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The Shape of Cooperative Communication

Summary

The paper considers a sender-receiver model of cheap talk (Crawford-Sobel '82, henceforth CS) with no conflict of interest between the sender and the receiver. However, a message sent by the sender may be heard with noise by the receiver. Specifically, if the sender sends a message $m \in [0,1]$ the receiver hears a message m' uniformly distributed in a (small) interval around m. Preferences are usual symmetric loss functions, but the magnitude of the loss may vary with the state.

The main result is that the sensitivity of messages m to the state q (the slope of $m(q)$) will vary with q. In states where the loss (or priors) is large, $m(q)$ will be steep. Messages vary finely with the state in high loss states, because the sender wants to lower the chance that the receiver misunderstands him in those states.

Comments

I read the paper with interest and find the model neat and the basic insight reassuring. The model does not have excessive moving parts and this is a very good thing. I have two main reservations. First, as a pure theory piece, does the paper make sufficient progress on the "shape" of language and communication? Some progress for sure, but I am not sure what has been achieved is surprising enough. Things seem to hinge on the assumed noise structure. How should we interpret it? What are possible remedies? The paper says little in this regard. Second, the authors emphasize a number of empirical implications and on these dimensions I find things less compelling. I detail these concerns below.

On the theory

Cheap talk games have no restrictions on possible messages. If one reads the model literally, one may object that there is an implicit restriction. Why does the sender not send (what the authors call) a message, many, many times? If the noise is independent each time the sender speaks, it should vanish. Alternatively, can the sender be "loud" or "write things down" or preface his message by saying "let me be clear" or "pay attention now" or even ask the receiver what he understands and then further clarify matters if needed, etc.?

I appreciate that the model tries to capture the vagueness of spoken language (or the differences in the vocabularies of the sender and the receiver or something like it) in a simple manner. But even in such an abstract setting, it seems important to think more about the points I raise in the previous paragraph. Ordinary experience suggests that we do manage to sort out mishearing via emphasis or volume or long conversations. The paper does not investigate matters in this direction in sufficient depth, and in this regard the contribution so far is a good start, but somewhat limited. I urge the authors to think more about remedies to mishearing. The contribution also seems to hinge on the specific structure of the noise. For

instance, if the message received was either the actual message sent with some probability or a random draw from the entire state space with the remaining probability, things should be different.

It seems particularly important to motivate the noise structure given the applications the paper emphasizes. How can an analyst recommendation or a Moody's rating be "misheard" by rational investors? Mishearing is not the same as being uncertain about the exact meaning of a rating, a phenomenon that is covered by the standard CS model. The CS model focuses exclusively on considerations of the sender's incentives and what can (and cannot) be rationally inferred from what the sender says, given these incentives. Are we to interpret mishearing as some kind of additional constraint on the receiver(s), e.g., they take message literally or do not know exactly what to do with it or they hear it through an intermediary or there are language barriers? At any rate, applications of the model to ratings and analyst recommendation do not seem to be the best suited one.

Given that there is no conflict of interest, why is cheap talk the relevant model? Why does Moody's not simply reveal its data and its model to investors? With a conflict of interest, Moody's may of course fudge the data and manipulate the model (which is a motivation for using cheap talk models of the CS type). But this force is absent in this paper.

On the empirical implications

One of the main implications of CS-type models is the endogenous coarseness of communication. Morningstar or Moody's choose their rating systems to be coarse, FICO scores are less coarse. In this model, is there any reason for the sender to use a coarse rating system if he does not have to?

Another implication of the CS model is how the receiver's residual uncertainty about the state varies with the message. The receiver is more uncertain if the message is in the direction of the sender's bias. A buy recommendation is less compelling than a sell recommendation. In this model, why would it be more valuable for everyone to identify overvalued stocks compared to undervalued ones (so that the sender is more precise in identifying the former)?

Finally, WFA referees may not simply be judging papers according to an ordinal scale such as (uniformly distributed) percentiles, but according to some cardinal metric; and then communicating without noise. The observed/prior distribution of papers according to this cardinal metric may be skewed, a case that seems to be empiricially indistinguishable from the model.