



The rigin of Cultures

How Individual Choices Make Cultures Change

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Sensory Fields and Cultural Outputs

Normal human thinking processes generate an unceasing stream of unexpected, new ideas and new ways of doing things. We construct new ways to think and act by a process we call “inference.” Thus, new ways to think about ourselves and the world we live in constitute guesses about the best way to go about living. Because no two people follow the same path through life, the material of our experience varies individually. Each of us cannot help but be different—indeed, unique—from others. You speak English, like 1.5 billion other people in today’s world. But you speak English with a distinctive dialect that you acquired by virtue of your association with other language speakers, perhaps in Boston, or Singapore, or London. Because the operation of your mind produces new things all the time, incremental change occurs constantly, despite your lack of awareness. Thus, you speak this dialect in unique ways, which linguists call your idiolect. Moreover, it changes over your life time. Significant changes become codified as named things retrospectively.

Different Experiences Produce Different Cultures

The sensory fields from which our minds acquire information vary with when we arrive in the world, where our birth takes place, and the people with whom we interact, in which ways, and at what age. People exposed to different sensory fields necessarily evolve different ways of thinking about the world and acting in it. Because people everywhere respond to the world of experience in equivalent ways, people with equivalent forms of sensory experience form equivalent prototypes and discover the same things, despite never having been in contact. Shared prior experience thus may lead many people to arrive at the same conclusion independently.

For example, ongoing research with Danielle Wozniak in the Women's Sexuality Over the Life Course project has revealed that some women who learn that they have chlamydia or herpes, which people assign to the same category as sexually transmitted diseases (STDs) of reproductive organs, experience embarrassment, self-loathing, and guilt, and characteristically receive blame, discomfort, and embarrassment from others who learn of their disease. Other women who learn that they have those conditions, however, experience irritation rather than embarrassment and feel no guilt.

We do not find differences like these with diseases like cancer, heart disease, pneumonia, or flu. People who learn that they have heart disease or cancer, which belong to a category of major causes of death with genetic and life-style components, usually experience fear, feel little or no guilt for having gotten the disease, and receive much sympathy from others. People who learn that they have flu or pneumonia, which belong to a category of infectious agent-induced minor causes of death, usually experience far more irritation than fear, feel no guilt for having gotten the disease, and receive a small amount of sympathy from others. The features that differentiate STDs from diseases like these stem from variation in what women take as fundamental truths about relationships, adults, privacy, and sex. Consequently, these differences appear in the collectively agreed on and intersubjectively shared "shoulds" that we call cultural norms and that women use to reason about behavior and events that intersect these institutions. The following analysis thus focuses solely on cultural variation among women.

Women value relationships, for example, which is to say that they experience them as good things. They take for granted that life is a good thing, too, that threats to life and either emotional or physical hurts are bad things, and that feelings of joy, happiness, calm, and safety are good things. Humans are not perfect, so the individuals involved in a relationship do both good things and bad things to each other. But because hurts are bad things, involved individuals, who can be either male or female, should treat each other in ways that promote good feelings like happiness and safety. Things that count as showing respect and otherwise taking care of the other's material and emotional welfare evoke good feelings. Involved individuals thus should show each other

respect and otherwise take care of each other. Women judge a partner whose patterned behavior consists primarily of things that count as showing respect and taking care of them as good, and as someone in whom they can safely place their trust. Women evaluate physicians whose patterned behavior consists primarily of things that count as showing respect and taking care of them as good doctors who provide good medical care and in whom they can safely place their trust.

Women also value adults. All communities define adults by reference to some age criterion. But chronological age takes second place to a more fundamental criterion. Adults are people who exhibit responsible, mature behavior. Things that count as such behavior include taking care of oneself and treating others with respect and care for their emotional and material welfare. Thus, adults should take care of themselves. They should also treat others with respect and care for the other's emotional and material welfare. Chronologically young people may act like adults, and are so judged when their behavior closely matches the norms for adult behavior. Chronologically old people may act like children and are so judged when their behavior badly matches the norms for adult behavior. One thing that counts as treating others with respect and care for others' emotional and material welfare is placing trust in them. A relationship with another adult thus implies the mutual expectation of trust. Indeed, engaging in such a relationship counts as a distinguishing feature of adulthood.

Women also value privacy. The label privacy applies to a domain of things that, if exposed to the view of others, may threaten things that a person values. Things that count as private include many kinds of sexual activities and an individual's genitals. Thus, one should take great care when exposing certain kinds of sexual activities or one's genitals, for to do so would cause embarrassment or worse. Because women generally value children very highly, damage to one's ability to reproduce usually counts as among the worst possible consequences.

Women also value sex, and unmarried women in their 20s and unmarried women older than 40 engage in patterns of sex that differ only superficially. Young women often practice "hook-ups"—casual, one-night relationships in which partners exchange oral sex. They also engage in intercourse with men selected because they might add to women's sexual experience and prowess, or can help women rid

themselves of the liability of virginity, not because they might make a good long-term partner. Older women feel less compulsion for experimentation and tend to select partners for compatibility. But both sets of women, if unmarried, characteristically practice serial monogamy and, married or not, engage in unprotected sex.

