

The 2005 French riots: a data-driven epidemiological modeling reveals a spreading wave of contagious violence

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During autumn 2005, after two youth died while trying to escape a police control, riots started in a poor suburb of Paris, spread around and then in all France, hitting more than 800 municipalities and lasting about 3 weeks. Thanks to an access to a detailed, day by day, account of these events, we analyzed the dynamics of these riots. In this talk I will show that a parsimonious data-driven epidemic like model, taking into account both local (within city) and non-local (through geographic proximity or media) contagion, allows to reproduce the full time course of the riots at the scale of the country. I will make explicit the specificity of the model as compared to the modeling of the spread of infectious diseases. I will also discuss the methodology in the broader context of modeling social phenomena, showing in particular how modeling provides a kind of regularization of the data. In the case of the 2005 French riots, it allows to visualize the wave propagation around Paris in a way not described before.

Ref: Laurent Bonnasse-Gahot, Henri Berestycki, Marie-Aude Depuiset, Mirta B. Gordon, Sebastian Roché, Nancy Rodrez and Jean-Pierre Nadal, "Epidemiological modeling of the 2005 French riots: a spreading wave and the role of contagion ", submitted, arXiv:1701.07479