1 Quantifying Social Influence in an Online Cultural Market

Quantifying Social Influence in an Online Cultural Market

Coco Krumme, Manuel Cebrian, Galen Pickard, Sandy Pentland

May 9, 2012

1.1 Abstract

We revisit experimental data from an online cultural market in which 14,000 users interact to download songs, and develop a simple model that can explain seemingly complex outcomes. Our results suggest that individual behavior is characterized by a two-step processthe decision to sample and the decision to download a song. Contrary to conventional wisdom, social influence is material to the first step only. The model also identifies the role of placement in mediating social signals, and suggests that in this market with anonymous feedback cues, social influence serves an informational rather than normative role

1.2 Notes

This paper somewhat creates a stuctural model, creating this two-stage discrete choice situation, and focusing on conditional probabilities between the two stages to predict if a consumer will listen. It still relies on simulation, and has no endogenized notions of inequality or unpredictability. The structure only serves to create a predictive model for whether someone will listen rather than a casual one.

2 Of songs and men: a model for multiple choice with herding

Of songs and men: a model for multiple choice with herding

Christian Borghesi Jean-Philippe Bouchaud

03 March 2007

2.1 Abstract

We propose a generic model for multiple choice situations in the presence of herding and compare it with recent empirical results from a Web-based music market experiment. The model predicts a phase transition between a weak imitation phase and a strong imitation, fashion phase, where choices are driven by peer pressure and the ranking of individual preferences is strongly distorted at the aggregate level. The model can be calibrated to reproduce the main experimental results of Salganik et al. (Science, 311, 854856 (2006)); we show in particular that the value of the social influence parameter can be estimated from the data. In one of the experimental situation, this value is found to be close to the critical value of the model

2.2 Notes

This paper proposes a model for multiple choice, and then simulates the model with some estimated values used in the paper, and shows that these simulated results are consistent with the results noted in the experiment. It is not fitting a model structurally, but does have quite a bit of structure for their model.

3 An empirical study of observational learning

An empirical study of observational learning
Peter W. Newberry

3.1 Abstract

This article provides an empirical examination of observational learning. Using data from an online market for music, I find that observational learning benefits consumers, producers of high- quality music, and the online platform. I also study the role of pricing as a friction to the learning process by comparing outcomes under demand-based pricing to counterfactual pricing schemes. I find that employing a fixed price (the industry standard) can hamper learning by reducing the incentive to experiment, resulting in less consumer surplus, but more expected revenue for the platform

3.2 Notes

This paper Structurally estimates the online market for music, but uses a seperate data set rather than the one used by Salganik. While he references Salganik's paper he states that their results show the long-run effect of what his paper is describing. 'In a project closely related to the current study, Salganik, Dodds, and Watts (2006) show descriptive evidence of the long-run effect of social learning in an experimental music market. I quantify these effects by estimating a structural model.'

4 Parameter Evaluation of a Simple Mean-field Model of Social Interaction

Parameter Evaluation of a Simple Mean-field Model of Social Interaction
Ignacio Gallo, Adriano Barra and Pierluigi Contucci

4.1 Abstract

The aim of this work is to implement a statistical mechanics theory of social interaction, generalizing econometric discrete choice models. A class of simple mean-field discrete models is introduced and discussed both from the theoretical and phenomenological point of view. We propose a parameter evaluation procedure and test it by fitting the model against three families of data coming from different cases: the estimated interaction parameters are found

to have similar positive values, giving a quantitative confirmation of the peer imitation behavior found in social psychology. Furthermore, all the values of the interaction parameters belong to the phase transition regime suggesting its possible role in the study of social systems

4.2 Notes

This is an attempt to generalize the discrete choice model further with interaction parameters, but not really related to 'learning' about the enviorment, just enjoying what they believe others to enjoy. This data is then used in census data on several social matters in Italy. This would only really be relevant for adding to papers using the discrete choice model.

5 Aligning Popularity and Quality in Online Cultural Markets

Aligning Popularity and Quality in Online Cultural Markets

Pascal Van Hentenryck, Andres Abeliuk, Franco Berbeglia, Felipe Maldonado, Gerardo Berbeglia

5.1 Abstract

Social influence is ubiquitous in cultural markets and plays an important role in recommendations for books, songs, and news articles to name only a few. Yet social influence is often presented in a bad light, often because it supposedly increases market unpredictability. Here we study a model of trial-offer markets, in which participants try products and later decide whether to purchase. We consider a simple policy which re- covers product quality and ranks the products by quality when presenting them to market participants. We show that, in this setting, market efficiency always benefits from social influ- ence. Moreover, we prove that the market converges almost surely to a monopoly for the product of highest quality, making the market both predictable and asymptotically optimal. Computational experiments confirm that the quality ranking policy quickly identifies "blockbusters", outperforms other policies, and is highly predictable

5.2 Notes

This paper finds results opposite to Salganik's paper, directly contrasting the results from his experimental approach. He uses simulations to try to model the music lab experiments. His estimate of quality is derived from the data used in the Music Lab even if there is not a structural estimation from the data set. This paper finds instead that markets are still efficient, and converges to a monopoly.

