INVESTING IN SOCIAL NORMS *

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Abstract. We show how social norms may be endogenously created in the context of Akerlof's theory of social custom. We argue that the development of a social norm can be conceived as an investment activity under external effects. As an example, the case of a consumption norm is presented. We provide conditions under which the norm is introduced and fully characterize the equilibrium path. Due to the externality, consumption norms may not come into existence under perfect competition, whereas a monopolist may be able to introduce norms even when they are inefficient.

Key Words: social norms, reputational goods, investment.

JEL Classification N°: Z1, D4, M3.

INVESTISSEMENT EN NORMES SOCIALES

Résumé. Nous développons la théorie de la coutume sociale de Akerlof en considérant le problème de la genèse des normes sociales. Nous montrons que la création d'une norme sociale peut prendre la forme d'un investissement soumis à des externalités. Cette idée est développée à l'aide d'un modèle concernant la genèse d'une norme de consommation. Nous déterminons à la fois les conditions sous lesquelles la norme est introduite et son chemin d'équilibre. A cause de l'externalité, la norme est introduite en régime de monopole mais pas en concurrence parfaite. La norme est introduite même si elle est inefficace du point de vue collectif.

Mots Clés: normes sociales, biens réputationnels, investissement.

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1. Introduction.

It is widely recognized that social norms influence a wide range of economic phenomena. Social norms matter because they specify what most members of a community think to be desirable behavior. Desirability in turn may be deduced from efficiency considerations as well as from ethical or religious beliefs. A seminal contribution to the economics of social norms has been provided by Akerlof's (1980) theory of social custom. This approach builds on two main ideas. Firstly, individuals are deeply concerned with their reputation within the community in which they live. Behaving in accordance with existing social norms is interpreted as a way of sustaining an individual's reputation. If breaking a norm induces a loss of reputation, individuals might be willing to comply with the norm also when the norm is costly to follow. Secondly, the reputational value of a behavior is entirely determined by past social practice. These two elements can provide an explanation for the persistence of social norms, even when they are inefficient.

As already stressed by Akerlof (1980), a general

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1 This hypothesis is supported by psychological studies which suggest that almost any stable state of affairs tends to become accepted as a norm, e.g. terms of exchange that are initially seen as unfair may in time acquire the status of a reference transaction (see Kahneman et al [1986]).

2 An alternative approach is proposed in the literature on repeated games, in which social norms are often referred to as a selection of a particular equilibrium [see e.g. Cole et al. (1992), Goyal and Janssen (1992), Kandori (1993)]. Another strand of literature treats customs as informational cascades in a Bayesian learning framework (see, e.g., Bikchandani et al [1992]).

property of his theory is that whenever a long-run equilibrium exists in which the social norm is obeyed, another equilibrium exists in which nobody follows it. Moreover, long-run equilibria are history-dependent. In particular, if the initial reputational value of a given behavior is nil, nobody will adopt it, and the lack of practice will in turn prevent it from becoming a social norm. Conversely, if the initial reputational value is sufficiently large, reputational incentives may lead to the persistence of the norm. Thus, a fundamental issue about social norms, namely the question of their origin, was left unanswered in Akerlof's article. Starting from some initial state, in which nobody attributes a reputational value to a given behavior, how can this behavior ever become a social norm?

The idea that we want to scrutinize here is that social norms may, to a certain extent, be consciously created by long-termed agents and institutions. In our model, the endogenous development of a social norm takes the form of an investment activity. A social norm may be created by inducing a certain fraction of the community to follow a behavioral pattern for a sufficiently long time. This may involve some incentive costs for some initial time, and yield long term benefits. We refer to this activity as an investment in social norms.

While we think that investing in social norms is a socially pervasive phenomenon⁴, the focus of the present investigation is on firm investment in consumption norms. Consumption norms attach a reputational value to consumption behavior, like wearing bell-bottom jeans or driving sport cars. Typically, a firm investing in a consumption norm for its output starts with selling at a low price in order to create the market for the good. As time goes on, agents may attribute a reputational value to the consumption of the good, which induces some agents to buy the good even if it has no intrinsic utility for them. Thus the firm can sell at a higher price and reap the gains of its

⁴ Most evident examples of institutions investing in social norms are the family, growing up children, and the state, forming citizens by means of the school system and the military service.
investment. Whether or not a firm chooses to invest in a consumption norm crucially depends on its market power. In fact, creating a social norm generally involves an externality. In our example, all producers benefit from an increase in the reputational value of the good. Hence, the individual incentive to invest declines with the number of firms, and may completely disappear if the industry is perfectly competitive.

