

RATIONAL RITUAL

CULTURE, COORDINATION,
AND COMMON KNOWLEDGE

Michael Suk-Young Chwe

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Introduction

What This Book Is Good For

How do individuals coordinate their actions? Here we consider “coordination problems,” in which each person wants to participate in a group action but only if others also participate. For example, each person might want to take part in an antigovernment protest but only if there are enough total protesters to make arrests and police repression unlikely. People most often “solve” coordination problems by communicating with each other. Simply receiving a message, however, is not enough to make an individual participate. Because each individual wants to participate only if others do, each person must also know that others received a message. For that matter, because each person knows that other people need to be confident that others will participate, each person must know that other people know that other people have received a message, and so forth. In other words, knowledge of the message is not enough; what is also required is knowledge of others’ knowledge, knowledge of others’ knowledge of others’ knowledge, and so on—that is, “common knowledge.” To understand how people solve coordination problems, we should thus look at social processes that generate common knowledge. The best examples turn out to be “public rituals,” such as public ceremonies, rallies, and media events.

Public rituals can thus be understood as social practices that generate common knowledge. For example, public ceremonies help maintain social integration and existing systems of authority; public rallies and demonstrations are also crucial in political and social change. Social integration and political change can both be understood as coordination prob-

lems; I am more likely to support an authority or social system, either existing or insurgent, the more others support it. Public rituals, rallies, and ceremonies generate the necessary common knowledge. A public ritual is not just about the transmission of meaning from a central source to each member of an audience; it is also about letting audience members know what other audience members know.

This argument allows specific insights in a wide variety of social phenomena, drawing connections among contexts and scholarly traditions often thought disparate. One explanation of how public ceremonies help sustain a ruler's authority is through their "content," for example, by creating meaningful associations with the sacred. By also considering the "publicity" of public ceremonies—in other words, how they form common knowledge—we gain a new perspective on ritual practices such as royal progresses, revolutionary festivals, and for example the French Revolution's establishment of new units of measurement. It is often argued that public ceremonies generate action through heightened emotion; our argument is based on "cold" rationality.

Ritual language is often patterned and repetitive. In terms of simply conveying meaning, this can be understood as providing redundancy, making it more likely that a message gets through. But it also seems to be important that listeners themselves recognize the patterns and repetition. In terms of common knowledge generation, when a person hears something repeated, not only does she get the message, she knows it is repeated and hence knows that it is more likely that others have heard it. Group dancing in rituals can be understood as allowing individuals to convey meaning to each other through movement. But group dancing is also an excellent common knowledge generator; when dancing, each person knows that everyone else is paying attention, because if a person were not, the pattern of movement would be immediately disrupted.

I then look at examples of people facing each other in circles, as in the kiva, a ritual structure found in prehistoric structures in the southwestern United States, the seating con-

figuration of various U.S. city halls, and revolutionary festivals during the French Revolution. In each of these examples, the circular form was seemingly intended to foster social unity. But how? Our explanation is based on common knowledge generation. An inward-facing circle allows maximum eye contact; each person knows that other people know because each person can visually verify that others are paying attention. I then look at how inward-facing circles specifically, and issues of public and private communication generally, appear in the 1954 feature film *On the Waterfront*.

Buying certain kinds of goods can be a coordination problem; for example, a person might want to see a movie more the more popular it is. To get people to buy these "coordination problem" goods, an advertiser should try to generate common knowledge. Historical examples include the "halitosis" campaign for Listerine. More recently, the Super Bowl has become the best common knowledge generator in the United States recently, and correspondingly, the great majority of advertisements on the Super Bowl are for "coordination problem" goods. Evidence from regular prime-time television commercials suggests that popular shows are able to charge advertisers more per viewer for commercial slots, because popular shows better generate common knowledge (when I see a popular show, I know that many others are also seeing it). Companies that sell "coordination problem" goods tend to advertise on more popular shows and are willing to pay a premium for the common knowledge they generate.

The pattern of friendships among a group of people, its "social network," significantly affects its ability to coordinate. One aspect of a network is to what extent its friendship links are "weak" or "strong." In a weak-link network, the friends of a given person's friends tend not to be that person's friends, whereas in a strong-link network, friends of friends tend to be friends. It seems that strong-link networks should be worse for communication and hence coordinated action, because they are more "involved" and information travels more slowly in them; however, empirical studies often

find that strong links are better for coordination. We can resolve this puzzle by observing that, even though strong links are worse for spreading information, they are better at generating common knowledge; because your friends are more likely to know each other, you are more likely to know what your friends know.

Finally, I consider Jeremy Bentham's "panopticon" prison design, in which cells are arranged in a circle around a central guard tower. Michel Foucault regards the panopticon as a mechanism of power based on surveillance, as opposed to spectacle or ceremony. Foucault and most other observers, however, neglect the fact that Bentham's design includes a central chapel above the guard tower, so that the prisoners can take part in service without having to leave their cells; in other words, the panopticon is to some extent also a ritual structure. The panopticon generates common knowledge in that each prisoner can see that other prisoners are under the same kind of surveillance.

In considering this variety of applications, no attempt is made to treat any single topic, writer, or text comprehensively. The goal instead is to explore unexpected connections, connections that span wide divisions in the social sciences as currently disciplined. Ideas of rationality and culture are often considered as applying to entirely different spheres of human activity and as having their own separate logic. This book argues instead for a broad reciprocal connection. To understand public rituals, one should understand how they generate the common knowledge that the logic of rationality requires. To understand how rational individuals solve coordination problems, one should understand public rituals.

This book draws on scholarly literatures that are subject to ever increasing methodological specialization. I hope that the connections here suggest that an argument can bring together not only diverse subject matter but also diverse methodologies. This book considers, for example, new data (the prices of network television slots, Super Bowl advertising), suggests new explanations for existing empirical regularities (why "strong links" are better than "weak links"), offers

new interpretations of aspects of ritual practices (group dancing, repetition, inward-facing circles) and cultural products (the film *On the Waterfront*), and compels a closer reading of classic texts (Bentham's and Foucault's panopticon).

After considering these applications, I briefly consider competing explanations of how rituals affect action, either through direct psychological stimulation or through the emotions that come from being physically together with other people. Next I try to respond to the common objection that common knowledge is not really applicable to the "real world" because people do not actually seem to think through several layers of "I know that he knows that she knows" and so forth.