These women take the view that, as responsible adults, they should take care of themselves, and “being careful” appeared as a theme throughout our interviews. Things that counted as being careful included not sleeping around, not having one-night stands, and not having multiple sex partners at once. For young women, hook-ups, which some women practice by the hundreds over any given year, do not count as sleeping around or having one-night stands because they involve oral sex and, thus, do not count as (real) sexual activity. For women of all ages, using condoms also counts as being careful. But a responsible, adult partner should not give a girl friend or wife an STD. Moreover, women should place trust in their partnerships with someone who exhibits adult behavior. One way to take care of oneself is to ask a partner about his sexual history. Partners who do not talk about a history of many sexual partners exhibit responsible, adult behavior. One way to show your trust of a responsible, adult partner is not to ask for an STD test. An older woman might use the “three date rule” and avoid intercourse until after the third date, whereas a younger woman might have intercourse on the first date with a male with whom she had developed a “deep connection,” perhaps an agreement for monogamy. But women of all ages consistently apply norms for relationships and adults to sexual behavior and, consequently, expose themselves to STDs. One woman stated, “I use condoms until, well, until I don’t.” Only one woman reported that she asks her partners to be tested for STDs. Nonetheless, these women act in ways that count as “being careful” and thus act like responsible adults.

Women who do not protect themselves from STDs by taking these steps fail to act like a responsible adult. Hence, only irresponsible women who have lots of anonymous sex—“not taking care of yourself and having sex with lots and lots of dirty people,” as one woman put it—get sexual diseases. Some women extend this conclusion, that women who get STDs have only themselves to blame, to calling “promiscuity” a female health issue.

Learning that one has an STD thus contradicts fundamental truths about relationships, adults, and sex, and poses significant privacy threats. The existence of an STD reveals to a woman that she deceived herself about her partner's ability to act like a responsible adult by focusing on only a small subset of behaviors. Thus, she, too, failed to act as a responsible adult. If it is possible to cure the disease, she must expose herself at least minimally to members of the health care system. The disease may threaten her reproductive potential. It also threatens her relationship potential by reducing her mate choices. She will lose some mate choices through reputation damage that follows from public knowledge of her STD. She will lose others when desirable mates break off future relationships after learning about her STD history. A woman who learns that she has chlamydia or herpes thus experiences embarrassment, self-loathing, and guilt, and receives blame, discomfort, and embarrassment from others like themselves who learn of their disease. Such women rarely confide STD histories to close friends.

The women who experience irritation rather than embarrassment when they learn they have an STD, and feel no guilt, operate with a different set of fundamental truths—that men are rutting beasts who cannot act as responsible adults and, thus, should never be trusted. A responsible adult takes care of herself. Granting a man respect, and acting in ways that place a man's emotional and material welfare on a par to one's own emotional and material welfare, thus counts as irresponsible adult behavior. Men treat STDs as a sign of their virility, so STD histories pose little threat to one's reproductive potential by lost mate choice—women with STDs are commonplace. The mere exposure of sexual activities or genitals poses no threat, so do not count as private phenomena. Because one can count on men to act irresponsibly, as a responsible adult, one cannot take responsibility for the consequences of male behavior. Consequently, if a partner infects you with an STD, you have nothing to feel embarrassment or guilt about. Like flu or cancer, STDs just happen.

Individuals derive their assumptions and the norms that follow from those assumptions from their accumulated experiences. The fundamental truths collectively agreed on and intersubjectively shared among the first set of women, for example, imply much experience

with affectionate and supportive cultural environments. The fundamental truths collectively agreed on and intersubjectively shared among the second set of women imply much experience with violent and traumatic cultural environments. Catherine Fuentes's 2008 article "Pathways from Interpersonal Violence to Sexually Transmitted Infections" shows, indeed, that the qualitatively different cultural models used by these two groups of women correspond with qualitative differences in childhood histories of violence or affection and in subsequent STD histories, ability to negotiate condom use, drug/alcohol abuse, number of lifetime sexual partners, and adolescent childbearing.

Sensory Field Isolation and Information Flow

Because the material of our experience consists largely of information about the behavior of the people with whom we come into contact, cultural variation corresponds closely to the frequency and intensity of social interaction. Ordinarily, for example, we learn much from our parents and less from our grandparents or uncles and aunts. Significant changes in historical events coupled with significant interaction with peers, however, combines to create generational differences, as between grandparents who grew up with the depression and fought in World War II; parents who grew up in the prosperous years of the second half of the 20th century, the Civil Rights movement, the Vietnam War, and the sexual revolution; and children (now, parents too) who grew up with the collapse of the Soviet Union, video games, computers, and the Internet.

The frequency and intensity of social interaction varies with distance in time, space, or behavior. If you have ever spent much time alone, you probably learned that your isolation produced changes that left you with a sense of disconnectedness with your friends and family once you started to interact with them again. That's because each of us changes all the time, even if only a little. Because new cultural things come into being all the time to create differences in the sensory fields of the people we live with, cultural differences grow over time in the presence of barriers of distance, time, or behavior. Within the last 1,500 years, the breakup of the western Roman Empire produced relative isolation among Vulgar Latin-speaking populations

and the subsequent evolution out of Latin of languages that we know today as Italian, Spanish, Catalan, Portuguese, French, and Romanian (and, still not widely known, Calabrese and Occitan). The Proto-German spoken perhaps 2,500 years ago evolved into Proto-Norse, South Germanic, and Anglo-Frisian. Proto-Norse evolved into Danish, Swedish, Norwegian, and Icelandic. South Germanic evolved into German, Dutch, and English. Anglo-Frisian evolved into Frisian, Scots, and English, the latter two having evolved out of Old English. The Middle English spoken around the time of William the Conqueror evolved into modern English by around 300 years ago. Modern English has since evolved many dialects—English, American, Australian, Malaysian, and West Indian, among others, each of which exhibits its own evolved dialects, like the differences between cockney and the Queen’s English in the British Isles, and the English spoken in Boston and New Orleans.

