Socializing, Shared Experience and Mass Culture

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Received: _____; *Accepted:* _____

Abstract

Socializing is an important economic activity. A critical input into the activity of socializing is the set of experiences—especially cultural experiences—that is shared by participants. Our model of this link provides an explanation of a number of interesting mass culture phenomena, including certain sorts of conformity, the domination of one culture by another, and the existence of superstars.

We gratefully acknowledge the financial support of the Social Sciences and Humanities Research Council of Canada. We would like to acknowledge the comments and criticisms of our colleagues and friends: George Akerlof, Jay Allen, Michael Carter, Jeff Church, Kim-Sau Chung, Cam Donaldson, Greg Dow, Brian Krauth, Philip Meguire, Gordon Myers, Ravi Pendakur, Allen Shiell, J. F. Wen and Lasheng Yuan. Any mistakes that remain are, of course, our own.

1. Introduction

We human beings spend a significant portion of our time socializing. Rarely do we attend movies or concerts or ball games or eat a meal by ourselves; we ski and hike and canoe, and in general recreate, in groups; many of us spend an hour or more per day socializing via E-mail or on the telephone; most of us spend a significant portion of our waking hours in conversation; we sometimes strike up conversations with total strangers; our dreams are filled with imagined conversation.

It is well established that socializing contributes to our well-being (see especially Kahneman and Krueger 2006).[1] Conversation, and socializing in general, rests on a bedrock of shared experience. Socializing is more enjoyable and more efficient if the participants have a set of common experiences. Because they provide a focus for conversation and interaction, shared experiences directly enhance social encounters, and because they facilitate communication, they indirectly enhance them. On the latter point, John Adams (a noted classical composer) observes in a New Yorker profile that "when we communicate, we point to symbols that we have in common. If people want to make a point, they reach for a reference. It might be a Woody Allen movie, or a John Lennon lyric, or 'I'm not a crook"' (Ross, 2001, p. 42).

Some shared experiences are more valuable than others as inputs into socializing. Goods like toothpaste, concrete and microchips carry little metaphorical content and have few links to other aspects of our social, emotional and cultural lives. In contrast, goods like CDs, books, movies, and television programs — cultural goods — carry with them rich metaphorical content that make them especially valuable as inputs to socializing. Consump-

[1] See Lomas (1998) for a review of the evidence and the implications for health policy. Berkman and Syme (1979) is one of the pioneering studies. Bosworth and Schaie (1997) is representative of the recent literature in gerontology and Antonucci, Fuhrer, and Dratigues (1997) of the recent literature on the relationship between mental health and social interaction.

tion of these cultural goods is also related to our choice of, and experience of, identity (see Akerlof and Kranton 2000). Consumption of cultural goods produces value in our social encounters, but only if we choose the right ones, the ones chosen by everyone else. Thus there are consumption externalities attached to these cultural goods.

We use a standard social interactions framework to model consumption choices over cultural goods. Through our model of socializing, we provide an explicit motivation for the existence of the consumption externality in cultural goods. Our analysis explains a number of puzzling cultural phenomena, including the possible domination of one culture by another, country differences in cultural subsidies, the existence of media superstars, and fads.

It is helpful to distinguish two types of social encounter – *random* and *planned*. The identities of the people we meet in random social encounters, like those that occur in elevators or in the line-up at the supermarket, are beyond our control. In addition, the social interactions associated with more critical experiences like job interviews can often involve the uncontrolled matching of people. In this environment of unpredictable or random social encounters, individuals want to have experiences that are shared broadly with the population in order to maximize the utility from the encounters.[2] In planned social encounters, like those that often occur at a dinner party or a business lunch, the identities of the people with whom we interact are carefully chosen. Shared experiences are important inputs in both types of encounter. In particular, in planned social encounters we choose the people with whom we interact based at least in part on the experiences that we have in common with them, while in random social encounters it is not possible to do so. We focus on shared experiences in random social encounters – the type of encounters that give rise to mass

[2] It might be argued that some degree of diversity in experiences improves the utility of socializing in that conversations with a clone of oneself could lead to boredom. Thus, in situations where we choose our social encounters, we often choose to interact with people from different backgrounds. But in random encounters, where the diversity of experience across people is large, we believe that more shared experience is always preferred.

culture.

Herd behavior of the sort first identified in Leibenstein's (1950) article on bandwagon, snob and Veblen effects (see also Corneo and Jeanne 1997) is the core phenomenon in our theory.[3] The defining feature of this literature is formally modeled by Schelling (1971), who explores environments in which aggregate behavior appears as an argument in individual utility functions (in the sociological literature, see especially Granovetter (1978)). More recently, this line of argument is developed in the social interactions literature for both theoretical and empirical studies of neighbourhood effects and other phenomena (see especially Brock and Durlauf (2001, 2000)), but not to understanding mass culture. Our paper is a new application of these ideas and proposes a novel theoretical basis for the presence of aggregate behavior in individual utility functions—the value of social encounters.