I then further elaborate on the basic argument. Although one of the main points of this book is that common knowledge generation is an interesting dimension of rituals that can be analytically separated from content, in practice content and common knowledge generation interact in interesting ways; I discuss some examples from marketing and sculpture and the "Daisy" television ad for Lyndon Johnson in 1964. Common knowledge depends not only on me knowing that you receive a message but also on the existence of a shared symbolic system which allows me to know how you understand it.

Because common knowledge generation is important for coordinated action, it is something people fight over; for example, censorship typically cracks down hardest on public communications. Recently political struggles have adopted techniques of modern advertising; for example, in 1993, domestic violence activists successfully pressured the NBC television network for Super Bowl air time. The fact that common knowledge generation is a real resource suggests that "symbolic" resistance should not be underestimated.

Common knowledge is generated not only by communication but also by historical precedent. Political protests and advertising campaigns when trying to generate common knowledge thus draw on history as a resource. Just as history can help create common knowledge, common knowl-

edge can to some extent create history through mass rituals and commemorations. Similarly, common knowledge not only helps a group coordinate but also, to some extent, can create groups, collective identities, "imagined communities" in which, for example, each newspaper reader is aware of millions of fellow readers.

In sum, this book tries to demonstrate three things. First, the concept of common knowledge has broad explanatory power. Second, common knowledge generation is an essential part of what a public ritual "does." Third, the classic dichotomy between rationality and culture should be questioned. This third point is explored more fully in the conclusion. In an appendix, I look at a simple example that illustrates how the argument is made mathematically.

The Argument

In some situations, called "coordination problems," each person wants to participate in a joint action only if others participate also. One way to coordinate is simply to communicate a message, such as "Let's all participate." But because each person will participate only if others do, for the message to be successful, each person must not only know about it, each person must know that each other person knows about it. In fact, each person must know that each other person knows that each other person knows about it, and so on; that is, the message must be "common knowledge."

This truism is a fact of everyday social life and is this book's central argument. It has come up in many different scholarly contexts, from the philosophy of language to game theory to sociology. David Lewis (1969), influenced by Thomas Schelling ([1960] 1980), first made it explicitly; Robert Aumann (1974, 1976) developed the mathematical representation that makes it elementary (see the appendix). It is best expressed in an example.

Say you and I are co-workers who ride the same bus home. Today the bus is completely packed and somehow we

get separated. Because you are standing near the front door of the bus and I am near the back door, I catch a glimpse of you only at brief moments. Before we reach our usual stop, I notice a mutual acquaintance, who yells from the sidewalk, "Hey you two! Come join me for a drink!" Joining this acquaintance would be nice, but we care mainly about each other's company. The bus doors open; separated by the crowd, we must decide independently whether to get off.

Say that when our acquaintance yells out, I look for you but cannot find you; I'm not sure whether you notice her or not and thus decide to stay on the bus. How exactly does the communication process fail? There are two possibilities. The first is simply that you do not notice her; maybe you are asleep. The second is that you do in fact notice her. But I stay on the bus because I don't know whether you notice her or not. In this case we both know that our acquaintance yelled but I do not know that you know.

Successful communication sometimes is not simply a matter of whether a given message is received. It also depends on whether people are aware that other people also receive it. In other words, it is not just about people's knowledge of the message; it is also about people knowing that other people know about it, the "metaknowledge" of the message.

Say that when our acquaintance yells, I see you raise your head and look around for me, but I'm not sure if you manage to find me. Even though I know about the yell, and I know that you know since I see you look up, I still decide to stay on the bus because I do not know that you know that I know. So just one "level" of metaknowledge is not enough.

Taking this further, one soon realizes that every level of metaknowledge is necessary: I must know about the yell, you must know, I must know that you know, you must know that I know, I must know that you know that I know, and so on; that is, the yell must be "common knowledge." The term "common knowledge" is used in many ways but here we stick to a precise definition. We say that an event or fact is common knowledge among a group of people if everyone knows it, everyone knows that everyone knows it, everyone

knows that everyone knows that everyone knows it, and so on. Two people can create these many levels of metaknowledge simply through eye contact: say that when our acquaintance yells I am looking at you and you are looking at me. Thus I know you know about the yell, you know that I know that you know (you see me looking at you), and so on. If we do manage to make eye contact, we get off the bus; communication is successful.

The key assumption behind this example is that we mainly enjoy each other's company: I want to get off only if you get off and you want to get off only if I get off. For example, say that instead of an acquaintance it is your boyfriend yelling; I care only about your company, but you would rather join him than me. I would thus get off if I knew that you hear the yell, but I need not care if you know that I hear it, because you will get off regardless of whether I do. Situations like the acquaintance example are called "coordination problems": each person wants to act only if others do also. Another term is "assurance game," because no person wants to act alone (Sen 1967). The boyfriend example is not a coordination problem because one person wants to act regardless of whether anyone else does.

In coordination problems, each person cares about what other people do, and hence each person cares about what other people know. Hence successful communication does not simply distribute messages but also lets each person know that other people know, and so on. Two examples illustrate this further.

Rebelling against a regime is a coordination problem: each person is more willing to show up at a demonstration if many others do, perhaps because success is more likely and getting arrested is less likely. Regimes in their censorship thus target public communications such as mass meetings, publications, flags, and even graffiti, by which people not only get a message but know that others get it also (Sluka 1992, Diehl 1992). For nearly thirty years, the price of a loaf of bread in Egypt was held constant; Anwar el-Sadat's attempt in 1977 to raise the price was met with major riots.

Since then, one government tactic has been to make the loaves smaller gradually; another has been to replace quietly a fraction of the wheat flour with cheaper corn flour (Jehl 1996). These tactics are more than just a matter of individual deception: each person could notice that their own loaf was smaller or tasted different but be unsure about how many other people also noticed. Changing the size or taste of the loaves is not the same public event as raising its price.

In January 1984 Apple Computer introduced its new Macintosh computer with a visually stunning sixty-second commercial during the Super Bowl, the most popular regularly scheduled television program each year. The Macintosh was completely incompatible with existing personal computers: Macintosh users could easily exchange data only with other Macintosh users, and if few people bought the Macintosh, there would be little available software. Thus a potential buyer would be more likely to buy if others bought them also; the group of potential Macintosh buyers faced a coordination problem. By airing the commercial during the Super Bowl, Apple did not simply inform each viewer about the Macintosh; Apple also told each viewer that many other viewers were informed about the Macintosh. According to the senior vice president of marketing for Walt Disney Attractions, the Super Bowl "really is the convening of American men, women and children, who gather around the sets to participate in an annual ritual" (Lev 1991; see also Real 1982).