By contrast, participation in a common sensory field lets you keep pace with the changes in others, even if you don’t interact for long periods of time. The mutual unintelligibility by which we identify language differences, for example, did not evolve among neighboring people who maintained close ties. Swedes in the south of Sweden speak more easily to Danes across the border than they can to Swedes in the north. In West Africa, people who live in Cape Palmas and people who live 100 kilometers up the coast in Sasstown speak in ways that the other cannot understand. The people in Cape Palmas speak Grebo; the people in Sasstown speak Kru. People who live inland from Sasstown speak Kru. People who live inland from Cape Palmas speak Grebo. But Grebo spoken inland is mutually intelligible with Kru spoken inland. Inland, Grebo and Kru constitute different names for the same language. People who live in neighboring villages from Portugal to Italy through Spain, France, and Belgium speak mutually intelligible languages. As distance grows, the sensory fields that contribute to new cultural things become increasingly different, and language intelligibility shrinks. We call incremental language differences like these dialect chains.

Dialect chains, however, are just a special case of incremental cultural differences called cultural clines, which distinguish world culture regions. Thus, internal similarities and external differences distinguish

Africa (south of the Sahara) from Europe, East Asia, Southeast Asia, South Asia, the Middle East (Southwest Asia and North Africa), North America, Mesoamerica, South America, Oceania, Australia, and the Arctic. Each great culture region exhibits clinal change from one to the other. And each exhibits subregional culture areas. In Africa, for example, the peoples in the East African cattle region show marked differences from the people of the Kalahari. Within North America, the natives of the Arctic, Pacific Northwest Coast, and the Great Plains show great internal similarities and sharp external differences. In each case, however, adjacent subregions change from one to another only incrementally.

We Take Our Cultures with Us

Americans overseas create little American communities that re-create, to the extent possible, the world from which they came. These include swimming pools and swimming lessons, tennis courts and tennis lessons, and American schools built so that, inside, you can't tell if you're in Moline, Illinois, or Redding, California, or Accra, Ghana. The cultural patterns that our Foreign Service officers bring with them come predominantly from white, upper- to upper-middle class, Anglo-Saxon, Protestant America. The Chinatowns in all large cities and many smaller ones show that American WASPS aren't the only ones who do this. Indeed, many U.S. cities are famous for immigrant communities—Miami's Little Havana, Boston's Irish Southie, and Los Angeles's Little Tokyo, Little Saigon, Koreatown, and Mexican East LA, to name only a few. Large numbers of German and Polish immigrants settled in the American Midwest; Minnesota attracted large numbers of Swedes and Norwegians, where they still dominate. Hamtramck, Michigan, grew as a center for Polish immigration, and Dearborn, Michigan, became a center for Arab immigration. Solvang, California, was settled by Danes; Fresno, California, attracted large numbers of Armenians; Praha (Prague), Texas, was settled by Czechs; Tarpon Springs, Florida, attracted a large Greek population; and the small town of Willimantic, Connecticut, now contains so many Puerto Ricans that locals sometimes call it Willirico.

Large concentrations of people allow the maintenance of the most diverse set of cultural communities. In New York City, for example,

you can find more than 150 daily and weekly newspapers in languages from Russian to Bengali to Chinese to Hebrew. New York contains not only Spanish Harlem (which now contains a growing population from Mexico, in addition to Puerto Ricans) and Little Italy (which contains few Italians at this point), but dozens of cultural enclaves from the Hassidic community in Brooklyn's Borough Park and Crown Heights to the Irish-dominated Rockaway Park and Roxbury, the Russian-dominated Brighton Beach in Queens, and the West Indian-dominated Jamaica, all in Queens. In the Bronx, you'll find a concentration of Albanians in Belmont, Vietnamese and Cambodians in University Heights, and Jamaicans, Ecuadoreans, and Ghanaians in Tremont. London, England, contains an equivalent array of cultural communities, albeit biased to their former territories in the West Indies, Africa, Pakistan, India, and Bangladesh. France, likewise, contains Algerians, Moroccans, Libyan Arabs, and Senegalese. Germany contains enclaves of Turks, Greeks, Italians, Poles, Russians, Serbo-Croatians, and Spaniards.

Every country in the world contains communities that originated elsewhere. Although individuals have moved from one camp or village to another throughout the history of our species, most enclave communities date to the period just prior to, or subsequent to the Industrial Revolution. Within the last 200 years, Russians settled and left lasting influences in Harbin, China. The Portuguese did likewise in Macau, as did the British in Hong Kong and the English and American international settlement in Shanghai. Within the same time period, Lebanese created merchant communities throughout West Africa, as did Indians (who had been brought there initially as laborers) in East Africa, and as did Chinese merchants throughout Southeast Asia. Some enclave communities date to much earlier periods. The Jewish Diaspora created *shtetls* in Eastern Europe and Russia, ghettos in Western European cities, and around 800 years ago, religious communities in China, some of which, like that in Kaifeng, remain viable to this day.

The cultures of contemporary nation-states characteristically synthesize the cultures brought to them by immigrants. In his 1989 book *Albion's Seed*, for example, David Fischer suggests that whatever we might count as a distinctively American culture today came

into being through the interaction among immigrants who brought to the New World four regional cultures from their homes in Britain. Puritans from East Anglia settled New England between 1629 and 1640; Cavaliers from south and west England settled Virginia and the adjacent Chesapeake Bay tidewater areas between 1642 and 1675; Quakers from England's North Midlands settled the Delaware Valley between 1675 and 1715; and migrants with origins in the regions north and south of the Scots-English border, some of whom first migrated to Northern Ireland, settled the American frontiers between 1717 and 1775. Fischer shows that each culture (like regional cultures everywhere) differed systematically in cultural assumptions and norms regarding speech, building styles, sex, marriage, children and family conventions, dress, religion, and foodways. Their root differences revolved about answers to the question: "Who best knows what choices are right for you?" Puritans answered "God, and those he has blessed with secular authority." Cavaliers answered "Me, but the more choices I have the more responsibility I have to treat others well and maintain my personal integrity." Quakers answered "Me, with guidance from the light within me; and because this is true for everyone, I extend to you and all people all the freedoms and liberties I want for myself." Migrants from the Scots-English borderlands answered "Me, and woe to anyone who says otherwise."

