Unidentified Male: You're listening to a podcast from the Stanford Center for International Security and Cooperation.

Amy Zegart: Why don't we go ahead and get started. Welcome to CISAC. I'm Amy Zegart. I have the great joy of being the co-director of CISAC. I'm also a senior fellow here. I see my partner in crime David Relman is in the back, the other co-director. And I'm a senior fellow at Hoover.

We are so very fortunate today to have a special CISAC seminar celebrating the publication of this book, which you can get on Amazon. I'm told that mine arrived before Martha's did, so Amazon is apparently quite fast.

We're so delighted that our own Martha Crenshaw is joined by her terrific co-author, Dr Gary LeFree, today.

As you all know, they are two of the top leaders in the world when it comes to terrorism studies. This is a highly anticipated book, Countering Terrorism, which we're going to hear a sneak peak of here today.

They met in 2003 and one year later they had created START, The National Consortium for the Study of Terrorism and Responses to Terrorism. Talk about a productive working partnership.

Let me just take a minute to introduce both of them and then I'm going to turn it over to Martha, who's going to go first for 20 minutes and then Gary for 20 minutes. Then we'll be sure to have lots of time to open it up to questions, comments and answers about what we can do to better combat terrorism today.

You all know Martha Crenshaw well. She's a senior fellow here at CISAC and FSI. Before coming to Stanford she was the Colin and Nancy Campbell Professor of Global Issues and Democratic Thought, and a professor of government at Wesleyan, where she taught for more than 30 years and mentored and trained some of the next generation of leading thinkers in this field.

You all may know that she's also been teaching the CISAC honors program, helping to churn out amazing undergraduate theses here, right at CISAC.

She's written extensively on political terrorism. She's a pioneer in terrorism studies, one of the very first people to take the study of terrorism seriously as an academic enterprise. I won't say how long ago, but a fair bit of time ago.

In addition to this new book, her other recent works include *Explaining Terrorism*, which is a fabulous collection of her previously published work in 2011, five edited volumes and a number of articles. Her work's been funded by Ford, Pew, Guggenheim, NSF and Minerva. She's testified before congress and has advised policy makers.

Since 2005, she's been a lead investigator for the National Consortium for the Study of Terrorism and the Response to Terrorism (START) at the University of Maryland, a project funded by DHS.

She's won a number of awards and we don't have time to go through all of them, although I'm sure Richard would like it if we did. But let me just mention two. In 2016 she received the very prestigious ISA International Security Studies Section Award for distinguished scholarship. She is the very first woman in the history of ISA to receive that award. And in 2015 she was elected to the British Academy, the UK's national academy for humanities and social sciences.

Her co-partner in all of these efforts is Dr Gary LaFree, who is Professor of Criminology and Criminal Justice and Director of the National Consortium for the Study of Terrorism and Responses to Terrorism at the University of Maryland. He's been just as busy as Martha Crenshaw. While at Maryland, he's been a founding member of the Democracy Collaborative, an invited member to the National Consortium on Violence Research, and in 2012 he was named a Distinguished Scholar-Teacher.

Before joining the Maryland faculty, he was Chair of the Sociology and Criminology Department at the University of New Mexico for six years, and Director of the New Mexico Criminal Justice Statistics Analysis Center for more than a decade.

He has written more than 60 articles and book chapters, and three books. He is a senior member of the team that created and now maintains the Global Terrorism Database. He's been the past president of the American Society of Criminology, a member of the Attorney General's Science Advisory Board and a member of the National Academy of Sciences Committee on Law and Justice.

He, too, has received a number of distinguished awards. I'll just highlight a couple: the Paul Sylvestre Award for outstanding achievements in advancing criminal justice statistics, and the Phillip Hoke Award for excellence in applied research from the Justice Research Statistics Association.

It is a very sobering topic but we are very delighted and cheered to have you both with us today. Please join me in welcoming Martha and Gary.

[Applause]

Martha Crenshaw: Well thank you Amy. Thank you for that very kind introduction. I hope you can all hear me. My _____ [00:05:12] Catherine will make sure you can hear me. There, okay, now hopefully you can all hear me.