Coordination Problems

I should make clear that a coordination problem is not a "free rider problem," also known as the "prisoners' dilemma." In a free rider problem, no person wants to participate under any circumstances: each person always prefers to "free ride" on the participation of others. We all want to keep the common field green, for example, but everyone has an incentive to let his herd overgraze. "Solving" free rider

problems hence requires enlarging people's possible motivations, by for example legal or social sanctions against free riders or repeated contexts in which free riding now might make people not cooperate with you later. "Solving" coordination problems, however, does not require changing people's motivations: when everyone cooperates, each person wants to do so because everyone else is. Although the term "collective action problem" is often used to refer only to free rider problems (Olson 1971), some argue that collective actions such as political protest are better described as coordination problems (e.g., Chong 1991; see also Moore 1995). Also, even when solving free rider problems via sanctions, for example, there is the "prior" coordination problem of getting people to participate in a system of sanctions, because usually a person wants to participate in sanctioning only if others do also.

A coordination problem also does not require complete commonality of interest; all that is necessary is that each person's motivation to participate increases (or at least does not decrease) the more others participate. For example, in a political protest, there might be "militants" who want to take part even if only a few others do, "moderates" who want to participate only if many others participate and make it seem a reasonable thing to do, and "hangers-on" who simply want to be part of a big crowd experience and are indifferent about the protest's political aims. As long as for each person "the more the merrier," we have a coordination problem. What is ruled out in a coordination problem is each person not caring what others do, thus making each person's decision completely independent, or each person wanting to participate only if others do not—for example, wanting to go to the beach only when it is not crowded.

In a coordination problem, each person wants to coordinate with others but there can be considerable disagreement about how to coordinate. For example, "many Ghanaians would prefer to rely on a common indigenous national language but differ as to which it should be" (Laitin 1994, p. 626). A given coordination might be very bad for a person,

but she still might choose to participate because this undesirable coordination is better than the even worse possibility of nonparticipation. For simplicity, we generally assume that the only issue is whether to participate; the issue of how people fight over how to coordinate is considered later.

Common Knowledge

Here I offer some examples to illustrate how common knowledge is a useful everyday concept, part of the commonsense meaning of "public," and also how common knowledge can to some degree be distinguished from "content" or "meaning."

A recent development in U.S. political campaigning is "push-polling," in which voters are asked leading questions in some impartial guise. As part of a contract with Bob Dole during the 1996 Republican presidential primary, Campaign Tel Ltd. employees identifying themselves with "Iowa Farm Families" made more than ten thousand telephone calls to Iowa voters attacking opponent Steve Forbes's flat tax plan. In response to criticism, a Dole campaign spokesperson defended the tactic, saying that the calls "amounted to messages that have mirrored our television commercials" (Simpson 1996). Regardless of whether the "messages" were the same, the crucial distinction is that the telephone calls were not common knowledge: each person who received a call had little idea of whether or how many other people were similarly called. A television commercial, on the other hand, is common knowledge at least to some degree because a person seeing a television commercial knows that other people are seeing the same commercial. This distinction holds even though a "mass audience" of at least ten thousand people received telephone calls, and would remain even if fewer than ten thousand people saw television commercials.

The New York Metropolitan Opera finally decided in 1995 to display translations of the libretto during performances. However, instead of "supertitles," in which transla-

tions are projected on a screen above the stage, the Met developed its own "Met Titles," in which each member of the audience has her own small electronic screen, which she can turn on or off. According to one reviewer, " 'Met Titles' are markedly superior to the systems of most theatres: . . . they don't become part of the performance's public discourse" (Griffiths 1995). Even if most people turned their screens on, the translations would not be common knowledge because a person reading them does not know if other people are reading (or will admit to reading) them.

For users of electronic mail, common knowledge is nicely described as the difference between cc: ("carbon copy") and bcc: ("blind carbon copy"). When one sends a message to several people at the same time via the To: address line or via carbon copy, each receiver gets the list of people to whom the message is sent. With blind carbon copy, however, each receiver gets a message such as "recipient list suppressed." In terms of the transmission of messages from one person to another, carbon copy and blind carbon copy are the same; they differ in whether they allow recipients knowledge of other recipients. Because carbon copy allows each recipient to have the email addresses of other recipients, it invites bulk email "spamming." But this disadvantage is sometimes outweighed by the need to generate common knowledge. For example, "Ms. Tadaki said having her e-mail list borrowed made her rethink how she addresses messages to a large list. 'Next time I send out a change of address, I will definitely do Bcc,' she said. Even so, Ms. Tadaki said there were still cases when she would use the To field for group messages—namely, an invitation to a party or some other social gathering. 'It allows people to see who else is coming or who is invited' " (Stellin 2000).

Common knowledge is affected not only by technology, but also by how people choose to communicate. Brian McNaught (1993, p. 53) tells of an accountant friend who says "I'm sure my boss knows I'm gay . . . but I'm also sure he doesn't want to talk about it and doesn't want me to talk about it." Here her boss knows that she is a lesbian, and

she knows that he knows, but she cannot talk about it with him, because then he would know that she knows that he knows. The accountant and her lover hosted a pretheater cocktail party for "the accounting firm's employees and their spouses. . . . Once the boss and his wife finally arrived, all the employees quickly headed out the door with their dates. Joining them was the lesbian accountant who took the arm of her male escort. Her lesbian lover stayed home. . . . In this case, everyone knows that there is a homosexual present but pretends that it isn't so." If the accountant went with her lover instead, people would know that everyone else knows; the fact that she is a lesbian would become public, common knowledge.

Common knowledge is in some sense the opposite of a secret. George describes how he came out as a gay man: "I told Peter first . . . then I told Fred . . . and told them not to tell anyone else or talk about it with anyone else until I did. . . . After I talked with other people in our circles, then they did, so after a while everyone was talking with everyone else about it instead of having this big secret that everyone bottled up inside" (Signorile 1995, p. 76). Initially, George told other people individually; even though everyone knew that George was gay, for each person it was still a secret. Once Peter and Fred initiated conversation, people began to know that other people knew; the secret evaporated only after common knowledge was formed.

