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## How Communication Shapes Culture

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Culture is the precipitate of cognition and communication in a human population. (Dan Sperber, 1990, p. 42)

**B**usinessmen typically wear ties. Most Europeans know the story of Hansel and Gretel. Psychologists rarely treat a research finding as meaningful unless  $p < .05$ . What do these three things have in common? Not much, except that they are cultural norms. They are culturally normative not because they are especially “right” but simply because they have been successfully communicated. Within the corporate world, the tie-wearing prescription has been communicated more successfully than alternative sartorial styles. “Hansel and Gretel” has been more successfully communicated from parent to child than, say, the story of “Hefty Hans.” And, despite many strenuous attempts to the contrary, the  $p < .05$  decision rule has been communicated to young scientists more successfully than many other useful rules for judging the quality of an empirical result.

While a case can be made that some elements of shared culture may be evoked simply as a consequence of individual-level cognitive mechanisms that are themselves widely shared within any human population (Atran & Norenzayan, 2004; Tooby & Cosmides, 1992), many other fundamental components of culture emerge as a consequence of – and are sustained by – interpersonal communication. The act of communication does not necessarily create the raw material from which these shared cultural norms are drawn. But, just as the hands of a potter mold rather than make the clay, repeated acts of communication shape those raw materials into the ultimate form that a culture takes. The purpose of this chapter is to elaborate on the various ways in which the psychology of interpersonal communication creates and shapes human culture.

## COMMUNICATION IS NECESSARY FOR CULTURE

First things first. Before discussing the causal mechanisms through which interpersonal communication creates culture, it is worth noting that communication (and the linguistic means through which it is typically achieved) is integral to the very concept of culture itself. Although strict definitions of culture vary widely from scholar to scholar, many cultural scholars explicitly define culture as something shared among people who communicate with each other through some common language, and which is further communicated to immigrants, children, and other new members of a society (e.g., Triandis, 1994). The specific means of transmission may be varied, encompassing everything from mere mimicry to complicated constructions of symbolic language, but the basic defining principle remains: Some form of information transmission – communication – is assumed whenever we talk about culture.

This assumption is evident in the fact that human cultures are intimately connected to language; and language, of course, is one of the primary means through which people communicate. Language is often the defining feature of a specific cultural population (e.g., francophone Canadians; Sinhalese Sri Lankans). A common language is not merely a badge of social identity, it is also often a signal of shared history, shared customs, and shared beliefs and values.

Languages also embody many of the cultural values held by the people who speak those languages. For example, although all human languages have pronoun words (e.g., *I, you*), these pronouns are more likely to be dropped – implied rather than actually spoken – in the languages spoken by people in collectivistic cultures (Kashima and Kashima, 1998). This relationship makes sense because, unlike collectivists, personal pronouns explicitly emphasize individual persons. While these and related empirical findings (see Nisbett, Peng, Choi, & Norenzayan, 2001, pp. 304–305) cannot disentangle the causal relations between language and cultural world views, they do illustrate the deep connection that language and culture share.

Further revealing that deep connection is evidence revealing how the use of a particular spoken language compels individuals to think and act as particular kinds of cultural beings. Language influences cognition in a variety of domains, including color perception (Kay & Kimpton, 1984), memory processes (Marian & Neisser, 2000), and social cognition (Bond & Cheung, 1984; Hardin & Banaji, 1993). Consider, for example, a study by Hoffman, Lau, and Johnson (1986). Participants fluent in both Chinese and English were presented with a personality description written in one of those two languages. The descriptions contained some personality terms that had English labels for which there is no Chinese equivalent, and some personality terms that had Chinese labels for which there is no English equivalent. Results revealed that bilinguals who read English descriptions showed more schematic thinking for the personality types with English-specific labels, while bilinguals who read Chinese descriptions showed more schematic thinking for personality types with Chinese-specific labels. These and other lines of empirical evidence reveal that language – and the use of language for interpersonal communication – influences cognition, and in doing so helps

to transform culture from a population-level abstraction into an individual-level psychological reality (Lau, Chiu, & Lee, 2001; Lau, Lee, & Chiu, 2004).

Our focus here is not on language so much as it is on the job that that language is designed to accomplish: interpersonal communication. This brief discussion of the intimate connection between culture and language simply offers one means of underscoring a fundamental point of departure: A complete understanding of culture is impossible without considering the social psychology of interpersonal communication.

## COMMUNICATION IS SUFFICIENT FOR CULTURE

Some scholars have argued that, not only is communication a necessary feature of culture, but communication by itself is sufficient to account for the emergence of culture (Latané, 1996). To understand why, it is first necessary to be more explicit about just what culture is.

In the preceding section, we noted that many scholars consider “culture” to be something that is transmitted from person to person and from generation to generation. But just what is that something? The following working definition seems to capture the essential spirit of what most people understand a culture to be: a set of beliefs, customs, symbols, or characteristics that is shared by one population of people and is different from the set of beliefs, customs, symbols, or characteristics shared by other distinct populations (Conway, Clements, & Tweed, 2006; Schaller, Conway, & Crandall, 2004). Lurking within this statement are three key defining elements of culture: those things that signify a culture – beliefs, customs, etc. – are common within some specifiable population (e.g., the majority of Sinhalese Sri Lankans ascribe to the tenets of Buddhism); such things are relatively less common within other populations (Sri Lankan Tamils do not ascribe to Buddhism; nor do most other human populations); and there are multiple overlapping things of this sort that distinguish between populations (Sinhalese Sri Lankans are distinguished not only by their Buddhism, but also by their distinct language, cuisine, political beliefs, and other norms). These three defining elements of culture correspond to phenomena that, within the context of Dynamic Social Impact Theory (DSIT; Bourgeois, 2002; Harton & Bourgeois, 2004; Latané, 1996), have been called *consolidation*, *clustering*, and *correlation*. We now elaborate on Dynamic Social Impact Theory, and show how each of these defining elements of culture emerges as a natural and inevitable consequence of interpersonal communication.

### *Dynamic Social Impact Theory*

Dynamic Social Impact Theory is rooted in decades of research on persuasion and social influence that operates through the medium of interpersonal communication. This research shows that the amount of influence any one person experiences from others is a joint function of the strength, immediacy, and number of communications from other persons. To illustrate, imagine that you hold a certain

belief (e.g., “meat is good for you”), and you have been presented with the alternative belief (“meat is bad for you”). How likely are you to change your belief? In part, the answer depends on the influential *strength* of those sources communicating the alternative opinion. Some people have high status, are especially articulate, or in other ways are more compelling than other people, and so are more successful at exerting influence over others (Petty & Wegener, 1998). In addition, the answer depends also on the *immediacy* of those sources. We are more influenced by people with whom we are in close contact with than by those who are far away (Latané, Liu, Nowak, Bonevento, & Zheng, 1995). Finally, the answer depends on the *number* of sources communicating this alternative opinion. The more people who attempt to communicate something, the more influential it is (Cialdini, 1993). There is a huge body of evidence documenting the role of these three kinds of variables on communication-based social influence (Latané, 1981).