2. The Model

We model a series of discrete choice problems with non-overlapping sets of socially linked consumption experiences. In each of these choice problems, every individual chooses one *consumption experience* from a set of consumption experiences. Subsequently, individuals have a series of pairwise *social encounters*. Consumption experiences have a direct *private value* to individuals, and an indirect or derived *potential social value* that is realized (in part, or in whole) in their subsequent social encounters. Social encounters are random events with uniform probabilities across individuals, so that the probability that any one individual encounters any other individual in the population is the same for all individuals. To capture the underlying hypothesis that shared experiences enhance social encounters, we assume that in any encounter, the *realized social value* of participant j is larger if the other

[3] Herd behavior also arises in the social norm literature (see Akerlof (1976, 1980, 1997), Bernheim (1994) and Jones (1984)), and in the literature on informational cascades (see especially Bikhchandani, Hirshleifer and Welch (1992, 1998)). These literatures are not, however, directly related to our work.

participant chose the same consumption experience that participant j chose than it is if the other participant chose a different consumption experience.

In each of these discrete choice problems, there are M *socially linked* consumption experiences denoted by E_i, $i = 1, ..., M$, and one *asocial* consumption experience, denoted by E_0. We denote the private value of E_i to any individual j, net of any out-of-pocket costs, by θ_i^j. We normalize private values by setting $\theta_0^j = 0$ for all individuals j. We impose no *a priori* restrictions on θ_i^j for $i > 0$ — they may be positive, negative, or zero.

Each individual has a total of T social encounters, and gains an increment $s > 0$ of utility from every encounter in which the two participants share the same consumption experience. N_i $(0 \leq N_i \leq 1)$ denotes the proportion or mass of the population that chooses consumption experience E_i. To ensure that N_i is independent of the choice made by any one individual, we assume a continuum of individuals. Given this assumption, the expected utility of consumption experience E_i for individual j, denoted by V_i^j, is:

$$V_0^j = 0, \tag{1}$$

$$V_i^j = \theta_i^j + \sum_{j=1}^{T} sN_i, \ i = 1, ..., M. \tag{2}$$

Defining $S = sT$, this can be rewritten as

$$V_i^j = \theta_i^j + SN_i, \ i = 1, ..., M. \tag{3}$$

E_k is a solution to the individual j's choice problem if $V_k^j \geq V_i^j$ for all $i \neq k$.

Private consumption values, $\theta^j = [\theta_1^j, ..., \theta_M^j]$, differ across individuals, and are distributed according to the continuous and strictly positive probability density function $f(\theta^j) = f(\theta_1^j, ..., \theta_M^j)$.[4]

[4] Brock and Durlauf (2001) explore a similar model. Their model of private valuations of individuals is more restrictive than ours, but permits more general forms of social interaction. In particular, we impose minimal

The exogenous elements of this discrete choice problem are S and f, and the endogenous variables of interest are the aggregate choices $N = [N_1, ..., N_M]$. Although there are $M + 1$ consumption experiences, there are only M independent proportions, so that

$$N_0 = 1 - \sum_{i=1}^{M} N_i. \tag{4}$$

$N^* = [N_1^*, ..., N_M^*]$ denotes the equilibrium proportions for consumption experiences $E_1, ..., E_M$.

Define $\Omega_k(N)$ as the set of individuals who would prefer E_k, given N. Then,

$$\Omega_k(N) = \{\theta^j | V_k^j \geq V_i^j \ \forall \ i \neq k\}, \ k = 1, ..., M. \tag{5}$$

Integrating f over $\Omega_k(N)$ we get $\eta_k(N)$, the proportion or mass of individuals who would prefer E_k to all other consumption experiences, given N:

$$\eta_k(N) = \int_{\Omega_k(N)}, ..., \int f(\theta_1^j, ..., \theta_M^j) d\theta_M^j, ..., d\theta_1^j, \ k = 1, ..., M. \tag{6}$$

Equilibrium proportions satisfy:

$$N_k^* = \eta_k(N^*), \quad k = 1, ..., M. \tag{7}$$

Some general results on equilibrium and welfare are well known for models of this sort. For example, Brock and Durlauf (2001) show the existence of multiple equilibria and demonstrate that equilibria may not maximise total utility in this sort of social interaction environment. In our context, if S is sufficiently large, then the externality dominates consumer choices and there are multiple stable equilibria. When S is small, then the private consumption values dominate consumer choices and there is a single stable interior equilibrium.

restrictions on the distribution of θ_i^j, while Brock and Durlauf assume that private valuations are identical across individuals but for white noise. On the other hand, Brock and Durlauf allow for a very general utility effect of aggregate choices which contrasts with our assumption of a linear effect.

Hence, when S is sufficiently large, there are multiple equilibria characterized by herd behavior. Further, as in any model with positive externalities, an equilibrium may be inefficient in that too little of the positive externality producing activity—in this case, coordinating on a single consumption experience—takes place.

Different discrete choice problems have different, non-overlapping, sets of consumption experiences, different probability density functions, and most importantly, different values of S. Clearly, the utility gained from a consumption experience hinges critically on the value of S. As discussed above, we have in mind at least two sources for the utility value of shared experience. First, shared experiences are directly valuable in social interactions because they provide a focus for the interaction – they give us something to talk about. Second, shared experiences are indirectly valuable because they facilitate communication.