It's a great pleasure to be here. I'm sure Gary joins me in feeling a great sense of relief. We have been working on this book for many years. We were

just looking back and it's been quite a long time and so we are really, really happy to be with you and we thank you all for coming. We also want to thank CISAC for holding this event. And also for holding an earlier _____ [00:05:48] board on the manuscript last spring, where we invited some outside scholars and policy makers to come and give us some comments on the draft, which were really very helpful. And also we should thank Stanford for funding a series of research assistants, and also thank the Department of Homeland Security for helping fund some of this research. One of my key research assistants is Itay Ravid from the law school, who's sitting over there, who helped a lot with one of the chapters.

As you can tell from this introduction, this book is an interdisciplinary sort of project, in that my background is clinical science and international relations and Gary's background is criminology and sociology. He is much more of a quantitative analyst than I am, as you will hear from his side of the presentation.

Our purpose in writing this book was to try to explain to any interested and reasonably well informed audience, not just scholars, why it is that terrorism poses such challenges. Particularly for policy makers but also for people trying to explain it in the academic world. Why is it a problem for policy makers as well as for scholars and for analysts?

What we wanted to focus on were the characteristics of terrorism itself. We're not so interested in the organizational problems that might impede effective counter terrorism policy. We're not so concerned with the partisan political dimension of policy making. We just wanted to say, "What is it about terrorism that makes it so hard? Why is it so difficult to deal with this problem?"

It's clearly a problem that we've been dealing with in the United States for some time and now countries all over the world are dealing with it. But I think it's fair to say that our primary audience is the United States. Most of the examples that we reach out to are cases that involved American interests. But we go much beyond that because the Global Terrorism Database that's maintained at the START center is truly a global incident database of terrorism that goes back to 1973. We did use that a lot for the empirical side.

Let me just describe to you some of these problems about terrorism that we tried to explain in the book. One of the first things is, as Gary's going to explain in more depth, that acts of terrorism are actually rare events. And we argue that they are often something of the nature of a black swan event. They are uncommon, they are atypical. Despite the fact that if you read the news media you might think that terrorism is happening all the time, it actually happens rarely, particularly to us here in the United States. So it is actually rare, but at the same time it tends to encourage overreaction.

In the book we're trying to caution against overreaction while recognizing the pressures on governments to react very strongly when there's a spectacular

incident of terrorism. We're encouraging a balanced approach, perhaps a more reflective approach. At least, cautioning that here's what happens when you take very strong measures against terrorism. They have unintended consequences that you think are undesirable in the long run. Also it's very difficult to roll back the measures that you've taken.

If you look at the vast array of measures taken in the United States in the immediate aftermath of 9/11, and they were in the immediate aftermath most of them, many are still with us. It's very difficult despite a lot of efforts to turn back any of these measures. Among other things, this impedes a government's ability to adapt to a very changing, malleable terrorist threat. So the threat changes but you're stuck with the institutions, policies and procedures that you created in the aftermath of a crisis.

Another problem with terrorism is that what we tend to see, what we tend to focus on in the news media, what the public tends to be aware of, and what generally policy makers react to are completed acts of terrorism. They are physically completed. The bomb goes off, people are killed, the physical effects. So, in a tactical sense, this is a terrorist success. However, most, probably 90 per cent, of terrorist efforts fail. That is, these are unrealized plots, conspiracies, on the part of terrorists and they don't come off.

Now, most databases including the Global Terrorism Database, or GTD, have a very, very large number of incidents in them, but these are only the completed incidents when actually something happened. What about the rest of it, of all of their efforts, their plots, what they wanted to do but weren't able to do?
So I commenced a project with funding from the Department of Homeland Security. Itay was my main research assistant for the US part of the data where we did try to track failed and foiled plots in the United States. What we found was that   even if you included failed and foiled plots, there aren't that many really, over time. Second, that there's really not a pattern in terms of these plots. There are glimmers of patterns but there's no consistent pattern. It's not all immigrants, I can assure you.