Most of that research focuses on brief, unidirectional opportunities for social influence. In real life, of course, the opportunity for bidirectional influence exists (just as you might influence me, I might influence you). So too, there exists often the opportunity for repeated influential communications over long stretches of time. When we consider the eventual consequences of this dynamic context of interpersonal communication, then the psychology of communication – and the social influence that occurs as a result of communication – has immediate implications for the creation of culture. Specifically, it has been shown that as long as there is diversity in the strength of influence sources across some social landscape, and that people are more likely to communicate with (and therefore mutually influence) their immediate neighbors than to communicate with others who are further away in social space, and there are repeated opportunities for communication over time, then there will be a trend toward the emergence of the three structural elements that define culture – consolidation, clustering, and correlation. Thus, simply as a consequence of communication operating at the local level, there is an implication that occurs at a more global level: The emergence of culture.

These implications are not always intuitively apparent. Although a complete discussion of this research is beyond the scope of this chapter, in the following paragraphs we attempt to briefly sketch out the reasons why consolidation, clustering, and correlation emerge as a natural consequence of ordinary communication.

**Consolidation** One of the most obvious aspects of culture is that it involves some kind of *shared* belief or custom. Indeed, the degree to which a belief is considered a part of a culture is often directly proportional to the percentage of people in the population who believe it. Plenty of evidence, from a wide range of sources, suggests that communication alone is sufficient to produce this state of popular consolidation. In Sherif’s (1936) classic research employing the autokinetic effect, the mere act of sharing opinions publicly led to increasing convergence of those opinions over time. Subtle acts of interpersonal communication also appear to underlie a variety of other empirical examples in which beliefs and behavior become increasingly consensual over time (e.g., Conway, 2004; Crandall, 1988).

The process of consolidation (at a population level of analysis) has been directly tied to the impact that strength, immediacy, and number of communicators have on social influence (operating at the interpersonal level of analysis). In one research paradigm, individuals communicated to each other opinions on various topics, and did so via a carefully-controlled email-like computer interface (e.g., Latané & Bourgeois, 1996; Latané & L'Herrou, 1996). These computer networks were set up to ensure diversity in immediacy, while diversity and strength and number occurred naturally. Although the entire group contained 24 members in all, each individual could only communicate directly with the small subset (e.g., 4) of group members within their local "neighborhood." However, because there existed some points of overlap between local neighborhoods, there remained the opportunity for opinions to spread, over time, throughout the entire group. And, in fact, results of these studies show that initial diversities of opinion are reduced over time, as group opinions tend to converge toward higher levels of consensus. This principle, in which increasing consensus (consolidation) occurs as a natural consequence of repeated communications over time, may help to explain the emergence of a wide variety of cultural norms, including informal popular beliefs (e.g., beliefs about paranormal phenomena; Markovsky & Thye, 2001) as well as institutionally formalized codes of conduct (e.g., laws; Schafer & Bankowski, 2003).

**Clustering** Studies on dynamic social impact reveal that acts of communication compel opinions to converge toward higher levels of consensus within a broad population, but rarely do these opinions actually attain complete global consensus. This is important, because the very definition of culture depends importantly on *local* rather than *global* consensus. Indeed, we think of cultures primarily in contrasts (e.g., contrasts between East Asian and Western European modes of thought – the prototypic topic in contemporary cultural psychology). Thus, the emergence of culture must be defined not merely by the emergence of consensus, but rather by the emergence of clusters of attributes that show consensus at a regional scale but are discriminable when one steps back to examine the broader population from a global perspective.

So, how does this happen? Given the tendency toward consolidation described above, how is it that distinct cultural clusters come into being? And, if they do exist, how do they resist the pressure to be dissolved into a larger mono-cultural group? Some answers are provided by considering the effects of those basic principles of communication-based social influence. As long as some people are more compelling communicators than others (diversity in strength), and as long as people cannot communicate equally well with all others in the broader population (diversity in immediacy), there will emerge culture-like clusters of attributes within that broader population, and these clusters will persist as relatively stable cultural entities. This clustering phenomenon may be more intuitively appealing if we imagine ourselves as members of this dynamic system: If I am more influenced by those people I am most in contact with, then my beliefs will resemble those of my immediate neighbors more than those of more distant individuals. And these local beliefs will conform most closely to the beliefs of whoever is the

most influential communicator in my local region, whereas the beliefs of distant individuals will conform more closely to the beliefs of whoever is the most influential communicator in that more distant region.

Whether this phenomenon is intuitively appealing or not, it happens. Computer simulations – in which the long-term consequences of local communication processes can be tested with rigorous precision – reveal that whenever there exists inter-individual diversity in influence strength, and there exists the pragmatic constraint in which individuals are most likely to communicate with their immediate geographical neighbors, then any randomly-distributed set of opinions will, over time, show a tendency to dynamically self-organize into stable clusters of opinion. The emergence of clustering is no mere artifact of abstract computer logic either. Lots of studies on real people show exactly the same thing on topics as diverse as political attitudes, mock jury deliberations, and aggression (for a review, see Harton & Bourgeois, 2004).

The upshot is this: Within a natural social ecology, acts of communication – repeated over time and space – conspire to create local clusters of people who are similar to each other, but who are distinct from clusters of people within the broader population.

**Correlation** Of course, cultures are not defined by just a single characteristic. Scottish culture is defined not merely by an accent, or by the ingestion of haggis, or by any other singular attribute. Scottish culture is defined by the fact that there is some larger collection of attributes, all of which tend to be associated with Scots more than with other peoples. In order for cultures to emerge, there must not only emerge discriminable differences along single attributes, but there must emerge discriminable differences along correlated bundles of attributes.

Some attributes may be culturally correlated because of some logical connection between them. People who believe strongly in individual rights often apply that belief to guns as well as speed limits, and so it is unsurprising that US states with loose gun restriction laws also have higher speed limits (Conway, Clements, & Tweed, 2006). But many culturally-correlated attributes fail to fit together in any sort of meaningful way. For example, regions of the United States that are defined by higher rates of condom purchase are also defined by lower rates of dog-ownership (Weiss, 1994). While it might be tempting to treat these kinds of cultural correlations merely as inexplicable flukes, there is good reason to believe that they are not. Rather, research on dynamic social impact reveals that the tendency toward cultural-level correlation of attributes is another inevitable byproduct of interpersonal communication.

