



CoCo Seminar Series Spring 2020

The Emergence of Monitoring

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(Work in collaboration with Peter Dicola)

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Online (Zoom meeting link available on

<http://coco.binghamton.edu/>)



Ostrom's famous Principles of Polycentric Governance (Ostrom, 1990) are characteristics of institutions that manage common pool resources (CPRs) that she found, from case studies, tend to describe those that successfully administer those CPRs. This prompts the observation: If these principles tend to improve management of CPRs by a community, and successful management would increase the long-term viability of the community, then in an appropriately specified evolutionary, agent-based model, we should see the emergence of these principles. This project attempts to validate this observation. One principle is monitoring, which is that agents in the community can and do keep track of whether others in the community follow the rules that the community has chosen to manage the CPR. One issue of importance is how to evaluate the emergence of an institution. The setting we model is the CPR of fields for grazing cattle. In this context, monitors would be ranchers who otherwise would be taking their cattle to these fields, but instead are going without cattle and receiving some kind of compensation from the other ranchers when they find ranchers who are "overgrazing" by some endogenously determined standard. We attempt to define the agents' behavior broadly so that these behaviors can be interpreted ex-post as monitoring without an ex-ante specification; that is, if agents simply choose "monitoring" as a pre-specified action available, then one would not say that the institution of monitoring has emerged. In this sense, this paper is an attempt to provide what one might call "microfoundations" for the institution of monitoring in the management of a common pool resource.

Dr. Andreas Pape is an Associate Professor and the Graduate Program Director of Economics at Binghamton University. His research interests include microeconomic theory, decision theory, and agent-based modeling of complex systems. For more information, contact Hiroki Sayama (sayama@binghamton.edu).

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