Puritans came to the New World, mostly from East Anglia's relatively privileged middle-class urban population, to build communities that mirrored Calvinist assumptions about the nature of God and humans. These hold that God alone rules all things, whereas humans, owing to Adam's fall from grace, are born depraved and unworthy, suitable only for eternal damnation. God's loving mercy, however, may provide for a person's salvation, as seen in that person's submission to God's rule and living according to God's moral law. But God may choose not to grant salvation. Human effort to submit to God's rule and live according to His moral law cannot produce salvation. Salvation comes only from submission to God's rule, which originates as a gift from God.

Communities modeled on this covenantal relationship between a single all-knowing and all-powerful authority and dependents expect submission to community norms, as did God in the covenants He

offered His creation. Community norm violations receive severe punishments that mirrored their importance, just as God punished Adam for his original sin by death—in Puritan Boston, this included the hanging of a number of Quakers who insisted on their own freedom of belief and speech. And community leaders took measures to protect some of their members from the consequences of chance events that threatened their well-being, just as God in His mercy grants some of Adam’s descendants everlasting life. Puritans thus gave America a strain of collectivism and authoritarianism that vests rights in communities, not individuals, and attributes knowledge of what is best for community members to community leaders.

Cavaliers came from the upper layers of British society and, beginning with the English Civil War, brought with them indentured servants and an occasional slave to settle in Virginia and the adjacent Chesapeake Bay tidewater country. Part of this migration stream went first to Barbados, from which many emigrated subsequently into the Carolinas. In the New World, Cavaliers created communities organized hierarchically around themselves, the Church of England, and plantation agriculture. The latter re-created in the New World agricultural manors with traditions of servility and slavery, which originated in southern England 1,000 or so years earlier. “Can you trust that person?” constitutes a terribly important question in sharply stratified communities in which maintenance of the elite requires cooperation among its members. Moreover, the importance of the answer grows with a person’s position in the local social hierarchy. In New World Cavalier communities, the most important answer to this question emerged as a construct of personal honor. An honorable man or woman is trustworthy by definition. Honorable people show it by treating others well, regardless of social position, by remaining faithful to their word and convictions and by consistently displaying personal honesty.

Cavaliers brought to the New World the idea that rights come to people by virtue of their birth and life circumstances. Freeborn people enjoy rights and freedoms merely because they are freeborn. But a person may lose their rights or increase them. The English Civil War taught Cavaliers that the best way to maintain their position meant avoiding dependency on government or other people. Cooperation

among elite peers based on a code of personal honor most effectively maintained one's independence. Cavaliers thus gave America a strain of individualism and independence jealous of its privileges and hostile to local authority, founded on the cultural norm of personal integrity and kindness to others.

Quakers, mostly from modest social origins, both urban and rural, came mainly from the highlands of England's North Midlands, which had been settled primarily by Vikings prior to the Norman invasion. Founders of what came to be known as the Society of Friends broke away from Puritan groups when they substituted for Calvinist assumptions the claim that all individuals contain a "light within" which provides the means for the personal, direct experience of God. Quaker assumptions evolved from a line of logic that, we may imagine, ran something like this: Given that God may intervene in peoples' lives, it must be true that God may intervene in anyone's life. If that is true, everyone must have the capacity for direct, personal experience of God. If this is true, everyone must have something of God inside them. If this is true, everyone must have insights given by God. And if this is true, we should learn best by consulting with each other. Some people ("weighty friends") may have greater insight than others, but if we rule out some points of view we miss part of God's message. Therefore, we should listen to all, weigh our words and ideas, and work out agreements by consensus.

If we reason from the cultural assumption that all individuals contain a "light within," discrimination and inequalities imposed on any basis other than how well one treats another thus constitute wrongs. By implication, rights belong to individuals and everyone holds the same set—to believe and say and practice your beliefs, so long as they do not intrude on the rights of others; to say in who exerts authority over you; and to freely participate in the exercise of community authority. These translate into protections against unwarranted taxation, property confiscation, speedy trials by a randomly selected jury of peers, with equal treatment for both prosecution and defense. Quakers thus gave America a strain of individualism founded on the cultural norm that the golden rule applies to everyone.

Migrants from the Scots-English border, both gentry and tenants, both small businessmen and highly skilled craftsmen and unskilled

laborers and servants, learned from surviving in a region subject to continuous and horrific levels of violence for 700 years that men, too often, are evil and that governments cannot be trusted to protect you but they can be trusted to destroy you if you give them a chance. After arrival in the New World, they moved quickly beyond the coastal settlements into the frontier regions of the early colonial settlements, into the Appalachian mountain range from Maine to Georgia, and beyond, primarily into what became the American South and Southwest. Borderland migrants, proud of the skills that made them survivors, formed communities characterized by dispersed rather than nucleated settlements and leadership patterns modeled after families, where loyalties and trust follow from personal knowledge of specific people. Borderlands migrants thus gave America a strain of distrust of institutionalized authorities, reliance on trust based on personal knowledge of specific people, individualism highly sensitive to threats to personal well-being, and fast, aggressive responses to those threats with the most effective weapons available.