In one study that employed the standard computer-mediated communication interface described above (Latané & Bourgeois, 1996), participants tried to guess the majority opinion on multiple categorical choices that bore no logical relation to each other. They communicated their guesses to other participants in their local neighborhood. This process was repeated across multiple communication opportunities. Before discussion, none of their responses showed any correlation with each other. After discussion, many were correlated (i.e., the same cluster of people who generally believed X, also generally believed Y), and generally quite

strongly. Other studies using different methodologies (e.g., Harton et al., 1998) show the same tendency: Over time, and across repeated opportunity for interpersonal communication, previously uncorrelated beliefs and opinions become increasingly correlated. In other words, if you start with a situation in which condom-use and dog-ownership are randomly distributed and uncorrelated, you can end up with a cluster of condom-using dog-haters and a separate cluster of dog-loving condom-eschewers, simply as a consequence of communication.

The exact reasons for this emergent correlation between clustered attributes are somewhat abstract, and we will not attempt to articulate them here (for thorough discussions, see Harton & Bourgeois, 2004, and Latané, 1996). For our purposes, the important point is this: The reasons are rooted in the act of interpersonal communication and its consequences on local-level social influence.

In sum, research testing Dynamic Social Impact Theory reveals that the basic definitional elements of culture – consolidation, clustering, and correlation – are all population-level byproducts of ordinary interpersonal communication. Communication alone, it appears, may be sufficient to produce the defining contours of culture.

### COMMUNICATION SCULPTS THE SPECIFIC CONTENTS OF CULTURE

Cultures have more than general contours; they also have specific contents. While the principles of Dynamic Social Impact Theory show us that the defining structural features of any culture may emerge simply as a dynamic consequence of interpersonal communication, these principles alone cannot tell us why specific cultures are characterized by specific values, customs, and other kinds of cultural norms. But, while the answer to that question may not lie in Dynamic Social Impact Theory, an answer still lies in the realm of interpersonal communication. A preliminary version of this answer is very simple: The more likely people are to communicate about something, the more likely that it (compared to less “communicable” things) will become and remain culturally normative.

This simple point is illustrated by research on ethnic stereotypes. Psychologists typically define stereotypes at an individual level of analysis, as some sort of knowledge structure lurking within an individual’s cognitive architecture. And so they are. But the reason that stereotypes matter – the reason why they attract so much attention from scholars and educators and public policy makers – is because stereotypes are not merely idiosyncratic knowledge structures; rather, they are *shared* knowledge structures, held in common by large populations of people (Schaller & Conway, 2001). The stereotypes that matter most are cultural norms. An important question, then, is this: Why do some stereotypic traits become and remain culturally normative, while others do not? Remarkably, given the number of other variables (e.g., historical and sociological circumstances) that surely influence the waxing and waning of popular stereotypes, it appears that the sheer likelihood of talking about a trait exerts an impact on its likelihood of becoming and remaining part of a popular ethnic stereotype.

Some personality traits are more likely to be talked about than others. All else being equal, I am more likely to tell you that my Uncle Bob is intelligent or cruel than I am to tell you that he is suave or superstitious. If communication truly does shape culture, then those traits that people generally are likely to talk about – for whatever reason – will be especially likely to become and remain central to popular stereotypes of prominent ethnic groups (as long as those groups themselves are likely to be talked about). Those traits that people do not talk about as much are less likely to endure in these popular stereotypes.

Empirical evidence shows that this is so (Schaller, Conway, & Tanchuk, 2002). In one study, participants provided communicability ratings, indicating how likely they were to include specific trait-relevant information in their conversations with others. An entirely different sample of participants indicated the extent to which each of these traits was stereotypical of different ethnic groups within the local area. For prominent, talked-about groups, more highly communicable traits were also more likely to be central to the popular stereotype. A companion study employed archival evidence to test the hypothesis that more highly communicable traits were more likely to remain part of popular stereotypes across time. Results revealed that they did. For ethnic groups that were likely to be the subject of conversations (but not for less conversationally-prominent groups), there was a consistent positive correlation between a trait's communicability and its persistence in the popular stereotype throughout the 20th century. Highly communicable traits remained stereotypic, while less communicable traits dropped out of cultural currency.

This same logic can be applied to just about any kind of cultural norm – beliefs, attitudes, and customs (Pleh, 2003; Sperber, 1990). Some attitudes and opinions are beliefs more readily talked about than others. They are therefore more communicable, and so more likely to become popular and to remain so. Some skills are more easily taught than others, which means that these skills are more communicable, and – all else being equal – are also more likely to become normative within a culture. The concept of communicability need not be restricted to merely verbal communication either. Some behaviors are more easily mimicked, or, for some other reasons, more likely to be imitated. These behaviors too can be considered to be especially communicable, and so are likely to become culturally widespread and to remain that way.

So, whatever is more highly communicable is likely to be more popularly cultural. This begs the question: What makes something more or less communicable?

### *Contributors to Communicability: Stickiness, Pitchiness, and Catchiness*

Epidemiologists know that a virus is more likely to be communicated from one host to another if that virus persists for a longer time within a host. An analogous principle applies to beliefs, stories, and other kinds of cultural information. In *The Tipping Point*, Gladwell (2000, p. 92) writes:



In epidemics, the messenger matters: messengers are what make something spread. But the content of the message matters too. And the specific quality that a message needs to be successful is the quality of “stickiness.” Is the message – or the food, or the movie, or the product – memorable?

Thus, the cognitive principles of human memory play an important role in determining the communicability of potentially cultural information. Those pieces of information that are encoded more securely into long-term storage (and thus are more likely later to be activated into working memory) are more likely to be communicated repeatedly as well, and so are likely to become and remain part of the cultural landscape. They have a cultural advantage over information that is less mnemonically “sticky.”

Stickiness is certainly not the only contributor to communicability. Many pieces of information may be activated into individual working memory in the course of any interpersonal communication, but information is communicable only if it is selected for inclusion into an interpersonal message of some sort that is transmitted to others. No matter how sticky a message might be, it will not become part of the cultural landscape unless it is “pitched” into the interpersonal arena. Thus, we must consider not only stickiness, but “pitchiness” as well.

Not all transmitted messages are received. Some communications get ignored by the receiver. And even if they are attended to, they are not necessarily received with great fidelity. Facts get mangled, and beliefs are re-interpreted through the schematic filters of the listener. In short, even if information is pitched into the interpersonal arena, some of that information is dropped by the receiver; only a subset of that information is successfully caught. In order for information to be culturally successful, that information must be “catchy” too.

