Interventions in criminal networks.

Criminals do not operate alone, but often have networks of associates with whom they commit their crimes. Because it is not a fixed organization structure, these networks are often more flexible and resilient when the police tries to intervene in them. However, if you arrest the central node in a network it can cause the whole network to crumble and a mojor disruption of the criminal activities.

Unfortunately, the criminal networks are not registered and documented. So, we have only limited knowledge of which networks exist and how they actually look like. Note, that most of the knowledge of these networks is coming from networks that have been exposed and of which members have been arrested. But, this does not mean that all other networks look the same. In the extreme only the bad networks are exposed and we have no knowledge of any successful criminal networks!

This project investigates how different intervention strategies could be devised and implemented that are effective with some types of basic network archetypes and behavioral models of the criminals. The simulation should then test which intervention strategy works good for a certain type of network plus behavior of the criminals. Important to keep in mind is that police always have a limited view of a network and thus might act on the wrong information or assumptions. Thus, it might be relatively easy to make an optimal intervention strategy given that you know the exact network properties and behavior. But, we look for strategies that work good in many cases, also when information is limited.

There are several standard network types: randomized, small-world and scale free. There is a variation available on the small worlds network in which clusters can be connected with a given probability. In work of Epstein and Jelte Mense simple models of behavior can be taken to prevent e.g. the propagation of violence through networks. This can be used to produce intervention strategies to reduce the probability of participation in criminal activities as well as intervention strategies that prevent a further spreading of criminal activities.

An approach that is not investigated yet, but which looks promising is to focus interventions on specific roles within a network. Thus one might be able to arrest a finance supplier of the network and thus prevent any subsequent payments and thus stop the activities. However, success will depend on whether other individuals can take over the role.

Some literature:

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