

Predicting Future Threats- Part I

Introduction

Who will pose the greatest terrorist threat in the next twenty years, and how do we stop them? As responsible security professionals, we cannot sit on the sidelines and wait for a terrorist event to occur. We place upon ourselves the burden of acting to prevent and prepare for such attacks with the highest negative consequences for our organizations and people that we serve. Thus, no matter how difficult it may seem, we are forced to explore the possibilities and implications of future events.

Yet, the future is an 'unknown universe', one that lies beyond the horizons of our perception and our present knowledge. It should be immediately apparent to all but the most solipsistic or fatalistic among us that uncertainties abound as we look further ahead in time, with myriad possibilities presenting themselves at each moment. While this should not be viewed as grounds for doing nothing in the matter of trying to anticipate the threat of terrorism, it is only by better understanding the impediments – both conceptual and practical – to accurate prediction of terrorist behavior that we can begin to address them and approach the threat more judiciously. The most important of these impediments are discussed below, separated into three types:

- General obstacles to accurate forecasting,
- Problems inherent in anticipating human behavior and
- Particular complications in the context of terrorism.

Before we start discussing these in any detail, it is important to draw a distinction between two generic types of prediction that occupy opposite ends of scale. **Strategic prediction** seeks to describe general trends and the existence and magnitude of future threats, whereas **point prediction** focuses on the precise nature of future events, such as their exact timing and location or the identities of the individuals involved. Generally speaking, while even strategic prediction is often extremely problematic, the closer one moves towards seeking point predictions, the more difficult the problem of prediction becomes.

Also, we realize that that as one extends the time frame of one's forecast, there is a greater level of uncertainty and anticipation becomes more complicated, It is important, therefore, to **select the range of our forecasts with care**, so that we maximize the utility of a forecast by looking as far ahead as practically possible, while at the same time minimizing the uncertainties by not seeking to look too far into the future. For example, it is not always necessary to spend a large amount of resources on attaining point predictions, or exploring the long-distant future, when strategic predictions of the medium term will be sufficient to guide a particular decision.

General Forecasting Complexities

The fundamental unpredictability of certain classes of events

Some event patterns can emerge and be perceived retrospectively but cannot be predicted, and the others which are completely devoid of cause and effect can neither be perceived nor predicted. If a threat or potential threat is situated in one of these circumstances, the best strategy is not to attempt to predict the specifics of an outcome, but rather to address the threat through other means, for example, through a process of actions designed to restructure the environment in which the threat might arise. Terrorism, with its variety of interacting causes, dynamics and effects has many elements of a complex problem. We must remain open to the possibility, then, that at least parts of the threat we are considering may not even be possible to forecast in the traditional sense.

The past as an imperfect indicator of the future

Most attempts at the anticipation of future threats are based either implicitly or explicitly on extrapolations from past events. There is a variety of opinions on relying on past observations as indicators of future probabilities, ranging from viewing the past as an indispensable guide to the future, to believing that concentrating on past experiences is, to quote the philosopher Nassim Taleb, like "drivers looking through the rear view mirror while convinced they are looking ahead," so that we are blind to substantial future changes. The realistic state probably exists somewhere in between.

Now as far as relying on past observations, there are inherent problems (deriving general rules from a finite number of observations). A further complicating factor in relying on past experience is that **recorded history**

is an imperfect guide – we often place undue reliance on past *observations*: that is, we try to relate cause to those factors which we are able to easily measure and for which we have data. Since many less tangible aspects of past cases of terrorism are not recorded, or a simple geopolitical change that does not lend itself to a simple empirical analysis can lead to the development of false trend models and erroneous expectations of future events. Taking into account these limitations, it is no wonder that many have argued that historical analysis provides no reliable basis for forecasting terrorism events.

On the other hand, while one would be foolish to view terrorism as in any way deterministic, it would be equally unwise to dismiss the lessons of our past experience completely. There are **many social and behavioral trends that are both observable and consistent**, and which can serve as a guide to anticipating future threats. Indeed, several behavioral disciplines, ranging from political science to criminology, rely heavily on the notion that the past bears some relevance to the future. While technologies and tactics might change considerably, many of the broader strategies, motivations and operational requirements of terrorists remain essentially the same as those of the past. It may therefore serve us better to treat the trends as evolutionary as opposed to revolutionary and less concrete and more malleable. In conclusion, past and present events can serve as one (not the only) guide to anticipating future terrorist attacks and paying attention to current trends, while remaining sensitive to outlying possibilities and outlier events, is a more prudent strategy.