In essence, we have three rules of thumb to follow. Ideas, beliefs, behavioral expectations, and other kinds of cultural information are highly communicable if they (1) are likely to stick in individual memory, (2) are likely to be pitched into the public arena, and (3) are likely to be caught by those to whom they are pitched. In short, information is more communicable – and thus more likely to be cultural – to the extent that it has the qualities of stickiness, pitchiness, and catchiness.

And just what exactly contributes to stickiness, pitchiness, and catchiness? And just what exactly are the consequences for culture? In recent years, several research programs have begun to provide specific answers to those questions. In doing so, they illustrate a variety of ways in which human cognition guides human communication, and so in turn shapes culture.

## FROM COGNITION TO COMMUNICATION TO CULTURE

### *Memory Mechanisms and their Collective Consequences*

Unless some transmitted piece of information “sticks” in one’s memory, it is unlikely to be transmitted again, and so stands little chance of becoming culturally popular. People are not computers; we do not remember every input. While our memory processes are selective, they are not randomly so. Information recalled

and information forgotten are subject to predictable biases. These biases further bias the information that is communicated impersonally, and thus also bias, predictably, the emergent contents of cultural beliefs. This chain of events was demonstrated famously in Bartlett's (1932) classic research on the "serial reproduction" of short narratives. More recently, similar serial reproduction methods have been applied productively to study the effects of memory processes on the emerging contents of other kinds of culturally-shared knowledge structure.

One illustrative line of research focuses on group stereotypes, and examines the role of expectancy-based memory biases on the repeated communication of stereotype-relevant information (McIntyre, Lyons, Clark, & Kashima, 2004). Two very different expectancy-based memory biases are well-documented. First, we attend especially to information that stands out against a background, and so we show a recall advantage for information that violates expectancies (Belmore & Hubbard, 1987; Srull, Lichtenstein, & Rothbart, 1985). On the other hand, we more readily assimilate information that fits logically with existing knowledge structures, and so we show a recall advantage for information that is schema-consistent (Snyder & Uranowitz, 1978; Srull et al., 1985). Kashima and his colleagues have examined the implications of these opposing biases on the transmission and retransmission of group stereotypes. In one study, for instance, Kashima (2000) presented an initial participant with a narrative that contained information both consistent and inconsistent with traditional gender stereotypes. This participant then attempted to reproduce the story for a subsequent participant, who reproduced it for a subsequent participant, and so on. Results revealed that, early in the communication chain, stereotype-inconsistent information was especially likely to be retained. However, near the end of the communication chain, this pattern had reversed, and stereotype-consistent information was more likely to be retained. This ultimate effect leads to the homogenization, polarization, and persistence of popular stereotypes about outgroups (see also Lyons & Kashima, 2001; Thompson, Judd, & Park, 2000), and about ingroups as well (Kashima & Kostopoulos, 2004). The latter finding implies that this serially-reproduced memory bias contributes to the formation and maintenance of the shared social identity that is so central to any culture.

The two expectancy-based memory biases pull in different directions. Given this tension, one might speculate that the most memorable – most sticky – information will strike a happy medium between being entirely consistent and entirely inconsistent with pre-existing expectations. One recent body of work has recast this logic in terms of the extent to which beliefs are intuitive or counterintuitive, with the implication that "minimally counterintuitive" beliefs – those that are somewhat but not entirely inconsistent with pre-existing expectations – will be most memorable, and thus most likely to become and remain culturally popular (Norenzayan & Atran, 2004).

One particularly interesting line of research applies this reasoning to beliefs that violate our assumptions about the way the natural world works. Tales of magic, miracles, and supernatural events permeate every human culture. Indeed, these tales – in the form of folklore and religious mythologies – are artifacts that are often of central importance in defining the anthropological essence of a culture.

It is striking that these culture-defining artifacts contain narrative elements that are so obviously inconsistent with basic assumptions and expectations about how nature works: Animals talk, people turn into toads, supernatural beings are able to be in more than one place at once, and so on. Boyer (1994) argued that these “ontological violations” are no accident; their presence may confer a memorial advantage over intuitive beliefs. There is a catch, however: They cannot be too counterintuitive, because if they stray too far from our well-worn cognitive pathways, we will not be able to make enough sense of them to remember them at all. Consequently, it has been hypothesized that the most memorable beliefs are those that are minimally counterintuitive: They are mostly in line with basic ontological assumptions about the world, but also violate those assumptions to a modest degree.

A growing body of evidence supports this hypothesis. For example, after being presented with unfamiliar Native American folktales, people later show greater recall for minimally counterintuitive narrative elements than for completely intuitive elements (Barret & Nyhof, 2001). The same effect has been shown with other stimulus materials, and in subject samples from widely varying cultural populations (Boyer & Ramble, 2001). This memory advantage for minimally counterintuitive items is not a function of the sensory salience or bizarreness of those items. Minimally counterintuitive narrative elements (e.g., a carrot that speaks) are more memorable than narrative elements that evoke highly salient images (e.g., a bright, pink newspaper flying in the wind) or are simply bizarre without violating ontological assumptions (e.g., a giant gorilla in an opera house). This evidence indicates that there is something uniquely memorable about minimally counterintuitive knowledge structures; consequently, these kinds of narrative elements are especially likely to be communicated and to endure in cultural narratives.

Of course, narratives and other coherent sets of cultural knowledge are not necessarily communicated piecemeal. Folktales, for example, are generally communicated as a single entity all at once. It is important, therefore, not only to consider the counterintuitive nature of specific elements of any narrative but also to consider the counterintuitive nature of entire narratives. Imagine an entire folktale comprised of many narrative elements, each of which is minimally counterintuitive. Is this entire narrative also minimally counterintuitive? No; quite the contrary. Such a narrative, considered as a whole, might seem so overwhelmingly in violation of ontological assumptions that it would be unusually difficult to encode and recall, and would be unlikely to be communicated to others. Some recent research has focused on entire narratives (rather than specific narrative elements) as the units of analysis. The results of this research reveal that minimally counterintuitive narratives – those that contain perhaps just two or three counterintuitive elements – enjoy an advantage in recall and cultural transmission (Norenzayan, Atran, Faulkner, & Schaller, 2006). In a carefully-controlled laboratory study, for instance, results revealed less degradation in memory (over the course of a week) for minimally counterintuitive narratives compared to narratives that were either entirely intuitive or contained an abundance of counterintuitive elements. Another study used archival methods to examine the relation between the narrative contents and the enduring popularity of Western European folktales

(those collected by the brothers Grimm). Results revealed that minimally counter-intuitive folktales (compared to those that were entirely intuitive or massively counterintuitive) were judged by raters to be more memorable and also easier to transmit. Moreover, folktales that had become enduringly popular (such as “Hansel and Gretel”) were especially likely to be minimally counterintuitive, whereas those that remained culturally unsuccessful (such as “Hefty Hans”) were more likely to be either entirely intuitive or to be massively counterintuitive.

