Escalation Management in Cyber Conflict: A Research Proposal

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### Research Questions

- Under what conditions is cyber conflict most likely to lead to uncontrolled escalation?
- Under what conditions is cyber conflict likely to lead to escalation in other domains (conventional, nuclear)?
- What steps are most affective at the reducing the risks of escalation?
- How relevant are existing theories of deterrence and escalation management to cyber conflict?

### Relevant Attributes of Cyber

- **Constant background of attacks**
- **Diversity of actors (state and non-state)**
- **Diverse motives for attacks**
- **Difficult to identify attacker**
- **Difficult to identify the source, purpose of attack.**

### Implications

- Avoid framing cyber defense in military terms, and avoid defining threshold for cyber “act of war.”
- Declaratory policies should remain ambiguous (could perversely encourage other parties, create credibility trap)
- Efforts to deter through retaliation are likely to be self-defeating.
- Important role for international coordination and foreign capacity building.
- Deterrence by denial has limited utility, and can risk unacceptable or self-defeating costs.

### Analytic Framework

- Most Analyses Have Looked to Theories Developed for Cold-War Nuclear Deterrence as Model to Understand Escalation in Cyber
- A Number of Characteristics of Cyber Conflict Suggest Irregular Warfare May be a Better Framework for Analysis:
  - Combatants are extremely difficult to deter
  - Many have no interest in managing conflict intensity.
  - Asymmetries of information, interest, and capabilities are present.
  - Escalation management is set in a context of overlapping and simultaneous conflicts.

### Escalation Management in Different Forms of Conflict

<table>
<thead>
<tr>
<th></th>
<th>Nuclear (Cold War)</th>
<th>Irregular Warfare</th>
<th>Cyber</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Paths to Escalation</strong></td>
<td>Few</td>
<td>Many, Diverse, Multiple Conflicts Exist Simultaneously</td>
<td>Many, Diverse, Multiple Conflicts Exist Simultaneously</td>
</tr>
<tr>
<td><strong>Relevant Actors</strong></td>
<td>Small Number of States, Global Interests</td>
<td>Many, Diverse, Often with Regional or Local Interests</td>
<td>Many, Diverse, Often with Regional or Local Interests</td>
</tr>
<tr>
<td><strong>Knowledge of Other Actors’ Intentions and Capabilities</strong></td>
<td>High, Signals Relatively Easy to Send, Receive, and Interpret</td>
<td>Low, Signal-to-Noise Problem</td>
<td>Low, Signal-to-Noise Problem</td>
</tr>
<tr>
<td><strong>Ability to Accurately Attribute Attacks</strong></td>
<td>High</td>
<td>Low</td>
<td>Low</td>
</tr>
<tr>
<td><strong>Risk of Deliberate Escalation</strong></td>
<td>Low</td>
<td>High</td>
<td>Unknown</td>
</tr>
<tr>
<td><strong>Risk of Proxy Attacks</strong></td>
<td>Low</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td><strong>Frequency of Attacks</strong></td>
<td>None</td>
<td>High</td>
<td>Constant</td>
</tr>
<tr>
<td><strong>Damage from Attack</strong></td>
<td>Extremely High, Symmetric Vulnerability</td>
<td>Variable, Asymmetric Vulnerability</td>
<td>Extremely Variable, Typically Low, Asymmetric Vulnerability</td>
</tr>
</tbody>
</table>

### Research Plan

- Explore existing literature on deterrence and escalation management in irregular warfare.
- Identify key areas of similarity /difference between cyber and other forms of irregular warfare.
- Develop comparative case-study analysis, drawing from four different types of conflict: irregular warfare, nuclear, conventional, and cyber.

### Author and Affiliation

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