We Learn From Our Neighbors

The most recent female ancestor from whom all contemporary people descend, called Mitochondrial Eve because the mitochondrial DNA in all of us came from her, lived somewhere in northeast Africa about 100–200,000 years ago. The human population of that time may have been so small that everyone from whom all of us later descended spoke a single language and shared a single culture. Population growth and subsequent migration took their descendants to all parts of our planet. Some became farmers, others pastoralists, and a few remained foragers. Some of the farmers created civilizations and one of these initiated the industrial free-market revolution. Their subsequent histories produced relative isolation and divergent cultural evolution. Subsequent contact between these communities of long-separated relatives, primarily for trade and war, opened a flow of information about the new cultural things created out of the new sensory fields that the history of each had yielded. Loan words constitute one common outcome. English now contains words that originated in Arabic (tariff, magazine, jar, cotton, algebra, admiral), Chinese (tycoon, tea, silk, yen), various American Indian languages (caribou, caucus, chipmunk,

moose, coyote, chocolate, cigar, potato, tomato), Indonesian languages (mango, sarong, compound, bamboo, cooties, batik), and African languages (OK, coffee, banana, jazz, gumbo, okra, yam), to cite only a few examples. The English word Coca-Cola now exists as a loan word in every language in the world. Ironically, and appropriately, the word consists of loan words from languages in South America (coca, probably from Quechua) and West Africa (cola).

Neighbors can teach us new and better ways to do things. They also help us differentiate between options that have consequences so shrouded in ambiguity that we can't tell if one choice really differs from another. Today, examples include what soft drink or laundry detergent or make of running shoe to buy or what politician to vote for. We may as well flip a coin. In lieu of coin-flipping, we pay attention to what other people say and do, perhaps especially those we admire. Celebrities hawk products of all kinds, from Nike shoes to car insurance to candidates for president. Celebrities, even if they consist only of an imaginary gecko, count as a kind of authority. An authority can help you avoid errors because he or she knows things that you do not, can use that knowledge to make decisions without your consent or input, and can ask you to do things. When an authority asks you to do something, you should do it, or at least seriously consider doing it.

A lifetime of experience in making errors leads us also to pay attention to the behavior of people we don't know and may have never met. In 2006, for example, Matthew Salganik, Peter Dodds, and Duncan Watts showed that among more than 14,000 teens exposed through an Internet experiment to a list of previously unknown songs by previously unknown bands, knowledge about previous downloads increased the popularity of the most popular songs and decreased the popularity of the least popular songs. Individuals make choices independent of their own evaluation based on what they see other people do, something we call an informational cascade. We engage in supportive behavior with others that produces an outcome that none of the participants wanted, something we call the Abilene Paradox after the example Jerry Harvey provided to illustrate his idea in 1974.

When ambiguity shrouds the consequences of alternatives, we act in ways that do not violate cultural norms because the one that remains counts as a threat. We call these things names: crowd

behavior, groupthink, and peer pressure. If we find ourselves surrounded by a crowd of people running in the opposite direction from how we're heading, we turn around and run with them. In a Catholic or Anglican church service, we stand when others stand, kneel when others kneel, and bow our heads when others bow their heads. In a Methodist or Baptist service, we stand when others stand to sing a hymn, even if we don't sing along with them. Individual decisions may support existing cultural behavior patterns. They may also produce their own shared behavior, as in the experiment reported by Salganik, Dodds, and Watts, or as David Dalby noted in 1971, as in the processes through which the expression /o ke/, which was brought to America by Mande slaves born on the coast of West Africa, made its way into our language as OK, a word pronounced the same and with the same meaning as the original Mande word.

Kroeber and Kluckhohn made the point half a century ago that the neighbors from whom we learn need not be our contemporaries.

[A modern scholar who learns about mediaeval North African culture from Ibn Khaldun] . . . does not interact with the person, Ibn Khaldun, nor the latter's Muslim contemporaries. The modern scholar really encounters, through a book, a different way of life which (as filtered through his personality and culture) he then reacts to and tends to diffuse into his own culture. (1952:186)

Moreover, cultures may span many generations and many levels of human affairs. For example, Kroeber and Kluckhohn write: "Mohammedan culture, as we know it today, cuts across communities, societies, and nations. Roman society ceased to exist as such more than a millennium ago, but Roman culture was a vital force throughout the Middle Ages and, in certain aspects, is still 'alive' today" (1952:186). Even while it clearly draws from a broader Islamic culture, for example, the current global jihad differs significantly. Its differences are drawn, ironically, from broader non-Islamic and primarily Western cultures of warfare, finance, communication, and organization. Cultures consist of a set of things that hang together irrespective of where they originated. Jihadic culture, like all cultures, is made unique by the manner in which it organizes a configuration of shared cultural things that stands at the intersection of many broader cultures.

Ralph Linton made this point vividly in 1936. He tells us how an ordinary American citizen, who dresses in clothes modeled after garments created by nomads of the Central Asian steppes, begins his day. For breakfast he eats a version of cereal and milk, a practice that originated in the Southwest Asia and, perhaps, an egg from a species of bird domesticated in Southeast Asia together with strips of flesh from an animal domesticated in East Asia that had been salted and smoked by a process developed in Northern Europe. Linton ends with this (1936:327):

When our friend has finished eating he settles back to smoke, an American Indian habit, consuming a plant domesticated in Brazil in either a pipe, derived from the Indians of Virginia, or a cigarette, derived from Mexico. If he is hearty enough he may even attempt a cigar, transmitted to use from the Antilles by way of Spain. While smoking he reads the news of the day, imprinted in characters invented by the ancient Semites upon a material invented in China by a process invented in Germany. As he absorbs the accounts of foreign troubles he will, if he is a good conservative citizen, thank a Hebrew deity in an Indo-European language that he is 100 per cent American.

The gunpowder in the bomb Ayat used to kill Rachel originated in China, the technology was developed in Western Europe, the martyrdom she sought goes back to early Syrian Christian thought with roots in ancient Jewish concepts (*Kiddush Hashem*), she was financed through Western institutions that developed in the Middle Ages, and the coordination of her behavior with fellow jihadists was facilitated with information technologies that originated in Bell Labs in the United States. The success of Ayat's attack thus rests, ironically, on products of the Western culture that the contemporary jihad-by-the-sword seeks to destroy.