These and related lines of research (e.g., Berger & Heath, 2005; Rubin, 1995) lend conceptual substance and empirical detail to the appealing notion of “stickiness.” More generally, they reveal that basic mechanisms of human memory influence the interpersonal communication of potentially-popular information, and so indirectly influence the contents of culture.

### *Epistemic Needs, Communication Norms, and Cultural Knowledge*

As human beings, we are fundamentally driven to know things and, ideally, to know them with confidence. To some extent, this fundamental epistemic need may help explain why culture exists at all. Our epistemic needs compel us to communicate with others, not only to obtain their knowledge, but also to obtain validation for our own perceptions. These repeated acts of communication, of course, set the stage for cultures to emerge. (And once they have emerged, cultures – especially the worldviews and belief systems that help to define them – help to satisfy epistemic needs by providing a means of making collective sense of the complex barrage of ecological information.) In addition – and more germane to the topic at hand – specific epistemic needs govern the specific kinds of information that people choose to communicate about, and thus indirectly govern the kinds of information that become and remain culturally popular.

Epistemic needs lie at the basis of the conversational norms discussed by Grice (1975) and others. For instance, people generally try to communicate information that they judge to be relevant and meaningful to (and thus fulfill specific epistemic needs of) their conversational partners. These implicit norms have demonstrable influences on the kinds of knowledge that are, and are not, retained across repeated acts of communication. For example, the tendency for serial reproduction chains to produce stereotype-consistent narratives evaporates when transmitters perceive that recipients of their communication already know all about the group in question; in contrast, stereotype-consistent information is especially likely to be retained when communicators believe that recipients know little about the characteristics of the target group (McIntyre et al., 2004).

The conversational relevance of information depends, to some extent, on epistemic concerns specific to any particular interpersonal interaction. These idiosyncratic and variable epistemic concerns are unlikely to exert any systematic impact on the contents of culture, but many of the things people care to know about are not so idiosyncratic. Information bearing directly on basic human needs is especially likely to be judged as interpersonally relevant to all persons, at all times in all places.

Consider, for example, information bearing on danger. One basic human need is the need to avoid harm and to protect our kin from harm. Like most species, people are vigilant to potential threats, and are also probably especially keen to learn about potential threats from others. Consequently, threat-relevant information is likely to be highly communicable and to have a selective advantage in the cultural milieu. There is empirical evidence consistent with this thesis. Within the realm of person perception, for instance, the danger relevance of a trait is positively correlated with its communicability (Schaller, Faulkner, Park, Neuberg, & Kenrick, 2004). Schaller et al. (2004) also found that the danger relevance of a trait predicted its persistence in the cultural stereotype of African-Americans over time. Studies of mass communication also support this thesis. People judge news stories to be more subjectively important, to be more meritorious of broadcast, if they arouse more fear (Young, 2003). Indeed, editorial decisions appear to be made deliberately to amplify the extent to which news stories do arouse fear and concern (Altheide, 1997).

Research on the transmission of urban legends also supports the thesis that threat-relevant information is especially communicable. Heath, Bell, and Sternberg (2001) examined the extent to which different urban legends elicited different emotions, and assessed the influence of emotion-elicitation on the actual interpersonal transmission of these urban legends. Across several studies, Heath et al. found that urban legends are more highly communicable – and become more popular – to the extent that they arouse disgust. Disgust, of course, is a clear emotional signal indicating specific kinds of imminent threat (e.g., threats posed by poisons and communicable diseases; Curtis, Aunger, & Rabie, 2004; Rozin & Fallon, 1987).

Effective child-rearing is another universal human concern. Information about techniques or practices that are especially effective (or ineffective) in raising successful children is likely to be highly communicable. This may help to explain the cultural propagation of myths such as that pertaining to the so-called “Mozart effect” – the alleged (but actually non-existent) effect whereby children who listen to classical music become more intelligent. Bangerter and Heath (2004) report evidence documenting the extraordinary communicability of the Mozart effect and its emergence as a cultural phenomenon. Moreover, their results reveal that the Mozart effect was especially communicable within populations in which there was greater collective anxiety about the quality of early childhood education.

These lines of evidence all bear directly on the “pitchiness” of information: Beliefs, stories, and other kinds of cultural knowledge are more likely to be transmitted if they appear to fulfill others’ presumed interest in certain kinds of information. Not all transmissions are received, of course. While especially “pitchy” information may, in general, be especially catchy as well, this may not always be the case. There are many variables that influence the extent to which receivers ignore or attend to incoming information, and the extent to which they are sufficiently persuaded by that information to retransmit it to others.

One such variable is a particular kind of epistemic need: the need to know something – anything – as long as it resolves the disquieting feeling of uncertainty. When people show high levels of this need for cognitive closure, they are

especially persuadable, and especially likely to be open to whatever opinions and beliefs are presented to them (Kruglanski, Webster, & Klem, 1993; Shestowsky, Wegener, & Fabrigar, 1998). But the need for cognitive closure leads people to be especially open-minded only in the absence of prior knowledge. When people have some pre-existing opinion or knowledge, high need for closure makes people less open to persuasion (Kruglanski et al., 1993). What are the implications of these interpersonal processes for the emerging properties of culture? The answers must remain speculative at this point. One implication may be that during times of heightened uncertainty within a population (e.g., during wars, famines, and other unsettling events) there is greater opportunity for rapid cultural change, and that the specific directions of this change will be influenced most strongly by those individuals who are most personally committed to their prior beliefs. (For further speculations about the eventual impact of epistemic needs on culture and cultural norms, see Richter & Kruglanski, 2004.)

### *The Impact of Interpersonal Motives on Communication and Collective Beliefs*

Epistemic needs represent just one subset of the needs and goals that influence communication. Also important are the variety of other goals that influence the ways in which people interact with each other. Any motive that exerts an impact on interpersonal interaction is likely to be manifest in the conversations and communications that take place during those interactions. To the extent that these motives are widely shared within a population, their communicative consequences will exert a systematic influence in shaping cultural knowledge.

To illustrate, consider the implications of impression-management goals. People are sensitive to the kinds of impressions that others form about them, and are adept at manipulating interpersonal interactions in such a way as to encourage others to form positive impressions. We do this not only by trying to do the right things, but also by trying to say the right things. Consider, for instance, the common reluctance that people have to deliver bad news to others (Rosen & Tesser, 1972; Milliken, Morrison, & Hewlin, 2003). The reasons for this phenomenon appear to lie in individuals' desire for positive interactions with others. And yet, over time, there may be much broader consequences in which desirable information, relative to undesirable information, is more likely to become and remain culturally popular.