Common knowledge is not always desirable; sometimes people deliberately avoid it. A male hotel butler who intrudes upon a naked female guest, instead of acting embarrassed and thereby letting the guest know that he knows, might say loudly, "Pardon me, sir." Dissimulation can prevent common knowledge (Kuran 1995), but, as the examples here illustrate, honesty alone is not sufficient.

Most interpretations of cultural practices focus on the "content" or "meaning" of what is communicated. Much of the point of this book is that cultural practices must also be understood in terms of "publicity" or, more precisely, common knowledge generation. This distinction, which cannot

be rigidly maintained (as discussed later), still is useful. To see the distinction, consider two examples. Abner Cohen (1974, p. 133) describes the Friday midday prayer in Islam as both "a demonstration of allegiance to the existing political order . . . [and] an ideal strategic occasion . . . for staging rebellion . . . in the presence of all the men of the community in one gathering." The public execution, described by Michel Foucault (1979, pp. 50, 58–60) as a "ritual of armed law," was actually quite unstable: "the people, drawn to the spectacle intended to terrorize it, could express its rejection of the punitive power and sometimes revolt. Preventing an execution that was regarded as unjust, snatching a condemned man from the hands of the executioner, obtaining his pardon by force . . . overturned the ritual of the public execution." An event's meaning can be "overturned," but the aspect of common knowledge, necessary for both mass legitimation and mass rebellion, remains constant.

Where the Argument Comes From

Without attempting a comprehensive survey, it is worth noting at least that the concepts here are basic enough to have come up in several different contexts. Lewis (1969, p. 6) finds the idea of coordination problem in David Hume's example of several people in a rowboat, each rower wanting to row at the same rate as all the others. The notion of common knowledge arises immediately when thinking about language (Clark and Marshall 1992, Schiffer 1972); knowledge of the knowledge of others and so on is necessary even for basic conversation. For example, to respond affirmatively to my friend's question, "Do you want some coffee?" I would say, "Coffee would keep me awake" only if I know that my friend knows that I want to study rather than sleep (Sperber and Wilson 1986). Coordination problems and how they are solved were considered early on by Schelling ([1960] 1980), and common knowledge was modeled mathematically by Aumann (1976); these issues have been pursued in game the-

ory (for a survey, see Geanakoplos 1992), as well as logic, theoretical computer science, and philosophy (e.g., Gilboa 1998). "Higher-order beliefs" (beliefs about the beliefs of others) and the distinction between public and private announcements are increasingly relevant concepts for economics and finance (e.g., Chwe 1999a, Morris and Shin 1999, Shin 1996). Common knowledge relies on people having a "theory of mind," an ability to understand the mental states of other people; how exactly the theory of mind works and develops is an important question for cognitive neuroscience (e.g., Baron-Cohen, Tager-Flusberg, and Cohen 2000). In the popular literature, common knowledge comes up periodically in recreational mathematics and logic puzzles (e.g., Stewart 1998).

Social psychologists developed the concept of "pluralistic ignorance," which refers to a situation in which people hold very incorrect beliefs about the beliefs of others, and is in this sense the absence of common knowledge. To take one of many examples, in a 1972 survey 15 percent of white Americans favored racial segregation, but 72 percent believed that a majority of the whites in their area favored segregation (O'Gorman 1979; see also Shamir 1993). Most see pluralistic ignorance as a distortion at the individual level (e.g., Mullen and Hu 1988; see O'Gorman 1986): a person reduces dissonance by thinking that her own view is the majority view, for example. Recently it has been applied to the Soviet Union and eastern European states, the idea being that dissatisfaction was widespread but that few people knew how widespread it was. These accounts focus on limited communication: criminal penalties for self-expression, a government-controlled press, and a lack of social ties. "The reduction of pluralistic ignorance," due to modern communication technology and increased foreign contacts, "led . . . to a political wave of tremendous power" (Coser 1990, p. 182; see also Kuran 1991) and the collapse of these regimes.

In his analysis of law, Niklas Luhmann (1985, pp. 26–28) emphasizes the "*double contingency* of the social world": not only is the physical world uncertain, but the actions of

other people are uncertain. Understanding “the perspectives of others . . . is only possible if I see others as another I . . . [who] is as free to vary his behaviour as I am.” Hence there is a need, which social institutions help fill, to stabilize “*expectations of expectations*. . . . Moreover, it needs to be considered that there is a third, fourth, etc. level of reflexivity, namely expectations of expectations of expectations and expectations of expectations of expectations of expectations, etc.” According to Luhmann, “the reciprocity of perspectives and the constituted meaning of the you for the I can be traced back to German idealism.”

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Applications

Ceremonies and Authority

How do cultural practices such as rituals and ceremonies constitute power? Clifford Geertz (1983, p. 124) writes that “the easy distinction between the trappings of rule and its substance becomes less sharp, even less real; what counts is the manner in which . . . they are transformed into each other.” Lynn Hunt (1984, p. 54) is more direct: during the French Revolution, “political symbols and rituals were not metaphors of power; they were the means and ends of power itself.” How exactly does this happen? What is the mechanism?

Our explanation starts by saying that submitting to a social or political authority is a coordination problem: each person is more willing to support an authority the more others support it. For example, Jürgen Habermas interprets Hannah Arendt as saying that “the fundamental phenomenon of power is not the instrumentalization of *another's* will, but the formation of a *common* will in a communication directed to reaching agreement” (Habermas [1977] 1986, p. 76; see also Postema 1982 and Weingast 1997). This coordination problem can result not only from a desire to reach consensus but also from intimidation: according to Michael Polanyi (1958, p. 224), “if in a group of men each believes that all the others will obey the commands of a person claiming to be their common superior, all will obey this person as their superior. . . . [A]ll are forced to obey by the mere supposition of the others' continued obedience.” Because submitting to an authority is a coordination problem, an authority creates ceremonies and rituals that form common knowledge.

