

RATIONAL RITUAL

CULTURE, COORDINATION,
AND COMMON KNOWLEDGE

Michael Suk-Young Chwe

With a new afterword by the author

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To Sylvia

a "stadium" of 16,000 Bud can spectators (Kahn 1989); in a spot for Rold Gold pretzels, Jason Alexander seemingly parachute-lands on the Super Bowl field during the game, to the surprise of the sportscasters and the wild cheers of the crowd ("Super TV Ad Jumps into Homes" 1995). The Super Bowl as premiere venue is even used as metaphor. The Super Bowl takes place on "Super Sunday" each year; hence print ads for the launching of Paramount's UPN television network with the premiere of the series *Star Trek: Voyager* proclaimed "Before Super Sunday, Get Ready for Super Monday! We're launching a new television network and a new starship to boldly take you where no one has gone before" (*Chicago Reader*, January 13, 1995). The association is not with football but common knowledge creation, which makes sense if each person is more likely to watch if he thinks that his friends will.

Ever since cable television and even more so with the internet, network television overall has been in decline. "A contemporary television blockbuster like *Seinfeld* draws only one-third the audience, as a percentage of the total, that saw 1960s network hits like *The Beverly Hillbillies*" (Rothenberg 1998), back in the days when a large, furniture-like television set served as a home's "electronic hearth" (Tichi 1991). Media events like the Super Bowl (more generally see Dayan and Katz 1992) are television's last stronghold: regardless of increasing fragmentation, there remain the "communal pleasures of watching a popular show at the same time as everyone else in the country. 'The shared experience is the value of television,' . . . asserts CBS president [Howard] Stringer" (Zoglin 1993). Even spokespersons for the "new media" recognize the importance of common knowledge. With the internet, a person can easily tailor her own daily newspaper to include only those stories relating to her own interests. However, David Weinberger (1995), who heads a web marketing company, notes that "such micro-customization would strip newspapers and other documents of one of their primary strengths: helping bestow a sense of community on a group. . . . The fact that the document I'm looking at is the

same for all who receive it . . . establishes a baseline of expectations about what we, as a community, are all supposed to know."

George W. S. Trow (1997, pp. 88, 36) writes that the "most important moment in the history of television was the moment when a man named Richard Dawson, the 'host' of a program called *Family Feud*, asked contestants to guess what a poll of a hundred people had guessed would be the height of the average American woman." Trow goes on to complain that there is "no *reality* whatsoever. No *fact* anywhere in sight. . . . I would like to know in what way the producers of this show *aren't* culpable." But is television's main purpose to transmit facts? If *Family Feud* is the most important program in the history of television, it is because it rewards people for knowing what others know.

The Price of Publicity

Television advertising provides not only interesting anecdotes, but also quantitative evidence. Here I look at 119 brands advertised on three U.S. networks (ABC, CBS, and NBC) during three months representative of a network year (October 1988, February 1989, and July 1989; the data set is available from the author). By seeing on which shows a given brand advertises, and finding demographic and cost data available on each show, it is possible to get an idea of that brand's overall advertising strategy.

I call a good "social" if a person is more likely to buy it the more other people buy it; buying a social good is a coordination problem. If we assume that viewers generally know which shows are popular, we can say that when a product is advertised on a popular show, not only do many people see the ad, each viewer knows that many other people see the ad. Hence our argument would say that social goods should be advertised on popular shows. The data here suggest that social goods are in fact advertised on more popular shows

and also that advertisers of social goods are willing to pay more per viewer to do so.

The audience size ("ratings") and demographics of virtually every network television program are estimated by Nielsen Media Research. Nielsen also estimates the cost of commercial slots on a given program, based on reports from the television networks, not on actual transactions. Actually a slot on a given program usually does not have "its own" price; slots are often bought and sold in blocks in a complicated sequence of negotiations (Poltrack 1983). These cost data, the only such available (with the exception of actual contracts made available to the Federal Communications Commission in 1980; see Fournier and Martin 1983), at least are relied upon by the advertisers and television networks themselves. Information on which brands advertise on which programs is the greatest limitation of our data set: only those brands which Nielsen clients contract for are available, and only for the months October, February, and July (for a description, see Webster and Lichty 1991, p. 222). This quite limited sample of 119 brands is neither random or representative, but at least for each brand we know the complete television advertising strategy, in full cost and demographic detail, during three months chosen by Nielsen to represent a television season.

