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Journal of Economic Theory 153 (2014) 313–343

JOURNAL OF Economic Theory

www.elsevier.com/locate/jet

Social learning by chit-chat

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Received 27 December 2011; final version received 20 February 2014; accepted 2 May 2014

Available online 11 July 2014

Abstract

Individuals learn by chit-chatting with others as a by-product of their online and offline activities. Social plugins are an example in the online context: they embed information from a friend, acquaintance or even a stranger on a web page and the information is usually independent of the content of the web page. We formulate a novel framework to investigate how the speed of learning by chit-chat depends on the structure of the environment. A network represents the environment that individuals navigate to interact with each other. We derive an exact formula to compute how the expected time between meetings depends on the underlying network structure and we use this quantity to investigate the speed of learning in the society. Comparative statics show that the speed of learning is sensitive to a mean-preserving spread of the degree distribution (MPS). Specifically, if the number of individuals is low (high), then a MPS of the network increases (decreases) the speed of learning. The speed of learning is the same for all regular networks independent of network connectivity. An extension explores the effectiveness of one agent, the influencer, at influencing the learning process.

JEL classification: D83; D85

Keywords: Social learning; Network; Speed of learning; Mean preserving spread; Influencer

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http://dx.doi.org/10.1016/j.jet.2014.07.007

1. Introduction

The advent of social plugins has significantly changed the way we learn from others online. A social plugin embeds information from a friend, acquaintance or even a stranger on a web page that you are visiting. This information is usually independent of the content of the web page and it can be about what this other individual likes, recommends or a comment that she has left. For instance, you may open an article on the US election on the New York Times and a social plugin will inform you that an acquaintance likes a certain product or recommends a review article about a trendy travel destination. This may in turn influence your beliefs on the best product to buy or where to go on vacation.[1]

Social plugins have increased the prominence of a learning process that has always been pervasive in the offline world. As we go about our daily activities, we sometimes engage in chance conversations, or chit-chat, with friends, acquaintances or even strangers whom we happen to meet. There is evidence that these random conversations influence many important decisions in our lives, including whom to vote for and what to purchase. For instance, Huckfeldt [9] argues that they are influential in determining voting choices.[2] There are also several examples of companies which have attempted to exploit the potential of chit-chat to influence consumers' choices of travel destinations and type of entertainment, purchases of beauty products, magazines, and cigarettes, amongst others.[3]

The objective of this paper is to formulate a model of the learning that happens through social plugins or chance conversations, which we dub *social learning by chit-chat*, and to investigate the speed of learning. This learning process is distinctly different from the learning processes captured by standard models in the economic literature, in which agents purposely learn how to play an underlying game. In social learning by chit-chat the agents are strategic as they go about their daily activities, but these activities are independent of the learning process. For instance, an individual may be strategic in the choice of news articles she reads about the US election, but the information she learns about the trendy travel hotspot is independent of these strategic considerations. The presumption of the social learning literature is that individuals *actively* learn from the decisions and experiences of their neighbors and/or social relations. In social learning by chit-chat an individual can *passively* learn from another individual independently of the presence of a social relation, as Huckfeldt [9] points out in the context of political choices.

The main determinants of the speed of learning in the social learning by chit-chat framework are *the size of the population* and *the environment* these individuals are living in. For instance, if we think of the environment as a physical environment, the speed of learning may be very different in a scarcely populated village where there is one central square vis-à-vis a metropolis buzzing with people with multiple meeting points. Moreover, in this framework individuals are *learning as a by-product* of their other activities and they do not rely exclusively on their social relations to learn: they discuss politics with their work colleagues during coffee break, they chat

[1] Social plugins have become a large industry. Gupta [8] estimates that revenue from social advertising has reached $8.8bn in 2012, and a sizeable share comes from social plugins.

[2] In Huckfeldt's [9] words: "[t]he less intimate interactions that we have ignored – discussions over backyard fences, casual encounters while taking walks, or standing in line at the grocery store, and so on – may be politically influential even though they do not occur between intimate associates."

[3] See "In-Your-Face Marketing," Wall Street Journal, February 11th, 2003; and "The Body as Billboard: Your Ad Here," New York Times, February 17th, 2009. These examples further highlight the importance of chit-chat for offline activities.