Geertz's explanation starts with a society's core cultural beliefs, its "master fiction"; a symbolic communication such as a ceremony or ritual is powerful through an "intimate involvement" with this master fiction. Geertz (1983) illustrates this in three examples of royal progresses. In sixteenth-century England, a progress was didactic and allegorical: "four townsmen [were] dressed to represent the four virtues—Pure Religion, Love of Subjects, Wisdom, and Justice," with Elizabeth Tudor representing the Protestant virtues of "Chastity, Wisdom, Peace, Perfect Beauty, and Pure Religion." In fourteenth-century Java, which had a hierarchical, nested-circle world view, the king Hayam Wuruk appeared in the middle of the procession, with each of the four compass points represented by a princess. In eighteenth- and nineteenth-century Morocco, a core belief was that "one genuinely possesses only what one has the ability to defend," and hence "as long as he could keep moving, chastening an opponent here, advancing an ally there, the king could make believable his claim to a sovereignty conferred by God." For our purposes, the more basic question is not how these three cases differ but how they are the same: that is, why progresses? "Royal progresses . . . locate the society's center and affirm its connection with transcendent things by stamping a territory with ritual signs of dominance. . . . When kings journey around the countryside . . . they mark it, like some wolf or tiger spreading his scent through his territory, as almost physically part of them."

But this interpretation misses, or takes for granted, the most obvious aspect of progresses—their very large audiences, "crowds of astonished peasants" (Geertz 1983, p. 132); under this interpretation, the audience would be powerfully affected regardless of how large or small it is. Our interpretation focuses exactly on publicity, the common knowledge that ceremonies create, with each onlooker seeing that everyone else is looking too. Progresses are mainly a technical means of increasing the total audience, because only so many people can stand in one place; common knowledge is extended because each onlooker knows that others in

the path of the progress have seen or will see the same thing. That the monarch moves is hence not crucial; mass pilgrimages or receiving lines, in which the audience moves instead, form common knowledge also. Under our interpretation, widespread ritual signs of dominance do not by their omnipresence evoke transcendence but are rather more like saturation advertising: when I see the extent of a vast advertising campaign, I know that other people must see the advertisements too. This is quite different from the wolf analogy, if taken seriously: a lone animal knows to stay away from another's area by smelling the scent at a given place; no one perceives or infers the entire scent trail (for that matter, scents keep away rivals, whereas progresses are for "domestic" consumption).

Another way to say this is to consider how Geertz uses the term "public," as in the following: "anything that somehow or another signifies is intersubjective, thus public, thus accessible to overt and corrigible *plein air* explication" (Geertz 1980, p. 135). Geertz is making the methodological point that culture is not about "unobservable mental stuff" but about "socially established structures of meaning" by which people communicate and are therefore available for analysis and understanding (Geertz 1980, p. 135; 1973, p. 12). But the use of "public" to include anything intersubjective is much broader than common usage, as in, for example, "public apology" or "public tribunal." My income tax returns are intersubjective and to some extent accessible, but they are not public. In an extended discussion, Geertz (1973, p. 6) notes that the meaning of a wink cannot be reduced to the physical act of twitching one's eye, but depends, among other things, on the understanding between two people that the wink is done "conspiratorially," "without cognizance of the rest of the company." In other words, the meaning of a wink depends on it not being common knowledge. This, of course, makes sense; however, it is not clear that something purposefully conspiratorial should be placed under the category of "public." Using "public" so broadly makes it difficult to explore the dimension of publicity—or, more pre-

cisely, common knowledge generation—in cultural practices; it does not allow us to see that the whole point of some ceremonies is to make public. According to Geertz (1980, p. 135), “arguments, melodies, formulas, maps, and pictures are not idealities to be stared at but texts to be read; so are rituals, palaces, technologies, and social formations.” Speaking glibly, rituals and ceremonies are not just “texts” but also publishing processes (see also Keesing 1987).

Geertz’s explanation focuses on the meaning or content of progresses, while ours focuses on publicity, how progresses create common knowledge. The point is not that content and meaning are unimportant, but that the aspect of publicity, common knowledge generation, must also be considered.

Lynn Hunt (1984, p. 88), in her analysis of the symbolic and cultural practices of the French Revolution, writes that “radicals . . . exposed to themselves and everyone who watched the fictionality of the Old Regime’s ‘master fiction.’ . . . a new political authority required a new ‘master fiction.’ . . . the members of society could invent culture and politics for themselves.” In adopting Geertz’s framework, Hunt shows its weakness: if cultural practices can be used to create a new master fiction, their power cannot be based solely on association with the existing master fiction. But Hunt (1984, p. 54) continues: “Governing cannot take place without stories, signs, and symbols that convey and reaffirm the legitimacy of governing in thousands of unspoken ways. In a sense, legitimacy is the general agreement on signs and symbols. When a revolutionary movement challenges the legitimacy of traditional government, it must necessarily challenge the traditional trappings of rule as well. Then it must go about inventing new political symbols that will express accurately the ideals and principles of the new order.”

Here Hunt acknowledges that it is not enough simply to invent new symbols or systems of meaning; they must also be made to enjoy “general agreement.” Although what this means is not made explicit, by using the term “unspoken,” perhaps Hunt means common knowledge, something each person knows and can take for granted that everyone else knows. Indeed most of the practices Hunt examines, espe-

cially revolutionary festivals, an “incurable mania for oaths” (Jean-François La Harpe, quoted in Hunt 1984, p. 21), and even planting liberty trees and wearing revolutionary colors, are ceremonies that generate common knowledge, in which each participant can readily see that others are participating.

Revolutionaries also established new units of weight and measure (the metric system) and invented a new calendar, with new holidays and the seven-day week replaced by a ten-day “decade.” That most of the world today drives on the right is also due to the French Revolution: the previous custom in western Europe was to drive on the left, but because ordinary people walked on the right to face the oncoming traffic, that direction was considered more democratic (Young 1996). Hunt (1984, p. 71) interprets these changes in terms of propaganda, so that “even clocks could bear witness to the Revolution,” but we can be more specific. Getting people to accept new conventions of trade, time, and travel is a coordination problem, less important than but similar, in terms of its mass scale, to the coordination problem of getting people to accept a new government. By successfully solving one coordination problem, revolutionaries build the common knowledge helpful in solving the second: a person might not know the extent to which other people support a new regime but would know that others consented at least to using its new weights and measures. William Sewell (1985, p. 77) understands the revolution’s new units of measure and time in terms of its ideology: revolutionaries wanted to transform people’s “experiences of space and time. . . . Their revolution recognized a new metaphysical order; wherever existing social practices were based on the old metaphysics they had to be reconstituted in new rational and natural terms.” But changing weights, measures, and the calendar is particularly effective not simply because they change the way that a given individual thinks about the revolution or the physical world, but because they change how individuals interact with each other; they change what an individual knows about other individuals.