In what follows we analyze the behavior of firms investing in a consumption norm. In the next section, we show that perfect competition may prevent the formation of new consumption norms. In section 3, we replace the competitive industry with a monopolist, and show that a consumption norm may be endogenously created. We provide conditions under which the norm is introduced and fully characterize the equilibrium path.

2. The model with perfect competition.

We consider a continuous time economy in which a continuum of agents \([0,1]\) consumes a good. This good is "reputational" in the sense of Akerlof (1980), i.e. it decreases the utility of those who do not consume it. This utility loss may be interpreted as a loss of reputation, which depends on the number of agents in the economy who attribute a symbolic value or some "social status" to the consumption of this good. Formally, the utility of agent \(c \in [0,1]\) depends on the good in the following way:

\[ U_c = R_c - \delta c \cdot p \]

where \(\delta c\) is a dummy variable indicating the decision to buy the good. These agents are called "believers" in Akerlof's article. One may assume that the attention of these agents go to those who consume the good, like in Veblen's theory of conspicuous consumption (Veblen (1922)).
good ($\delta c=1$ if agent $c$ buys the good, $\delta c=0$ if not), while $p$ is the price the agent must pay for it. The good has no intrinsic utility. The sole utility it yields to the consumer is purely reputational, and amounts to $Rc$, given by:

$$Rc = -b \cdot (1-\delta c) \cdot R/e \quad R>0 \quad (1)$$

where $b$ may be seen as the number of agents who attribute a symbolic value to the good. Hereinafter, we shall refer to this variable as the reputational value of the good. The reputational disutility of not consuming the good is decreasing with $c$; in other terms, agents with higher $c$ are less sensitive to their reputation. We assume that $b$ is related to the number of consumers through the following dynamics:

$$\frac{db}{dt} = \alpha \cdot [B(nt) - bt] \quad , \alpha>0 \quad (2)$$

where $nt = \int_0^t \delta c \cdot dc$ is the number of consumers at time $t$, and $B(.)$ is a function defined on $[0,1]$ that gives the long-term reputational value of the good. This dynamics on $b$ generalizes Akerlof (1980), who assumes $B(n)=n$. It is general enough to capture different types of reputational effects associated with consumption, like the desire to look like others (conformism) or, conversely, the desire to look different (snobbery). The function $B(n)$ depicted in Figure 1.a corresponds to the case of snobbery: the long-term reputational value of the good is maximum when it is consumed by a small number, the élite. The size of the élite must be large enough for the good to be known in the whole society, and small enough for the good to keep its distinction value. Conformism is represented in Figure 1.b: the good becomes more desirable as soon as the number of consumers exceeds a rather large critical value. We make the following minimal assumptions on $B(.)$. It is positive and smaller than one, continuously differentiable, and $B(0)=0^6$.

*6Reputational effects associated with the consumption of "positional goods" are also captured by our specification. Positional goods are things whose utility depends on how they compare with things consumed by others [see Frank (1985)]. Setting $\alpha=+\infty$ in our model, the loss of reputation from not consuming the
The maximization of the utility function implies that agent $c$ consumes the good at $t$ if and only if:

$$c < \frac{R \cdot bt}{pt}$$

whence the number of consumers at $t$ is:

$$n_t = \text{Inf.} \left[ \frac{R \cdot bt}{pt}, 1 \right]$$

Let us assume that the good may be produced by a large number of producers with a constant marginal cost $c$, and that competition is perfect. (The case of imperfect competition will be considered in the next section.) It follows that the price of the good is constant and equal to $c$. The dynamics of the economy is then described by the two equations:

$$\begin{cases} \frac{db}{dt} = \alpha \cdot [B(n_t) - bt] \\ n_t = \text{Inf.} \left[ \frac{Rbt}{c}, 1 \right] \end{cases}$$

As Figure 2 shows it, there typically exist two stable stationary equilibria. In the first one, the good has no reputational value. Accordingly, the demand for it at price $c$ is nil, and it is not supplied by producers. In the second equilibrium, the good does have a reputational value, which generates some demand for it at price $c$. The reputation value of the good is in turn maintained by its consumption. These results depend on the fraction of the population that consumes the good, which means that the good is positional.