A related line of research on stereotype formation more fully demonstrates that when we selectively communicate about some things – and not others – in order to make a good impression, there are unintended consequences on collective beliefs (Schaller & Conway, 1999). Participants in dyads both read information about members of two target groups, and periodically wrote notes to each other about these groups. At the end of the session, they completed measures indicating the contents of the emerging stereotypes of the groups. Prior to these procedures, a manipulation was introduced that led different sets of participants to believe that different kinds of communication styles were associated with success and happiness throughout life. In some sessions, participants were led to believe that a

tendency to talk about positive traits in others predicted positive life outcomes. In other sessions participants were led to believe that a willingness to talk about negative traits predicted positive life outcomes. This manipulation not only led different sets of participants to differentially communicate about positive versus negative traits of the target groups – a direct effect of the desire to say things that make oneself look good – but it also had an indirect effect on the contents of the shared stereotypes that emerged within dyads. This indirect effect on shared beliefs was tied directly to the actual process of interpersonal communication; the effect did not occur to the same degree under conditions in which attempts to communicate were unconsummated. The implication is this: Any widely-shared individual-level interpersonal motive is likely to have an impact on the contents of communication, and so is also likely to have an indirect – often entirely unintended – effect on the shaping of shared beliefs.

### COERCIVE COMMUNICATION: IMPLICATIONS FOR CULTURAL PERSISTENCE AND CULTURAL CHANGE

In the preceding section, we considered a variety of subtle ways in which interpersonal communication shapes human culture. Of course, some acts of communication have more obvious implications for the production and persistence of cultural norms. People in positions of power are particularly persuasive. Power – particularly when it connotes expertise – may function as a heuristic for persuasion and attitude change (Chaiken, 1987). And, as is famously documented by research on obedience (Blass, 1991; Milgram, 1974), people in positions of power may demand conformity to their own preferences. These interpersonal acts of coercive communication can have consequences at the cultural level: Authority figures (and others endowed with high levels of social power) may manufacture and maintain specific forms of consensus simply by communicating their beliefs and expectations. This effect is evident in the phenomenon of “groupthink” (Janis, 1982). It is also evident in research supporting Dynamic Social Impact Theory, in which clusters of cultural consensus coalesce around individuals who are unusually influential (Harton & Bourgeois, 2004).

Does coercive communication always create conformity? Does it inevitably promote the persistence of (often arbitrary) cultural norms? No. In fact, sometimes, coercive communication can backfire, and inspire deviance instead. Under these conditions, coercive communications not only fail to promote the persistence of cultural norms, but they may actually play a role in cultural change.

There are at least two distinct psychological processes through which coercive communication can inspire deviance from normative expectations.

One process is that of reactance (Brehm, 1966; Fiegen & Brehm, 2004). Coercive communications may lead targets of those communications to feel that their freedom of choice is restricted, an experience that arouses negative affect for many people (perhaps especially those in individualistic cultures). These individuals often respond by seeking means to re-establish their decisional freedom. Such means may include deliberate defiance of the expectation evident in

the coercive communication, or some other kind of deviation from normative consensus.

Although little research directly ties reactance (or other emotion-based deviance motivations; Knowles & Linn, 2004) to phenomena operating at a cultural level of analysis, there are plausible implications for several of the findings we have reviewed above. For instance, we are perhaps especially likely to respond with reactance to coercive communications that challenge existing beliefs that we consider important or central to our self-concepts. This suggests that clusters of cultural consensus are least likely to form around attitudes that, in general, people consider important. Some empirical evidence on the heritability of attitudes is indirectly consistent with this speculation. More highly heritable attitudes – those with a stronger genetic basis – appear to be especially important to people (Tesser, 1993); and these highly heritable attitudes are also more resistant to the sort of cultural-level “clustering” that emerges as a result of repeated interpersonal communication (Bourgeois, 2002).

There is also a second process through which coercive communication can sometimes inspire deviance from existing cultural norms. This process is rooted in the psychology of causal attribution. The perception of some consensually-endorsed belief leads us to implicitly attribute that consensus to some positive value inherent in the belief. Consequently we are likely to endorse that same belief ourselves. We may act otherwise, however, if some circumstance leads us to make a different attribution about the underlying origins of consensus. Coercive communication may create just such a circumstance. If consensus is attributed to some external coercion (e.g., the command of a powerful authority figure), then individuals may question the validity or utility of the consensually-endorsed belief, and so are more likely to deviate from the norm.

Conway and Schaller (2005) report five studies that test exactly this hypothesis. The results reveal a clear set of conditions in which, because of the attributions it inspires, the coercive command of an authority figure backfires, and inspires deviance from the commanded compliance with a cultural norm. These studies also identify an important set of moderating variables. Among other things, the tendency for an authority’s command to inspire deviance is moderated by the perceived expertise of that authority figure, and the ability of perceivers to fully engage their cognitive resources (Conway & Schaller, 2005).

These findings suggest that the effects of coercive communication on social influence are not quite as straightforward as they might seem at first glance. In the hands of powerful individuals, coercive communication can manufacture consensus and promote the persistence of whatever cultural norms fit the whims of those people in power. But coercive communication can also backfire, and thus sow the seeds of cultural change.

## CONCLUDING REMARKS

When Sperber (1990, p. 42) wrote that “culture is the precipitate of cognition and communication in a human population,” we suspect that he was writing



both to an audience of anthropologists and to an audience of psychologists. Anthropologists often limit their inquiries to the cultural level of analysis. For this audience, Sperber's words represent an invitation to consider more deeply the individual- and interpersonal-level mechanisms that give rise to and sustain cultures over time. Psychologists, of course, are deeply concerned with exactly those mechanisms. But psychologists often limit their inquiries to just the individual and interpersonal level of analysis, without considering the consequences that cognition and communication can have at other levels of analysis. For this audience, Sperber's words represent an invitation of a different sort. It is an invitation to apply psychological findings – particularly those pertaining to social communication – to problems that exist at the cultural level. To accept that invitation is to arrive at a whole new frontier of social psychological research.