A lot of the _____ [00:11:24] involve people who had other problems and whose motives are actually extremely murky. So we have a small number of events that did come off, people were killed, and all this is tragic. Of course nothing approaching the level of the 9/11 attacks at all. The most deadly after that would be the Orlando shooting.

In fact, one other small observation about this is that the foiled plots are mostly foiled by government informers and they mostly involve the use of bombs. The attacks that have actually come off, where people are killed, are more likely to involve guns. Most of these involve guns. Which is, I think, an interesting observation.

We also discussed the fact that we refer, in public discourse and policy, to terrorist organizations as though they were concrete entities that had a shape

that we could easily recognize, that was pretty clearly defined, that we all know what we're talking about. When actually, the actors that are behind incidents of terrorism are extremely ambiguous. They range from individuals who appear to be inspired by appeals from ISIS or Al Qaeda to highly structured organizations that actually hold territory and create caliphates in Syria and Iraq and everything in between. They involve social networks, they involve links to criminal gangs. In other words, there is no one coherent entity out there and there is certainly no monolithic unitary jihadist threat out there.

There are many, many different strands, trends, and we try to explain this: the actor out there, the terrorist, the terrorist organization, or the foreign terrorist organization. You probably all know the state department keeps a list of foreign terrorist organizations known, in government jargon, as FTOs. This really creates, I think, an image of an adversary that is just simply belied by reality.

As a corollary to this, it is very difficult to know who did it when you deal with terrorism. So attribution is a major problem for governments, because if you're going to deal with terrorism, you'd like to know who did it. Usually, I think, when the state does something your intelligence agencies are going to be able to figure out who did it. It's going to be reasonably clear. When it comes to terrorism it's really very difficult to know. This means that if you want to adopt a policy of deterrents, for example, of terrorism it's going to be very difficult to threaten to punish the adversary because you can't be sure you're going to know who did it.

There are cases dated from the 1980s that went to court, in one case in Spain… Three trials and still it's not sure who did it. There's still controversy and division.

Look at the Benghazi controversy, where a misattribution that was apparently in [00:14:29], and not totally wrong, by Susan Rice, led to all sorts of political consequences, including her not being nominated for Secretary of State because of an attribution error.

The political consequences, as well as the response and difficulties posed by attribution dilemmas, they're always going to be with you. It would be wrong to assume that you're going to be able to attribute. USS Cole is still in court, that was 2000 and it's still in court. It's not determined finally who did it.

The last thing that we mention is a very fundamental difficulty and that has to do with counter-terrorism itself. It is extremely difficult for policy makers and for academic analysts to say what's effective in dealing with terrorism. In the case of US policy, overall policy goals have tended to be sometimes, let us say, so ambitious that there was no way you could achieve them.

You recall that right after 9/11 the US government was to eradicate all terrorism of global reach. And then it became to eradicate all tyranny around

the world and establish democracy. Now how are you going to get from here to there? What sort of measures might you come up with that you can show that _____ [00:15:54] progress towards those goals?

The goal of the current administration is to eradicate ISIS. Actually I think the Obama administration has been trying to first remove Al Qaeda and then discovered itself having the successor ISIS. For all these years we've not been able to reach this goal.

Even if you look at shorter term objectives on the part of the government, it's really very difficult to measure progress toward those goals. Now the government, of course, wants metric. They always want metric in terms of measuring the effectiveness of policy. Donald Rumsfeld famously asked for metrics in terms of defeating our adversaries in Iraq, but it's very difficult to come up with metrics that anybody can agree on.

Take as an example the controversy over the use of drone strikes, one of the prime counter-terrorism measures of the Obama administration. There was widespread disagreement among analysts, among experts, among scholars, as to whether drone strikes had a positive effect. Do they actually degrade the organizational capability of ISIS, of Al Qaeda, both of which are targeted by American drone strikes? Or do they simply create a desire for revenge leading to the kind of inspirational individual level of terrorism that has plagued the United States and western Europe in recent years? So there's total disagreement, I assure you, on what really works.

