

# INTRODUCTION TO THE PSYCHOLOGICAL STUDY OF CULTURE

## Chapter 1 Outline

**1.1 The Journey of Culture**  
Psychology and Culture

**1.2 What Is Culture?**  
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**SPOTLIGHT: Toi: That Which Is Created**

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Taonga Tuku Iho  
Why We Will Use Arts as a Theme Throughout the Text

## Learning Objectives

**LO 1.1** Explain the relevance of culture to psychological research.

**LO 1.2** Evaluate existing definitions of culture and their relevance for cultural research.

**LO 1.3** Describe evidence of factors that made human culture possible.

**LO 1.4** Identify brain structures that enable human thought and communication and relevant theories about human social interaction.

**LO 1.5** Describe configurations of basic human groups.

**LO 1.6** Discuss the rise of symbolic thought and communication and its effect on rate of innovation in human culture.

**LO 1.7** Explain how cultural products and processes provide evidence of basic psychological parameters of culture.

## PREPARING TO READ

- What comes to mind when you think of the word *culture*?
- What is/are your culture(s)?
- Have you ever had to interact with someone whose actions seemed strange or difficult to understand because he or she came from another culture?

*If you were moving from island to island around the Pacific a few thousand years ago, during the Great Pacific Migration, you would have traveled by waka (Māori), also called wa'a (Hawaiian) or canoe (English). These were not simple carved logs; they were durable and sophisticated ocean-voyaging vessels that had sails and outriggers for speed and stability and were capable of journeys covering thousands of miles. The risks and planning required were as daunting as a journey to Mars, perhaps with less chance of surviving or returning. The navigators steered by stars and currents in ways still never mastered in the West. They eventually settled the largest maritime expanse in the world, from the Maldives in the Indian Ocean to Rapa Nui (Easter Island) in the east, to Hawai'i in the*

**Figure 1.1** Canoe From New Zealand at a Gathering of Traditional Deep-Sea Voyaging Canoes From Across the Polynesian Triangle at Keehi Lagoon



Source: tropicalpixsingapore/istockphoto.com

north, to Aotearoa (New Zealand) in the south. One such vessel, the Hōkūle'a, recently circumnavigated the globe with the crew using only traditional navigation by stars and currents (see Figure 1.1).

Waka were crucial in the lives of Polynesians and, as such, held metaphorical and practical meanings that filled Polynesians' explanations of life and the world. Waka provide conveyance from one place to another. Something that takes you from one way of knowing to different understanding is a metaphorical waka. A teacher is like a navigator who guides your journey of learning. A textbook is a language vessel that carries knowledge from one person to another. This text is a vessel to help you reach greater understanding of how people live and think in cultures unlike your own and how culture has shaped you as you live in your culture.

## WHY IT MATTERS

This text will challenge your ideas of how people think and feel and why they believe and act as they do. One frequent assumption is that Western culture, that of Europe and its colonial descendants, is the pinnacle of human thought and achievement. How do you feel about the idea that a few people could set out on a hand-crafted vessel without even a compass to sail around the whole earth? People from Polynesian traditions hold continuing bodies of knowledge stretching back thousands of years before Europe developed civilization. Did your upbringing prepare you for challenges like that?

### 1.1 THE JOURNEY OF CULTURE

#### LO 1.1: Explain the relevance of culture to psychological research.

*‘Ike Pono speaks to clear and certain comprehension and understanding; to recognize and understand completely and with a feeling and sense of righteousness.*

*Native Hawaiian Hospitality Association, 2013*

Humans have explored and settled the entire earth, with every land mass and stretch of water mapped and catalogued, so that even those who cannot navigate by stars and currents have GPS to draw upon. As we spread around the planet, though, we forgot our common origins. We now speak thousands of different languages and, more important, we approach life from different perspectives. We have branched into completely disparate, often conflicting, ways of viewing life, nature, the universe, and our fellow humans.

As we expanded, we developed different technological abilities, including the capacity to blow up the entire planet. Because we have forgotten our common origins, violence erupts with alarming frequency on local to international levels, ranging from military attack to less obvious violence done by embargos and inequitable distribution of resources. These factors claim millions of lives each year. Ultimately, our survival as a planet and species depends upon intercultural understanding and cooperation. We may be able to observe and describe the many lights in the night sky, but we can only live on one tiny planet so far.

This book intends to convey you to greater understanding of how people learn to feel and think as members and products of cultures. All humans share formative and functional processes, even if the resulting person ends up very unlike you, but understanding how culture shapes the person can help us to appreciate the vast diversity of human culture. Hopefully, those who read this text will end up able to empathize a bit with even the most different person because we all share the same DNA and we all have to survive on this one little marble spinning across the vastness of space. The better we know our fellow passengers on this planetary *waka*, the more we can accommodate varied points of view, the better we are equipped to negotiate solutions, and the less likely we are to use lethal violence to achieve our goals.

### Psychology and Culture

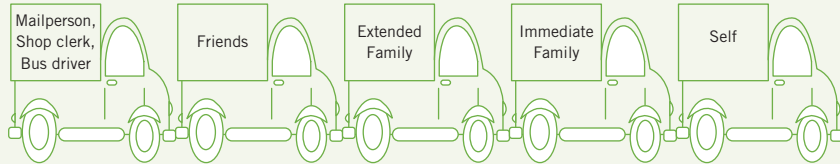
*A culturally sensitive psychology . . . is and must be based not only upon what people actually do, but what they say they do and what they say caused them to do what they did.*

*Bruner, 1990, p. 16*

Humans are unquestionably social creatures. People require parents, at least for biological reproduction, and someone must nurture us for our first couple of years. Our food, shelter, and clothing must be made, and even if we learn to make all of that ourselves, the knowledge we need is socially transmitted to us from those who came before. Humans exist, according to Caporael and Brewer (1995), in an unavoidable state of **obligatory interdependence**: human life is the product of thousands of years of cumulative and continuing social cooperation (Richerson & Boyd, 2008). The accumulations of habits, knowledge, and beliefs we have collected along the way form building blocks of culture.

Our lives are full of interactions with other people—parents, siblings, friends, or employers, along with the tellers, cashiers, bus drivers, and physicians who are occasionally encountered in our **social convoy** (see Figure 1.2), a concept that includes all those who accompany us through our daily journeys (Kahn & Antonucci, 1980). In all cultures, there are things people are encouraged to do and activities that are discouraged, either by laws, morals, or community pressures. Our interactions are governed by these rules, in the form of norms and customs that are culturally determined. We have certain bodies of knowledge instilled in us as we grow, so that we are toilet trained and can read textbooks or tend a flock of goats. We know what to eat and what is going to make us sick; this is a very important body of knowledge. We learn our collections of knowledge

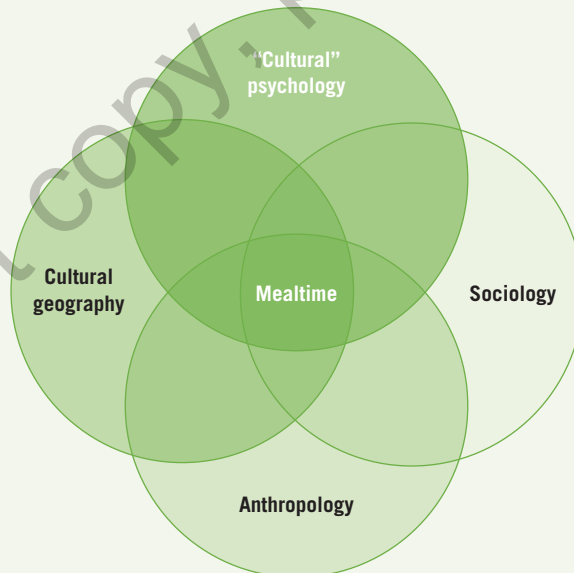
**Figure 1.2 Social Convoy Elements of Common Social Interactions**



in particular ways, whether in a school, on a farm, or in a hunting party. We share these broad categories of learning and acting, yet we differ in the details of every one of them.

For our purposes, the general goal of psychological science is to explain the laws by which individual minds work, and we will explore aspects of this study throughout the book. Bringing culture to the study adds inevitable overlapping of interests with disciplines such as anthropology, cultural geography, and sociology, for instance when we examine the ways different cultures approach mealtime (see Figure 1.3). Does the family eat together at one time? Are they separated by gender? Are members served in order of age, rank, gender, or hunger level? A cultural psychologist might look at how meal sharing affects an adolescent's senses of connectedness and well-being (Crespo, Jose, Kielpikowski, & Pryor 2013).

**Figure 1.3 Venn Diagram of Mealtime as a Topic of Study**



The questions asked and the approaches used lead to very different answers in the various disciplines. In psychology, culture ultimately can illuminate both how individual cognition and resulting action shapes our larger collective social structures and how cultures simultaneously shape the individual (Schaller, Conway, & Crandall, 2004). Gelfand and Kashima (2016) propose that “culture is essential to human psychology” (p. iv), such that no real understanding of humans is possible without inclusion of these cultural forces.

Obviously, there are differences between cultures. The question for psychology is whether culture makes a difference in areas that are normally the domain of psychology, such as cognition, emotion, or development. As shall be discussed, the science of psychology emerged primarily from Europe and America, and the overwhelming body of research has been conducted by researchers from those cultures, with people (mostly students) from those cultures as participants in their studies. Given psychology’s broad goal of finding universal laws to describe and explain behavior, the discipline’s laws, theories, and assumptions should hold true for all humans, but differences continue to emerge. Psychology programs can now be found in most countries, from Afghanistan (Kabul University) to Zimbabwe (University of Zimbabwe), providing more perspectives and diversity of data. In cultural research from all over the world, effects of culture are being observed scientifically, and a culturally informed body of literature is growing.

To illuminate the relationship between mind and culture, this text will use past and current research and real-life examples, along with creative expressions found in the arts, music, and literature of different cultures. Perhaps we take our shoes off at the door of a house when we enter, or perhaps our host gets profoundly uncomfortable upon seeing our unshod feet, and that may constitute a droll difference we can laugh about at parties. Behind that slight difference in custom may lie hundreds of generations of thought, transmitted and modified across the centuries, and reflecting very sound hygienic practice or spiritual wisdom shaping our preferences. Particular customs are fascinating in their many forms, but how do they come to be, and why are they so very different? How are they expressed, transmitted, and enforced and why? What do they mean to us and to others? These questions, regarding underlying beliefs and motivations and not simply whether or not someone wears shoes inside the house, are what we will study.