In Figure 2 it is assumed that $R > c$ and $B'(0) = 0$. For $b = 0$ to be a stable equilibrium in the snobbish case, a necessary condition is $B'(0) < c/R$. 

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hold whether the good is conformist or snobbish, but there is a
difference between the two cases. A snobbish good must be sold in
small quantity in order to maintain its reputation value, while
the converse is true for conformist goods.

The dynamics of the reputational value crucially
depends on the initial conditions. As Figure 2 makes clear, if the
initial reputational value of the good, \( b_0 \), is lower than some
critical level, the reputational value tends to disappear in the
long term. On the other hand, if \( b_0 \) is larger than the critical
level, the economy converges towards a steady state where
consumption of the good persists. Hence the fate of the good is
determined by its initial reputational value, which in turn
depends on the whole history of its consumption. This is exactly
the kind of results stressed by Akerlof (1980) in a similar model.

While this model underlines the importance of
history, it makes difficult to understand how new social norms may
arise. In our example, a new reputational good will never be
launched in the market. This is because, by definition, a new
reputational good has never been consumed, and accordingly has no
initial reputational value. It would acquire some value by being
consumed, but it never is because consumers do not buy it at a
positive price. Thus, some new ingredient must be added to the
model in order to explain the emergence of social norms, which is
done in the next section.

(Insert Figure 2 here)
3. Creation of a social norm by a monopolist.

Let us assume that a reputational good with no initial reputational value ($b_0=0$) may be produced and sold by a monopolist until the end of times. The stockholders of the producer represent an infinitesimal fraction of the population, so that the profit which they share is infinitely larger than the utility they derive from the good as consumers. Thus, because utility is linear, the producer maximizes the intertemporal utility of the stockholders by maximizing the intertemporal profit:

$$
\Pi = \int_0^{+\infty} \pi_t \cdot \exp(-\rho t) \cdot dt
$$

where $\pi_t$ is the instantaneous profit of the producer and $\rho$ is the psychological discount rate. The instantaneous profit may then be written:

$$
\pi_t = (p_t - c) \cdot n_t
$$

Assuming that the monopolist decides to produce and sell the good, the price path it will choose is a solution of the following optimization program:

$$
\text{MAX. } \int_0^{+\infty} [p_t - c] \cdot n_t \cdot \exp(-\rho t) \cdot dt
$$

subject to:

$$
\frac{db}{dt} = \alpha \cdot [B(n_t) - b_t]
$$

$$
b_0 = 0
$$

Note that all agents, not only stockholders, may have an intertemporal utility of this form. However, the optimization of consumers has no intertemporal dimension; they only choose to consume or not at each date $t$. 
This program involves a control variable, the price of the good \( p_t \), and a state variable, the reputational value of the good \( b_t \). When choosing its price, the monopolist must balance the short-term loss in the instantaneous profit with the long-term gain in reputation. Formally, this program may be compared to an optimal investment program, in which the reputational value plays the rôle of productive capital\(^9\). In this sense, the reputational value of the good may be viewed as an asset of the firm. Thus our model provides a way to formalize the fact (central in management and accounting) that trademarks constitute an important part of firm assets.

The optimal strategy of the monopolist is characterized in the following proposition (see the proof in the Appendix).

**Proposition 1.**

(i) The monopolist chooses its price so as to keep the number of consumers constant. If the monopolist does produce, the number of consumers, \( n^* \), and the intertemporal profit of the monopoly, \( \Pi \), are jointly determined as solutions to:

\[
\Pi = \max_{0 < n^* \leq 1} \left( \frac{1}{\rho} \right) \left[ \frac{\alpha}{\alpha + \rho} \cdot R \cdot B(n^*) - c \cdot n^* \right] \tag{4}
\]

(ii) If \( n^* > 0 \), the price continuously increases from 0 towards \( \frac{R \cdot B(n^*)}{n^*} \), according to\(^{10}\):

\[
p_t = \frac{R \cdot B(n^*)}{n^*} \cdot [1 - \exp(-\alpha t)] \tag{5}
\]

\(^9\) The difference is that the level of productive capital influences the production side, while the level of reputational capital influences the demand side.

