

Motivations, Mechanisms and Determinants of Terrorist Technology Transfer

OVERVIEW

The Unconventional Weapons and Technology Division of the National Consortium for the Study of Terrorism and Responses to Terrorism (UWT-START) and the Swedish Defense Research Agency (FOI) collaborated to conduct a pilot research project examining the motivations, mechanisms and determinants of success that influence the transfer of technologies to terrorists.

PROJECT BACKGROUND

A comprehensive understanding of the processes by which terrorists and other violent non-state actors become aware of, pursue and ultimately acquire new technologies is increasingly vital to anticipating and countering emerging threats. One essential aspect, that has received relatively little attention, are the conditions surrounding the transfer of dangerous technologies to terrorists. The T3 project presents a preliminary research framework that systematically considers various components of this transfer and further analyzes this potential threat through two pilot case studies focusing on unmanned aerial vehicles and opioid (carfentanil)-related production technology.

T3 MODEL

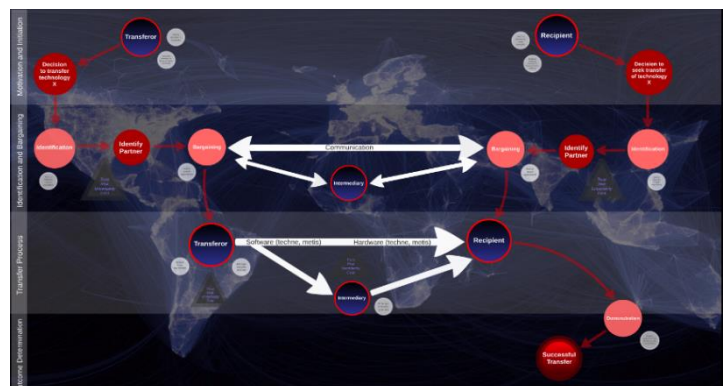
A review of the literature focusing on technology transfer across multiple terrorist contexts built the theoretical basis for a T3 model. With the exception of several key sources, the literature is largely descriptive in nature, lacks in-depth analysis across cases, and fails to identify important dynamics in terrorist technology transfer.

Relevant concepts extracted from the literature provided the first iteration of the T3 Model with a foundation for a broad characterization of actor connections and interaction dynamics used in technology transfer. The T3 model defines three primary actor roles along the x-axis of the model:

- The **Transferor** (which can be a multinational corporation, a state, a transnational criminal organization, or another violent extremist organization);
- One or more **Intermediaries** (not present in all cases); and
- The **Recipient** (which, according to the parameters of this project, is always a terrorist actor).

Delineations of the different stages of the transfer process (which mostly occur in chronological order) are represented along the y-axis in the model visualization and capture the evolution of each actor role over time. The four primary temporal stages are:

- (1) Motivation and Initiation;
- (2) Identification and Bargaining;
- (3) Actual Transfer; and
- (4) Successful Outcome Determination.



To view the T3 model, visit <http://www.start.umd.edu/news/motivations-mechanisms-and-determinants-terrorist-technology-transfer-t3-model>

FINDINGS

The model development process yielded multiple hypotheses about how the above factors and model dynamics might affect the process of terrorist technology transfer. A pilot case study of the transfer of unmanned aerial vehicles (UAVs) or “drones” to terrorists served as an initial test for some of the hypotheses. By exploring the activities of the Lebanese Hezbollah, Ḥarakat al-Muqāwamah al-ʾIslāmiyyah (HAMAS), and the Islamic State, researchers discovered preliminary support and undermining for certain T3 model hypotheses.

The pilot case study illustrated that:

- Previous engagement in transfer activities increased the chances of engaging in subsequent transfer; and
- State sponsorship increased the price of transfers. Lack of funding did not decrease chances for transfer; and
- The use of third parties impeded transfer.

The final phase of this pilot effort was to conduct a preliminary application of the T3 model to an emerging technology threat, the transfer of carfentanil-related production technology. Application of the T3 model in this case elucidated potential routes of carfentanil-related production technology transfer, particularly along existing synthetic chemical and designer drug trafficking routes, and potential points of transfer failure, including the relatively undefined audience or consumer.

METHOD

The project engaged in the following research activities, presented sequentially as different sections in the T3 report.

- *Review of the Literature*: an in-depth examination of literature, including available sources on terrorist technology acquisition and terrorist collaboration with outside actors, as well as research on technology transfer more broadly, as found, for example, in the business literature.
- *T3 Model Development*: synthesis of findings from the literature review into a theoretical framework that captures the dynamics of the transfer process and the actors involved, iterated with subject expertise and the pilot case study.
- *Pilot Case Study on the Transfer of UAVs to Terrorists*: a case study assessing the feasibility of the T3 Model and providing preliminary evaluation of a subset of the previously generated hypotheses regarding terrorist technology transfer.
- *Illustrative Application*: applying the T3 Model prospectively to an emerging threat – the potential transfer of carfentanil-related production technology to terrorists – in order to illustrate the potential of a fully developed T3 Model to aid analysis and interdiction of such threats.

FUTURE DIRECTIONS

Among the tasks that could be undertaken in a continuation of the current effort are:

- Developing and increasing the robustness of the T3 Model, by conducting workshops and interviews to elicit government and non-government expert opinions on the factors that facilitate and hinder technology transfer between different terrorist contexts. Probabilistic Analytic Hierarchy Process (P-AHP) and Technique for Order Preference by Similarity to Ideal Solution (TOPSIS) are among the methodologies that could be employed in the design of elicitations and to analyze the data collected.
- Developing a Knowledge Matrix of terrorist technology transfer.
- Conducting multiple additional case studies. This would allow for the testing of more hypotheses and increasing the robustness of existing findings.
- Undertaking an extensive and detailed data collection effort to capture past technology transfer cases and code them in a manner suitable for quantitative analysis. Creating a comprehensive event-coded terrorist technology transfer dataset would allow for rigorous empirical testing of certain elements of the theoretical framework.

RESEARCHERS AND CONTACT INFORMATION

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