As Bruner (1990) proposes, a culturally sensitive psychology asks why we do particular things and why we think we do them. Unlike behaviorist John Watson (1913), who was only concerned with observable behavior, we are concerned with the cognition behind the action. Subtleties of culture are often so deeply ingrained that we are unaware of them unless we encounter something that runs contrary to our norms, such as bumping into someone while walking down a sidewalk in a country that passes on the opposite side from our accustomed norm. Humans have a common genetic propensity for right-handedness, but norms of passing another pedestrian or car are learned and then automated beneath our active level of consciousness. Culture forms the canvas and palette with which we paint our lives in frameworks passed down for generations, and consciousness of the rationale may be lost to history; few people are aware that Americans drive on the right because Napoleon changed traffic flow so that habit would unmask British spies in France, and America adopted his scheme. Eras and situations color our

individual lives, set against shifting sociocultural backgrounds as history marches on. Within our inherited cognitive frame, each human helps to create relationships and interactions with others, our systems of learning and bodies of knowledge, and our philosophical and moral systems. The different ways these common parameters are flavored by culture and circumstance make our collective creation of life on earth a fascinating tapestry of diversity.

## REALITY CHECK

Have you encountered people from other cultures this week?

Was there anything about their actions that seemed unusual to you?

How have cultural differences shaped events in the news this week?

## 1.2 WHAT IS CULTURE?

**LO 1.2: Evaluate existing definitions of culture and their relevance for cultural research.**

### The Problem of Defining Culture

Culture is our topic of study, but what is it? We use the term *culture* without much thought, and everyone seems to know what we mean, at least in casual conversation. Anyone speaking a language with a word for *culture* might answer that, yes, of course, they know what culture is. When you ask for a clear definition, though, the topic may become quite murky. In English, *culture* may refer to ballet, a group of people, or a Petri dish of growing bacteria. *Culture* can refer to the products and processes of a group or to the group itself. Is it the things we make, such as our paintings, sculptures, or symphonies? Is it how we behave? We see culture constantly all around us; everything humans make or do is a product of culture. The manifestations of culture are, however, the metaphorical tip of the iceberg (Hanley, 1999). Those outward expressions of culture and identity are products of behaviors, directed by belief systems, arising from worldviews and ways of thinking. It is obvious to anyone reading a newspaper or newsfeed that we have different opinions about how to live and what is right and proper to do. Is culture the behavior or the belief system that directs those behaviors? We share belief systems with some people, and yet others hold beliefs so different from ours that they are in irreconcilable conflict. Those belief systems underlie how we make decisions as individuals and nations.

Culture becomes most important when someone from a different culture does something we cannot fathom. Sitting at home alone, we are not consciously aware of culture; only when we run into something exotic or inexplicable do we suddenly take note of culture. Perhaps a person is oddly quiet or loud, or eats food that smells funny, or they bash your brains in when you arrive in their village, as happened to many 1960s missionaries attempting to convert the previously uncontacted Yanomamo of the Amazon (Chagnon, 1988, 1974). Then culture matters a lot. Hofstede (1980) reminds us that a fish does not understand water until it is on dry land, and we become aware of culture only in the face of the unfamiliar.

Definition of culture evades easy confinement; it shifts depending upon one's perspective and priorities. Ultimately, the concept of culture is itself a product of culture, which makes definition a dangerously circular piece of logic: culture can only be defined within the terms and understanding of a culture in which someone feels obliged to define culture. This endless loop is one reason culture is troubling to many psychologists. To study something, Western science says we need an **operational definition** of the concept; in other words, we need a way to specify what we will study and how it can be quantified. Usually, that process begins by examining previous research on the topic.

### Defining Culture in the Social Sciences

An erstwhile definition of culture in social sciences came from an early anthropologist, Edward Burnett Tylor (Kashima & Gelfand, 2012). In his 1871 work *Culture or Civilization, Taken in Its Wide Ethnographic Sense*, Tylor defines culture as “that complex whole which includes knowledge, belief, art, morals, law, custom, and any other capabilities and habits acquired by man as a member of society” (p. 1). By 1952, Kroeber and Kluckhohn found 164 definitions of culture in use (Shteynberg, 2010). Psychologists studying culture have described it more narrowly in recent years, for instance as unique patterns of behaviors and beliefs that distinguish one group from another (e.g., Keefe, 1992; Phinney, 1990). Geert Hofstede (1980), one of the pioneers of cultural psychology, described culture as “the collective programming of the mind which distinguishes the members of one group from another” (p. 21), using a computer analogy to distinguish cultural components, which would be software, from the neural structures of our brains that would be analogous to the hardware. We will see, however, that even our neurons are pruned and shaped by culture, optimizing them for a particular set of stimuli. Yoshihisa Kashima (2008), a social psychologist from Japan, describes culture more abstractly as “an enduring and shared system of meaning” (p. 107). He continues, “Clearly, people coordinate their activities in their daily living with their shared understandings about institutions, practices, symbols, and concepts” (pp. 107–108). Ultimately, human life is a shared process, however one approaches the description.

### Our Operational Definition

The preceding definitions vary in focus and emphasis, depending upon the authors' backgrounds, training, research interests, and audiences. Each was influenced by the origins, perspectives, and purposes of the writers themselves, as is this text, and together,



# SPOTLIGHT

## BEHIND CUSTOMS: SHOES INSIDE OR OUTSIDE?

In cultures from India to China to Aotearoa (New Zealand), you will be expected to remove your footwear when you enter a home or a sacred space. If you are from an Asian or Polynesian culture, this is completely normal and you are wondering why the textbook is wasting space on the topic. In Europe and its former colonies, people wear shoes into churches and homes without thinking twice.

Spending time with Māori friends in Aotearoa, I was told that the shoe prohibition there is part of the *tapu* system—called *kapu* in Hawaiian—which I knew also included some dietary rules and ideas about not trespassing on sacred ground. Westerners misheard the word as “taboo” and thought it meant “forbidden,” though it is more broadly a system for enhancing health and well-being and maintaining social order. *Tapu* practice also forbids defecation in waterways above where people drink and even sitting on a table where food would be served. The Māori were fantastically healthy when the Europeans arrived. John Liddiard Nicholas reported in 1817, “I never thought it likely they could be so fine a race of people as I now found them.”

The Māori *tapu* system, I came to understand, formed a public health doctrine on both mental and physical levels. During my time in Aotearoa, I went to a conference in the Malaysian portion of Borneo, and at night on my way back from the conference or the *pasar malam* (night market) I would see creatures scurrying about with six and four legs that told me I did not want my shoes anywhere near my sleeping space (see Figure 1.4). Shortly after returning from Borneo, I visited my sister’s farm and was reminded that shoe removal is a marvelous idea in most places, for health reasons (see Figure 1.5). The additional effect of shoe removal in Māori culture and in Asian temples is to establish a clear division between the mundane and the sacred, the world and the divine, so that, upon entering temple or the

**Figure 1.4** Market Stall, Kota Kinabalu, Malaysia



**Figure 1.5** Woman and Children With Goat, Florida



(Continued)

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*whareniui* (meeting house) of a *marae*, the turbulence of the world is left at the door. Similarly, our homes remain free of the turbulence pathogens bring if we leave shoes outside. *Tapu* is about physical, mental, and spiritual hygiene, resolving our conflicts and maintaining harmony.

### Why It Matters

Customs are among the most visible examples of culture and cultural difference. Although some

customs reflect superficial practices, others arise from differences in belief or moral systems or from worldviews crucial to culture and cultural difference. Customs and norms are often obeyed without conscious awareness, but people may react strongly when presented with violations. As such, the study of customs may provide insight into or explanations of cultural differences, which can be useful, for instance, in prevention or resolution of conflict.

they provide context to understand how psychology has accommodated the idea of culture. To those we may add Kashima and Gelfand's (2012) more recent explanation: "By culture, we mean a set of meanings or information that is nongenetically transmitted from one individual to another, which is more or less shared within a population (or a group), and endures for some generations" (p. 500). The component of *nongenetic* transmission differentiates culture from biology and instinct, without excluding epigenetic effects to be discussed later. The generational component separates culture from momentary phenomena or fads that are not repeated or sustained. Mesoudi (2009) cautions that overly specific definitions may rely too much on the perspective of a particular discipline or philosophical stance and thereby discourage avenues of inquiry, but operational definitions require clarity and specificity. For this text, we will distill our operational definition of **culture** from psychologists like Hofstede, Kashima, and Phinney, acknowledging the anthropologists and others from whom they drew inspiration: **Cultures are constellations of thought and behavior characteristic of a particular group of people that are transmitted nongenetically and survive for an extended period of time, and by which meanings and identities are created and shared.**

In order to understand how our psyches end up similar and/or different depending on our cultural origins and experiences, this text will explore concepts and phenomena including how human culture came to be; how we share, maintain, and transmit its elements; and how culture shapes the ways we live, think, and interact.

## REALITY CHECK

Why is culture difficult to define?

How has cultural psychology attempted to define culture?

What components of human life might relate to culture and psychology?

Explain our operational definition of culture.

## 1.3 A VERY BRIEF PREHISTORY OF HUMAN CULTURE

**LO 1.3: Describe evidence of factors that made human culture possible.**

### Earliest Evidence of Modern Human Origin

According to recent genetic analysis, human beings—all of us—originated around 70,000 years ago on a windswept seashore of what is now South Africa (Henn et al., 2011; Soares et al., 2011; Underhill et al., 2000; Vigilant, Stoneking, Harpending, Hawkes, & Wilson, 1991). The continent had been devastated for centuries by a gargantuan drought, but a fortunate few hundred souls lived in a milder region around what South Africans now call the Blombos Caves, and they gradually procreated and prospered. The climate was a little more hospitable, but something else was afoot, some difference in these people—and they were, indeed, people, genetically virtually identical to us now. There was something about how this group thought or learned or cooperated (or all of these) that enabled them to survive while most of their hominid cousins across Africa faded from existence.

In those distant days, we already lived in communities, and we probably survived because of our aptitude for working together. As our hearty forbearers spread, they encountered different environments and obstacles and found myriad solutions to the difficulties they faced across the eons. We adapted and adopted different attitudes and ideas. Successive generations moved farther and farther across the planet, until their descendants had spread from desert to swamp to Alpine forest, reaching the proverbial four corners of the globe. We owe our existence today to something about those particular Blombos people, about *us*, because *we* (their descendants) have become wildly successful as a subspecies, despite being weaker, smaller-brained, smaller-toothed, and slower than many of our hominid cousins. Those other hominids roamed the world for hundreds of thousands of years, but only *Homo sapiens sapiens* have developed high heels, computers, and nuclear bombs. Those things are products of culture, and they came to exist via processes of the mind in cultural context over time. Everything we have and use exists only because billions of our ancestors have lived and learned and passed on what they knew to their descendants in the grand procession of culture. Eventually, we developed reading skills and books, and now we can communicate across time and space with digital technologies. This book is really an ode to that epic journey from the Blombos Caves to the present and a guide to navigating the different ways of being and thinking that developed along the way.

