

An Experimental Implementation of Multidimensional Cheap Talk

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Extended Abstract

We experimentally investigate information transmission in which two biased senders communicate with a receiver on state of the world that consists of two components. The theoretical literature of cheap-talk communication begins with environments in which a single sender transmits information to a receiver over a unidimensional state space (Crawford and Sobel, 1982). The analytical picture there is clear: among other things, no full revelation of information can be achieved unless the sender and the receiver share a common interest. The picture changes drastically when a higher dimensional state space and/or additional sender are introduced. The departure from the single-sender-single-dimension regime not only admits the possibility of full information revelation, but it also brings into the research agenda the searches for robust equilibria, which traditionally are not a concern of cheap-talk models. A small but growing literature has singled out various robustness criteria under which the full revelation equilibrium may or may not survive.

The lack of consensus in the theories of multidimensional cheap talk presents another opportunity for experiment to inform theory. While the various robustness criteria proposed in the theoretical literature purport to select the right equilibrium, there appears to be no theoretical guideline in place to select the right criterion. Our experimental study is motivated by the contention that empirical regularity observed in a controlled environment might well provide a sensible criterion to scrutinize whether certain type of equilibrium is plausible.

Our focus is to implement in the laboratory the fully revealing equilibrium of Battaglini (2002), in which the receiver can perfectly identify the two-dimensional state of the world by

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consulting two biased senders. The essence of the equilibrium involves each sender truthfully revealing on the dimension where a common interest is shared with the receiver. Within the confine of laboratory implementations, we design communication games with a discrete 2×2 state space. In the two-sender game there exists, as in Battaglini (2002), a fully revealing equilibrium, whereas in the one-sender game babbling is the only equilibrium. We find, consistent with the equilibrium predictions, that the frequency of truth-telling outcomes is significantly higher in the two-sender game than in the one-sender game. The percentage of truth-telling outcomes converges to as high as 90% with two senders, whereas in the one-sender case it never exceeds 50%. Apart from providing empirical support to the theory of multidimensional cheap talk, our study demonstrates experimentally that two are better than one when it comes to eliciting information from experts.

References

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