Table 2 shows the social and nonsocial brands by product type; very crudely, along with computers, I include in "social" brands those which are typically consumed with people outside the household: in our sample, the social brands are the Apple Macintosh, IBM hardware, the U.S. Army, Dominos Pizza, Gallo Wines, and thirteen brands of beer. Computers are social goods because of technological compatibility. The idea with beer (and wine and pizza similarly) is that I might prefer to buy a beer brand which I think my guests know and like, I might not want to be the only person who brings a strange brand of beer to a party, or I want to participate in the collective experience of drinking the same kind of beer as everyone else (see also Pastine and Pastine 1999a, 1999b). This classification is fairly ad hoc, but at

least we might say that goods that are typically consumed inside the household are less likely to be social goods because no one can see what others are consuming. According to Gary Becker (1991, p. 1110), "a consumer's demand for some goods depends on the demands by other consumers. . . . [R]estaurant eating, watching a game or play, attending a concert, or talking about books are all social activities in which people consume a product or service together and partly in public."

Table 2 also shows the average audience size and average cost per thousand for each product type. What these terms mean can be explained in an example: if Brand X pays \$25,000 for one thirty-second slot on a show with an audience of 9 million households and pays \$10,000 each for two thirty-second slots on a show with an audience of 3 million households, the average audience size for Brand X is 5 million and the average cost per thousand is \$3, since the total cost is \$45,000 and there are a total of 15 million "gross impressions" (see Webster and Lichty 1991, p. 192). Average audience size indicates the popularity of the shows that a brand's commercials appear on, and average cost per thousand indicates how expensive those commercials are. Audiences are measured here in terms of households, and during this time there were 90.4 million households in the United States.

The first thing to notice is that average cost per thousand is consistently higher for the social brands than for the nonsocial brands (exceptions are shaving and cameras and film processing). In other words, beer and pizza advertisers are willing to spend more per household than battery and deodorant advertisers. If a beer advertiser pursued the same advertising strategy as a deodorant advertiser, he could get roughly twice as many total impressions for the same amount of money. Second, audience sizes for social brands are larger than for nonsocial brands. With two exceptions (bath and soap, and shaving) nonsocial categories have audience sizes of less than 7 million, and with two exceptions (armed forces and computers) social categories have audience

TABLE 2
Average Audience Size and Average Cost per Thousand for Various Brand Categories

Category	Number of Brands in Category	Typical Brand in Category	Average Audience Size (millions)	Average Cost per Thousand (dollars)
Social brands				
Armed forces	1	U.S. Army	5.9	10.1
Beer	13	Coors Light	7.3	10.5
Computers	2	Apple Macintosh	5.4	9.5
Pizza	1	Dominos Pizza	9.5	9.1
Wine	1	Gallo Wines	7.9	9.1
Total	18		7.1	10.2
Nonsocial brands				
Baby care	2	Chubs Baby Wipes	4.6	4.8
Bath and soap	3	Caress Beauty Bar	7.4	7.0
Nonsocial brands (cont.)				
Batteries	2	Energizer	5.3	5.8
Bleach and detergent	6	Clorox Bleach	5.9	4.6
Cameras and film processing	2	Canon Cameras	6.9	10.7
Candy	2	Carefree Gum	6.1	4.2
Cereal	27	Kellogg Crispix	6.0	6.3
Deodorant	6	Arrid Deodorant	5.6	5.2
Food	12	Shedds Spread	5.5	5.0
Hair care	10	Head & Shoulders	5.5	5.0
Household cleaners	14	Lysol	5.3	3.9
Household medications	10	Nuprin	5.3	5.2
Pet food	1	Milk Bone Biscuits	5.7	4.8
Shaving	2	Attra Plus Razor	7.8	9.7
Toothpaste	1	Aquafresh	4.3	5.5
Wood finishing	1	Minwax	4.5	5.1
Total	101		5.6	5.4

sizes of greater than 7 million. If we exclude computers, Canon cameras, and the U.S. Army because they are the only brands in the sample that have a price of more than a few dollars, the distinction is clearer.

We graph average audience size and cost per thousand for all 119 brands in Figure 9. Again, the first finding is that social brands tend to be advertised on popular shows. The second finding is that campaigns for social brands pay a higher cost per viewer.

These findings support our argument, but of course there are competing explanations. The first and most obvious is that audiences of popular shows have more favorable demographic characteristics. Nielsen reports on more than forty demographic categories, including age, sex, region, county size, rural versus urban, household size, presence of children, household income, and cable television subscription. Because we know demographic characteristics for each show, and we know which shows an advertiser places commercials on, we can determine the demographic composition of the audience of a brand's complete campaign.