We suppose that S is large in situations where we are choosing among cultural goods like movies, or books, or television shows, or sporting activities.. In contrast, we suppose that S is zero, or nearly so, in situations were we are choosing among goods like ball point pens that carry no metaphorical, cultural or social content.

3. Simulation

In this section we outline and illustrate a simulation approach that quickly conveys some of the important features of the model. We use this approach in subsequent sections to explore a number of questions. There are just two socially linked consumption experiences, E_1 and E_2, and one asocial consumption experience, E_0. Private values θ_1^j and θ_2^j are distributed independently and normally in the population, so that f is just the product of two normal distributions. We use an *adaptive adjustment dynamic* to go from initial conditions, $N^0 = (N_1^0, N_2^0)$, to equilibrium proportions, $N^* = (N_1^*, N_2^*)$. Our convergence

criterion is $|\eta_i(N) - N_i|/\eta_i(N) \leq 0.000001$ for all i. If the convergence criterion is not satisfied, then each N_i is adjusted by the addition of $(\eta_i(N) - N_i)/10$.

Figures 1 through 4 illustrate the comparative statics with respect to S for the case in which θ_1 and θ_2 have different means. In these figures, the mean of the θ_1 distribution is $\mu_1 = 0.25$, the mean of the θ_2 distribution is $\mu_2 = -0.25$, and both variances are 1. The figures are attractor spaces, with N_1 and N_2 on the two axes, and the lines depict adjustment paths from a variety of initial conditions to the equilibrium (equilibria), denoted in the figures by filled squares. Social optima are marked by empty squares in these figures.

In Figure 1, $S = 0$, and $N^* = (.498, .261)$. In this case, the social optimum coincides with the equilibrium. Because the average private valuation of E_1 is higher than that of E_2, the equilibrium proportions favor E_1. In Figure 2, $S = 1$. In this case, $N^* = (.703, .209)$, and the socially optimal proportions are $N^{**} = (.940, .054)$. Notice that, relative to the social optimum, in the equilibrium too few people choose E_1. In Figure 3, $S = 2$, equilibrium proportions are $N^* = (.939, 051)$, and socially optimal proportions are $N^{**} = (.999, .001)$.[5]

In Figure 4, $S = 3$. Now there are two equilibria, $N^* = (.993, .007)$ and $N^* = (.071, .927)$ – notice that the basin of attraction for the first equilibrium is much larger than that for the second because private valuations favor E_1. The social optimum is unique and has virtually everyone choosing E_1.

4. Public Support for the Arts

In this section we use our model to show how the mass culture of a small country can come to be dominated by that of a larger a possibility that we call *cultural imperialism*, and to provide an explanation for differences across countries in public support for the arts.

[5] In the text, we report population proportions in (0.999,1.000) as .999 to distinguish them from corner solutions where the proportion is exactly 1.

Traditional explanations for state subsidies to the arts focus on externalities and resulting market failures. Recent work (Zimmer and Toepler, 1999) has criticized this approach because the externalities identified are similar across countries and thus cannot explain the significant variation in subsidies across countries. Throsby (1994, p. 21) reports that whereas public expenditure on the arts is only \$3 per capita in the USA, it is \$16 per capita in the UK, \$28 per capita in Canada and \$45 per capita in Sweden. Although the Canadian population is only a tenth of the U. S. population, Canada spends almost as much as does the U. S. in this area. Our model suggests a reason that small countries spend more on the arts and cultural preservation than do large countries: a small country may face the possibility that its culture may be replaced by a larger culture. If we suppose that countries desire to maintain their own cultural identities, larger per-capita expenditures may be desirable in smaller countries. Our model suggests that the welfare implications of this sort of cultural imperialism, and the cultural protectionism that it engenders, are not straightforward, and it may be the case that social welfare in small countries is decreased by their efforts to support their cultures.

To get some insight into the domination of a small culture by a large culture, we imagine a situation in which two countries, a large one and a small one, exist side-by-side, with the same two socially linked consumption experiences to choose from, but with different distributions of private values in each country. In country A, most people privately prefer E_1, while in country B, most people privately prefer E_2. Specifically, in country A the means of the θ_1^j and θ_2^j distributions are $\mu_1^A = 0.25$ and $\mu_2^A = -0.25$, respectively, while in country B they are $\mu_1^B = -0.25$ and $\mu_2^B = 0.25$, respectively. The standard deviations of all four θ distributions are 1. The population of country A is assumed to be 10 times the population of country B.

We then imagine a scenario in which the frequency of cross-border socializing increases over time, as communication and mobility costs decrease, and we focus on the ways in which the equilibria in the two countries change as cross-border socializing increases. This scenario is intended to mimic the ever increasing levels of cross-cultural interaction that have occurred over that last century. We use as initial conditions the equilibrium proportions for the equilibrium favoring E_1 in country A and for the equilibrium favoring E_2 in country B.

We define a *cross-border socializing* parameter, C, on the unit interval [0,1] such that with $C = 0$, all social encounters occur within countries, and with $C = 1$, social encounters are independent of national borders. Specifically, residents of either country have a fraction C of their social encounters with individuals drawn randomly from the pooled population, and a fraction $1 - C$ of their social encounters with individuals drawn randomly from the population of their own country.