### Accelerating Cultural Complexity

To appreciate what culture is, we must dig briefly into the dim recesses of time to see its origins. We cannot know when people began to think like we do; we can, however, skim rapidly over the evidence from paleontology and anthropology to see when the seeds of certain behaviors and abilities were sown. Much as life on Earth began as nucleotides, eventually forming single-celled organisms and gradually becoming complex organisms

consisting of trillions of cells, the earlier, simpler neural structures and abilities set the patterns for what we have become, from simple creatures to mammals to primates to humans. The accelerating development of biological complexity parallels the story of cultural progress, how we developed and maintain culture, and how culture may progress into the future.

*Homo sapiens sapiens*, in particular, are unique, extremely complex organisms who move around and do things on a little bauble in a remote corner of the known universe. The term *known* reflects part of the uniqueness: we can *think* about concepts not connected to momentary need for sustenance or shelter; hence, we say we are *sapient*, and we develop collections of thought that form *what* we know and *how* we know. We have words to describe ways of knowing, referred to as **epistemology**, in English. We think and act in predictable ways, systematically, and yet these systems may differ markedly from human to human depending upon our cultures of origin and individual proclivities. Ralph Waldo Emerson said, “The ancestor of every action is a thought.” From our thinking, we constructed our lives and cultures, including the concept of uniqueness and the ability to map our location among the stars.

We have no way to ascertain for certain whether there are similar organisms in the billions of star systems surrounding our planet. We have developed highly detailed categories to classify creatures with whom we share the planet, but we cannot yet find ways to communicate with other creatures on our own planet sufficiently to know with certainty that our thought processes are not similar. We have no comparison group of creatures on other planets, and despite having no real idea of how the creatures who share our own planet might think and feel, we seem quite convinced of human superiority. We can observe living earthly creatures, however, and we have fossil evidence of what we share and when we diverged as we evolved. In that sweeping history of our planetary existence, we can find what we have in common with our fellow animals and how human culture may actually be unique.

Humanity has existed for a brief moment in the 13-billion-year history of the universe. Our whole solar system only coalesced two thirds of the way through the story, and modern humans have been around for a mere 120,000 years, or less than 1/1,000 of one percent of the great universal span. Shirov and Gordon (2013) applied **Moore’s Law**, that computers double in complexity every two years, to the complexity of life, and estimated that it would have taken 9.7 billion years, plus or minus 2.5 billion, to reach the current level of complexity of organisms on Earth. The article is highly hypothetical but may illuminate parallels in the increasing complexity of human culture. Our particular type of hominid may have only been around for a brief time in the cosmic scale, but the fact that we can conceive of such immensity seems amazing for creatures so recently evolved. Most of our fellow creatures appear to be aware only of the present and recent past and confine their activities to immediate needs (your dog or cat, for instance). Lenski and Lenski (1987) studied our rate of technological innovation and reached similar conclusions that we are in the midst of a rapidly accelerating explosion of complexity in which culture is a predictable development. Whether the process is, indeed, linear or we are part of some great cycle is unknown, but certainly, we can look at the evidence of evolution in human culture and see that there are trends that lead from sticks and stones to airplanes and internet at an amazing rate.

## Is Culture Uniquely Human?

As discussed earlier, the funny thing about culture is that we have a hard time saying exactly what it is, so saying whether humans are the only ones who can claim it becomes difficult. We share the most fundamental needs and activities with all of our primate relatives and, to varying degrees, with many of the other creatures of Earth. In terms of basics, living creatures all eat, interact, and procreate. **Sociality**, the tendency to associate in groups, is characteristic of creatures from bees to bison, with forces of evolution shaping the specific ways social species cooperate and communicate to promote their survival. Bees and ants perform highly organized, cooperative behaviors: ants communicate via chemicals released (van Wilgenburg, Sulc, Shea, & Tsutsui, 2010), and bees actually dance the distance and trajectory information they need to convey food locations (Dyer, 2002; von Frisch, 1953). Mammals and birds generally have a variety of sounds and movements that communicate information of varying complexity. Members of family Canidae, which includes dogs and wolves, express themselves using a wide range of vocal sounds and postural cues (Anton, Tedford, & Wang, 2008; Bekoff, 1977; Robbins, 2000). Whales and porpoises use highly complex patterns of sound to communicate with each other (May-Collado, Agnarsson, & Wartzok, 2007; Tyack, 1981). Some species come together only to mate. Others live together in herds, flocks, or packs, deliberately coordinating protection from predators or organizing their predatory hunting.

In cognitive ability, more variation appears. Insects appear capable only of instinctive behavior, with adaptations appearing very slowly over countless generations. Other creatures may learn more readily and engage in complex processes. Dogs and rhesus monkeys are capable of simple **numerism** and can count and add up to about four items. New Zealand robins have been observed to remember and differentiate larger numbers of up to 64 food items (Garland, Low, & Burns, 2012). Creatures enjoy the company of their fellows to greater and lesser degrees and in different intensities. Many creatures appear to love their young and each other, and a great many play, especially when they are young. The basics are shared while more complex activities are less and less common across species. We humans like to think we are the pinnacle of this tapering pyramid of uniqueness, but we do have commonalities with other creatures, and these commonalities can illuminate how humans came to be such social creatures, as we rewind toward the roots of our global family tree.

Other than humans, creatures create few things, other than perhaps nests, honey, or tools for a specific task, so they have little to show for their efforts other than millions of years of survival. They also learn new ways to do new things as a species slowly, compared to humans. Does this mean they lack culture? Are there meaningful ways we can differentiate between culture and other organized systems of cooperation and communication? From an evolutionary perspective, there should be a patterned progression from slime to symbolic reasoning, and we should see shared physiological structures dating back to our common ancestors along the way (called *homology*). **Homology** predicts it is more likely that species share common features because they are descended from a common ancestor with that feature than that both developed the feature independently (Stone, 2006).

## REALITY CHECK

Where did human culture begin?

How does Moore's Law apply to culture?

What do humans share with other living creatures?

### 1.4 STRUCTURAL COMPONENTS OF HUMAN THOUGHT

**LO 1.4: Identify brain structures that enable human thought and communication and relevant theories about human social interaction.**

Humans share a number of characteristics with the other living things in our world, and yet somehow we are unlike any other creature. We will focus on two major theories to examine aspects of how we have arrived at our current level and diversity of cultures: the *social brain hypothesis* and *theory of mind*, looking at what we share with our evolutionary cousins for homologous support along the way.

#### Bigger Brains: The Social Brain Hypothesis

In the 1930's, anthropologists and other scientists began to notice that creatures' brains varied in relation to their body size, and creatures with more brain proportionate to their size tended to be capable of more complex behaviors (Jerison, 1975). The basic idea is that brain size should be fairly consistent from one mammal to the next, and a bigger creature

has a proportionately bigger brain. Some creatures have brains that are bigger than average, compared to creatures of similar size. This is the case with humans. Figure 1.6, for example, is a photo of my sister and her dog, who weigh roughly the same amount. If brains are consistently sized, then sister and dog should have the same sized brain, but in fact, one has a larger brain than the other, and I am hoping it is my sister.

All of our closer primate relatives—orangutan, gorillas, bonobos, and chimpanzees—share a few social activities with us. We all live and eat together, sleeping in nests, either crafted from branches and trees or in

**Figure 1.6** Encephalization Quotient of Human and Dog



beds and houses. The mystery has been why some of these bigger primate brains were more successful in the evolutionary process, allowing certain creatures to spread across the planet and invent automobiles while others are decreasing in range. The developing human brains did not simply increase in size uniformly, but rather added the mass primarily in the neocortex, the forebrain, where our executive and reasoning functions are found (Dunbar, 2003).

Early research assumed that the greater capacity supported development and use of tools, but it is not simply that tool use enabled human advancement. Jerison (1975) viewed the creativity of the bigger brain as coming first, stating that the most meaningful evidence

is not in the behavior of making and using tools but in the associated cognitive activity: planning the tool, judging its quality, and applying culturally transmitted information to its construction. . . . From this hypothesis one can argue that fossil tools and other artifacts provide evidence about the evolution of human brain:behavior relations. The syllogism is simple. Since living humans make tools by using human cognitive (and other) skills . . . obviously worked “fossil” tools indicate the evolution of “homologous” cognitive skills. (p. 28)

In other words, we can assume a certain amount and type of thinking, learning, and transmission goes into the making of tools, whether they are made of stone or printed in 3D from complex polymers. If a creature was making tools of some sort, the tools themselves provide evidence of cognitive mechanisms. It is the thinking, not the tools themselves, that is important. Jerison (1975) would say that cooperative hunting and tool-making are *products* of these larger brains rather than precursors. The larger brain enabled us to do these things, and do them together, rather than the advantages provided by these products leading to selection for increased brain. Stated differently, brains had to develop for some other reason first, and complex tools are a byproduct.

In this line of research, the other change that coincided with larger brains, perhaps the most important one, is the increasing size and complexity of group interaction and cooperation among primates. The primary evolutionary advantages that allowed hominids and humans to flourish, according to one line of research, were our growing social skills and our increased ability to act together, facilitated by specific developments in our brain capacity and structure, and hence it is termed the **social brain hypothesis** (Byrne & Whiten, 1988; Dunbar, 1998, 2003). The making of a simple tool can be an individual act. What truly distinguishes humans from other primates is our ability to make tools cooperatively, then pass on and enhance the process, eventually reaching a point where we can cooperate in the building of cities, pyramids, and spaceships.

Our neocortex relates at about 4:1 to the rest of the brain, a size that appeared when our optimal group size reached about 150 individuals, which is the number of people of whom we can comfortably be aware—our cognitive group size (Dunbar, 1998). We are, first and foremost, social creatures, but we did not suddenly go from small bands of monkeys to complex communities. It took millions of years, adding skills and growing our cultural complexity along the way. The social brain hypothesis suggests there were

evolving structures bringing capacities to facilitate social complexity, including regions associated with creating and understanding language. Recent fMRI studies show that speech activates similar regions in the brains of dogs (Andics, Gácsi, Faragó, Kis, & Miklósi, 2014), which may be part of why humans and dogs have developed such a close coexistence. This means that the capacity for vocalizing had already begun to evolve when our lineages split 80 to 100 million years ago (mya). Humans evolved more complex forms of language, allowing more communication and cooperation, and eventually facilitating transmission of knowledge via print and digital media.