Signal versus noise

The other significant issue is discerning what is signal versus what is noise. With advancement of Information age the ratio of relevant signal to irrelevant noise is another impediment to anticipating future threats. The problem is not only quantitative but also qualitative. Not only we have more information available than ever before, but also that that information, be they propaganda videos from a remote terrorist hide-out or maps of new threats, can spread virally, and almost instantaneously, around the globe. The sheer volume of information makes it impractical to monitor every possible information source to detect early signs of impending threat, even if we knew what signs to look for. Those seeking to predict future threats therefore **must rely on information sharing, extensive collaboration, and automated tools**. Unfortunately, none of these activities, whether alone or in combination, has thus far been implemented in a manner that would comprise a robust method for finding the needle of true threat in the haystack of superfluous data.

Impediments to Forecasting Human Behavior

The obstacles to anticipating the future mentioned above can apply to all events, whether those are brought about intentionally or are disasters that are “naturally” occurring. There are, however, several aspects of intentional acts by human beings that make behavioral prediction especially difficult and that come into play in any consideration of terrorism. First, **human threats are even more dynamic** than natural processes (in the sense of being non-stochastic), in that human beings can adapt their behavior instantaneously, can strategize to avoid defenses and can concentrate their efforts on vulnerabilities. Second, human beings display a **diversity of action** rarely observed in the natural world, with adaptation/innovation a common occurrence amongst human adversaries. Lastly, while many natural processes are quite well understood and at least relatively well-defined, the **study of human mental processes is in many ways still in nascent stage**, with few well-defined features and hardly any predictive tools with general application. But this problem is even more pronounced in case of Terrorism which is characterized by high levels of dynamism. To begin with, **extreme behavior of any sort serves to exacerbate the baseline difficulties** of predicting human behavior. And fewer actors demonstrate more extreme behavior than the current crop of jihadists who are driven by constantly changes in interpretations of religious edicts and who must engage in constant organizational reinvention as a matter of survival. Their future intentions and actions are thus likely to prove more difficult to gauge than those of the majority of law-abiding citizens. Another obvious (though no less serious) complication related to terrorists stems from the fact that terrorists and many other dangerous actors, by their very nature, operate clandestinely, thus making proactive identification and data collection more difficult, say, than studying the prospective response of consumers to the addition of a new ingredient in laundry detergent.

Then there are the singular dynamics associated with the technologies and tools used by terrorist organizations. Many of these technologies meant largely for peaceful use are growing and maturing at an exponential rate. This is particularly noticeable in the life sciences. If the **rapid rate of technological development** might result in future capabilities that look very different from those of today, we must be careful not to be preparing to confront only past (or indeed present) threats. Just because no terrorist organization has ever developed a biological weapon from scratch, this does not mean that it will not happen sometime in the near future.

Conclusion

It might appear that, with impediments such as undependable data that may or may not be indicative of future threats and the possibility of unforeseen factors that we do not or cannot discern the entire exercise of attempting to forecast future acts of terrorism is a non-starter. Yet this is hardly the case. A diverse array of techniques has emerged in recent years to assist security professionals in assessing the future. In fact, following Chinese quote that "real knowledge is to know the extent of one's ignorance," we are now far better equipped to engage in the forecasting activity, so long as we bear the following in mind:

1. **We should not ignore current trends, but approach them judiciously** by admitting the possibility of outliers and maintaining a healthy index of suspicion regarding rapid changes.
2. **We need to meticulously monitor the dynamics of our adversaries, looking for early indicators of change in patterns of behavior.** For instance, we need to pay more attention to prevailing currents of religious and social ideology for signs of major shifts in the permissibility or appeal of certain tactics.
3. Once we come to terms with the fact that uncertainty is a pervasive element in any predictive effort, we can **manage the uncertainty by incorporating it into our planning, rather than attempting to minimize or eliminate it.**