In Figure 5, $S = 1$. The filled squares denote NA_2^*, the number of people who choose E_2 in country A's equilibrium, and the filled triangles denote NB_2^*, the number of people who choose E_2 in country B's equilibrium. Because S is relatively small, there is just one equilibrium in each country. We see from the figure that as C increases, the equilibria in the two countries are drawn toward each other. The larger is C, the less attractive is E_2 for individuals in country B because a larger portion of their social encounters are with people in country A, most of whom choose E_1; similarly, the larger is C, the more attractive is E_2 for individuals in country A because a larger portion of their social encounters are with people in country B, most of whom choose E_2. But, because the population of country B is much smaller than that of country A, country B's equilibrium is much more sensitive to cross border social encounters than is country A's equilibrium: with $C = 0$, $NA_2^* = .210$ and $NB_2^* = .703$, and with $C = 1$, $NA_2^* = .226$ and $NB_2^* = .471$.

In Figure 5, we also report welfare results for the case in which $S = 1$. Empty squares denote aggregate welfare for country A and empty triangles denote aggregate welfare for country B. To facilitate comparison, these welfare measures are scaled so that within-country welfare equals 1 when $C = 0$. Notice that welfare is highest for both countries when $C = 0$ and that it declines in C. This is because when $C = 0$, relatively homogeneous within-country populations are engaging in social encounters only with other residents of their own county. However, as C rises, the frequency of social encounters with people who have chosen different consumption experiences rises, which diminishes the realized social value of consumption experiences.[6]

In Figure 6, $S = 4$. Now S is so large that, when C is small there are two equilibria in each country. When there are multiple equilibria, for country B we pick the equilibrium in which the majority of people chooses E_2, and for country A we pick the equilibrium in which the majority of people choose E_1. For $C < 0.28$, the pattern is similar to what we saw in Figure 5: as C increases NA_2^* moves (imperceptibly) upward toward NB_2^*, while NB_2^* moves downward toward NA_2^*. But, at $C = 0.28$, in country B, the equilibrium in which NB_2^* is large simply vanishes, and residents of country B flock to E_1. This is a really dramatic form of cultural domination: increasing cross-border socializing abruptly destroys the equilibrium in country B in which most people choose E_2, and further if we focus only on the evolution of NB_2^* when $C < 0.28$, there is really no warning of the impending discontinuity – no warning that the culture of the smaller country is about to be swamped by that of the larger country.

In Figure 6, we also report welfare results for the case in which $S = 4$. As in Figure 5, empty squares denote welfare for country A and empty triangles denote welfare for country B, and welfare measures have again been scaled so that within-country welfare equals 1 when

[6] Clearly, our partial equilibrium model does not capture the standard welfare effects associated with decreasing costs of mobility, communication, and transportation, most of which are positive. Accordingly, one should not conclude based on results reported here that $C = 0$ is optimal in a global sense.

$C = 0$. With large S, the welfare effects are dramatic. Within-country welfare is highest for each country when $C = 0$. As C rises from zero, welfare declines slightly in country A and precipitously in country B. This is because for any given increase in C, the frequency of social contact with residents of the other country increases slightly for residents of country A and greatly for residents of country B. At the switch-point of $C = 0.28$, welfare in both countries jumps up, as residents of both countries coordinate on the same consumption activity, E_1. In country A, welfare jumps back up to its value with $C = 0$. However, in country B, welfare never recovers to its value with $C = 0$, because in the E_1 equilibrium, citizens of Country B are coordinating on a consumption experience that is intrinsically inferior given their private preferences.

Clearly, in both cases the mass culture equilibrium in the smaller country is more susceptible to changes driven by increases in the level of cross-border socializing, and thus the small country may have more reason to attempt to manage its mass culture. This is particularly so in the second case where S is large – if the smaller country does not subsidize its cultural goods, it risks the disappearance of those cultural goods. Our welfare results suggest that effective support of arts and culture may be very expensive for small countries.

5. Superstars

The superstar literature is focused on explaining why in mass culture environments some actors, musicians, painters and authors enjoy immense earnings both in an absolute sense and relative to the incomes of an army of equally (or almost equally) talented starving artists. Dominant explanations (e.g., see Rosen (1981), MacDonald (1988) and Frank and Cook (1995)) for the existence of superstars stress the supply side, for example, increasing returns in production driven by large development costs and insignificant costs of reproduction. In

contrast, Adler (1985) suggests a demand side story in which agents receive utility from both direct contact with artistic works and discussing the works with other knowledgeable individuals. Adler analyses an environment with homogeneous preferences and stresses the idea that appreciation increases with knowledge. In this environment, superstars can emerge even in the absence of pure quality differences.

Our explanation of superstars is similar to Adler's, but situated in an environment with no learning and with heterogeneous preferences. In this environment, consumers are not interested in learning from their conversation partners, but rather in the conversation itself. There is an externality between the choices of different consumers that leads to a coordination problem among them. Our explanation yields superstars even when consumers have widely varying preferences over the intrinsic quality of artists. Further, our model allows for superstars who are thought to be untalented by almost everyone.