Do hard-line, coercive measures work better? Or do more conciliatory measures, such as efforts to counter violent extremism by persuading people that they shouldn't follow [00:17:31], persuading people they shouldn't go to Syria to become foreign fighters?

Nobody really knows what works better and we don't really have any standards for measuring progress toward the goal, even if we should be able to clarify a goal. And as I say, often the goals at least are announced by the government in terms of public discourse and public communications are truly unrealistic.

A last caution that we have is, of course, transparency. We do make a very strong plea for more transparency from the government in terms of counter-terrorism policy and in terms of providing information to scholars, to analysts, who actually could help governments sometimes if they had better information about terrorism, in order to analyze it and in order to at least try to come up with some sort of sensible solutions to the problem.

On that issue of data and information, I'm going to turn the podium over to Gary and I'm also going to turn the microphone over to him.

Gary LaFree: It's a real delight to be here and appreciating this fantastic weather you're having out here right now. I certainly want to give thanks to Amy and the

CISAC for organizing the presentation today. I want to acknowledge in the audience my son who is a doctor at UC San Diego and his friend Talia who's getting a Masters here at Stanford, who are visiting today, so it's good to see them as well.

I'm going to try to follow the advice of Mark Twain, some of you may have heard it before, who once said during a public speech that, "Few sinners are saved after the first 20 minutes of a sermon." So I'm going to try to take 20 minutes to consider from a data standpoint, from a science standpoint, why is studying terrorism so challenging?

We're arguing in this book, and I think you can tell already from the presentation Martha just did, that we're arguing for the importance of strong data, strong analysis, for science in terms of informing public policy. But we're also strongly cautioning that we need to be honest in our appraisal of the limitations of the data and the analysis.

The main data that we relied on in the book, that Martha's referred to already, is called the Global Terrorism Database, or the GTD. Just a little bit of background on that so you can get some appreciation of what this actually consists of: the GTD is collected and managed by the START center at the University of Maryland and right now it's the most comprehensive of the unclassified databases on terrorist events.

The way it works right now is we rely on print and electronic media sources to identify records of terrorist attacks around the world. We're starting each day with about 1.6 million articles published worldwide in 72 different languages. We obviously do not have the staff to go through 1.6 million articles a day, so we use computer algorithms and natural language processing methods to reduce the pipeline to about 10,000 to 15,000 articles a month. It's actually very similar to the way Google works on your browser.

We then have a team of about 25 that examines these cases and records about 120 pieces of unique information. We get information on location, perpetrators, targets, tactics, weapons, and so on.

What I'm going to talk about briefly is mostly based on the analysis of the GTD. In the book, of course, we go into much greater detail, but we came up with, really, six characteristics of data in this area that make it especially challenging. I'll call these complications.

Complication number one Martha's referred to already. For most places and times terrorism is an incredibly rare event. In recent years in the GTD we've been reporting about 12,000 terrorist attacks worldwide. This seems like a lot, but at the same time during a recent year, the United Nations estimated there were about 450,000 homicides worldwide, about 40 times more homicides than terrorist incidents.

In the United States in recent years, the GTD has recorded as few as 25 terrorist attacks. At the same time in the United States there are about 15,000 homicides and about 350,000 robberies every single year. In fact, 38,000 people died in traffic accidents in the United States last year.

What does this mean from a data science standpoint? Well, because there are so few cases carrying out statistical analysis on terrorism, it's generally limited and challenging. This is why we have lots of scholarly work on the ISIS on the Al Qaeda, but not on the lesser known groups because there's just not all that much evidence that you can glean from it. So it's very difficult to study these groups quantitatively.

Even groups that are incredibly important, like Al Qaeda … We have a total of 59 attacks from Al Qaeda in the database, only five attacks since 2008. So even for a very important group, from a policy standpoint, you just don't have a huge amount of data.

The GTD identifies 2,500, actually almost 2,600 organizations that have operated since 1970 but most of them have engaged in so few attacks that it's impossible to do much in the way of statistical analysis.

So this is the first point. The fact that terrorism is rare means that we have limited ability to do large scale statistical analysis.