Humans cooperate incredibly well, despite our periodic aggressions and wars. By and large, most humans awake each day and go about their tasks helping more than they hurt each other. In the debates of nature versus nurture, Field (2001) and others propose that our altruism selfishly favors our own genetics, but this idea is contradicted by the many ways we enthusiastically help others and mix our genes as we migrate and move about. Hodgson (2013) proposes that cooperation may be rooted in genetics but that culture has been the greater force in transmission and reinforcement, enabling our greater success as a species. The social complexity allowed by our big brains gives us the ability to make abstract and shifting social alliances, leading to more options for success. Despite opportunities presented by digital communication, however, our functional group size in modern electronic social networks remains usually limited to a maximum group of about 150 people, with only extraverts interacting regularly and intensively with more people (Pollet, Roberts, & Dunbar, 2011). The story of becoming human twines our physical development of brain hardware with our improved thinking abilities (software), and our resulting ability to coordinate life with larger social groups.

A criticism of the social brain hypothesis is that the theory is based on analysis of historical and anthropological data from extinct creatures of bygone epochs rather than existing structures that can be tested now. If our brains evolved advanced cognitive skills specifically and solely for purposes of social cooperation, this does not explain the multiple other purposes of these systems. The forebrain's executive functions are useful in memory, language, social cognition, and tool manufacture and extend beyond simply helping in the social domain (Stone, 2006). We will next examine theory of mind, which may be more directly linked by homology to functions we share with other living cousins.

### Theory of Mind

Our cognitive awareness of our individual selves and others relates to what psychologists call **theory of mind** (ToM). Beginning in infancy, we learn the shocking fact that others are unaware of our internal thoughts. A baby may know she is hungry or has a wet diaper, but her mother may not know. In a few short months, we are brutally thrust from utter inseparable oneness within our mother's womb to irrevocable awareness that there are others who are *not* ourselves, and our thoughts are walled within our heads unless we can communicate them. Hunger and discomfort quickly motivate children to let others know their needs and wants. We also naturally begin to develop theories about what is going on in other people's minds, hence the term *theory of mind*. Stone (2006) explains



that, “Humans make inferences about and interpret others’ behavior in terms of their mental states, meaning their emotions, desires, goals, intentions, attention, knowledge, and beliefs” (p. 106). Full-blown, highest level ToM is uniquely human, we think, and is achieved in adulthood.

### Components of ToM

Stone (2006) suggests that the contribution of ToM to human existence can best be understood by looking at its components. Unlike the social brain hypothesis, ToM can be tested by examining a number of living evolutionary relatives for evidence of its components and of parallel brain structures that may be active in the processes. As a child develops, it retraces this evolutionary journey, each component marking a branching in our ancestral family tree:

- Inferring goals and intentions
- Joint attention
- Pretend play
- Mentalism: Understanding and acting based on others’ mental states
  - Desire
  - Belief and knowledge
- Metarepresentation

The most basic skill of ToM is the ability to **infer goals and intentions** of another, to see the direction of another’s behavior and the outcome toward which he or she is moving. Construed broadly, we share this ability with many mammals and other creatures, depending on where one draws the line differentiating instinct. A penguin must perceive that its mate is ready to go find some food and cooperate carefully when transferring the egg they gestate from one’s feet to the other’s or the egg will freeze. A wolf must be able to infer goals and intentions of both pack members and prey, in order to hunt. These abilities may be ascribed to instinct, or they may be rudimentary versions of what will become ToM in humans.

By between 5 and 9 months of age, a child can distinguish between intentional action and accidents, an ability that definitely requires inference of intentions that may not be shown overtly. This ability is shared by chimpanzees and orangutan, firmly dating the ability to our common ancestors 14 mya (Stone, 2006). Jellema, Baker, Wicker, and Perrett, (2000) recorded specific activity in the superior temporal sulcus (a brain area associated with ToM) when Japanese macaques (*macaca fuscata*) observed another monkey both looking at and reaching for an object. To monitor intent, the macaques used a brain structure employed by humans in another ToM function: joint attention.

In **joint attention**, eye gaze direction and finger pointing provide information to an observer about the focus of attention. In children, eye monitoring happens between

1 and 2 years of age. As with the macaques inferring goals, we use the superior temporal sulcus to synchronize our attention. The Japanese macaque can be trained by researchers to use pointing, but it does not do so in the wild. Chimps and apes also readily use pointing in captivity but less often in the wild. It is notable that monkeys walk on all fours and apes use a knuckle-dragging walk, so their hands are not free to gesture, and other means of communication must be employed.

**Pretend play** or pretense means that we can adopt a shared fiction, such as pretending that a doll is a baby, and share that play with another. Here, we get into murky water in distinguishing between play and instinctive behavior and in determining what a child knows about someone else's idea of what is going on. We do know that animals play and that young carnivores go through motions of hunting together. Young bonobo females are more likely than males to play with rudimentary dolls, providing evidence of both pretend play and of gender differences in that play (Kahlenberg & Wrangham, 2010). We know that a small human may tell you earnestly that the ragged stuffed bear is her baby, but it is more difficult to identify whether she accurately perceives your ideas about the play process, which would complete the full circle of shared pretending.

Between 18 and 24 months, children develop the ability to understand what other people want and desire, termed *mentalism*. They can understand that Daddy drinks coffee that smells really bad, but it seems to make him happy in the morning. They can verbalize what other people might like and want to do, which means they are demonstrably able to perceive the mental states of others and to interact with them via language. We know a great deal about ToM because we are developing language skills at the same time ToM is developing, so we can simply ask children about what they are thinking. We use symbolic systems (words) to transmit our wants and needs, and we use them to pass on the knowledge and ideas in our heads to those around us.

What we say, and what others say to us, helps us eventually to develop an ability called **metarepresentation**, in which we can think about the thoughts of others: "Billy thinks that doughnuts are tasty." We can recognize that Billy thinks something and identify what he is thinking. Metarepresentation is the penultimate level of ToM. We know that we have thoughts and that others have their thoughts, and we can consider the content of other people's minds. We can further contemplate ways to convey our own knowledge and beliefs and to use the beliefs of others to our advantage.

We can survive eating leaves, fruits, and grubs. We can cooperate on a hunt with a few grunts and gestures. We have chosen as a species, however, to do many more things than required for simple survival. Moving beyond survival, language becomes crucial for virtually everything that follows for the rest of our lives. Our use of symbolic thought, our communication of those ideas, and our skill in making our ideas into reality marks the end of our commonality with any creature we know that came before (Stone, 2006).

## The Last Hominid Standing

About 6 million years ago, we split from our nearest surviving relatives, bonobos and chimpanzees. All of the hominids that evolved on our side of the split are extinct except us. We have a lot in common with the bonobos and chimps, if you look at the big picture.

They use simple tools like twigs to access foods, and our tools have merely progressed to greater refinement (van Schaik, 2004; Pontzer, 2012). Primates show affection for each other and want to make friends. In a recent study of the bonobos at the Lola Ya Bonobo Sanctuary in the Democratic Republic of Congo, Tan and Hare (2013) placed bonobos in adjacent cages with the opportunity to share food with two other bonobos, one they knew and one they did not already know. The bonobo with the food would most often share first with the one it did not yet know, thereby making a new friend. The new friend would then let in the other, previously known bonobo, and they would all eat together. Getting to know someone over a meal is an ancient part of our behavioral repertoire, and it remains a way we bond at holidays, or international State dinners, or when meeting future in-laws. The bonobo understand intentions and how to shape the thoughts of other bonobos to achieve an intended amicable outcome. They are quite human in some ways, but in these past six million years, humans have achieved many things bonobos have not, for better or worse.

The big differences began to arise around the time our Australopithecine ancestors started walking upright, about 3 to 4 million years ago. Then we began making the big strides that led to what we consider human culture. It was a long, slow process, with sometimes a million years passing before each new innovation arose, but we advanced (Heine, 2013; Lenski & Lenski, 1987). The first relative we grant the name *Homo*, from the Latin for “man,” was *Homo habilis*, who came on the scene about 2.3 million years ago. Jerison (1975) credits *Homo habilis* as the first big-brained hominid, and paleontologists have found animal bones that *Homo habilis* butchered with sharpened stone tools (Pontzer, 2012). They eventually began to cook food, which was probably their bigger contribution because it provided easily digested fuel for our growing brains.

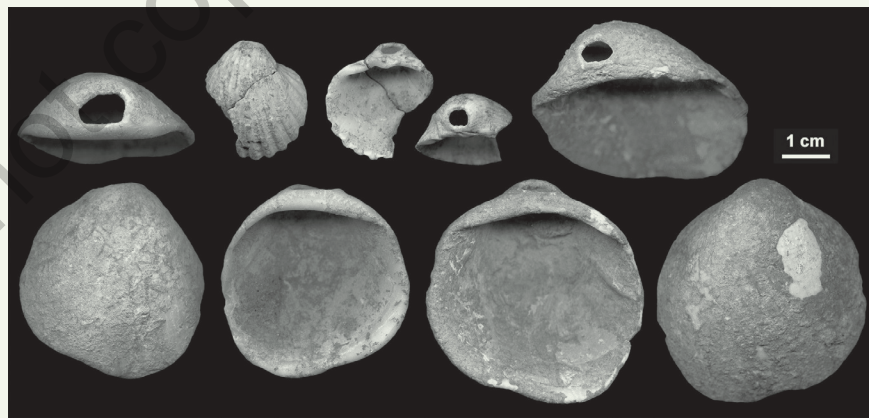
The next known hominid was *Homo erectus*, who survived from 1.9 million years ago until 100,000 years ago, by which point *Homo sapiens sapiens* had already developed into our current form. *Homo erectus* was exceptionally adaptable, spreading across Africa, Europe, and Asia, with their larger brains approaching 1,250 cc (Anton, 2003). They certainly used fire, with evidence of regular cooking dating to 790,000 years ago (Goren-Inbar et al., 2004). These were people, not with great technological knowledge, perhaps, but with the heart, spunk, and savvy to evade extinction for eight times as long as we modern humans have lived so far. They may have spawned a number of offspring, notably *Homo heidelbergensis*, who survived for about a half million years.

*Homo heidelbergensis* first appeared 700 thousand years ago, and by 400 thousand years ago, they had fire well under control, losing their larger canine teeth to a softer, brain-friendly diet. They were well aware of their mortality, honoring the dead with simple burials for the first time in the archaeological record (Carbonell & Mosquera, 2006). Burial and some amount of ritual suggest that they were thinking in ways that extended well beyond immediate survival. Fossil evidence of healed injuries and chronic disability indicate they cared for injured and disabled individuals, demonstrating that they had compassion (Hublin, 2009; Pontzer, 2012). *Homo heidelbergensis* probably evolved into both *Homo sapiens neanderthalensis* (the Neanderthal “cave people”) and eventually *Homo sapiens sapiens*. With the early *Homo sapiens*, the rate of innovation increased to one every 20,000 years or so, judging by material culture left behind (c.f. Lenski & Lenski, 1987).