When S is large, consumers want to coordinate their choices so as to realize potential social value, but since there are many equilibria that achieve the desired coordination, there is a coordination problem. We argue that consumers use superstars to solve this coordination problem. When superstars are used in this way, there can be only a small number of them since superstar opposite superstar yields no coordination value. Another implication is that more talented newcomers may be forced to wait a long time before becoming superstars — witness the examples of Van Gogh, Mozart and Lenny Breau, all of whom died penniless.

We use a tournament simulation of binary choice to illustrate the emergence of superstars in a setting where past histories of actors matter. In these simulations $S = 4$ and the distribution of private values is nearly symmetric so that there are almost always two stable equilibria, which for all practical purposes are corner equilibria in which everyone chooses the same consumption experience. Actors' histories establish the initial conditions, and

therefore essentially determine the equilibrium that is attained.

In each period, two consumption experiences vie for market share. The standard deviations of both private value distributions are 1, and the means of the two distributions are random draws from a normal density function with standard deviation σ and mean 0. One of 10 actors (or writers or musicians) is randomly assigned to each consumption experience, and initial conditions are determined by the sum of the actors' market shares in all previous periods. In this environment, since S is large, an actor's market share in any period is either very close to 1 or very close to 0. Naturally, an actor that is not assigned in that period gets a market share of zero. Letting H_i denote the sum of the market shares of the actor associated with E_i $(i = 1, 2)$, the initial value of N_i in any period of the simulation is $H_i/(H_1 + H_2)$. Table 1 reports results for simulations that differ by value of σ, each of which was run for 1000 periods. Average market shares of the 10 actors over the last 200 periods of the simulation are reported in rank order. Each actor participates in approximately 40 of the 200 periods, and her average market share in those participating periods is reported. Thus, the market shares reported in Table 1 do not sum to 1 across actors.

Table 1: Superstars				
	Variance			
Rank	$\sigma = 100$	$\sigma = 1$	$\sigma = 0.05$	$\sigma = 0.000001$
1	0.61	.66	1.00	0.95
2	0.54	.63	0.85	0.93
3	0.54	.62	0.78	0.72
4	0.52	.52	0.70	0.66
5	0.52	.51	0.46	0.62
6	0.51	.50	0.41	0.27
7	0.49	.47	0.39	0.25
8	0.46	.43	0.21	0.18
9	0.45	.42	0.12	0.03
10	0.35	.15	0.00	0.00

The results reported in this table show an interesting interplay between the role of initial conditions and differences in the inherent quality of consumption experiences in picking the equilibrium that emerges. When σ is large, there is considerable variance in average quality. Hence the better actor in any period tends to have a very large basin of attraction, which implies that only rarely do differences in initial conditions pick the equilibrium in which the inferior actor dominates the market. Because initial conditions are essentially irrelevant when σ is large, average market shares of all actors tend toward 0.5. In contrast, when σ is small, there is very little variance in the average quality of consumption experiences. Hence, in most periods there is very little difference in the sizes of the basins of attraction, which means that initial conditions play a dominant role in picking the equilibrium that emerges. Accordingly, an actor's relative success in the first few periods of the simulation determines

the actor's relative success for the entire simulation. Since S is large, it is necessarily the case that there are significant differences in relative success in the first few periods of any simulation, which persist throughout the entire simulation. In short, when σ is small and S is large, we get superstars – that is, actors who get very large market shares over extended periods of time, not because they are inherently superior to other actors, but simply because they were lucky in the first few periods of the simulation.

Notice that the explanation of superstars that we are offering is applicable to situations where there are small differences in the inherent quality of the consumption experiences, and a large utility from coordinated consumption. We would argue that these conditions prevail in a variety of entertainment industries, including music, movies, and books.

It might be argued that all we have done is to add another rationale for the existence of superstars to an already plausible set of hypotheses. Our case is strengthened by the following observation. While superstars dominate mass culture films, in another market for movies, the evolution of the superstar phenomenon has been quite different. The Economist (1999) reported that in pornography, the studio system – with actors on payroll and the absence of superstars – emerged in the latter decades of the twentieth century as the dominant form of organization. In contrast, Considine (2003) reports the recent appearance of superstars in pornography. The proposed explanation for this contrast directly supports our story for the existence of superstars. "There was a stigma up until a few years ago where no one wanted to admit they watched porn ... And now, it's 'Oh, yeah. Of course I do.' So it's very mainstream." We would put the argument as follows. Since cultural norms in the 1980s and 1990s restricted many people from sharing their pornography experiences in social encounters, superstars were not useful as coordination devices. Rather there was an information problem but not a coordination problem. What was needed was a producer

with a good reputation — just what emerged in the pornographic movie industry. By 2003, pornography had attained more mainstream status, conversations regarding pornography became more commonplace, a mechanism was needed to coordinate consumption, and as a result popular culture created superstars.

