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**Agent-based model of the dynamics of the development of a protest campaign: the endogenization of repression**

Modern quantitative research of the protest-repression nexus often arrives at conflicting conclusions. The results of researches begins to overly depend on the statistical methods used and the selected database of one or another level of protest campaigns data aggregation. With rare exceptions, consensus on many key issues for this research area has not been found. Modern methods are unable to take into account the dynamic nature of the protest-repression nexus.

The computational modeling approach [Epstein, 2002], which has received significant development in recent years in political science, can just solve the above problem of ignoring the internal dynamics of the protest campaign, taking into account the mutual influence that protesters and authorities have on each other. Pointing to the approach of computational modeling, I primarily mean agent-based models that allow agents to specify various decision-making mechanisms, depending on the state of the system of the created micro-world and the positions of other agents, which allows us to identify the emergent properties of the system [Akhremenko et al., 2021]. Thus, at the stage of empirical analysis, a blind search is not carried out, but a test of non-trivial hypotheses derived from models that take into account the complex dynamic nature of the relationship between the protesters and the authorities takes place.

Unfortunately, the existing numerical models of the relationship between the protesters [Akhremenko, Petrov, 2020; Siegel, 2009] and the authorities are not perfect, if only for the reason that they ignore the endogenous nature of the repressive activity of the authorities. A level of strength and a frequency of repression is set exogenously for each simulation by the researcher, and does not follow from the dynamics of the conflict.

In this report, I will present a model of interaction between the protesters and the authorities, based on the developments [Akhremenko, Petrov, 2020], in which I have added a decision-making system in relation to the protesters by the authorities. Within the framework of this system, several strategies have been developed for the authorities' reactions to protesters.

The model and numerical experiments on it are implemented in the Python programming language.

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