Field Research on Learning

HANMING FANG
Department of Economics, University of Pennsylvania,
Philadelphia, PA, USA

Synonyms
Observational learning; Social learning

Definition
The general concept of social learning encompasses many mechanisms through which individuals may learn from others. In particular, it includes the mechanism in which individuals learn from each other through direct (formal or informal) communications; it also includes the mechanism of observational learning where the behavior of individuals is influenced by their observation of other people's choices because of the information contained therein. Bandura (1977) is the pioneering book in psychology that started the research on social and observational learning. Banerjee (1992) and Bikhchandani et al. (1992) are the seminal works in the economics literature on observational learning.

Randomized natural field experiment is a research method where researchers randomly assign different treatments to individuals in a naturally occurring decision-making setting, instead of a laboratory, to disentangle the effects of different confounding mechanisms (Harrison and List 2004). Field research, as in laboratory experiments, randomizes the sampling of subjects and their assignment into treatment and control groups and compares the outcomes between these groups to distinguish and quantify the importance of different causal mechanisms. However, successful randomization in a field setting is much more difficult to achieve than in a laboratory. Moreover, field researchers may not have control over all elements relevant to the study. Finally, field studies tend to be more time consuming and therefore more expensive and demanding than laboratory studies.

Theoretical Background
Understanding the mechanisms through which individuals learn from others is not only relevant for the theoretical literature in economics, it also has policy implications. The key difference between direct communications and observational learning as channels of social learning lies in whether temporal, spatial, and social proximity among individuals is important for learning to occur. Observational learning can take place as long as the underlying decision problems faced by individuals are similar; in contrast, learning from others via direct communications requires individuals to be close in time, space, and social distance. As a result, if a policy maker wants to, say, expedite the adoption of an advantageous technology, an information campaign about the technology's popularity among other groups of agents will be effective if observational learning is important, but will not be effective if instead direct communication is the main channel of social learning.

However, to empirically establish that an individual's decisions are affected by the observation of others' choices because of its informational content is complicated by at least two plausible confounding mechanisms. The first is the saliency effect. The term “saliency” is widely used in the perceptive and cognitive psychology literature to refer to any aspect of a stimulus that, for whatever reason, stands out from the rest. Observing others' choices could make those choices more salient than the alternatives. When consumers are not aware of their entire choice set, the differential salience of the elements in the choice set may affect the decision-maker's choices. As a result, a consumer may follow others' choices because they are more salient.

Note that saliency effect is also an informational effect. The key difference between observational learning and saliency effect is that the information is about the characteristics of the choices in the former, while it is about the choice set itself in the latter. The second confounding mechanism is the conformity effect, that is, individuals may adopt the observed choices of others because they want to conform.
Important Scientific Research and Open Questions
Cai et al. (2009) conducted a randomized natural field experiment conducted in a restaurant dining setting to distinguish the observational learning effect from the saliency effect. The restaurant they choose for their experiment has a thick menu with about 60 hot dishes. The size of the menu poses a challenge to diners when deciding what to order. In their experimental design, they randomly expose diners to one of three information conditions: In the control tables, the diners are not given any additional information about the dishes other than what is contained in the menu; in “ranking treatment” tables, diners are provided with a display with the names of the “top five” dishes sorted by the actual number of plates sold in the previous week; and in “saliency treatment” tables, diners are provided with a plaque simply listing the names of five “sample dishes.” They analyze how the information conditions affect the choices of customers. The three information conditions allow them to separately estimate the saliency effect and the observational learning effect, even though their experimental design does not directly address the conformity channel. They find that, when customers are given ranking information of the five most popular dishes, the demand for those dishes increases by 13–20%. They do not find a significant saliency effect. They also find modest evidence that the observational learning effects are stronger among infrequent customers, and that dining satisfaction is increased when customers are presented with the information of the top five dishes, but not when presented with only names of some sample dishes.

Salganik et al. (2006) studied how social influence may lead to unpredictable outcomes for popular cultural products. In an artificial music market, subjects (recruited from visitors to a particular website) are shown a menu of 48 songs under different treatment conditions. They report the results of two experiments that differ in whether the subject is provided with the knowledge of previous participants’ downloading choices and in how such information is presented to the participants (either in one column in descending order of current popularity of the song, or in a 16 × 3 rectangular grid, where the positions of the songs were randomly assigned for each participant). They found that in both experiments, social influence (i.e., others’ downloading choices) has significant effect on subsequent subjects’ choices, and moreover, the social influence is stronger when the information about other choices are arranged in a more salient manner (i.e., in descending order of current popularity). Note that conformity effects are likely more severe in Salganik et al. (2006) setting because it is well known that shared experience is a major component of the utility from consuming popular cultural products, while contrast, restaurant dining is a more private experience.

The experimental designs in the above two contributions do not allow us to separate conformity motives from observational learning. Experimental designs that can separate conformity from observational learning may be possible if we assume that conformity motives are likely to be stronger among closer social groups. But this remains an open question. Another open question is whether observational learning effects are persistent. For example, do the diners who were exposed the information about the popular dishes eventually find their own true favorite dish, or they become trapped in the popular dishes of others? A third open question is how the effect of observational learning would change when profit-maximizing sellers, not third parties, are providing the popularity information.

Cross-References
▶ Design Experiments
▶ Experimental and Quasi-Experimental Designs of Research on Learning
▶ Methods/Methodology of Learning Research
▶ Social Learning

References