Information Volume Regulates How Much We Learn

Variation in historical and regional context provides one set of choices to some people and a different set of choices to others and produces different historically and regionally specific cultures. Both Connecticut Yankees and Puerto Rican migrants to Connecticut, for

example, bring to parenthood assumptions constructed from their experiences with family members, teachers, and friends, which may vary by birth cohort, gender, and specific social origins. Global movement of people, particularly toward the end of the 20th century, placed individuals who embodied different cultures face-to-face. But mass and instantaneous global communication has produced cultural merging. A successful rap group comes out of Japan; you can watch the movie *Slumdog Millionaire* in an African bush village; and Russians play jazz, compose country music, and turn capitalist. Because each of us learns from the sensory fields to which we have been exposed, when you first meet someone you can't easily tell by that person's age, gender, dress, or skin color which cultures you share and which you don't. Detecting cultural differences comes only from listening for the right cues—speech or other behavioral patterns that make no sense or which don't form part of your personal cultural repertoire. We can't tell from shared historical and regional origins alone, for example, whether Connecticut Yankee natives and Puerto Rican migrants use distinctive cultural models of what constitutes and how to organize a working relationship with their child's teacher.

Research I carried out a few years ago revealed two cultural models of parent-teacher cooperation. One set of parents and teachers took the view that parents had one set of responsibilities and teachers had another and that each contributed equally to a child's success in school. Another set of parents and teachers took the view that both parents and teachers shared the same set of responsibilities and should help each other help a child. These differences bear on the effectiveness of parent-teacher relationships in very important ways. A parent (teacher) who tries to create an effective working relationship based on the separate-but-equal model with a teacher (parent) who employs the mutual decision-makers model sets themselves up for the classic symptoms of clashing cultures—misunderstandings, disappointments, frustration—and an ineffective if not hostile parent-teacher relationship. A mother who employed the mutual decision-makers but who continually ran into teachers who employed the separate-but-equals model explained:

I feel *super* strongly about this. I've given talks about it [to parent-teacher groups]! I really hated the ones [teachers] when you went

in to talk about your child and all they talked about was what *they* were doing in the classroom! I hated them to the degree that they eventually hated me. I just *wouldn't* give up.

But this cultural difference did not evolve from the historical and regional differences embodied in the labels for these parents and teachers. About half the separate-but-equal parents were Connecticut Yankee natives and half were Puerto Rican migrants. Likewise, about half the mutual decision-making parents were Connecticut Yankee natives and half were Puerto Rican migrants.

While writing the paper that reported these findings, I heard a National Public Radio report about type-casting and stereotypes in the entertainment industry. A Japanese American explained how he walked out of a casting session for a Japanese mobster after having been told repeatedly that his accent was wrong for the part, until he selected one that represented a stereotypical Cantonese Chinese. A Latina script-writer explained her successful writing career by reference to her non-Hispanic professional name. An African American actor and director explained how bias enters into the choices made by most of the people who control the industry because they have little or no historical experience with real people who have brown skin tones and minority ethnic labels. Increasingly, we find standing face-to-face with us people we might *think* embody different cultures, but who don't.

Populations that live primarily in ethnic enclaves today, however, undergo cultural change of the kind that produced the divergent cultural evolution characteristic of the descendants of Mitochondrial Eve. Unexpected cultural innovations arise and spread within that community and make it increasingly different from its cultural surroundings. The sources of enclave isolation may originate with the host population, the immigrant population, or some combination of the two. Growing differences make inevitable cultural conflict of the kind seen in the eruptions of jihad over the last few years in Madrid, London, Paris, Berlin, and elsewhere in Europe. Beyond this, and knowing that conflict resolution requires the merging of cultural differences, we know little about this increasingly prevalent and important issue.

Unimpeded interaction among different cultures, by contrast, facilitates the sharing of information and the sorting out of things that

work from things that work better. Characteristically, open interaction yields cultural synthesis. Elements from all four cultures brought to America by the earliest British colonists find expression, for example, in the U.S. Declaration of Independence as well as in the subsequent U.S. Constitution and Bill of Rights. Here's the core of the Declaration of Independence:

We hold these truths to be self-evident, that all men are created equal, that they are endowed by their Creator with certain unalienable Rights, that among these are Life, Liberty and the pursuit of Happiness. — That to secure these rights, Governments are instituted among Men, deriving their just powers from the consent of the governed, — That whenever any Form of Government becomes destructive of these ends, it is the Right of the People to alter or to abolish it, and to institute new Government, laying its foundation on such principles and organizing its powers in such form, as to them shall seem most likely to effect their Safety and Happiness. Prudence, indeed, will dictate that Governments long established should not be changed for light and transient causes; and accordingly all experience hath shewn that mankind are more disposed to suffer, while evils are sufferable than to right themselves by abolishing the forms to which they are accustomed. But when a long train of abuses and usurpations, pursuing invariably the same Object evinces a design to reduce them under absolute Despotism, it is their right, it is their duty, to throw off such Government, and to provide new Guards for their future security.

Puritan culture provided the covenantal relationship between an all-powerful and all-knowing authority and dependents. Cavalier, Quaker, and borderlands cultures stood the Puritan version on its head to assign the status of all-powerful and all-knowing to people and dependency to government. Quaker culture provided the foundation for the central claim of the equality of all people and their shared unalienable rights. Cavalier and borderlands cultures contributed language that expresses jealousy over these rights, and distrust of government. Borderlands culture provided the norm of self-defense, and Cavalier culture transformed this norm into a duty, a matter of personal integrity (honor), to destroy tyrannical forms of government. By the mid-20th century, these assumptions had become integrated with

indigenous cultural traditions in the Americas, Africa, the Middle East, and East Asia and had coalesced into human rights claims that warranted colonial independence. In 1948, this appeared formally as the United Nations Declaration of Universal Human Rights.