\(^{10}\) Note that at time \( t=0 \), \( b_0 = 0 \) and \( p_0 = u \), so that the number of consumers given by (3) is not well-defined at date 0. The problem provides a well-defined solution at time 0 if the initial reputation \( b_0 \) is strictly positive. Formula (5) may then be viewed as the limit of this solution when \( b_0 \) goes to 0.
The finding that the number of consumers is constant results from the particular specification of the model, which we chose for its tractability\textsuperscript{11}. The other properties stated in Proposition 1 are more general, and deserve some comments.

Firstly, Proposition 1 implies that the good may be marketed by the monopoly, even though it has no initial reputational value. The condition for the good to be marketed is that the profit defined by equation (5) be strictly positive. This condition is met as soon as it is possible to find at least one \( n \) such that:

\[
\left( \frac{\alpha}{\alpha+p} \right) \cdot R \cdot B(n) > c \cdot n
\]

This condition is more likely to be met if the good is less costly to produce (small \( c \)), the reputational effect is strong (large \( R \)), the reputation diffuses quickly (large \( \alpha \)), and the monopoly is patient (small \( \rho \)). Note also that it is more likely to be met with a snobbish good than a conformist good, because in the former case \( B(n) \) reaches its maximum for small values of \( n \). As Figure 3 shows it, the optimal sales \( n^* \) chosen by the monopolist are small for a snobbish good, and close or equal to the whole market for a conformist good.

\[\text{(insert Figure 3 here)}\]

Secondly, the price continuously rises from zero to a long term value, as the producer is reaping the increasing reputational rent of the good. The long term price is higher in the snobbish case than in the conformist case, because restricting the market of a snobbish good enhances its reputation value. Note that the instantaneous profit of the producer is negative at the beginning. While this may look as "dumping", the logic behind this strategy is different from what is usually meant by dumping. Here,\textsuperscript{11}

\textsuperscript{11} In the general case, the solution cannot be derived explicitly. The equations characterizing the price strategy may be found using the maximum principle, and the number of consumers is not constant. Proofs are available from the authors upon request.
the producer does not try to eliminate competitors, it attempts to develop the reputation of its product. The fact that the producer has some market power is crucial to explain why it accepts to bear losses. In the perfect competition case, an individual producer will not bear the cost of creating the demand, because the benefits will be reaped by its competitors.

While this is a side issue for our purposes, it may be interesting to look at the welfare impact of introducing the reputational good. Easy computations, which may be found in the Appendix, show that the consumer surplus is always negative, and equal to:

$$CS = -\left(\frac{\alpha}{\rho(a+p)}\right) \cdot R \cdot B(n^*) \cdot (1 - \log(n^*))$$

The reason why the consumer surplus is negative is that all consumers see their welfare reduced, whether they buy the good or not. Those who buy the good lose the difference between the price of the good and its intrinsic utility. Those who do not buy the good lose some reputation.

Moreover, as summing up $CS$ and $\Pi$ readily shows, the positive producer surplus is too small to make for the loss in consumer surplus, so that total surplus is strictly negative. To understand this result, note that the sum of the producer surplus and the consumer surplus of those who consume the good is negative and equal to the discounted production cost $-c \cdot n^*/\rho$. To obtain total surplus, one must add the surplus of those consumers who do not consume the good, which is always negative. Note that a negative total surplus would be impossible without reputation effect, because the monopoly would abstain to produce.

12 There is also an analogy with the marketing strategy of drugs dealers who, it is said, make low prices or even give their products to new "customers". The drug dealer strategy is better explained in terms of addiction than reputation, however. The analogy is due to the following feature which is common to reputation and addiction models: both types of model predict that current demand depend on past consumption, so that it may be optimal for the seller to lower the price in order to expand demand in the future.
3. Concluding remarks.

The main contribution of this paper is to provide a solution to the problem of the origin of social norms within Akerlof's (1980) theory. The model that we propose has three distinctive characteristics. Firstly, a social norm is not the result of an unvoluntary process, rather it is consciously and optimally created by economic agents. Secondly, creating a social norm takes the form of an investment. Essentially, this is because behaviors are sticky and determined by history, so that costly incentives and some time are required to induce agents to adopt a new norm. Thirdly, investing in a social norm needs some coordination between investors. In fact, policies that aim at establishing a norm are privately costly, while the gains that they may induce are public. Hence, only "large" investors may wish to create a social norm.