The *Neanderthal* were tough folk, adapted to cold climates and willing to hunt down a mastodon for food. That required spears and a high level of cooperation, as well as serious strategic planning, even with their stocky, well-muscled build. They also left evidence of the biggest leap: abstract thought. They made bone and shell ornaments for personal adornment more than 50,000 years ago (Zilhao, 2012; see Figure 1.7). It takes tools and serious effort to make holes in teeth, shells, and rocks, but it also takes motivation. The items must have meaning and aesthetic rationale to be worth making and wearing. The artifacts were significant to those people, representing something to the maker and wearer, and therefore, they suggest a certain level of cognition.

These early people were not as primitive as we suppose, and surprising archaeological evidence such as stone artifacts on the southern Ionian Islands hint at pre-human sites there as early as 110,000 years ago. The places in question are off the coast of Greece, and Crete is about 100 miles (160 kilometers) from the mainland. Investigators have recovered quartz hand-axes, three-sided picks and stone cleavers from Crete that may date to about 170,000 years ago. The exceedingly old age of these artefacts suggests the seafarers who made them were not modern humans, who originated between 100,000 and 200,000 years ago and had not reached the Mediterranean at that time. Instead, they might have been Neanderthals or perhaps even *Homo erectus* (Choi, 2012). We tend to rate members of our own groups as more capable in the present day, and by discounting the intelligence of our hominid ancestors and relatives, we miss some of the story of how we became who we are. The traditional empirical stance of psychology has focused upon a separation of nature and culture, assuming that humans are different from creatures like primates who exist in a natural world distinct from our world of human thought and technical innovation (Kashima, 2000). It is more likely that intelligence and thought have been developing in humans for hundreds of centuries, and they made amazing

**Figure 1.7 Neanderthal Personal Adornments**



Source: Zilhão (2012). Image courtesy of João Zilhão.

leaps in ideas and innovations long ago. Far from needing a “missing link” that connects primates to humans, we need to look at the evidence without ethnocentrism to see a rich and detailed story of how we became creatures of cultural groups.

## REALITY CHECK

Explain theory of mind.

How did group size affect the development of culture?

How does human culture differ from the culture of other creatures, if it does?

Explain the social brain hypothesis.

What was added in terms of culture as we evolved?

## 1.5 HUMAN GROUPS

### LO 1.5: Describe configurations of basic human groups.

In social psychology, a **group** is a set of two or more people who are doing or being something in common. Our doing and being happens together with parents, lovers, extended family, friends, schools, communities, regions, ethnicities, religions, and nations, all sharing one small planet. Our family forms our first set of relationships and our most basic group, whoever constitutes family in a given culture. A functional childhood prepares us for an adaptive adulthood, and as we grow, our group will nurture us toward the specific roles and behavioral norms of our culture.

### Evolution of Groups

*A tribe including many members who, from possessing in a high degree the spirit of patriotism, fidelity, obedience, courage, and sympathy, were always ready to aid one another, and to sacrifice themselves for the common good, would be victorious over most other tribes; and this would be natural selection.*

*Darwin, 1871, p. 132*

For their 40 million years of being, primates have lived in groups that grew in size and complexity until the present day. As Darwin suggests, it was probably increasing ability to cooperate and collaborate that enabled evolving humanity to flourish. The size of groups changed over time: Our brains arrived at modern dimensions around 250,000 years ago, when we also reached the *Dunbar's number* group size of about 150 individuals comfortably coexisting. Although 150 is the upper limit before village groups tended to split, Dunbar (1992, 1998) noted that the Pleistocene anthropological record indicates

three sizes of groups: 30 to 50 members in bands, 100 to 200 in lineage groups, and 500 to 2,500 in tribes. We humans made our march toward modernity in these growing units, eventually combining these small units into larger composite groups as greater cooperation was required.

### Core Group Configurations

The development of human sociality revolves around basic patterns of social interaction repeated throughout human evolution. We interact with essentially the same generic sets of others—family, friends, and community—that our ancestors did hundreds of thousands of years ago. In a slightly different approach from Dunbar's, Linnda Caporael (1997, 2007) proposes four core configurations of social relationships: *dyad*, *task group*, *band*, and *macroband*. Dyads include hunter/prey, sexual partners, and mother/child, communicating intimately and often wordlessly. The task group is based on the hunting or gathering party that shares specific socially transmitted knowledge to complete tasks, prototypically food acquisition. The band is the tribal group who live together, including the dyads and task groups who depend on that larger group for security and survival. Until recent centuries, bands connected by language and lineage would gather seasonally as macrobands to share knowledge and enact rituals that enhanced cohesion, as seen in the Native American powwow. European macroband rituals are still reflected in Christmas and New Year's, marking midwinter, and Easter, marking the Vernal Equinox. During All Hallows Eve, *Día de los Muertos*, and the *Obon* Festivals of Japan and Okinawa, the living groups also interact ritually with departed ancestors, lending the larger groups a sense of cohesion and permanence across generations (see Figure 1.8).

Figure 1.8 The Obon Festival



These social structures are theoretically analogous to those underlying our modern, more complex social organizations. *Demos* is an ancient Greek term for geopolitical divisions, and it is used in biology to describe local populations of organisms living in close enough proximity to breed. David Hull (1988) used *demic structure* to describe modern scientific communities who exchange ideas and researchers. Applying the concept to contemporary societies, Caporael (2007) replaces *band* with the term **deme** and *macroband* with **macrodeme**. Academic departments or corporate regional offices equate to the deme. Caporael likens annual academic conferences to macrodeme gatherings, where ideas are exchanged and graduate students move to other academic demes, or where engineers move between tech corporations, exchanging young members between their intellectual tribes to spawn new ideas and knowledge.

We gain our socially transmitted knowledge *from* these groups and we contribute our own efforts and learning *to* those groups, which then develop into new forms over time. This model bears similarity to the inner rings of Bronfenbrenner's (1979, 1994) ecological systems model and to Vygotsky's (1978) emphasis on the cultural context of development, both of which will be discussed in later chapters. We are born into a family that is part of a clan, village, or community that exists within context of a region, a tribe, or a state. Some of us grow up to enter dyads of romance and/or marriage; some cultures have other forms of relationship for procreating the next generation. We all interact with and educate our young, passing along our patterns of relationship, within a region, ethnicity, religion, nation, and ultimately, as part of humanity as a whole. Membership is common to us all, in groups from core family outward, differing in the meanings we give to our relationships; how we interact with others; and how our memberships, roles, and responsibilities influence our behaviors and beliefs. Our cultural origins, memberships, and identities shape our similarities and differences in how we relate to others around us and in the people we become.

## REALITY CHECK

Of what groups are you a member?

Do any of your groups fit the description of demes or macrodemes?

When do your groups gather? Holidays?

Conferences? Sports events?

## 1.6 COMMUNICATION AND INNOVATION

**LO 1.6: Discuss the rise of symbolic thought and communication and its effect on rate of innovation in human culture.**

We are now undeniably different from our ancestors. A principle difference lies in the complexity of our communication. Our surviving ape relatives do demonstrate facility

in learning and using gestures (de Waal, 2002), but the topics they can address are limited to their immediate physical and emotional situation. Humans systematically communicate highly complex and abstract concepts, a unique skill (Penn, Holyoak, & Povinelli, 2008). Somewhere along the way, we developed speech. Our mouths and throats evolved for eating, drinking, and breathing, but sounds emerged in reptilian days as a sort of bonus function, and gradually the structures adapted to more refined sound production. Our heads changed shape over millions of years, and the changes in our craniums coincided with development of the language centers in our brains. These include Broca's and Wernicke's areas, named for the scientists who identified them when they observed loss of language skills in people who had damage to those regions. We split from rhesus and macaque monkeys about 25 million years ago. In neural imaging studies, macaques, humans, and dogs show similar brain activation when they hear calls of their own kind (Andics et al., 2014; Gil-da-Costa, Martin, Lopes, Muñoz, Fritz, & Braun, 2006). Though they developed similar brain structures to process specific sounds from their cohorts, other primates lack larynx structures for speech. Fossil records do not show clearly when hominids acquired the correct physiology to create words, but we do know that humans are the only surviving members of the primate line with that ability, and for some reason, only humans compose sonnets and sing arias.

Speech enabled us to develop efficient ways to transmit our thoughts, and our enhanced frontal lobes enabled us to think increasingly profound thoughts to pass on. Language is a system of symbols by which we can facilitate transfer of subtle concepts represented by words and pictures. Once theory of mind processes began to inform us that others do not know our thoughts, we were compelled to find better ways to communicate our inner mental states. We represent the items, feelings, and concepts linguistically. The metarepresentation level of ToM depends upon being able to create conditional clauses about someone-thinking-something, which is a linguistic skill in itself. Whenever speech really came about, the ability certainly contributed to our more recent acceleration in technological innovation. The ability to reason about higher order concepts and to convey these concepts to others defines humans as something quite different from the other creatures of our planet.

### Life and the Art of Creating Culture

Once the first *Homo sapiens* departed the shores and caves of Blombos, they began to develop different skills and ideas. What we make and how we make it has obviously varied over the millennia, depending on environmental demands, materials available, and the technologies we shared at the time. This is why an anthropologist can identify the origin of an item by era and locale with a high degree of accuracy: the artifacts we leave and even our bones tell stories of how we lived and what we knew. We can look at evidence from an extinct civilization and know what they ate, how they got the food, what shelter they used, and, to some extent, what was on their minds. Arts convey our mental states in great detail, even at a distance of thousands of years. We can look at paintings on the walls of caves at Chauvet and Lascaux and we know that the artists were keen observers and superb at drafting; they saw as we see. We also know that the scenes had meaning as symbols of something important in life. We can suppose that the



many rotund “Venus” figurines such as the Willendorf Venus were popular because they reminded their owners of the mysterious power of women to give us life.

ToM lets us know that the *other* is distinct from us to some degree, from those in our immediate family to the fringes of our extended family and friends, to our community. Beyond that limit, the *other* becomes increasingly alien and threatening because after a few short millennia, we no longer recognized our shared origins and began to compete violently for resources. The Yanomamo will battle with and steal from neighboring groups from whom they split only a few generations before (Chagnon, 1988b), and Americans went to war in 1776 while still politically aligned with their British land of origin. In our repertoire of non-survival skills and practices, we had to develop ways to maintain connectedness and cohesion with those close to us in order to stand against other groups of humans, now no longer family. Arts provided symbols and rituals, flags and pledges, to demonstrate shared identity and mark differences.