Two Rules for Cultural Design

Although the volume of information regulates how much we learn, the usefulness of the information regulates *what* we eventually learn. When we look closely at the cultures of foragers, pastoralists, and nonindustrialized farmers, it is as if each embodies a resource management design that provides for collective action to address specific sustainability problems. These elegantly simple designs reflect just two rules—do nothing you don't have to, but all you can to improve your material well-being.

The Shoshone of North America's Great Basin, the San who live in the Kalahari, and the Mbuti Pygmies of the Congo rainforest share a strategic problem, for example: an inability to control the location and timing of a relatively small food supply stream. If too many people live at the same location and consume the available food too quickly, or if they don't move to the available food when and where it's available, they won't survive for long. Foragers thus must live in small, mobile camps. It doesn't pay to build elaborate houses or to lay claims to land. Cultural rules of local group exogamy require people to establish visiting patterns between camps, force people to move from the camp in which they grew up, and thus create a safety network of family ties over a broad landscape. The absence of cultural rules that restrict camp membership facilitates movement when needed, and a bilateral mode of identifying family members maximizes the number of camps in which one might move in an emergency.

Excellence—in tracking, arrow point production, knowledge of the location of root vegetables—brought prestige and admiration, but nearly everyone did something well and no one performed most things well. Men hunted, but in most foraging communities women gathered most of the food eaten. Sharing constituted a critically important norm because no one could count on being able to support themselves solely by themselves for any length of time. Men hunt because family continuity depends on the women who produce the

children. Placing women at risk would be foolhardy. Eskimo (called Inuit in Canada) women experience inequalities with men that their peers in Australia or the Kalahari do not. The foraging cultures of the American Pacific Northwest exhibit significant intracommunity ranking and inequalities. These exceptions to the prevailing patterns of foraging populations conform to the exceptional circumstances of the peoples who live in the American Arctic and Pacific Northwest. The rarity of significant plant food in the Arctic meant that Eskimo depended for their survival on men's hunting skills. The reliable runs of salmon into the rivers of the Pacific Northwest meant that it paid to create property rights.

Likewise, Fulani, Maasai, and Kazak pastoralists share a similar strategic problem that differs from the one faced by foragers, just slightly—an inability to control the location and timing of a relatively small food supply stream for their animals. Pastoralist cultures emerged on the periphery of centers of food domestication in regions too dry to support rain-fed agriculture but with sufficient rain to support grasslands on which cattle, goats, sheep, camels, and equivalent animals could graze. To sustain a family herding animals requires one to have many, many animals and in these semi-arid regions each animal needs access to a large amount of grazing land. If too many animals live at the same location and consume the available food too quickly or if they don't move to the available food when and where it's available, they won't survive for long. Pastoralists, like foragers, thus must live in small, mobile camps. Unlike most foragers, however, pastoralists created property rights and organized themselves so they could assemble huge numbers of people for concerted action.

Cattle produce more cattle, and sheep produce more sheep. By producing more of themselves, these sources of food thus constitute a stream of income. Unlike wild animals and plants, domesticated animals become wealth. Foragers generally do not lay claim to land or animals or plants because the uncertainties of a food supply stream made claiming just one part of the landscape foolish. Pastoralists lay claim to their animals because they constitute a relatively certain food supply stream. Because this form of wealth moves itself, however, it is highly susceptible to theft. Men defend the herds because family size and strength depends on the women who produce the children.

Pastoralists, like foragers, shield their women from foolish risks. Men's defense of herds gives them an investment of time and energy that warrants their ownership claim. Men want their brothers and sons to help with defense because they know them better than they know other men. The sets of brothers and their sons that defend herds maintained by a pattern of patrilocal residence at marriage are extended by the passage of animals from fathers to sons, which gives emphasis to a line of patrilineal descent. The common interest of sets of brothers and their sons warrants the emergence of a family corporation in which all members hold joint title to a common set of property.

Within this context, the brother of a deceased man may serve as the living embodiment of his ghost, marry and bear children in the brother's name, and thus perpetuate an important line of descent. Similarly, a barren woman may assume the position of a man, marry a woman who bears children in her name, and thus add to the manpower of her patrilineal family. Within farming communities, ghost marriages offer a solution to the similar problem of family continuity. In many areas of West Africa, daughters assumed the social position and activities of sons to solve the same problem. Women who lived in West African states might grow quite wealthy as merchants. Some assumed the social position and activities of a husband to maintain their wealth within their patrilineal family line. Ghost marriages and female husbands thus make perfect sense.

Farmers, too, share a common strategic problem that sets them apart from pastoralists—access to sufficient amounts of land and labor of the right kind at the right time. Moreover, farmers had no choice but to live in permanent settlements. Permanent settlement created four new problems that mobile groups never had to face. First, to farm meant that you had to clear brush and forest so you could plant crops. This destroyed wild game habitat. Habitat destruction together with the presence of a settled population rapidly depleted game reserves. As their supply of protein diminished farming populations began to encounter nutritional disease, particularly protein-calorie malnutrition. Second, permanent settlements created a problem of waste disposal and, thus, diarrheal disease. Third, permanent settlements meant congestion, which created conditions suitable for the spread of respiratory disease. Finally, landscape changes near permanent

settlements often created breeding grounds for mosquitoes, which served as carriers of diseases like malaria and yellow fever. Population growth intensified these health problems and death rates rose. Birth rates rose, too, if for no other reason than the increased time men and women spent with each other compared with the separations imposed when men left camp to hunt or to lead herds to fresh pasture. Very high birth and death rates created populations with even more children and even fewer very old people than in foraging or pastoral communities. Death was a very common occurrence, and elders gained respect not only as repositories of critically important knowledge but also for their rarity.