6. Fads and Related Phenomena

Fads refer to herd behavior that is ephemeral – in our model, a fad refers to a situation in which a good captures a large market share for a relatively small period of time. Fads are common in the market for children's toys, where one toy may capture a huge market share, but for a short period of time. The dominant explanation of fads is informational cascades (see Bikhchandani, Hirshleifer, and Welch (1992, 1998)). This explanation requires that consumers have identical preferences over quality, that they sequentially observe the purchasing decisions of others but not the quality of the goods they buy, and that no specialized expertise in quality assessment exists on which consumers may rely. These conditions are difficult to rationalize for the kinds of cultural goods we are concerned with. Book reviews, movie reviews, television and sporting event previews and restaurant guides are pervasive. Our experience is that people, especially children, delight in telling everyone about their cultural experiences often in the hope that others will choose to share them. Our model, which incorporates heterogeneous preferences, simultaneous choice and perfect information about product quality, is we believe more appropriate for cultural goods than is the informational cascades model. Further, with the addition of quality decay, described below, our model generates fads.

We use a tournament framework in which popular consumption experiences survive and unpopular ones are eliminated and replaced by new consumption experiences drawn ran-

domly from a quality distribution. Both private value decay and initial conditions are central to our story. Consider, for example, TV shows. Decay could arise for a number of reasons: if sitcom writers exploit their best ideas first, then decay is a natural phenomenon; often most of the real news in continuing news stories come out in the first few weeks and the informational content of news broadcasts decays over time (for example, in the Clinton/Lewinsky affair); in TV serials, decay may be driven by consumers' boredom with the set of main characters or other fixed elements of the show's formula.

We illustrate with simulations the relationship between fads and high values of shared consumption experiences and the decay of those experiences. In every period let two consumption experiences vie for market share. We set the variances of the private value distributions for all consumption experiences to 1. The means of these distributions are generated by random draws from a standard normal distribution. A consumption experience that captures a market share less than 20% is eliminated and replaced by another, whereas those that have a market share greater than 20% survive. The private values of all consumers for a surviving consumption experience decay from one period to the next by an absolute amount D. In each period except the first, initial conditions are determined by market shares in the previous period. When S is large, one consumption experience will survive and one will be eliminated in each period, and initial conditions in the next period will favor the surviving consumption experience. Since the extreme market shares associated with large values of S are the stuff of which fads are made, we restrict attention to values of $S \geq 2$ that tend to create equilibria with extreme market shares.

Table 2 summarizes results for 12 simulations distinguished by different values of the parameters D and S. Each simulation ran for 1000 periods. A consumption experience is called *successful* if it lasted for more than one period—that is, if it captured a market share

of at least 20% in at least one period. The number of successful consumption experiences is reported in the columns labeled *successes*, and the *mean duration* of successful experiences is reported in parentheses in the same columns. The percentage of periods in which the successful consumption experience had a higher mean private value than the eliminated consumption experience is reported in the columns labeled *% efficient*.

Table 2: Fads

	Decay					
	$D = 0.00$		$D = 0.05$		$D = 0.10$	
Social Interaction	successes	% efficient	successes	% efficient	successes	% efficient
$S = 2$	5 (201)	100	91 (14)	84.0	145 (9)	86.3
$S = 3$	3 (334)	99.1	49 (21)	90.9	85 (13)	87.5
$S = 4$	1 (1000)	96.7	31 (33)	77.1	54 (20)	70.9

When there is no decay ($D = 0$), for any value of S there are a small number of successful consumption experiences, and a correspondingly large mean duration, and a very high efficiency index – more than 95% of the time the successful consumption experience has a higher mean private value than the eliminated consumption experience. The number of successful consumption experiences diminishes as S increases, their mean duration increases, and the efficiency index decreases. These results are intuitive. With no decay, a consumption experience with a good private value distribution (one with a high mean) can be dislodged only by one with a better private value distribution (one with a higher mean). The better is the private value distribution, the longer on average is the interval of time before it is dislodged. In addition, the bias in initial conditions favoring surviving consumption experiences increases in S, so that the average interval of time before an experience is dislodged increases in S.

With $D > 0$ the ephemeral dominance characteristic of fads becomes evident. In addition, there is a clear and readily understood pattern in the results. Holding S constant, the larger is D, the larger is the number of successful consumption experiences, and the smaller is their mean duration. Holding D constant, the larger is S, the smaller is the mean duration of successful consumption experiences, and the larger is their mean duration.

With no decay ($D = 0$) or with no utility gained from shared experience ($S = 0$), there are no fads—high quality consumption experiences dominate forever. Fads are possible if decay in private values overwhelms the persistence of equilibria caused by a high value of S. The length and frequency of fads thus depends on the interaction of D and S.

There is a sense in which the United States is, and has been for a very long time, a football culture, while western Europe is, and has been for a very long time, a soccer culture. There have been numerous attempts to introduce American style professional football in Europe and to introduce professional soccer in the United States, but success has been limited. We would argue that the limited success is evidence of a large S and a very small D. Americans never tire of watching and talking about football, and because they don't, soccer will never replace football as the dominant team sport in the United States. Similarly, Europeans never tire of watching and talking about soccer, and because they don't, football will never replace soccer as the dominant team sport in Europe.