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#### REFERENCES

- Altheide, D.L. (1997). The news media, the problem frame, and the production of fear. *The Sociological Quarterly*, 38, 647–668.
- Atran, S., & Norenzayan, A. (2004). Religion's evolutionary landscape: Counterintuition, commitment, compassion, communion. *Behavioral and Brain Sciences*, 27, 713–770.
- Bangerter, A., & Heath, C. (2004). The Mozart effect: Tracking the evolution of a scientific legend. *British Journal of Social Psychology*, 43, 605–623.
- Barret, J. L., & Nyhof, M. A. (2001). Spreading nonnatural concepts: The role of intuitive conceptual structures in memory and transmission of cultural materials. *Journal of Cognition and Culture*, 1, 69–100.
- Bartlett, F. C. (1932). *Remembering: A study in experimental and social psychology*. Cambridge, UK: Cambridge University Press.
- Belmore, S. M., & Hubbard, M. L. (1987). The role of advance expectancies in person memory. *Journal of Personality and Social Psychology*, 53, 61–70.
- Berger, J. A., & Heath, C. (2005). Idea habitats: How the prevalence of environmental cues influences the success of ideas. *Cognitive Science*, 29, 195–221.
- Blass, (1991). Understanding behavior in the Milgram obedience experiment. *Journal of Personality and Social Psychology*, 60, 398–413.
- Bond, M.H., & Cheung, M.-K. (1984). Experimenter's language choice and ethnic affirmation by Chinese trilinguals in Hong Kong. *International Journal of Intercultural Relations*, 8, 347–356.
- Bourgeois, M. (2002). Heritability of attitudes constrains dynamic social impact. *Personality and Social Psychology Bulletin*, 28, 1063–1072.
- Boyer, P. (1994). *The naturalness of religious ideas*. Berkely, CA: University of California Press.

- Boyer, P., & Ramble, C. (2001). Cognitive templates for religious concepts: Cross-cultural evidence for recall of counter-intuitive representations. *Cognitive Science*, 25, 535–564.
- Brehm, J. (1966). *Psychological reactance: A theory of freedom and control*. New York: Academic Press.
- Chaiken, S. (1987). The heuristic model of persuasion. In M.P. Zanna, J. M. Olson, & C. P. Herman (Eds.), *Social influence: The Ontario Symposium* (Vol. 5, pp. 3–39). Hillsdale NJ: Lawrence Erlbaum Associates.
- Cialdini, R. B. (1993). *Influence: Science and practice* (3rd ed.). New York: Harper Collins.
- Conway, L. G., III. (2004). Social contagion of time perception. *Journal of Experimental Social Psychology*, 40, 113–120.
- Conway, L. G., III, Clements, S. M., & Tweed, R. G. (2006). Collectivism and governmentally initiated restrictions: A cross-sectional and longitudinal analysis across nations and within a nation. *Journal of Cross-Cultural Psychology*, 37, 1–23.
- Conway, L. G., III, & Schaller, M. (2005). When authority's commands backfire: Attributions about consensus and effects on deviant decision-making. *Journal of Personality and Social Psychology*, 89, 311–326.
- Crandall, C. S. (1988). Social contagion of binge eating. *Journal of Personality and Social Psychology*, 55, 588–598.
- Curtis, V., Aunger, R., & Rabie, T. (2004). Evidence that disgust evolved to protect from risk of disease. *Proceedings of the Royal Society of London B: Biology Letters*, 271, 131–133.
- Fuegen, K., & Brehm, J. W. (2004). The intensity of affect and resistance to social influence. In E. S. Knowles & J. A. Linn (Eds.), *Resistance and persuasion* (pp. 39–64). Mahwah, NJ: Mahwah Press.
- Gladwell, M. (2000). *The tipping point*. Boston: Little, Brown, and Company.
- Grice, H. P. (1975). Logic and conversation. In P. Cole & J. L. Morgan (Eds.), *Syntax and semantics: Speech acts* (Vol. 3, pp. 41–58). New York: Academic Press.
- Hardin, C., & Banaji, M. R. (1993). The influence of language on thought. *Social Cognition*, 11, 277–308.
- Harton, H. C., & Bourgeois, M. J. (2004). Cultural elements emerge from dynamic social impact. In M. Schaller & C. S. Crandall (Eds.) *The psychological foundations of culture* (pp. 41–76). Mahwah, NJ: Lawrence Erlbaum Associates.
- Harton, H. C., Green, L. R., Jackson, C., & Latané, B. (1998). Demonstrating dynamic social impact: Consolidation, clustering, correlation, and (sometimes) the correct answer. *Teaching of Psychology*, 25, 31–34.
- Heath, C., Bell, C., & Sternberg, E. (2001). Emotional selection in memes: The case of urban legends. *Journal of Personality and Social Psychology*, 81, 1028–1041.
- Hoffman, C., Lau, I., & Johnson, D. R. (1986). The linguistic relativity of person cognition: And English-Chinese comparison. *Journal of Personality and Social Psychology*, 51, 1097–1105.
- Janis, I. (1982). *Groupthink*. Boston: Houghton Mifflin.
- Kashima, Y. (2000). Maintaining cultural stereotypes in the serial reproductions of narratives. *Personality and Social Psychology Bulletin*, 26, 594–604.
- Kashima, Y., & Kashima, E. (1998). Culture and language: The case of cultural dimensions and personal pronoun use. *Journal of Cross-Cultural Psychology*, 29, 461–486.
- Kashima, Y., & Kostopoulos, J. (2004). Unintended social influence: Interpersonal communication may inadvertently help maintaining a shared culture. *Cahiers de Psychologie Cognitive*, 22, 445–461.

