Understanding terror attacks in India

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Recent advances in computer science at the University of Maryland's Laboratory for Computational Cultural Dynamics cast fresh light on terrorism in India, such as yesterday's coordinated attacks in Mumbai. Some important conclusions from two forthcoming papers, accepted for publication at the 2011 European Conference on Intelligence Security Informatics and the 2011 Open Source Intelligence Conference in September 2011, suggest that reining in terror groups like Lashkar-e-Taiba (LeT), who carried out the devastating Mumbai attacks in Nov. 2008, can be done only with concurrent action by the United States and India and a reduction in US aid to Pakistan.

In order to understand how terrorism from groups such as Lashkar-e-Taiba can be reduced, University of Maryland researchers led by Computer Science Professor V.S. Subrahmanian developed a number of mathematical models including stochastic opponent modeling agents and multi-player game theoretic models. The research team developed studied 5 entities – the US, India, the Pakistani military (including the Inter Services Intelligence agency), the Pakistani civilian government (not including the military or ISI), and Lashkar-e-Taiba.

The researchers looked for Nash equilibria, named after Nobel-prize winning economist John Nash, whose life was immortalized in the Oscar-winning movie, A Beautiful Mind. Intuitively, Nash equilibria specify situations where no entity involved in the game theoretic model can ``do better'' without upsetting another agency. "We did not find a single Nash equilibrium in which LeT exhibits good behavior in which the US expands financial aid to Pakistan," said Subrahmanian, who went on to

remark that "This is consistent with the recent decision by the Obama administration to cut $800M in military aid to Pakistan."

Nevertheless, "this would not be sufficient to de-fang groups like LeT that are reportedly funded by Pakistan's ISI intelligence agency", explained University of Maryland counter-terrorism analyst Aaron Mannes. "The recent court trial in Chicago of two alleged LeT operatives, David Headley and Tahawwur Rana, strongly suggests an ISI hand in the deadly Mumbai terrorist attack in Nov. 2008."

"In addition to the results about trimming financial aid to Pakistan, we also found that there was not a single Nash equilibrium in which LeT exhibits good behavior in which both the US and India did not concurrently take either covert action against LeT and/or exercise coercive diplomacy toward Pakistan", said John Dickerson, a University of Maryland scientist who is also earning a doctorate at Carnegie-Mellon University.

"The results do not imply that the US and India need to coordinate actions – just that the actions need to occur over an overlapping period of time that is sufficiently long to convince both the Pakistani military and the LeT that terrorist actions will not pay", said Subrahmanian.

In addition to researching Lashkar-e-Taiba, the University of Maryland team has also used their data mining algorithms to learn models of the behavior of other terrorist groups in the Indian sub-continent such as Jaish-e-Mohammed in Pakistan and the Indian Mujahideen – alleged by some to be responsible for yesterday's triple bombings in Mumbai that killed over 20 people.

"Though it is too early to identify the perpetrators of yesterday's Mumbai attacks, computational models and algorithms can help decision makers shape improved counter-terrorism strategies and policies for

threat reduction," said Subrahmanian.

Provided by University of Maryland