James Scott (1990, pp. 203–4, 56) distinguishes explicitly between public communications, the “public transcript,”

and nonpublic communications, the “hidden transcript”: for example, “the Catholic hierarchy . . . understands that if large numbers of their adherents have chosen to live together out of wedlock, such a choice . . . is of less institutional significance than if these same adherents openly repudiated the sacrament of marriage.” Similarly, “if the sharecropping tenants of a large landowner are restive over higher rents, he would rather see them individually and perhaps make concessions than to have a public confrontation.” Again, the question is why.

Scott (1990, pp. 41, 224) sometimes claims that the emotions that “breaking the silence” brings about have causal significance. For example, immediately after the live radio broadcast of black boxer Jack Johnson’s victory over the white Jim Jeffries in 1910, “there were racial fights in every state in the South and much of the North. . . . [I]n the flush of their jubilation, blacks became momentarily bolder in gesture, speech, and carriage. . . . Intoxication comes in many forms.” A public declaration creates “political electricity”; to understand how widespread the impact of a public declaration is, “we can metaphorically think of those with comparable hidden transcripts in a society as forming part of a single power grid. Small differences in hidden transcript within a grid might be considered analogous to electrical resistance causing loss of current.”

But Scott’s main explanation is the same as ours, that public declarations create common knowledge: “*It is only when this hidden transcript is openly declared that subordinates can fully recognize the full extent to which their claims, their dreams, their anger is shared by other subordinates.*” When Ricardo Lagos accused General Pinochet of torture and assassination on live national television, he said “more or less what thousands of Chilean citizens had been thinking and saying in safer circumstances for fifteen years”; the openness and publicity, not the content, of his speech, made it a “political shock wave.” “In a curious way something that everyone knows at some level has only a shadowy existence until that moment when it steps boldly onto the stage” (Scott 1990, pp. 223, 207, 215–216).

Even so, Scott (1990, p. 48) does not realize the power of his main explanation. “Imagine, for example, a highly stratified agrarian society in which landlords *recently* had the coercive force to reliably discover and punish any tenants or laborers who defied them. . . . So long as they maintained a bold ritual front, brandishing their weapons, celebrating past episodes of repression, maintaining a stern and determined air . . . they might exert an intimidating influence all out of proportion to the elite’s actual, contemporary power.” Here Scott, like Geertz, bases the power of state rituals on association: for Scott an association with previous weapons-based power, for Geertz an association with the master fiction. But as Scott (1990, p. 49) notes, “the successful communication of power and authority is freighted with consequences insofar as it contributes to something like a self-fulfilling prophecy. If subordinates believe their superior to be powerful, the impression will help him impose himself and, in turn, contribute to his actual power.” Hence the publicity of rituals, their “successful communication,” can constitute power all by itself; association is helpful but not absolutely necessary. Instead of resistances in a power grid, one could say that differences in hidden transcripts cause weaknesses in common knowledge. For example, this is how Mika Gupta describes her feelings reading Simone de Beauvoir’s *The Second Sex* as a young woman in Calcutta: “Her words had a potency because she knew how *I* felt. . . . At the same time I found her alienating. . . . There were no spaces into which I could fit my experience as a ‘bastard of cultures’” (Okely 1986, p. 4). Finally, one need not explain the reaction to Jack Johnson’s live radio victory in terms of “intoxication”: if I allow myself one moment to behave authentically, it might be rational to do so when I think that others will also.

How Do Rituals Work?

An often-quoted example from Rousseau ([1755] 1984) is the “stag hunt,” in which each person can either join with others and hunt for a stag, or hunt for a rabbit by himself. If

everyone hunts for a stag together, they succeed, and everyone gets more than one rabbit's worth of food. But if only a few people hunt for the stag, they surely fail, and each would be better off just getting a rabbit. Hence each person will hunt for the stag only if others do also. One could spread the message "Let's hunt for the stag at sunrise tomorrow" sequentially by word of mouth, but a more effective way to communicate would be to get everyone together in a meeting, so that not only would everyone know about the plan, but everyone would also immediately see that everyone else knows about the plan, forming common knowledge. If one calls this meeting a "ritual," then according to our argument, the purpose of a ritual is to form the common knowledge necessary for solving a coordination problem.

As argued earlier, coordination problems include not only quite specific tasks such as group hunting but also overarching matters such as political and social authority. Earlier we considered authority simply in terms of each person's decision about whether to consent to a given regime, but authority generally includes much more, such as systems of social status, implicit and explicit rules of behavior, and the entire set of ideas and institutions that guide social interaction. A ritual should then make public, make common knowledge, in this case not a specific hunting plan, but a set of beliefs and rules. There is some support for this idea in Victor Turner's analysis of the rituals of the Ndembu of Zambia: "ritual is a periodic restatement of the terms in which men of a particular culture must interact if there is to be any kind of a coherent social life. . . . There is no doubt that Ndembu, by their religious activities, call public attention to axioms of conduct" (Turner 1968, pp. 6, 269).

Due to internal pressures (conflict between the Ndembu principles that a man should live with his maternal relatives but also has a right to make his wife live with him in his own village), external pressures (an encroaching Western money economy), and the personal petty conflicts that unavoidably arise, there is a constant need to "shore up" rules of behavior through rituals. In fact some rituals "seem almost 'de-

signed' to contain or redress [social strains and tensions] once they have begun to impair seriously the orderly functioning of group life" (Turner 1968, p. 280). More generally, "in many African tribes rituals are performed most frequently when a small community is in danger of splitting up" (Turner 1968, p. 278). If recognizing and obeying rules of behavior is a coordination problem, then if tensions and hostilities threaten these rules, "remedial" actions are immediately required, because the more people who "opt out" of the system, the less incentive everyone else has to remain.

How exactly do rituals help in social integration? Turner (1969, p. 179) quotes at length the words of an Ashanti high priest (recorded and translated by Rattray 1923): "Our forbears . . . ordained a time, once every year, where every man and woman, free man and slave, should have freedom to speak out just what was in their head, to tell their neighbors just what they thought of them, and of their actions, and not only to their neighbours, but also the king or chief. When a man has spoken freely thus, he will feel his *sunsum* [soul] cool and quieted, and the *sunsum* of the other person against whom he has now openly spoken will be quieted also. . . . [W]hen you are allowed to say before his face what you think you both benefit." Turner interprets this in terms of a need for periodic "levelling" of status in which "the high must submit to being humbled." Under our explanation, what is important is being able to speak openly and publicly, to another's face, making what was previously furtive, personal, a grudge you hold that others might only suspect, common knowledge and hence publicly resolvable.