- Kay, P., & Kimpton, W. (1984). What is the Sapir-Whorf hypothesis? *American Anthropologist*, 86, 65–79.
- Knowles, E. S., & Linn, J. A. (2004). The importance of resistance to persuasion. In E. S. Knowles & J. A. Linn (Eds.), *Resistance and persuasion* (pp. 3–9). Mahwah, NJ: Mahwah Press.
- Kruglanski, A. W., Webster, D. M., & Klem, A. (1993). Motivated resistance and openness to persuasion in the presence of absence of prior information. *Journal of Personality and Social Psychology*, 65, 861–876.
- Latané, B. (1981). The psychology of social impact. *American Psychologist*, 36, 343–356.
- Latané, B. (1996). Dynamic social impact: The creation of culture by communication. *Journal of Communication*, 46, 13–25.
- Latané, B., & Bourgeois, M. J. (1996). Experimental evidence for dynamic social impact: The emergence of subcultures in electronic groups. *Journal of Communication*, 46, 35–47.
- Latané, B., & L'Herrou, T. (1996). Spatial clustering in the conformity game: Dynamic social influence in electronic groups. *Journal of Personality and Social Psychology*, 70, 1218–1230.
- Latané, B., Liu, J. H., Nowak, A., Bonevento, M., & Zheng, L. (1995). Distance matters: Physical space and social impact. *Personality and Social Psychology Bulletin*, 21, 795–805.
- Lau, I. Y-M., Chiu, C-y., & Lee, S-l. (2001). Communication and shared reality: Implications for the psychological foundations of culture. *Social Cognition*, 19, 350–371.
- Lau, I. Y-M., Lee, S-l., & Chiu, C-y. (2004). Language, cognition, and reality: Constructing shared meanings through communication. In M. Schaller & C. S. Crandall (Eds.) *The psychological foundations of culture* (pp. 77–100). Mahwah, NJ: Lawrence Erlbaum Associates.
- Lyons, A., & Kashima, Y. (2001). The reproduction of culture: Communication processes maintain cultural stereotypes. *Social Cognition*, 19, 372–394.
- Marian, V., & Neisser, U. (2000). Language-dependent recall of autobiographical memories. *Journal of Experimental Psychology: General*, 129, 361–368.
- Markovsky, B., & Thye, S. R. (2001). Social influence on paranormal beliefs. *Sociological Perspectives*, 44, 21–44.
- McIntyre, A., Lyons, A., Clark, A., & Kashima, Y. (2004). The microgenesis of culture: Serial reproduction as an experimental simulation of cultural dynamics. In M. Schaller & C. S. Crandall (Eds.) *The psychological foundations of culture* (pp. 227–258). Mahwah, NJ: Lawrence Erlbaum Associates.
- Milgram, S. (1974). *Obedience to authority*. New York: Harper and Row.
- Milliken, F. J., Morrison, E. W., & Hewlin, P. F. (2003). An exploratory study of employee silence: Issues that employees don't communicate upward and why. *Journal of Management Studies*, 40, 1453–1476.
- Nisbett, R. E., Peng, K., Choi, I., & Norenzayan, A. (2001). Culture and systems of thought: Holistic versus analytic cognition. *Psychological Review*, 108, 291–310.
- Norenzayan, A., & Atran, S. (2004). Cognitive and emotional processes in the cultural transmission of natural and nonnatural beliefs. In M. Schaller & C. S. Crandall (Eds.) *The psychological foundations of culture* (pp. 149–170). Mahwah, NJ: Lawrence Erlbaum Associates.
- Norenzayan, A., Atran, S., Faulkner, J., & Schaller, M. (2006). Memory and mystery: The cultural selection of minimally counterintuitive narratives. *Cognitive Science*, 30, 531–553.

- Petty, R. E., & Wegener, D. T. (1998). Attitude change: Multiple roles for persuasion variables. In D. T. Gilbert, S. T. Fiske, & G. Lindzey (Eds.), *The handbook of social psychology* (Vol. 1, 4th ed., pp. 323–390). Dubuque, IA: McGraw-Hill.
- Pleh, C. (2003). Thoughts on the distribution of thoughts: Memes or epidemics. *Journal of Cultural and Evolutionary Psychology*, 1, 21–51.
- Richter, L., & Kruglanski, A. W. (2003). Motivated closed mindedness and the emergence of culture. In M. Schaller & C. S. Crandall (Eds.) *The psychological foundations of culture* (pp. 101–122). Mahwah, NJ: Lawrence Erlbaum Associates.
- Rosen, S., & Tesser, A. (1972). Fear of negative evaluation and the reluctance to transmit bad news. *Journal of Communication*, 22, 124–141.
- Rozin, P., & Fallon, A. E. (1987). A perspective on disgust. *Psychological Review*, 94, 23–41.
- Rubin, D. (1995). *Memory in oral traditions: The cognitive psychology of epic, ballads, and counting-out rhymes*. Oxford, UK: Oxford University Press.
- Schafer, B., & Bankowski (2003). Emerging legal orders: Formalism and the theory of legal integration. *Ratio Juris*, 16, 486–505.
- Schaller, M., & Conway, L. G., III. (1999). Influence of impression-management goals on the emerging contents of group stereotypes: Support for a social-evolutionary process. *Personality and Social Psychology Bulletin*, 25, 819–833.
- Schaller, M., & Conway, L. G., III. (2001). From cognition to culture: The origins of stereotypes that really matter. In G. B. Moskowitz (Ed.), *Cognitive social psychology* (pp.163–176). Mahwah, NJ: Erlbaum.
- Schaller, M., Conway, L. G., III & Crandall, C. S. (2004). The psychological foundations of culture: An Introduction. In M. Schaller & C. S. Crandall (Eds.) *The psychological foundations of culture* (pp. 3–12). Mahwah, NJ: Lawrence Erlbaum Associates.
- Schaller, M., Conway, L. G., III, & Tanchuk, T. (2002). Selective pressures on the once and future contents of ethnic stereotypes: Effects of the “communicability” of traits. *Journal of Personality and Social Psychology*, 82, 861–877.
- Schaller, M., Faulkner, J., Park, J. H., Neuberg, S. L., & Kenrick, D. T. (2004). Impressions of danger influence impressions of people: An evolutionary perspective on individual and collective cognition. *Journal of Cultural and Evolutionary Psychology*, 2, 231–247.
- Sherif, M. (1936). *The psychology of social norms*. New York: Harper.
- Shestowsky, D., Wegener, D. T., & Fabrigar, L. R. (1998). Need for cognition and interpersonal influence: Individual differences in impact on dyadic decisions. *Journal of Personality and Social Psychology*, 74, 1317–1328.
- Snyder, M. & Uranowitz, S. W. (1978). Reconstructing the past: Some cognitive consequences of person perception. *Journal of Personality and Social Psychology*, 36, 941–950.
- Sperber, D. (1990). The epidemiology of beliefs. In C. Fraser & G. Gaskell (Eds.), *The social psychological study of widespread beliefs* (pp. 25–44). Oxford, UK: Clarendon Press.
- Strull, T. K., Lichtenstein, M., & Rothbart, M. (1985). Associative storage and retrieval processes in person memory. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 11, 316–345.
- Tesser, A. (1993). The importance of heritability in psychological research: The case of attitudes. *Psychological Review*, 100, 129–142.
- Thompson, M. S., Judd, C. M., & Park, B. (2000). The consequences of communicating social stereotypes. *Journal of Experimental Social Psychology*, 36, 567–599.
- Tooby, J., & Cosmides, L. (1992). The psychological foundations of culture. In

- J. H. Barkow, L. Cosmides, & J. Tooby (Eds.), *The adapted mind* (pp. 19–136). New York: Oxford University Press.
- Triandis, H. C. (1994). *Culture and social behavior*. New York: McGraw-Hill.
- Weiss, M. J. (1994). *Latitudes and attitudes: An atlas of American tastes, trends, politics, and passions from Abilene, Texas to Zanesville, Ohio*. Boston: Little, Brown.
- Young, J. R. (2003). The role of fear in agenda setting by television news. *American Behavioral Scientist*, 46, 1673–1695.