For the earliest farmers, land was free, as it has been among contemporary farming populations where population density has remained very low. Population growth, however, created conflicts over land within walking distance of a settlement. A common response was to move. At some point, however, it makes more sense to fight for land than to move. Farmers lay claim to land like pastoralists lay claim to animals because it makes possible a relatively certain food supply stream. Men defend the land because family size and strength depends on the women who produce the children. Placing women at risk would be foolhardy. Men's defense of land gives them an investment of time and energy that warrants their ownership claim. Men want their brothers and sons to help with defense because they know them better than they know other men. The sets of brothers and their sons who defend land maintained by a pattern of patrilocal residence at marriage is extended by the passage of land from fathers to sons, which gives emphasis to a line of patrilineal descent. The common interest of sets of brothers and their sons warrants the emergence of a family corporation in which all members hold joint title to a common set of property.

In some regions of expanding populations, such as in a broad band just south of the Congo River basin that stretches from the west to the east coast of Africa, fighting took men away from their families. The women who had to take over the farm work wanted to work with their sisters and daughters because they knew them better than they knew other women. The sets of sisters and their daughters that worked the land encouraged a pattern of matrilineal residence at

marriage. Common residence was extended by the passage of land from mothers to daughters, which gives emphasis to a line of matrilineal descent. The common interest of sets of sisters and their daughters warrants the emergence of a family corporation in which all members hold joint title to a common set of property. Most commonly, when the men returned home they assumed responsibility for land management, which often led to a shift in which men brought their wives to live near their mother's brother.

Wherever you look, you'll see cultural patterns consistent with the rules "Do nothing you don't have to but all you can to improve your material well-being." These include patterns as prosaic as paths worn into lawns when sidewalk placement fails to correspond with minimum distances between travel points, and patterns that signal fundamental global cultural changes like the phenomenal growth of Web commerce, which rose from \$31 billion in retail sales in 2001 to \$175 billion in 2007 and, according to Forrester.com, may reach \$335 billion by 2012. Similarly, Ayat's murder-suicide illustrates a cultural pattern of warfighting used commonly by weak opponents to inflict on powerful enemies maximal damage for minimum cost. Ayat and Rachel went to the supermarket because these institutions integrate a large number of economic functions at a single location and thus provide maximal shopping opportunities for minimum cost. The same principles explain the relative size and location of all kinds of central places, including the choice of the World Trade Center and the Pentagon as targets of the 9/11 attacks.

Cultural Dynamics

The ways in which our brains store and process information in sensory fields means that individually unique life trajectories yield individually unique people whose choices direct the course of their lives. New things only come from the minds of particular people at particular times. Critically important sensory input comes to us in the form of other people's behavior, however. Over the course of our lives and through various means—listening to news reports, reading, traveling, talking with friends or family members, taking courses or attending workshops, or explicit and rigorous research—we come to think differently about the components of our world. We think of new ways

to organize activities and new ways to think about domains of understanding. By interacting with other people—acting and responding to what we experience of other people’s words and acts—we actively participate in an unceasing process that leads to changes in assumptions, the norms that come from these assumptions, and how we act, and produces the shared understandings and patterns of behavior visible in the patterned, repetitive behavior that makes culture seem like a thing.

Our cognitive and behavioral response to that input reflects our prior life history and the personal configuration of assumptions, norms, and behavior that our minds construct from that history of experience. This produces evolutionary change in cultures. We build on our past and shape the future with it. This implies that what exists now could not exist without what went before and what exists now sets limits to what can come next.

Our behavioral responses elicit reciprocal cognitive, emotional, and behavioral responses from others. We call this social interaction. Other people influence us and constrain what we think and do by means of their behavior—by what they do or don’t do, by the circumstances of their life, as well as by their immediate responses to our responses; we influence others likewise. By virtue of the sensory input it generates, social interaction and living our lives in the presence of others thus reciprocally produces evolution in the cultures that we use to live our lives.

The *recurrent, patterned* behavior that characterizes a culture exhibits the properties of a thing because recurrent behavior constitutes an environment in which we carry out daily activities and which elicits cognitive, emotional, and behavioral responses. In eliciting these responses, recurrent, patterned behavior thus elicits evolution in the configuration of culture our mind uses to produce personal cognitive, emotional, and behavioral responses to input from the sensory fields to which we become exposed later. Certain forms of recurrent, patterned behavior (e.g., those that produce childhood traumatic stress) may induce specific, lifelong changes in how our minds work and in the behavioral trajectory of our lives.

But all this says is that new things come into being all the time, unexpectedly, and contribute to an ongoing evolution of culture that

takes shape as people interact with each other. That identifies the source of new things, why we can't predict them, why each builds on predecessors, and the immediate social context of cultural evolution. But it doesn't explain why we select specific new things and not others in ways that, in retrospect, make perfect sense. It doesn't explain why we select the specific new things that make our lives better. *Recurrent, patterned* behavior means that people with whom we interact make patterned choices from among the alternatives they see. *Patterned choices* come from the application of specific criteria to the choice alternatives provided by sensory input. Our minds rationalize *recurrent, patterned* responses in the form of domain-specific theories, models, or schemas, which consist of assumptions about the nature, components, and both the instrumental and moral organization of the world of sensory experience. In the next chapter, I argue that we manage to transform the chaos, error, and ambiguities of the present into retrospective rationality and continually do things better because evolved choice mechanisms direct us to learn some things but not others.

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