A second possible explanation has to do with a campaign's cumulative effect over a month. There is the issue of "au-

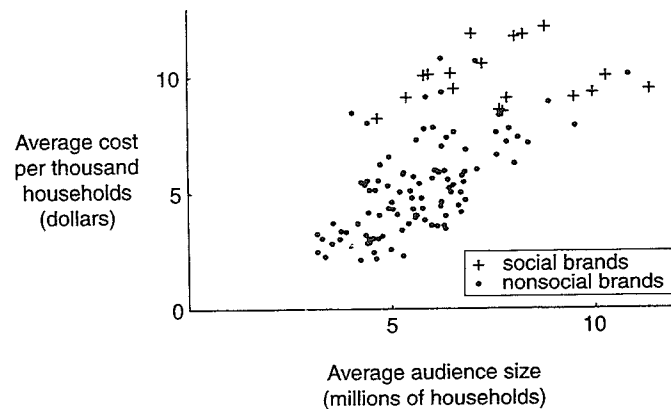


Figure 9. Cost per thousand versus average audience size.

dience duplication": two commercials that each reach 5 million people might together reach fewer than 10 million people because their audiences to some degree overlap. A commercial slot on a program that reaches 10 million people all at once might thus cost more even though it provides the same total number of exposures. Fortunately, data are available on each campaign's "four-week reach," the percentage of households that saw at least one commercial during the month, and we use this as our measure of cumulative exposure.

The standard tool for dealing with these complications is linear regression, and results are shown in Table 3. Here we consider monthly campaigns and hence there are 357 observations.

In regression (i) we regress cost per thousand on audience size and month (to correct for seasonality), and find the coefficient on audience size, 0.59, to be large and significant. Adding the demographic and cumulative exposure variables in regression (ii) brings this coefficient down to 0.25, but this is still economically as well as statistically significant: because audience size has a mean of 6.11 million and a standard deviation of 2.59 million and a typical cost per thousand is around \$5 to \$6, increasing audience size by one standard deviation increases cost per thousand by 10 to 15 percent. The demographic categories are fairly self-explanatory (urban represents counties belonging to the twenty-five largest metropolitan areas, and semiurban represents roughly all other counties that have population over 150,000); some of the demographic categories Nielsen reports, such as household size and presence of children, are left out because adding them changes little. The demographic variables are all in terms of percentage of the campaign's total audience belonging to that group; for example, a typical advertiser is willing to pay 16 cents more per thousand to reach an audience which is composed of 11 percent working women as opposed to 10 percent working women. Of the demographic categories, advertisers seem willing to pay extra for working women, middle-aged men, and households with incomes

TABLE 3
Regressions of Average Cost per Thousand on Average Audience Size, Demographic Characteristics, Four-Week Reach, and Social Good

Average Cost per Thousand (dollars)	(i)	(ii)	(iii)	(iv)
Regressed On:				
Social good			4.29***	1.17***
Average audience size (millions)	0.59***	0.25***		
Working women		0.16*		0.42***
Women 18-34		-0.06		-0.13*
Women 35-49		-0.03		-0.27*
Women ≥ 50		0.02		0.06
Men 18-34		0.13*		0.03
Men 35-49		0.29*		0.37**
Men ≥ 50		-0.08		-0.25***
Income > \$60,000		0.40***		0.36***
East central		-0.08		-0.14
West central		0.12		0.04
South		-0.08		-0.13*
Pacific		0.06		0.19**
Urban		-0.05		-0.12*
Semiurban		0.08		0.09
Pay cable		-0.19**		-0.11
Basic cable		0.04		0.26***
Four-week reach		-0.0001		-0.0015
February	-0.98**	-0.72***	-1.49***	-0.73***
July	0.77*	0.88***	-0.45	0.30
Intercept	2.37***	0.22	5.89***	0.93
R ²	0.33	0.84	0.36	0.83

***Significant at $p = 0.001$; **significant at $p = 0.01$; *significant at $p = 0.05$.

greater than \$60,000. The coefficient on four-week reach is small and not statistically significant.

Regressions (iii) and (iv) consider a dummy variable for social good (1 if social, 0 if not) instead of audience size. The results are that producers of social goods are willing to pay significantly more per thousand (\$1.17, around 20 percent

more) after correcting for demographics; cumulative exposure is not important.

