Summary

By strategic and non-strategic information transfers, Bayesian individuals update their information and infer to the true state. Strategic information transfer include cheap-talk (Crawford and Sobel (1982)), persuasion (Milgrom (1981) and Milgrom and Roberts (1986)) and disclosure (Dye (1986) and Gigler (1994)). Non-strategic information transmission includes learning by experiments such as strategic experimentation[1] (Bolton and Harris (1999)). In this dissertation, I explore the multifaceted landscape of information transmission, where the transmission occurs both by design and by happenstance. I delve into the intricacies of how individuals, endowed with distinct types and preferences, choose to convey their private knowledge and attitudes, shaping the outcomes of diverse interactions.

This thesis is divided into two folds. The first fold is about strategic non-cost-incurring messages on non-verifiable information to enhance the expectation about type – reputational cheap talks. Canonical models on cheap talks about preference of Sender, drive equilibria by preference alingedness of Sender and Receiver. Because optimal targets of Sender and Receiver are somewhat close, they can settle on some amount of noise in equilibrium. In cheap talks about being well-informedness of Sender, Sender has monotonically increasing payoffs in the beliefs of Receiver. In such models, possibilities of outcomes that lower Sender's reputation, lead to equilibrium. Chapters 2 and 3 center around truthful outcomes in reputational cheap talk about information acquisiton ability with a dynamic model based on Tajika (2021). In Chapter 2, I introduce two strategies, which lead to truth-telling on their respective paths. In Chapter 3, I generalize the results in Chapter 2 and consider the factors that makes truth-telling difficult.

The second fold is dedicated to individuals learning from observations. Wise wisdom

[1] In the literature, an agent is both Sender and Receiver at the same time. When translating the agent as Receiver, then the Sender here, is nature and not strategic. When translating the agent as Sender, s/he strategically decides how to gather and release information.

says you cannot have bubble under a common ex-ante prior, when agents are rational anticipate and it is common knowledge (Milgrom and Stokey (1982)). Recent studies on rational bubble, thus focused on information asymmetricity, were initiated by Allen et al. (1993), and applied game-theoretically by Awaya et al. (2022) in a network. When trading, the value of the good depends on the state which also affects trade histories, price, and the willingness-to-pay of individuals. As time flows, individuals learn more and more about the state even when the initial information was asymmetric. Chapter 4 considers rational bubbles when there is uncertainty about the networks. In the model, prices coincide to the willingness-to-pay's due to private information reflected on the attitude, thus learnings during the game occur.

The rest of this thesis is organized as follows. Chapter 2 analyzes truth-telling outcomes in a two-period reputational cheap-talk model with binary types. An expert receives multiple pieces of singals, which become more precise over time. The expert strategically provides recommendations to the public, aiming to enhance the reputation through carefully crafted advice. At the end of the game, the true state, and thereby, whether the recommendations were correct or not, are revealed; and the expert is evaluated by the Bayesian public. The model is based on Tajika (2021) who focused on equilibria in which truth-telling occurs sometimes, and bubbling occurs other times on the paths. I focus on equilbria in which truth-telling occurs all the time. Those are sustained under certain conditions composed of two dimensions: the information structure of the signals and the ex ante prior on the ability of the expert.

The results show that the expert's chosen strategy can determine whether a society attains a truth-telling equilibrium. The commitment to behave truthfully across all histories is more difficult to be achieved than the one to behave truthfully after truthful histories, in the sense that the condition sustains the former implies the latter; and the reverse is not true. It sheds lights both on the importance of off-path behavior in cheap-talk environments and on a normative question: should an individual be truthful all the time. The expert

ex-ante prefers truth-telling equilibria than ones in which some information is lost, if s/he is risk-loving. Furthermore, it is robust under monetary transfers that alleviate reputational bias.

Chapter 3 is built based on a similar model, with more general priors and information structure. I confirmed the robustness of the results in Chapter 2 to an extent. Especially, the condition for truth-telling to be the most favored by both Sender and Receiver remains unaltered under any information structure in dynamic reputational cheap-talk games with finite periods. Moreover, I derive a result regarding to robustness of a truth-telling equilibrium at a specific condition that is different from existing one in Tajika (2021). I alter the model to an essentially static one with a multi-dimensional signal space – the expert collects all available information before making a one-shot recommendation. The impact of the change is ambiguous; it relies on the strategy the expert was previously employing and which signal holds more significance in the assessment.

Chatper 4 formulates rational bubbles due to asymmetric information in networks. Players engage in trading a unit of indivisible good within a network where only one of them values it. Due to their restricted scope, they do not exactly know which network they are in; but they infer that the network is one of those in which they have the same neighbor set. Using thier information, they form expectation about the value that good will bring to them, which will be reflected in the price. Despite that they learn through the accumulated public history, there may exist an equilibrium in which there is a state such that on path, a player buys the good at a positive price while all players know there is no feasible path from the player to the one who appreciates it, which I call, a network bubble. Necessary conditions for such equilibria are investicated; and an example is provided.

The results indicate that network bubbles require severe restrictions on the probability space. In any network bubbles it is essential there exists a state that the buyer can and the seller cannot distinguish from the bubble state. However, since the price reflects private information of trading parties, the next potential buyer would infer the willingness-to-pay

of the current buyer. Nonetheless, I provide an example and an equilibrium with a network bubble, that satisfies neccesary conditions I suggested. In the model, the price rises because the states in which a buyer cannot find a next buyer are gradually excluded as time flows.