Towards Arms and Influence Networks: A network analysis of international arms transfers

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The international arms trade has two distinct aspects. On one hand, it is an industry like any other, with firms selling their products to consumers in order to make a profit. On the other hand, these consumers are almost always nation-states, while the manufacturers are either state-owned or else subject to strict government oversight, with arms transfers from state to state indicating cooperation or shared interests.

We treat the international arms trade as a state-to-state network, with edges weighted by the magnitude of transfers as recorded by the Stockholm International Peace Research Institute (SIPRI). We then use social network analysis tools to study the shape of the network. Innovatively, we use another international network – mutual voting in the United Nations General Assembly – in addition to more traditional country-level data as a predictor of tie formation.

Using community detection algorithms, we identify meaningful clusters within the arms transfer network. As validation of this methodology, we demonstrate that the network shows a division between the Eastern and Western Blocs during the Cold War, which is consistent with the clusters that emerge in the UN voting network.

We are in the process of conducting more detailed analyses of tie formation. We will estimate the variables which predict a country's decision to transfer arms to another, in order to gain a greater understanding of the degree to which these decisions are driven by political and economic considerations. We are conducting these estimates using both econometric techniques and exponential random graph models (ERGM).

This study is being done alongside a social media study of the response to the uprising in Syria, which is combining the state-level network data with geolocated social media attention to the conflict. This will allow us to demonstrate the degree to which individual-level interactions follow or depart from the interactions of their governments.

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