7. Concluding Remarks

This paper is built on two hypotheses, and two straightforward implications. The first hypothesis is that socializing is an important economic activity, and the second is that shared experiences are an important input into the activity of socializing. The first implication is that certain sorts of consumption experiences have, in addition to a private value, a potential

social value. The second implication is that in situations where, for most people, the potential social value is large relative to differences in private values, there are multiple equilibria, and in all of them we see herd behavior, or conformity. The first hypothesis is, we believe, undeniably true – socializing is important to our well-being. The second is, we think, also true, because shared experiences play a very visible role in our social interactions. The fact that we are able to provide a unified explanation of a variety of interesting and disparate phenomena is perhaps another indication that this line of research is worth exploring.

REFERENCES

Adler, M. (1985), "Stardom and Talent," *American Economic Review*, 75, 208-12.

Akerlof, G. (1976), "The Economics of Caste and of the Rat Race and Other Woeful Tales," *Quarterly Journal of Economics*, 90, 599-617.

Akerlof, G. (1980), "A Theory of Social Custom, of which Unemployment May Be One Consequence," *Quarterly Journal of Economics*, 84, 749-75.

Akerlof, G. (1997), "Social Distance and Social decisions", *Econometrica*, 65, 1005-1027.

Akerlof, G. and R. Kranton (2000), "Economics And Identity", *Quarterly Journal of Economics* 115(3), pp 715-753.

Antonucci, T., R. Fuhrer and J. F. Dartigues (1977), "Social Relations and Depressive Symptomatology in a Sample of Community-Dwelling French Older Adults," *Psychology and Aging*, 12, 189-195.

Bernheim, B. D. (1994), "A Theory of Conformity," *Journal of Political Economy*, 102, 841-877.

Berkman, L and S. Syme (1979), "Social Networks, Host Resistance, and Mortality: A Nine-Year Follow-Up Study of Alameda County Residents," *American Journal of Epidemiology*, 109, 186-204.

Bikhchandani, S., D. Hirshleifer and I. Welch (1998), "Learning from the Behavior of Others: Conformity, Fads, and Informational Cascades," *The Journal of Economic Perspectives*, 12, 151-170.

Bikhchandani, S., D. Hirshleifer and I. Welch (1992), "A Theory of Fads, Fashion, Custom, and Cultural Change as Informational Cascades," *Journal of Political Economy*, 100, 992-1026.

Bosworth, H. and K. Schaie (1977), "The Relationship of Social Environment, Social Networks, and Health Outcomes in the Seattle Longitudinal Study: Two Analytical Approaches," *Journal of Gerontology*, 52B, 197-205.

Brock, W. and S. Durlauf (2001), "Discrete Choice with Social Interactions", *Review of Economic Studies*, 68(2) pp 235-260.

Brock, W. and S. Durlauf (2000), "Interactions-Based Models", in *Handbook of Econometrics* Volume 5, J. Heckman and E. Leamer (eds), Amsterdam: North Holland.

Considine, J.D. (2003), "Boogie nights." *Globe and Mail* (May 7), pp R1 and R4.

Corneo, G. and O. Jeanne (1997), "Conspicuous Consumption, Snobbism and Conformism", *Journal of Public Economics*, 66, 55-71.

Economist, (1999), "Branded Flesh," *The Economist–FACE VALUE*, August 14 - 20 (1999), page 56.

Frank, R. H. and P. J. Cook (1995), *The Winner-Tale-All Society*. New York : Free Press.

Gravonovetter, M. (1978), "Threshold Models of Collective Behavior." *American Journal of Sociology*, 83, 1420-1443.

Jones, S. (1984), *The Economics of Conformism*. Oxford: Blackwell, 1984.

Kahneman, D. and A. Krueger (2006), "Developments in the Measurement of Subjective Well-Being", *Journal of Economic Perspectives*, 20(1), pp 3-24.

Karni, E. and D. Levin (1994), "Social Attributes and Strategic Equilibrium," *Journal of Political Economy*, 102, 822-840.

Leibenstein, H. (1950), "Bandwagon, Snob, and Veblen Effects in the Theory of Consumer Demand," *The Quarterly Journal of Economics*, 64, 183-207.

Lomas, J. (1998),"Social Capital and Health: Implications for Public Health and Epidemiology," *Social Science and Medicine*, 47, 1181-1188.

MacDonald, G. M. (1988), "The Economics of Rising Stars," *American Economic Review* 78, 155-66.

Panek, R. (1999), "Seeing the Familiar in Ever new Ways," *New York Times*, (June 20, 1999).

Rosen, S. (1981), "The Economics of Superstars," *American Economic Review*, 71, 845-58.

Ross, A. (2001), "Profiles, The Harmonist" *New Yorker*, January 8, 2001, pp. 40-46.

Schelling, T. (1971), "Dynamic Models of Segregation," *Journal of Mathematical Sociology*, 1, 143-186.

Throsby, D.(1994), "The Production and Consumption of the Arts: A View of Cultural Economics," *Journal of Economic Literature*, 32, 1-29.

Zimmer, A. and S. Toepler (1999), "The Subsidized Muse: Government and the Arts in Western Europe and the United States," *Journal of Cultural Economics*, 23, 33-49.

