

BOUNDED RATIONALITY

ARNAV SOOD

Mathematicians say that a map $f : (X, \rho_x) \rightarrow X$ between metric spaces is a *contraction* if it brings points closer together. If a contraction is sufficiently strong, it is known to have a *fixed point*, or a point such that $f(x) = x$.

Your life shrinks. Your sentences shrivel up, and dry, like cockroaches and ashen leaves. Your thoughts wither. The orbit of your life tightens, squeezing out all the self you couldn't save.

We say that agents have *rational expectations* when their perceptions about how the economy evolves match the actual law of motion. Rational expectations often arise when the rules of a model are known to all, and all agents solve the model.

Sometimes the disease is kinder, and sometimes it's not. To outsmart it is unthinkable — do not forget, it controls your thoughts. It lives in you. It is you. You are it. You have long since renounced contradictory views: those futures you imagined for yourself, those other people did for you. To expect those things would be irrational.

A *sunspot equilibrium* is a situation where agents' actions are coordinated by some external variable, like spots on the sun. These signals do not matter in themselves, but rather do because they are believed.

Under your mind's breath, terrified the disease might overhear, you whisper your defiance. It doesn't work. Do not forget, it controls your thoughts. It is you. You are it. Your soul is a lone buoy, against a vast and savage sea.

The theory of bounded rationality is a response to the rational expectations equilibrium. Agents cannot solve models. They cannot compute perfectly, cannot instantly process thousands of macroeconomic signals. They are noisy, human creatures.

You are boundedly rational.