Our model dealt in particular with the private generation of a norm. The norm was created by an agent, the producer, who privately benefits from it. Thus the norm is adopted if and only if the investment is privately profitable. This does not imply that the norm is socially profitable, and we showed that it is quite possible for a norm which decreases total welfare to be adopted. Alternatively, it is tempting to develop a theory of publicly generated norms. A public institution, like the State, may invest in norms which increase social welfare. For example, if self-sacrifice for the public good is deemed a desirable behavior, the State may invest in a prize system which rewards self-sacrifice. Our model predicts that the reward should be in kind or in money at the beginning, but when the norm is well established, it stands by the mere vigour of the human pursuit of reputation. Historically, the reward should be less and less material and more and more symbolic.

13 This relies of course on a naive and optimistic view of the State. The State might invest in norms which benefit to the social groups which control it, like the capitalists in the marxist view, or the bureaucrats in the liberal one.
While our paper has dealt with one puzzling aspect of Akerlof’s theory, other questions are left unanswered. Firstly, we still do not have a model of how social norms compete. In the real world, however, the problem is one of interaction between different, potentially conflicting, social norms. For example, many snobbish or conformist goods are available, and their suppliers compete between themselves. We need to build a model of how social norms compete, which implies to know how agents choose between social norms when several ones are available. Secondly, in Akerlof’s theory an exogenous dynamics of the reputational value is postulated. It would be preferable to derive it from explicit microeconomic foundations. We plan to explore these questions in future research.
APPENDIX

Proof of Proposition 1.

(i) The monopolist will never choose a price $p_t$ strictly lower than $R \cdot b_t$, since by doing so it would lose some profit without extending its market. Hence formula (3) may be simplified as:

$$ n_t = \frac{R \cdot b_t}{p_t} \quad \text{(A1)} $$

Hence, provided that the monopolist chooses to produce, its revenue $R \cdot b_t$, and its profit is:

$$ \Pi = \int_0^{+\infty} [R \cdot b_t - c \cdot n_t] \cdot \exp(-\rho t) \cdot dt $$

Integrating by parts gives, together with $b_0=0$:

$$ \int_0^{+\infty} b_t \cdot \exp(-\rho t) \cdot dt = \left[ \frac{1}{\rho} \right] \cdot \int_0^{+\infty} \left( \frac{db}{dt} \right) \cdot \exp(-\rho t) \cdot dt \quad \text{(A2)} $$

and plugging (2) into this equation then yields:

$$ \int_0^{+\infty} b_t \cdot \exp(-\rho t) \cdot dt = \left[ \frac{\alpha}{\rho + \alpha} \right] \cdot \int_0^{+\infty} B(n_t) \cdot \exp(-\rho t) \cdot dt $$

so that the intertemporal profit becomes:

$$ \Pi = \int_0^{+\infty} \left[ R \left( \frac{\alpha}{\alpha + \rho} \right) \cdot B(n_t) - c \cdot n_t \right] \cdot \exp(-\rho t) \cdot dt $$

The maximization of $\Pi$ has no intertemporal aspect. One simply needs to maximize the integrand on $n$, under the constraint $n \leq 1$, whence (i).

(ii) (2) and $n_t=n^*$ allow us to compute the path (b):

$$ b_t = B(n^*) \cdot [1 - \exp(-\alpha t)] $$

then $p_t$ follows from (A1).

QED

The intertemporal consumer surplus is:

$$ \text{CS} = \int_0^{+\infty} \left( \int_0^1 U(c) \cdot dc \right) \cdot \exp(-\rho t) \cdot dt $$

$$ = - \int_0^{+\infty} \left( \int_0^n p_t \cdot dc \right) \cdot \exp(-\rho t) \cdot dt - \int_0^{+\infty} \left( \int_0^{n^*} (b_t R/c) \cdot dc \right) \cdot \exp(-\rho t) \cdot dt $$

which, using (A1) and (4), may be written as in the text.
Figure 1.a
Long-term reputational value of a snobbish good.

Figure 1.b
Long-term reputational value of a conformist good.
Figure 2.a
Dynamics of \( b \) with a snobbish good.

\[ b \]

\[ B \left( \inf \left( \frac{Rb}{c}, 1 \right) \right) \]

Figure 2.b
Dynamics of \( b \) with a conformist good.
Figure 3.a
Profit with a snobbish good.

Figure 3.b
Profit with a conformist good.
REFERENCES


