian dialectic) likely would not have been investigated among Westerners if it had not been first identified among Chinese (e.g., Peng & Nisbett, 1999). It is likely that many more such examples will be found in other cultural contexts (e.g., *simpatia* in Hispanic contexts; Sanchez-Burks et al., 2000; Triandis, Marin, Lisansky, & Betancourt, 1984), and these phenomena would stand to greatly advance our understanding of cultural variation and the universality of psychological processes.

There will likely continue to be much interest in using cultural variation in psychological processes as a means to identify the underlying mechanisms. Such research has already increased our understanding of mechanisms in ways that it could not have done had the research been restricted to monocultural samples. This search for mechanisms has adopted various methods, such as employing trait measures to mediate the cultural differences (e.g., Diener & Diener, 1995; Singelis et al., 1999; but see Heine & Norenzayan, 2006, for discussion regarding limitations in the use of trait measures for understanding cultural differences), priming cultural constructs (e.g., Adams, 2005; Kühnen et al., 2001; Spencer-Rodgers et al., 2004), varying degrees of exposure to certain cultural experiences (e.g., Koo & Choi, 2005), situation-sampling (e.g., Kitayama et al., 1997; Morling et al., 2002), applying experimental methods that assess people's default thoughts across cultures (e.g., Heine et al., 2001), and using triangulation strategies that contrast multiple groups in different sets of cultural variables (e.g., Bailenson et al., 2002; Medin & Atran, 2004). These and other methods will surely continue to be used to identify the mechanisms underlying cultural differences.

Last, with the growing research in genetic differences among populations (e.g., Beja-Pereira et al., 2003; Jablonski & Chaplin, 2000), cultural psychology is likely to find itself in the position of helping to identify the degree to which population differences in psychological functioning are due to inherited or acquired tendencies.

We can anticipate that future research will find evidence that genes associated with particular psychological tendencies are not distributed with identical frequencies around the world (e.g., Taylor et al., 2007). Such findings would raise the question of whether any observed group variation in those same psychological tendencies could be seen as due to differences in gene frequencies, differences in the expression of genes, differences in cultural learning, or some combination of all of these. Addressing such questions will require targeting particular samples, such as immigrants and children adopted from other cultures, to control for variations in cultural experiences and genomes. Such research will be important and likely controversial.

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