6 The success of art galleries: a dynamic model with competition and information effects

The success of art galleries: a dynamic model with competition and information effects

Aloys Prinz, Jan Piening,Thomas Ehrmann

08 April 2014

6.1 Abstract

An intrinsic characteristic of cultural goods is the unpredictability of their economic success. Arts goods in particular share characteristics with credence, inspection, and experience goods. Accordingly, art collectors rely on the experience and the reputation of art galleries when investing in artwork. Some qualitative sociological studies have found that only a few very successful galleries represent the bulk of the most visible and most successful artists (e.g., Crane in The transformation of the avant-garde: the New York art world, 19401985. The University of Chicago Press, Chicago, 1989; Currid in The Warhol economy: How fashion, art and music drive New York City. Princeton University Press, Princeton, 2007). This paper investigates the success of art galleries in a dynamic model, which elaborates different statistical processes that allow us to analyze the development of different types of success distributions in the market for art galleries. Instead of applying standard economic analysis only, we employ methods from statistical physics to construct a model of gallery investment and competition. Our model entails information, competition, and innovation effects. Subsequently, art market data are used to test which version of the model fits best. We find that the lognormal distribution provides the best fit and conclude that the data generating process is compatible with the version of the model, which entails an inhomogeneous geometric Brownian motion. Hence, the success of art galleries depends strongly on information and innovation effects, but is hardly affected by competition effects. We argue that the superstar effect in the case of art galleries can be understood as an appropriation of search and entrance costs, which emerge whenever consumption requires special knowledge and social inclusion

6.2 Notes

This paper examines art-galleries rather than music markets, and treats them as a two-sided market. They estimate the dynamics of the world with a pretty nasty mean-reverting brownian motion, then fit art-market data. Their conclusion is that the information provided reduces search costs for individuals and that this drives the super-star effect.

7 Charts and demand: Empirical generalizations on social influence

Charts and demand: Empirical generalizations on social influence

Olaf Maecker, Nadja Sophia Grabenstrer, Michel Clement, Mark Heitmann

2 September 2013

7.1 Abstract

Social influence on consumer behavior has long been a subject of academic research in various scientific fields. According to research by Salganik, Dodds, and Watts (2006), music demand is a function of social influence between consumers. Market concentration tends to increase when information on demand becomes publicly available. In addition, stochastic agglomeration caused by social influence decreases the predictability of market success. These heavily cited findings challenge traditional market research and provide important insights on the impact of social media and sales charts. We test the stability of their results by replicating the study on music demand in a slightly different setting. We further investigate the generalizability of findings by probing other product categories and different phases of purchase decisions, i.e., interest, consideration, and actual demand. Across all categories and across all dependent variables, we are able to replicate the direction of the effects. We do, however, consistently obtain smaller effect sizes than reported in the original paper

7.2 Notes

This is a separate replication experiment of the original paper, and may be useful for creating a test set on any predictive models developed. They expanding the experiment to also include movies and scarves, but only so far as self-reporting on interest. Since this is not the same as downloading a song, I do not know whether that particular data could be useful.

8 Social Networks and the Diffusion of User-Generated

Social Networks and the Diffusion of User-Generated Content: Evidence from YouTube

Anjana Susarla, Jeong-Ha Oh, Yong Tan

March 2012

8.1 Abstract

This paper is motivated by the success of YouTube, which is attractive to content creators as well as corporations for its potential to rapidly disseminate digital content. The networked structure of interactions on YouTube and the tremendous variation in the success of videos posted online lends itself to an inquiry of the role of social influence. Using a unique data set of video information and user information collected from YouTube, we find that social interactions are influential not only in determining which videos become successful but also on the magnitude of that impact. We also find evidence for a number of mechanisms by which social influence is transmitted, such as (i) a preference for conformity and homophily and (ii) the role of social networks in guiding opinion formation and directing product search and discovery. Econometrically, the problem in identifying social influence is that individuals choices depend in great part upon the choices of other individuals, referred to as the reflection problem. Another problem in identification is to distinguish between social contagion and

user heterogeneity in the diffusion process. Our results are in sharp contrast to earlier models of diffusion, such as the Bass model, that do not distinguish between different social processes that are responsible for the process of diffusion. Our results are robust to potential self-selection according to user tastes, temporal heterogeneity and the reflection problem. Implications for researchers and managers are discussed

8.2 Notes

This paper is examining social influence from a very network-orientated approach. It examines youtube data rather than music data. It applies a structural approach, and attempts to control for many interaction terms and endogeneity concerns.