We may also have been developing musical skills at the same time we learned to use language, or perhaps our refining of perception of musical patterns from the noises around us allowed us to develop both language and music. It is a chicken-or-the-egg question, but somehow, we now have language, music, and visual arts, with symbolic content conveyed through all these means. They allow us to create common ground and shared experience and to develop and convey highly complex thoughts across generations. Think about how you learned the alphabet, which was probably via song. We have the ability to live in large, organized groups, in no small way because of our ability to share our thoughts in very creative ways. Cross (2001) explains,

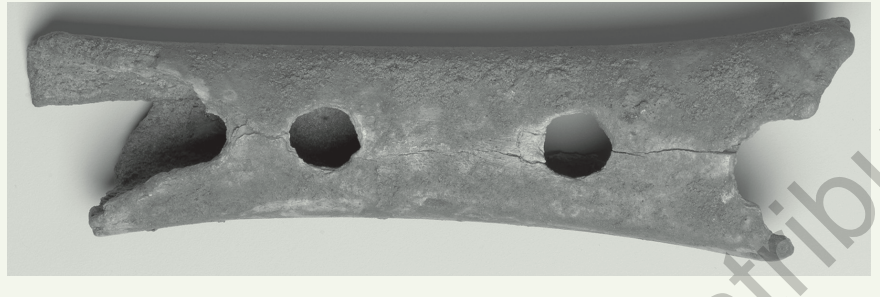
it could be that the emergence of proto-musical behaviour and their cultural actualization as music were crucial in precipitating the emergence of the cognitive and social flexibility that marks the appearance of *Homo sapiens sapiens*. (p. 100)

Actually, early language and music may not be solely the domain of modern humans. An artifact from Divje Babe in Slovenia may prove to be a 60,000 year old flute (Lau, Blackwell, Schwarcz, Turk, & Blickstein, 1997; see Fig. 1.9), though this is a topic of contention in the archaeological world. At that time, modern humans had probably not yet arrived in Europe, so if it is a flute, it was made by *Homo neanderthalensis* or some other relative.

### Rapid Change and the Advent of Humanity

About 200,000 years ago, humans who were morphologically very much like us appeared in Africa. By 100,000 years ago, mutations and selections had occurred, bringing our brains to their current 1,400 cc size (Pontzer, 2012). Soon afterward, we encountered the centuries of African drought and the stalwart survivors of Blombos on the South African coast. In this time period, we reached our optimal group size of about 150 people living and cooperating together, a number that has held throughout our subsequent migrations and adventures into new lands and on into digital realms (Dunbar, 1992; Roberts & Dunbar, 2011).

Figure. 1.9 Divje Babe “Flute”



Source: Kunej & Turk (2000). Image courtesy of National Museum of Slovenia; photo by Tomaz Lauko.

Somewhere around 70,000 years ago, the Blombos people struck out for new territories and began to populate the world, facilitated, the social brain hypothesis would say, by our ability to cooperate as we go. Our rate of innovation skyrocketed. From 40,000 to 12,000 years ago, an innovation came along every couple of thousand years. Then we kicked into high gear when agriculture developed, with 5.2 innovations per thousand years. At 9,000 years ago, the rate began to compound exponentially, though genetically and neurologically, we were still essentially the same creatures we were before, and we still functioned best in direct contact with relatively small groups.

The innovations were not uniform across all groups of humans, and even now, we are not adapting perfectly to all of our newfound abilities and creations. Humans are paradoxical, capable of thoughts spanning beyond the present into the remote past and unimaginable future. We live increasingly well and make ever more efficient ways to die. We kill each other by the millions in arguments and conflicts over resources and over the ideas our thinking minds have created. We consume too much of our resources and foods in increasingly less healthy ways. We have also, conversely, created ideas and artworks that transcend meager existence into the mystical, from songs and symphonies to Stonehenge and the pyramids. Tools, tunes, and technology are creations of humanity that make our lives better and more meaningful on this little rock in the sky. All of these, good and bad, are acts of culture.

Tens of thousands of years ago, our ancestors had certainly begun to think in abstract terms of numbers and ideas. They buried their dead, which suggests that they were aware in each moment that people lived and died, perhaps more intimately than modern humans, who rarely see a dead person and probably will die in a hospital at an old age with few people they know around them. They told stories, made jewelry, painted pictures, and played music, which means they had complex thoughts and reasons to wear an adornment, express something they imagined, or create a soundtrack of musical background for their lives. These creative products, from language to painting to music, formed the repositories of our evolving cultures and provided the means to transmit them to future generations. Evidently, it worked well because we have inherited language and technologies and textbooks.

# SPOTLIGHT

## TOI: THAT WHICH IS CREATED

Aotearoa is the land of the long white cloud. You may call it New Zealand, if you have not met the Māori who settled there long before Able Tasman arrived and supposedly “discovered” it. The last section of Earth that humans settled is a vast region called the Polynesian Triangle, roughly 10 million square miles across the Pacific and Indian oceans. The last bit of land to be settled was Aotearoa (Kirch, 2000). Their Polynesian cousins in Hawai‘i have chants and stories said to reach back at least 800 generations, or 16,000 to 20,000 years (Kame‘eleihiwa, 2009), an incredible span dwarfing the memory of Western culture. These amazing seafarers set out from China 20,000 years ago and reached Fiji by 1200 BCE, Hawai‘i by 900 CE at latest, and Aotearoa by 1200 CE, leaving behind elements of history, culture, linguistic origins, practices, and social processes along the way (Finney, 1994; Kyselka, 1987). In our journeys around the globe, humans have created things, we have created ideas, and we have created cultures.

*Sue (Māori weaver):* In Māori, there’s a word, *toi*. *Toi* for us kind of can mean art, but it also means, broadly put, creativity, so I use “Māori *toi*” more easily than I use “Māori art.” And I validate that, I suppose, by saying there is no word in Māori language for art. And so anything you create is *toi*, from child rearing—child birthing—to painting a picture, so in that way we’re all artists, all creators. (in Fox, 2010, p. 82)

Everything we do, from the moment we awake in the morning, whether making music or making lunch to totaling the cash at the end of a day flipping burgers, is an act of creativity (cf. Haley, 2007). Our process of creation distinguishes us from the other creatures of this world. The things we create and the reasons we make them differentiate us from each other. Our greatest creation is us: human cultures

scattered across time and space. Each culture is a unique constellation of ideas and beliefs, crowned by the behaviors and products that we dream into existence every day. A huge part of our distinctive output falls in the domain of what Western culture categorizes as art, perhaps devaluing the integral role of arts in the evolution of human modernity.

We know from bone flutes recently unearthed that musical practices were well developed 36,000 years ago (Hahn & Münzel, 1995; Turk & Kavur, 1997; Zhang, Xiao, & Lee, 2004). We made music with rasps, horns, and bull-roarers, as illustrated in the 25,000 year old bas relief we call the “Venus of Laussel” (“*La Femme à la Corne*”) from Laussel, France (Huyge, 1991; Morley, 2003). Painting was a demonstrably refined art by 32,000 years ago, when the inhabitants of caves such as those at Chauvet in Vallon-Pont-d’Arc, Ardèche, France painted their masterful depictions of the creatures of their time (Fischman, 1995; Valladas et al., 2001).

By comparison, humans only began to store food about 11,300 years ago and domesticated grains about 10,000 years ago (cf. Gilroy, 2009; Kuijt & Finlayson, 2009). Based on archaeological evidence, we can say conservatively that humans have had highly refined arts more than three times as long as we have been storing and growing food. If we demarcate ancient Mesopotamia as the beginning of civilization (Eliade, 1978), organized arts and the concepts they transmitted are easily 10 times as old.

By 12,000 years ago, people had laid foundations of highly organized religious complexes such as Turkey’s Göbekli Tepe complex (Schmidt, Dietrich, & Notroff, 2012). These structures undoubtedly housed visual arts and music conveying the symbols that made those sacred spaces meaningful. We have created arts to contain ideas that form our culture and used arts to convey culture into the future, eventually creating the ways we now think. We are the *toi*, the creative products, of our ancestors.

## REALITY CHECK

How does ToM relate to communication and symbols?

How has our rate of innovation changed over time?

How do arts compare to agriculture in terms of how long they have been around?

What do arts tell us about ourselves?

### 1.7 ELEMENTS OF CULTURE: PUTTING THE PIECES TOGETHER

#### LO 1.7: Explain how cultural products and processes provide evidence of basic psychological parameters of culture.

Our remote ancestors were very much like us in that they had physical needs, families, language, and technologies (if simple). In processes across our lifespan, we all learn ways of relating to others and about who we are in relation to those around us. We learn to think in terms of symbols we call words and we learn ways of connecting concepts in complex epistemologies; even societies with relatively simple technological systems have nuanced lore by which they explain and understand the world around them.

Although all humans interact socially and learn a collection of knowledge, the forms of interaction and content of knowledge differ immensely. Our worldview, beliefs, language, arts, and technology have evolved so far that we could not communicate with distant common ancestors linguistically or conceptually; we have evolved into such diversity that we have a difficult time communicating with other cultures alive today. Our genetics are more than 99% the same, but our culturally derived differences are so great that they obscure our common origins. Our languages are so divergent as to be mutually incomprehensible. Even within a single cultural stream, an English speaker today would find it challenging to understand the language of Chaucer from only a few centuries before. Across cultures, the divides widen.

We speak regularly today of culture wars, of differences so extreme that violence is the only apparent solution. Culture wars are not new, if one examines the histories of China, Greece, and Egypt, among others. Our known history is full of conflict and war. Our longer archaeological history is less defined, based only on bones and artifacts, but we know that the *Homo sapiens neanderthalensis* vanished soon after *Homo sapiens sapiens* arrived on the scene in Europe. In addition to our propensity for violence, we also continue to share use of visual and musical expression across cultures, and these more peaceful expressions of humanity contain our cultural legacy of symbols, beliefs, practices, and relations.

This is a book about culture and the human mind, written from the perspective of psychology, which studies ways individuals think and behave. The statement seems

straightforward enough, until you start sorting out its components. Psychology as a formal discipline is less than two centuries of age, and we have only just developed the tools to see patterns of thought in the closed box of the brain via fMRI and other imaging techniques. Further, the discipline only began seriously to explore beyond its home base of Western culture in the last 60 years. We may be years from universals that can cross all cultural boundaries. We can, however, use current research to understand better those around us, near and far.