To understand how a ritual does what it does, it is usually thought necessary to understand the varied meanings of the symbols and words used. But several people have pointed out the need to understand aspects of ritual that cannot easily be understood in terms of "meaning"; for example, words spoken in rituals typically involve lots of repetition, and are structured, in rhyme, verse, or song, for example, in "canonical parallelism" (Jakobson 1966). Maurice Bloch (1974, p. 56) takes as an example the circumcision ceremony

of the Merina of Madagascar, noting that "the participants use their language in a particular way: formalised speech and singing. A purely formal analysis of the symbols of the ceremony would simply miss out this central fact." Frits Staal (1989, p. 264) notes that "the Sanskrit that occurs in mantras is often used in an unintelligible fashion. . . . Even those mantras that say something or have meaning are not used like linguistic utterances when they are ritually used." Staal locates the ritualness of mantras not in the meaning of the words but in the patterns and rhythms of their spoken syllables.

Repetition of the same phrase can be understood as providing redundancy, in the spirit of information theory. But as Stanley Tambiah (1985, p. 138) notes, information theory is not directly applicable because rituals are more about "interpersonal orchestration and . . . social integration and continuity" than transmitting information. According to Tambiah, one must think of "‘meaning,’ defined not in terms of ‘information’ but in terms of *pattern recognition*." Interpreted in terms of common knowledge generation, repetition is about not just making sure that each person gets a message but also making sure that each person can recognize the repetition and thus know that everyone else gets the message. Claude Lévi-Strauss (1963, p. 229) asks "why [are] myths, and more generally oral literature, so much addicted to duplication, triplication, or quadruplication of the same sequence? . . . [T]he answer is obvious: The function of repetition is to render the structure of the myth apparent." In our interpretation, the function of repetition is to render repetition apparent.

Bloch argues that the reason that language is formalized in ritual (a "fixity of sequencing of speech acts") is to limit severely the possible set of meanings that can be conveyed: "the formalisation of speech therefore dramatically restricts what can be said so the speech acts are either all alike or all of a kind and thus if this mode of communication is adopted there is hardly any *choice* of what can be said. . . . An utterance instead of being potentially followed by an infinity of

others can be followed by only a few or possibly only one" (Bloch 1974, pp. 62–63). This formalization is for Bloch (1974, pp. 64, 71) the source of ritual authority: "it is because the formalisation of language is a way whereby one speaker can coerce the response of another that it can be seen as a form of social control. . . . *You cannot argue with a song.*" In our interpretation, each participant in a ritual can never be completely sure that the other participants are paying full attention. Formalization, the fact that once one phrase is said, the next automatically follows, assures each participant that even a person who momentarily loses attention or mentally drifts off for a while can still easily figure out what other people must have heard. With lots of repetition and structure, a person who is only paying attention at the end can still know what a person who only paid attention at the beginning heard. On a longer time scale, performing rituals the same way year after year gives a young person confidence that he hears what older people heard years ago, and an old person confidence that future people will know what he knows. The certainty of the ritual sequence generates authority not by enforcing responses but by helping generate common knowledge.

Bloch also includes under formalization "partial vocabulary" and "illustrations only from certain limited sources, e.g. scriptures, proverbs" (Bloch 1974, p. 60). Both of these aspects of ritual also help form common knowledge; it is mutually evident to all that the vocabulary and illustrations used are commonplace and cannot possibly be the source of any confusion. Tambiah (1985, p. 128) finds that rituals use "multiple media by which the participants experience the event intensely"; hence a person in a ritual has a strong presumption that other people are experiencing the same thing, if not via one medium then through another. Similarly, Turner (1968, pp. 21, 269) notes that although a ritual includes "rich multivocal (or 'polysemous') symbolism," it is "a dramatic unity. It is in this sense a kind of work of art." In other words, a ritual employs several parallel ways of saying the same thing, and thus each person knows that even if

another person might not “get it” in one way, she can in another. Audience participation—for example, call and response—helps create common knowledge: each person can see from the gestures or speech of others that they are in fact paying attention. Tambiah (1985, p. 123) quotes A. R. Radcliffe-Brown’s interpretation of dance as enabling “a number of persons to join in the same actions and perform them as a body.” Although one can say that “bodily movements are a kind of language and that symbolic signals are communicated through a variety of movements from one person to another” (Bloch 1974, p. 72), our interpretation is somewhat simpler: group dancing “as a body” is an ideal way of creating common knowledge because if any person loses interest, this becomes immediately evident to everyone because the pattern of movement is disrupted.

Inward-Facing Circles

One specific way to generate common knowledge, as mentioned in our bus example earlier, is eye contact. For larger groups the closest thing to eye contact is for everyone to face each other in a circle, which enables each person to see that everyone else is paying attention. Perhaps this is one reason why inward-facing circles help in coordination.

A common feature of prehistoric structures throughout what is now the southwestern United States is the kiva. Built partially underground, kivas were typically circular, and people presumably sat facing each other; some kivas had a masonry bench built along the wall (Figure 1). The large “great kivas” of Pueblo Bonito in Chaco Canyon, New Mexico, for example, had impressive features such as deposits of beads in niches in the walls. The difficulty of their construction suggests their importance: “in a limited sense Great Kivas can be considered public monumental building” (Lekson 1984, p. 52; see also Lipe and Hegmon 1989). Most interpreters see the function of kivas, especially the large great kivas, as ritual structures for the village, where public activities could

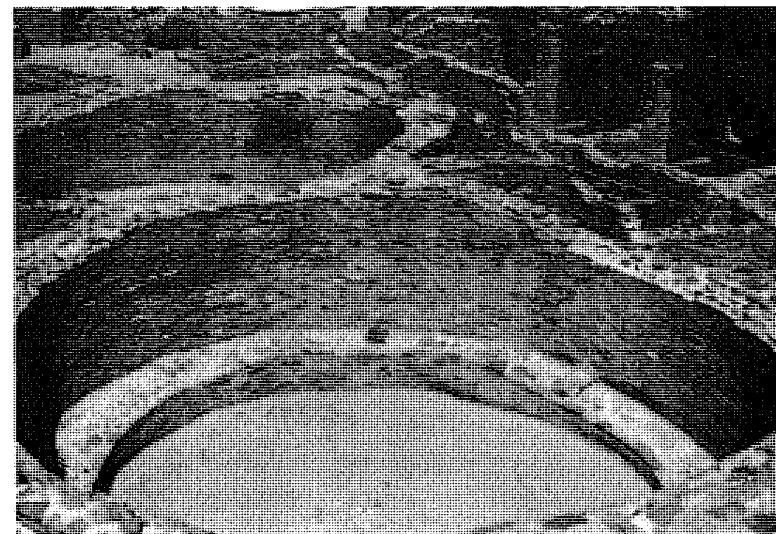


Figure 1. Kiva, Chetro Ketl, Chaco Canyon, New Mexico.

be held. Their purpose was to integrate the village across household and family groups, which presumably involves solving coordination problems.

