Rudimentary Memetics*

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Abstract. We consider a network of players arranged as vertices of an undirected finite connected graph, where the edges denote communication channels.

After a state is realized, a subset of the players receive iid informative signals. These signals are then re-transmitted across the network as — the re-transmitted signals are called "memes." We postulate that the players take memes at "face value," as if they were fresh signals, when formulating their beliefs about the state.

The "transmissibility" of memes is modeled in a wide variety of ways under some basic regularity assumptions. This is what Dawkins (1976) refers to as "spreadability" or "infectivity" of memes. These characteristics of memes drive the Darwinian dynamics that determine the long-run state of the network. We find that herd-like absorbing states ensue with remarkable robustness.

We then consider the same network but periodically re-seeded with relatively infrequent fresh signals. In the absence of meme transmission complete learning of the true state would ensue in this case. Instead, the circulation of memes swamps the informative signals and concentrates long-run (ergodic) probabilities on herd-like states.