Figure 1: Simulation with S=0

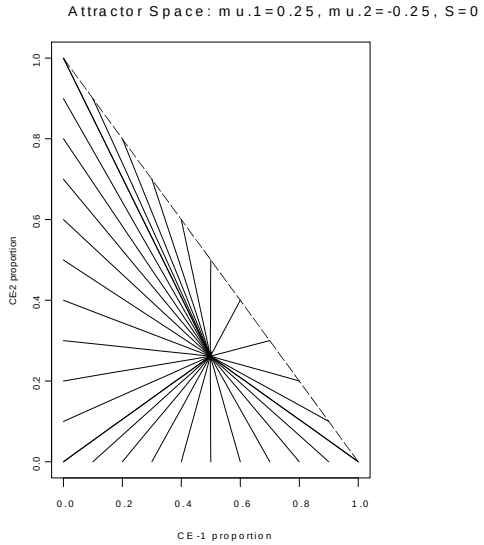

Figure 2: Simulation with S=1

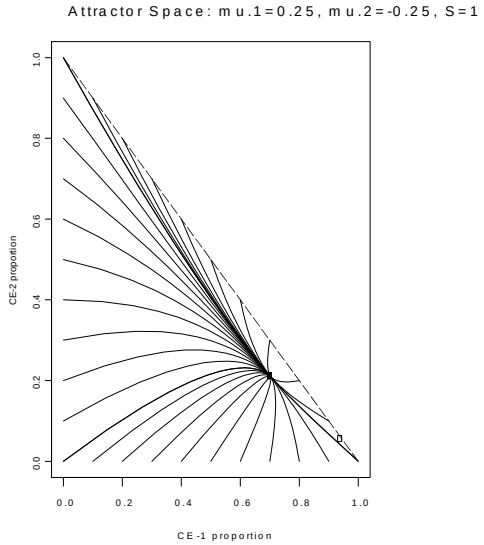

Figure 3: Simulation with S=2

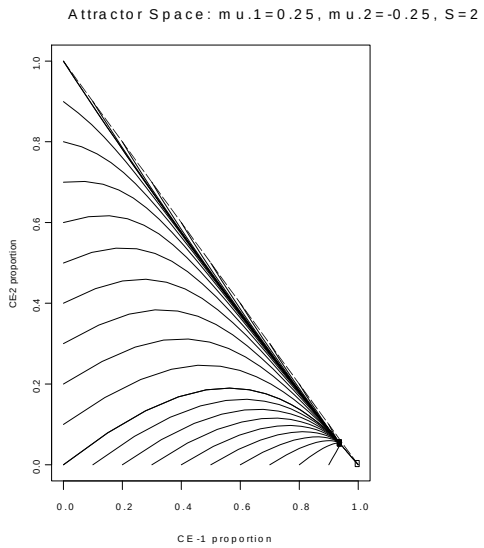

Figure 4: Simulation with S=3

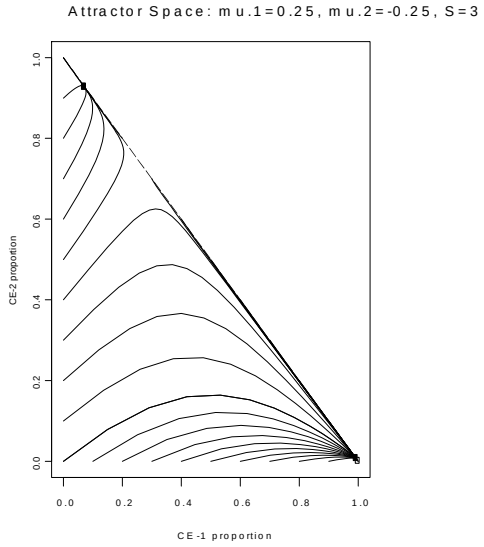

Figure 5: Equilibrium and Welfare in Two Countries with S=1

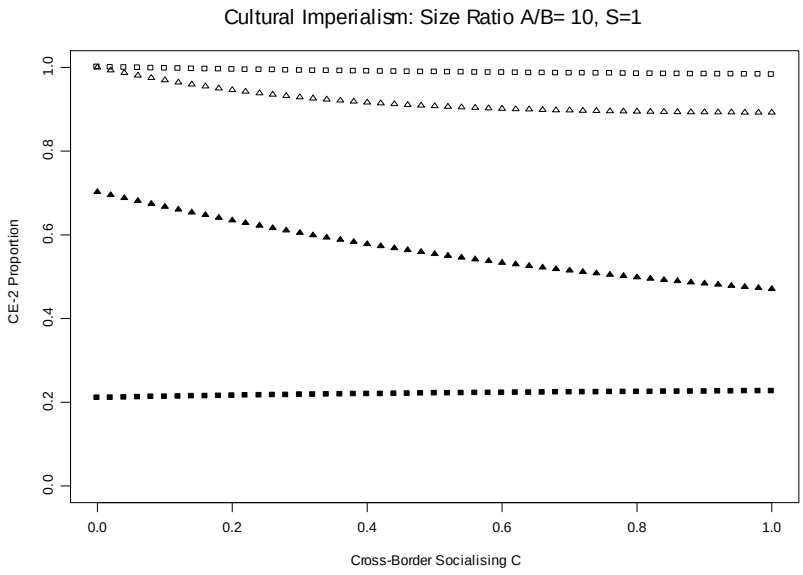

Figure 6: Equilibrium and Welfare in Two Countries with S=4