In his survey of city halls in the United States and Canada, Charles Goodsell (1988, p. 158) finds that curving seating rows feel friendlier than the more traditional parallel linear rows: they “help to create the impression that the occupants are bound together.” In Fort Worth’s city hall, the seats are arranged in coincentric inward-facing circles (Figure 2); the architect Edward Durrell Stone hoped “that a council meeting would be in the vein of a town hall meeting. . . . [I]n the circle, members of the audience would have visual contact with each other as well as the council, therefore enabling them to observe feelings and responses” (Goodsell 1988, p. 166). Note that Goodsell’s explanation of the effect of circular seating is based on content, an interpretation of its meaning; Stone’s explanation is based on common knowledge, the ability of people to see each other.

Mona Ozouf ([1976] 1988, pp. 130–31) finds that for revolutionary festivals in the French Revolution, circular forms

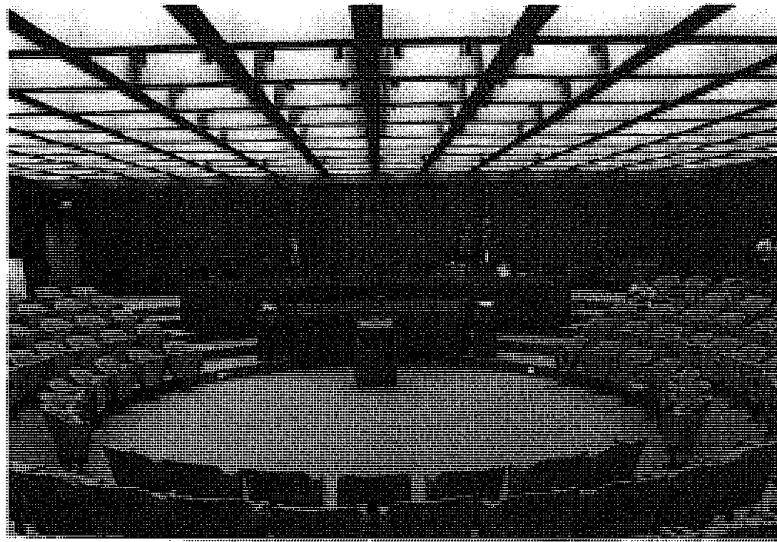


Figure 2. City Hall, Fort Worth, Texas.

were considered ideal (Figure 3): there was an “obsession with the amphitheater . . . which enabled the spectators to share their emotions equally and to see one another in perfect reciprocity.” Another reason was that organizers wanted to emphasize inclusivity by making the boundary of the festival as loose as possible; a circle is nicely enclosed by the outermost spectators, and can grow organically as more spectators arrive. Finally, the “circle was an emblem of national unanimity.”

Again, the last reason relies on content, the symbolic meaning of a circle, whereas the first relies on common knowledge, people being able to see each other. Ozouf’s quotations ([1976] 1988, pp. 308, 131) from contemporary observers set up this distinction nicely: according to Mouillefarine fils, “the circle is more symbolic of the facts to be immortalized, its solidity deriving from reunion and unanimous accord”; De Wailly writes that “the audience placed in front of the boxes thus becomes a superb spectacle, in which each of the spectators seen by all the others contributes to

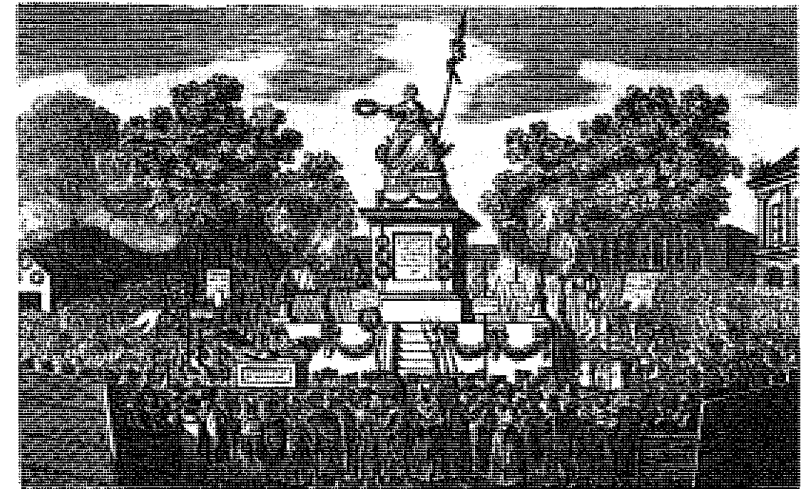


Figure 3. Festival of Liberty, October 1792.

the pleasure that he shares.” Is the circle symbol or communication technology?

Ozouf ([1976] 1988, p. 136) answers directly: “What was most important in the conversion of churches into *temples décadaires* was not the ingenuity employed in transforming a former Eternal Father into Father Time . . . or a Saint Cecilia into a goddess of Equality. . . . The essence of such conversions was to be found in those abolished side chapels, those truncated transepts, that re-creation within the church—by means of flags, hangings, foliage—of a place that could be taken in at a glance.” It’s not just a matter of changing symbols, but of changing the physicality of ceremonial spaces to make it difficult for someone to see you without you also seeing them, better to generate common knowledge.

On the Waterfront

Perhaps one reason why an inward-facing circle symbolizes solidarity is because it generates common knowledge, just as one reason that a ceremonial sword symbolizes power is because it is similar to an actual weapon. Here I illustrate how