A third possible explanation is that people who rarely watch television tend to watch the most popular shows. Because only popular shows manage to reach these people, popular shows can command a higher price, and producers of social brands might be willing to pay a premium to reach them. However, this does not seem to be the case, as illustrated in Figure 10, which for each of the 357 monthly campaigns plots total cost versus four-week reach. It is true that reaching remaining households is exponentially costly, but it is also true that producers of social brands are consistently willing to pay more, at all levels of cumulative exposure.

A fourth possible explanation is that advertisers of social brands simply need to advertise more than advertisers of nonsocial brands; because the total number of commercial slots is limited, advertisers of social brands are forced to buy the more expensive programs. Average cost per thousand

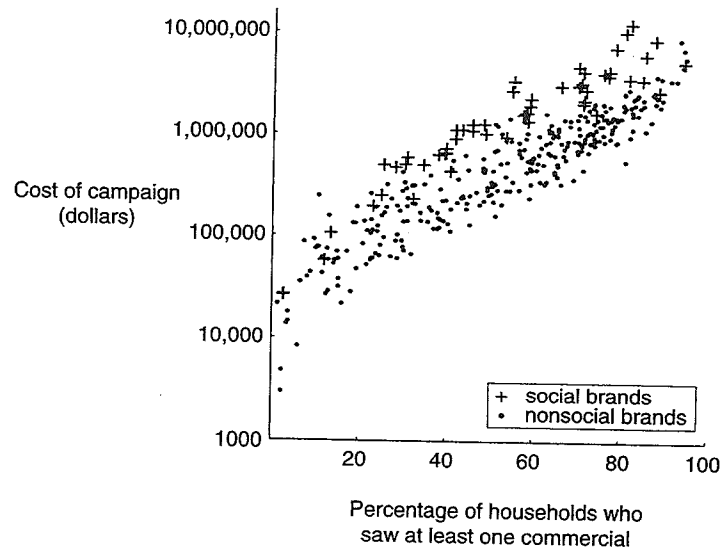


Figure 10. Total cost of campaign versus four-week reach.

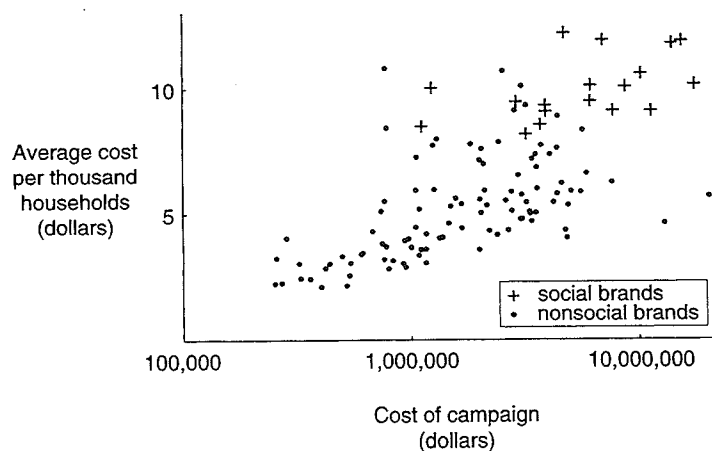


Figure 11. Cost per thousand versus total cost of campaign.

versus the total cost of the campaign over the year for each of the 119 brands is shown in Figure 11. This confirms the prediction (e.g., in Becker 1991, p. 1113) that social brands are in general more heavily advertised than nonsocial brands. But the graph shows that many nonsocial brands spend comparable amounts on advertising but still spend much less per household. In other words, social brands do not pay high cost per thousands simply because they advertise heavily.

There are several other plausible explanations. Popular shows might be more interesting and hence viewers might recall the commercials better (Webster and Lichty 1991). Advertising expensively on a popular show might indicate a higher-quality product (Nelson, 1974, Kihlstrom and Rioridan 1984, Milgrom and Roberts 1986). Because there are relatively few popular shows, networks might be in a better bargaining position when negotiating with advertisers over these shows and can thus charge higher prices. Popular shows might simply be more persuasive, better at changing preferences toward purchase (Dixit and Norman 1978). The

audience size and demographics of popular shows might be more predictable, which would appeal to risk-averse advertisers (Fournier and Martin 1983). All of these explanations can explain why popular shows are more expensive per viewer but not why social goods tend to be advertised on expensive popular shows. In other words, there is no obvious reason why issues such as recall, quality, persuasion, and risk aversion apply more to social goods than to nonsocial ones.