## Parameters of Culture

As we will see, psychological study of culture balances investigation of similarities and differences across cultures. Over the past few decades, researchers have proposed a number of ways to describe parameters of relevance in the study of culture: what comprises a culture, how cultures form and change, how cultures structure and order themselves, how they view the world and reality, and what the identifiable psychological components needed to predict behavior across culture might be.

In common parlance, culture has been equated with nationality, society, race, and ethnicity, which overlap and blur boundaries. Modern nations often include dozens of ethnic or racial groups who share the larger identity of “country.” Terminologies change, and “race” is now considered outdated if not prejudiced, given that we are genetically virtually identical even if our skin colors differ. Major research has been done on *inter*-national levels, such as Hofstede’s (1980) seminal study of dimensions of “cultural” variability, to be discussed later. Anthropology indicates that ethnocultural groups should probably be considered separately, even within national borders. While acknowledging the groundbreaking nation-level research that forms much of the psychological literature regarding culture, the need to understand processes and conflicts within multicultural environments suggests that we should use self-identified ethno-cultural groups, such as African American, Kosovar, Pashtun, or Māori, as our primary focus. Altogether, these are **levels of analysis**, which extend from individual to familial, to national, to global.

Broadly, cultures are shaped by ecological, social, and biological factors: the natural environment, the density and dispersion of people and their genetic propensities, and our interaction with germs and with other large organisms (think bison, mastodons, or horses). Eons of pressures from these forces have led to the identifiable groups seen today. Additionally, cultures interact with each other, currently in unprecedented domains such as electronic communities. These changes and forces are **extrinsic factors** that underlie many of the topics of difference addressed throughout the text.

Roots of social order *within* cultures and shared worldview extend back centuries. A social order described by Kung Fu-tse (Confucius) organized life in China and surrounding countries for more than two millennia, and a similarly rigid hierarchic structure remains central to the modern Chinese government. European culture traces its origins back to Mesopotamia and Greece, spread around the Mediterranean and beyond through trade and conquest, especially during the Roman era. These influences shape our beliefs about what is right and wrong and what and how we teach our children. The values, beliefs, and related stories we have inherited, passed on, and refined through

generations form the **historical contexts** shaping our decision processes about how we act and interact on a daily basis.

Environmental, political, historical, and social forces have shaped our current set of nations and cultures, and although life is always in some state of flux, the present set has definable and observable characteristics. Culture composes our beliefs and values, the symbols that represent them, and the ways we express them in our lives and relationships. It is the cause of our most dangerous conflicts. Culture is inseparable from shared human existence, but our focus here is the individual and how the mind is shaped by culture. If cultures are relevant to psychology, there should be predictably in how they shape behaviors and beliefs, both in similarities and differences across cultures. This text discusses what are essentially normal topics of psychology examined from the viewpoint of cultural forces and contexts.

This first chapter began by defining culture because psychology is a science built on belief in definition and measurement, and it discussed evidence of factors that enabled human culture to evolve, including our mental and communication capacities and how these may have enabled us to succeed in cooperative groups. Chapter 2 looks at how culture is transmitted, maintained, and changed; ways we identify as members of larger groups like ethnicities and nationalities; and some observed dimensions of variation between cultures. Chapter 3 examines the history of culture in psychology and special methods required to deal with cultural and cross-cultural factors in psychological research.

The text then will discuss usual topics of introductory psychology: development, self and relations with others, cognition and perception, emotional expression, motivation, and morality. Finally, we turn to well-being and the effects of life in a multicultural world, concluding with the practical applications of culture in organizational and educational psychology and what psychology can contribute to greater peace and well-being in our future.

### Arts, Culture, and the Human Mind

*This line of research concerns the compartmentalization of culture for research purposes. Culture . . . is a conglomeration of many aspects of life, including food, clothing, music . . . it is easy to lose perspective, thinking that these scores become culture.*

*Matsumoto, Wessman, Preston, Brown, & Kuppertsbusch, 1997*

Psychologies of culture have not yet widely examined those elements most commonly perceived as “cultural,” such as art, music, ritual, customs, and food (Matsumoto et al., 1997). Arts are viewed as an affective rather than a cognitive set of processes and products, and the widespread attitude is that arts lie outside the realm of objective science (Bresler, 2006). In fairness, artists do deal in intangibles that are not easily quantified, but they are a rich source of information on the ways people live and think in every culture.

Roughly 5,000 distinct cultures remain on Earth (Marsella & Pedersen, 2004), and all are unique constellations of beliefs, behaviors, values, and worldviews: each one is

the current product of thousands of years of adaptation to the situations they faced. The collected knowledge of any given culture—its ways of interacting, thinking, and being—form a tool kit contained and transmitted in its arts. In the songs, stories, and symbols of a culture—the domains of arts, artists, and cultural processes—one may find, neatly arrayed, the systems of meaning, concepts, and shared understandings of a culture, packaged within the actual institutions, practices, and symbols of that culture as they have been habitually shared and transmitted across the millennia (Burke, 1989; Frith, 1996; Geertz, 1973; Hargreave & North, 1999; Kashima, 2000, 2008; Turino, 1999).

Our challenge is to understand the various ways people live, act, believe, and think. Perhaps, if we really want to understand the ways people believe and think in cultures, we might find clues in the products they make to represent their beliefs and ideas, the vehicles by which cultural values and meanings are lived and transmitted across generations. W. E. Percy stated, “It is not enough that one is conscious of something; one is also conscious of something being something” (in Geertz, 1964, p. 61). Arts tell our stories; in short, they convey the meaning that makes something into something.

The objects and melodies we make are shaped by our thoughts, which have been shaped by the stories and languages we learned as children. Arts have been crafted over generations of historical contexts and events. It is a cyclic process that, in turn, shapes what our children learn, value, create, and pass on. A sculpture from ancient Rome, China, or Mesopotamia normally depicted a character from a myth or legend or an important person of the time. That particular image was important enough to represent in tangible form because it had particular meaning. Styles and subjects change, but across the eons, arts arise from the ideas we think and believe with enough conviction to pass the thought or belief onward into the future.

### Taonga Tuku Iho

*“Taonga” embraces the notion that there are things in the world, either naturally occurring, people, entities, or things made that are very precious—because what they do, they have very strong symbolic value as a carrier of identity. A carving can be taonga, but the art of carving is also taonga. “Tuku iho” is that which is passed down, or that which is passed on. So taonga tuku iho are those treasures or precious things that are passed on. “Taonga tuku iho,” as a concept, is that we value the notion that we will pass on our treasures, and one of our greatest treasures is knowledge itself, knowledge about the culture, about the world.*

*Ross Hemera, in Fox, 2010, p. 233*

Thirty thousand years ago, the most popular image to create was a rotund female figure, probably representing the mysterious feminine creative force that brings us life through birth. Many have been found around the world, and regardless of the meaning of the image, an incredible amount of effort went into carving that figure using only sticks and stones. We have reasons for making the particular things and images we create, whether a crucifix, a Chinese Taoist *ba-gua*, or a fertility symbol. We developed our symbols over generations as shorthand to convey and reinforce complex sets of ideas,

especially those that are central to our culture and worldview, because we are essentially lazy thinkers (Fiske & Taylor, 1984). We need efficiency so we can process new information amidst an overwhelming stream of experience, while retaining all that we have already learned.

Right now, you are probably sitting on something—a chair, bus seat, or the ground—but you do not feel it. You do not even notice the tip of your nose, though it is plainly in your view (take a look). This is called sensory adaptation, and what we tune out depends on our normal environment. We might tune out the chirping of birds and sound of wind in the leaves, or we might ignore the air conditioner and voices from the next classroom. What we ignore depends on what is usual and what may constitute a threat, such as a charging mastodon or an electrical burning smell, depending on your situation. With normal, nonthreatening stimuli, whatever those may be in your environs, we habituate to them so that we can pay attention to other tasks and ideas. This has been crucial to our survival because if you were constantly aware of every sensory input, you would go mad. We use **heuristics**—mental shortcuts—to make decisions swiftly so we do not freak out when the house cat comes by, but we react swiftly to a saber-toothed tiger outside the cave.

We synopsise our cultural ideas and ideals to reduce the workload of thinking and making decisions. The heuristic models that seem to work best become **conventional wisdom**, which social psychology has shown to be correct maybe half the time, but which provides a sense of organization and control in our world. Mental shortcuts underlie our skill sets and moral systems that assist our survival, along with our prejudices and stereotypes, and all of these definitely vary across cultures. We develop bodies of knowledge and corresponding ways of thinking using our marvelous brains. Some aspects are effective and some are not, but we generally seem to have benefited from having the systems of thought available. We learn and grow as individuals, cultures, and the species, and we pass on what we think is the best of what we learn from those who come before. Those are our intellectual *taonga*, the treasures of knowing and thinking.

We developed the ability to use images and symbols to represent our concepts of the ways we do things, the ways we live among others, and the ways we teach others. These elements of culture are transmitted with amazing fidelity and efficiency using our words and visual tools, now including printed or digitized words. These collections of words and symbols and the meanings we attach to them represent our ways of knowing and understanding the world. They are the treasures of culture we pass from generation to generation. In *te reo Māori* (Māori language), the things, ideas, and processes collectively are called *taonga tuku iho*. *Taonga* is treasure, a marvelous thing someone makes, a process that allows us to live better, or a way of thinking and perceiving reality that helps us flourish. *Taonga tuku iho* describes an indigenous epistemology—a way of knowing and of transmitting and maintaining culture across time and generations.

Humanity today benefits from hundreds of generations of treasures lovingly passed on and improved, developed in our minds, disseminated by communication processes, and shaping how we live, think, believe, and interact each day. Culture



has been both the vehicle and the product of human culture. As a vehicle, it allows us to grow and live within a cohesive group and to pass that particular culture's way of being on to our children. In terms of product, what we make, whether image or song, contains evidence of what and how we think as a unique group in a particular time and place.

### Why We Will Use Arts as a Theme Throughout the Text

At Victoria University of Wellington, New Zealand, there is a *marae*, which is the sacred meeting and ceremonial compound of the Māori culture. That particular *marae* is named *Te Tumu Herenga Waka*, which is the term for the mooring posts of the great ocean-sailing *waka*, the canoes of ancient times (Taonui, 2012). The name was chosen because Māori from many different *iwi*, or tribes, attend VUW, and the *marae* was built as a connecting point for all of them, even if their *iwi* were at war in the past. In learning, we seek to anchor our knowledge so it becomes a part of us, and our knowledge, in turn, anchors us in our world. It is my sincere hope that this book will be useful to people of many cultures. As such, we need common ground, a common mooring point where we can have our meeting of minds. All cultures have artistic expression, through stories and images, songs and dances. Arts are, literally and figuratively, a common ground shared by all cultures.

Earlier, we discussed that the practical parameters of culture are our relationships and interactions with others, methods of learning and teaching, our bodies of knowledge, and our systems of morality and motivation. The making and the sharing of arts are both common to all cultures as processes and unique to the culture of origin in their forms. Arts provide a safe platform to view the differences between cultures because although we have very different rules about behavior, what we can do or say and how we can and cannot connect with others, these differences are expressed directly but safely in our poetry, songs, dramas, music, and visual arts. When Homer retold the *Iliad*, his recounting of the Trojan War also conveyed the Greek understanding of life in a world symbolically ruled by capricious gods who personify the unpredictable motivations and fates of mortal humans. The foibles of the gods and the mortal heroes exemplify moral and behavioral codes that were the highest and best ways the Greeks knew to systematize civil society, and the epic sagas conveyed this rationale across generations as surely as the great *waka* bore the Polynesians across the Pacific.

Every culture has a body of treasured works concealing its history, worldview, and belief system. The *Mahābhārata* encapsulates the collected wisdom of ancient India within the epic telling of the Kurukshetra War. By Bach's time, Protestantism was the norm in Germany, holding that humans could be redeemed on their own merit. His musical genius reflected a quest to elevate the spirit through the beauty of music into divine realms. Johannes Brahms's *A German Requiem*, from more than a century after Bach, was a work to aid the living in bereavement from a perspective reflecting the growing popularity of Humanistic values. Our folk stories, myths, and legends convey mundane and divine lessons about living day to day. Our cultural products, the songs, stories, and sculptures provide our most direct evidence of specific ways of thinking and

being and their similarities and differences across time and cultures. Arts do not fully explain why our minds work as they do, but they tell us what a culture holds dear at a given point in history. For our text, they provide a common mooring point and a wealth of examples as we explore the domains of the mind across cultures.

## REALITY CHECK

*What can arts show us that is of value to psychology?*

*Why are heuristics important in our lives?*

### REFLECTING ON YOUR READING

- Has this chapter changed how you think about culture?
- As you go through your day, can you see any of the ways of being and interacting we share with our primate ancestors? What are they?
- Listen to a piece of music from another culture. What can you tell about that culture from the music?

### CHAPTER 1 SUMMARY

#### 1.1 The Journey of Culture

Humans have spread around the entire globe, diversifying and learning as we went. People are unquestionably social, living in a state of obligatory interdependence that we share with our social convoy. Psychology seeks to understand laws governing the mind, and the addition of culture to that study adds elements of other social sciences to understand how people and cultures shape each other. Customs can illustrate way of thinking underlying cultures if we seek to understand why they exist.

#### 1.2 What Is Culture?

Culture seems easy to define, but pinning down a definition is difficult. We see culture most clearly

when faced with difference. A general definition of culture cannot really be created independent of culture. Social sciences view culture as patterns of beliefs and behaviors that distinguish one group from another, but there is no universally accepted definition and no encompassing explanation for cultural differences and effects.

Our lives include social relations and ways of interacting. We have bodies of knowledge for how to live that we learn in particular ways. We share these general parameters but differ in the contents, and we are largely unaware of the differences. Culture provides the context for creation of our unique lives. Culture is described as nongenetic components of being that are shared by groups of people,

including the totality of their ways of life, transmitted across generations. We will also consider processes of shorter-term subcultures.

### 1.3 A Very Brief Prehistory of Human Culture

Genetic evidence suggests all modern humans descend from a group living at Blombos Caves in South Africa 70,000 years ago. We then spread across the globe, diversifying as we went.

Life in general has become more complex in a process theorized to have begun with the formation of the universe, and human culture is becoming more complex at an increasing rate. Humans have developed thought, including epistemology, or ways of knowing what we know. We have categorized the creatures of Earth and decided that we are unique and most advanced, despite having come into existence relatively recently. Our level of technology has increased in predictable ways, only reaching its current complexity in the past few centuries.

Humans do seem unique among living creatures, but we share common evolutionary origins with others, and these commonalities provide information about what we have become. Many creatures engage in social activity, including communication. Creatures vary more in their cognitive capacities. Some animals use rudimentary numbers and make simple tools. Homology predicts that ways of thinking we have in common may be due to shared brain structures, and this can be observed by studying evolutionary developments.

### 1.4 Structural Components of Human Thought

Two major theories relate to the differences between humans and other animals, the social brain hypothesis and theory of mind.

The size of an animal's brain relative to body size correlates with cultural complexity and, among primates, with group size. Social cooperation rather than ability to create tools probably enabled our

success as a species. We can make social alliances beyond simple kinship groups, which has resulted in greater flexibility in adapting to different conditions. New fMRI studies show correspondence between areas of brain activity and social abilities. Despite this new evidence, the social brain hypothesis depends mostly on post-hoc examination of historic evidence.

Theory of mind (ToM) is a way of thinking we begin to develop in childhood. We learn that other people have different ideas from us, and we develop theories to understand how they think. Components of ToM are shared by other animals in ways that parallel the evolutionary processes leading to modern humans. The components are inferring goals and intentions; joint attention; pretend play; mentalism; understanding and acting based on others' mental states; desire belief and knowledge; and metarepresentation.

Children perceive intention as early as 5 months, a skill shared by primate relatives. The other components come into play as the child develops, leading to the ability to make metarepresentations, which are ideas about what others think.

Increasing differences began to arise about 6 mya when we split from chimpanzees and bonobos, beginning with the ability to walk upright, then the ability to make spears and more complex stone tools. *Homo erectus* began to use fire and *Homo heidelbergensis* disposed of their dead in ritual ways. Neanderthals showed signs of abstract thought and created art.

### 1.5 Human Groups

Groups are some number of people being or doing something in common. Morphologically modern humans seem to be most comfortable at the *Dunbar's number* group size of about 150 individuals, though we do join in larger groups for certain purposes. Core group configurations include *dyad*, *task group*, *band*, and *macroband*, allowing close interaction, collaboration on tasks, sharing of resources

and protection, and larger gatherings for exchange of information and mates. These are reflected in Bronfenbrenner's ecological systems model.

## 1.6 Communication and Innovation

Humans are different from other animals in the complexity of our communication, though we share neural structures with dogs and apes among others. We have found increasingly effective ways to communicate and to enhance the range of thoughts we convey. Our topics and how we represent ideas evolved over time in ways identifiably specific to eras and regions. Over many millennia, musical ability emerged in parallel to verbal ability. Our rate of innovation increased over time, accelerating rapidly after the advent of agriculture.

## 1.7 Elements of Culture: Putting the Pieces Together

We share commonalities across cultures in the ways we socialize, learn, and think. These are studied in social, developmental, and cognitive psychology. Cultural psychologies study how culture has led to our different ways of thinking and acting. We have accumulated vast differences in language and ways of thinking. We have ongoing intercultural conflicts, but we also share artistic and creative processes by which we share and transmit our greatest cultural legacies.

The psychological study of culture balances investigating similarities and differences. A number of parameters have emerged in this study, describing

what is important for understanding humans across cultures. Levels of analysis must be considered, because what is true for one ethnic group may not be shared across a nation and vice versa. Extrinsic factors of ecology and environment, as well as intra-cultural historical contexts, can inform us about what led to current cultural situations and can inform us about present day psychological states. As sciences, psychologies of culture seek measurable and predictable dimensions of stability and variation.

Arts are not usually discussed as a part of cultural psychology, though they contain the most complete picture of the beliefs, thoughts, and symbols of any culture. More than knowing simply what the components of culture are, understanding requires that we know *why* they are important. What we do and make is shaped by what we have learned from childhood, which in turn shapes what our children learn and do.

Humans have developed symbols as shorthand for concepts, especially those that are central to our cultures. We develop heuristics—easily accessible rules for decisions—so that we can make swift decisions, including generalizations considered conventional wisdom. *Taonga tuku iho* describes concepts of an indigenous epistemological system from Māori culture that includes valuation of knowledge and acknowledges intergenerational transmission of that knowledge. Arts provide a well-developed record of concepts and symbols found in all cultures. In this text, they provide an anchoring point and collection of examples as we explore culture and the mind.

## GLOSSARY

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**Conventional wisdom:** A generally accepted viewpoint that a condition or series of events will happen in a particular way and/or lead to a particular outcome, whether or not this is factual.

**Cultures:** Constellations of thought and behavior characteristic of a particular group of people that are transmitted nongenetically and survive for an

extended period of time, and by which meanings and identities are created and shared.

**Deme:** In ancient Greece, a local affiliative political division; in biology, a breeding group within a species.

**Epistemology:** The study of the origins and nature of knowledge.

**Extrinsic factors:** In this text, relevant issues outside of the domain of culture, or of a particular culture, that affect current situations in a culture.

**Group:** A set of two or more people who are being or doing something shared in time or locale.

**Heuristic:** A strategy for evaluating evidence quickly and with low effort used to reach decisions and/or conclusions based on minimal information.

**Historical contexts:** The constellation of events leading to current awareness and cognition in a culture.

**Homology:** Similarity in form or function to a different type of origin due to shared heritage from a common ancestor.

**Infer goals and intentions:** To see the direction of another's behavior and the outcome toward which he or she is moving.

**Joint attention:** A ToM function in which eye gaze direction and finger pointing provide information to an observer about the focus of attention.

**Levels of analysis:** Definition of exactly what population is being studied.

**Macrodeme:** A superordinate set of related tribal or social groups, related by language and custom and usually exchanging youths to mate.

**Metarepresentation:** The ability to formulate mental cognitions about the mental cognitions of others.

**Moore's Law:** An axiom originated by George E. Moore that the number of transistors in a computer

(later, integrated circuits) would double every two years due to technological advances, thereby doubling computing power.

**Numerism:** The ability to understand and calculate numerical quanta.

**Obligatory interdependence:** The unavoidable state in which humans exist that is the product of thousands of years of cumulative and continuing social cooperation.

**Operational definition:** A clear specification of the phenomenon to be studied and the parameters by which it can be measured.

**Pretend play:** Fantasy activities in which objects, actions, or ideas are imagined to represent something else, such as a littermate substituting for prey in simulated attack or a box representing a boat to a child.

**Social brain hypothesis:** A theory that we developed larger brains with particular features, such as the prefrontal cortex, to facilitate cooperation in large, complex groups.

**Social convoy:** A network of close relationships, narrowly defined as those maintained for life, but more broadly construed as people we encounter on a daily basis for an extended period.

**Sociality:** The tendency to associate in groups.

**Theory of mind:** A normal development that begins during infancy when a child comprehends that he or she has thoughts and that other people have thoughts that are different from the child's.

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