The main problem with our analysis is that our sample of social goods is so limited, dominated by male-oriented products and beer in particular. As we have seen, we can correct for this to some extent, but there remains the possibility that instead of describing a social-good effect, we are simply describing a beer drinker effect. The only way to settle this convincingly is to look at data wherever available on other social goods, especially those with different demographic characteristics such as shoes, clothing, and soft drinks.

Another more conceptual problem is that it is difficult to distinguish whether a person buys a good because he expects that others will buy it or more simply because he knows that other people know about it. For example, Master Lock advertised on the Super Bowl for twenty consecutive years, spending most of its 1991 advertising budget for example on a single spot of a lock surviving a gunshot (Amos 1991). When buying a lock, I care not so much that others buy the same brand but rather that other people, including would-be thieves, think that the lock is tough. Instead of triggering coordination, publicity might simply be another aspect of the product (Becker and Murphy 1993; Keller 1993, p. 4).

Determining independently whether a good is social or not is also difficult. The general idea, however, of a distinction between public and nonpublic activities has been found to be empirically useful in studies by Anna Harvey (1999) and Juliet Schor (1998). Harvey finds that rates of partisan affiliation in the United States—measured by asking a person whether she considers herself to be a member of a political

party, or whether she cares which party wins, for example—tend to be higher in states in which people can publicly register their party affiliation when they register to vote. This suggests that partisanship is a coordination problem; if partisanship were mainly about, for example, individual loyalty, then party registration laws should not make a difference. Schor looks at women's cosmetics and finds that women are more likely to buy expensive "status brands" of cosmetics that are used in public, such as lipstick, and are less likely to buy status brands of cosmetics which are used in private, such as facial cleansers.

Our finding that popular shows are more expensive per viewer is similar to results from data not across shows but across localities. Fisher, McGowan, and Evans (1980) find that local television station revenue increases not only in the total number of households viewing but also in the square of the total number of households viewing. Similarly, Ottina (1995, p. 7) finds that the larger the local television market, the more advertising revenue is generated per household. Wirth and Bloch (1985, p. 136) find that the rates charged by local stations for a spot on the program *MASH* increase more than linearly in the number of viewing households. Again, there are many possible explanations, including differences in audience demographics and stations' market power across localities. Our data have fewer problems in picking up a pure nonlinearity because they come from the same nationwide viewing audience and advertising market and include complete demographic and cumulative exposure measures.

As mentioned before, several explanations are compatible with the finding that popular shows are more expensive per viewer. By showing also that advertisers of social goods buy slots on more popular shows at a significant premium, we are able to point to the specific explanation that more popular shows generate common knowledge and hence are better at solving coordination problems. In any case, at least we can say that our argument is empirically testable and not just a logical nicety.

Strong Links and Weak Links

An important resource for a group's coordination is the pattern of social relationships among its members. In his discussion of "social capital," James Coleman (1988) cites as an example the "study circles" of South Korean student activists that form the basis for mobilizing demonstrations (for details, see Lee 2000). James Scott (1990, p. 151) notes that "the social coordination evident in traditional crowd action is achieved by the informal networks of community that join members of the subordinate group . . . through kinship, labor exchange, neighborhood, ritual practices, or daily occupational links." Roger Gould (1995, pp. 18–20) explicitly describes both rebellion as a coordination problem and common knowledge as forming through social relations: "Potential recruits to a social movement will only participate if they see themselves as part of a collectivity that is sufficiently large and solidary to assure some chance of success through mobilization. A significant source of the information they need to make this judgement is . . . social relations [that are] the mechanism for mutual recognition of shared interests (and of recognition of this recognition, and so on)."

However, a puzzle has come up in several contexts, having to do with the relative effectiveness of "strong" and "weak" links. The distinction between strong and weak links is an early insight of social network theory (Granovetter 1973). Roughly speaking, a strong link joins close friends and a weak link joins acquaintances. A general empirical finding (Rapoport and Horvath 1961) is that strong links tend to traverse a society "slowly": start with an arbitrary person, find two of her close friends, then find two close friends of each of these two people, and continue in this manner. As you iterate, the group increases slowly because often no one new is added: the close friends of my close friends tend to be my close friends also. If instead you successively add two acquaintances, the group grows quickly: the acquaintances of my acquaintances tend not to be my acquaintances. Weak