Complication two. If terrorism is rare, mass casualty terrorism is even rarer. In our book we analyzed nearly 142,000 terrorist attacks from around the world over 50 years. We found that only 17 attacks claim more than 300 lives. Apart from the four coordinated attacks of 9/11, which took nearly 3,000 lives, no attack on US soil in nearly half a century has claimed more than 200 lives, and this is the Oklahoma City bombing in 1995 orchestrated by Timothy McVeigh.

One of the most surprising statistics in the GTD is that about half of the thousands of terrorist attacks we've recorded do not include any fatalities. Sometimes when I'm presenting this information to an audience people say, "Well how can it be terrorism if nobody was killed?" Well, there's several reasons. First you end up many times in situations where groups are targeting not people but facilities. This is very common, for example, for the environmental and animal rights groups, like ALF and ELF, which rarely, in fact they go out of their way not to, target individuals.

Secondly, in other cases terrorist organizations are trying to avoid casualties, believe it or not. This was very common for the IRA and the Eta, much less common unfortunately these days.

Finally, in many cases, attacks are set up to include fatalities but they fail for whatever reasons, either due to law enforcement or other kinds of failures on

the part of the terrorists. They don't end up killing anyone. You've certainly seen lots of high profile examples of failed assaults. You may recall Richard Reid, the so-called Shoe Bomber's unsuccessful 2001 attempt to detonate explosives hidden in his shoes on an American Airline flight from Paris to Miami. More recently, in 2009, the case of the so-called Underwear Bomber, Umar Farouk Abdulmutallab, who attempted to ignite explosives concealed in his underwear on board a Northwest Airlines flight going from Amsterdam to Detroit.

In tracking thousands of terrorist attacks from around the world since 1970, the coordinated attacks of 9/11 are still the deadliest yet recorded. As Martha alluded to just a moment ago, this has some very important implications from a policy standpoint and also from a psychological standpoint.

Martha referred to the essay on black swans that Nasim Taleb did a few years back. The idea of the black swan is essentially it's an event that falls outside of regular expectations, has a high impact and defies prediction.

The term is based on the idea that before the Europeans visited Western Australia, they'd assumed that all swans were white, and a black swan in everyday language then came to refer to something that didn't exist, an impossibility. Well, of course this was laid to rest when the Europeans eventually visited Western Australia and realized there were in fact black swans.

Taleb argues that 9/11 was a black swan event. He claims that a number of events like this event had a disproportionate impact on world history. Throughout this book, one of the things we're trying to show is that our conclusions and assumptions about terrorism look very differently if you concentrate on one case, on one black swan, versus looking at thousands and thousands of cases over a half century.

As Martha's already suggested, one of the important policy implications of that is if we over-emphasize a single atypical event it may have serious policy implications and they may be implications that are very hard to undo later.

Complication number three. Data on foiled and failed terrorist plots are especially difficult to track. A great many, and in some cases, even a majority of attacks planned by terrorists fail either because of poor planning or the work of law enforcement. And these cases are especially difficult to study.

In general, using the sort of system we're using to collect the GTD, which is based on the media picking it up … The media are much less likely to pick these cases up, and much less likely to dwell on them. As Martha mentioned, the databases like the GTD, most of them have this kinetic rule. We don't track hoaxes and plots. In other words, if someone puts on a suicide vest and goes outside their office or their lair, even if they don't blow anybody up we count it. But if they're building a suicide vest and they never get a chance to use it we don't count it. So we miss a lot of those cases.

A large number of these are being prosecuted now in the United States and western Europe. A large number of cases, because of the post 9/11 zero tolerance for terrorism ideology, are now prosecuting people for plots, not for things they've actually done yet. They're being stopped so early in the process that they haven't actually committed any violence yet, they're only plotting to do that.

This is a challenge, obviously, from a policy standpoint but also from a science standpoint because it's very difficult to get information on these cases. In the book we rely on a really unique database that Martha and two of our colleagues, Erik Dahl and Margaret Wilson, developed that looks specifically at this niche and tried to provide information on it. But it's very difficult and in many cases there's not a lot of information.

Complication number four. Terrorist organizations are extremely diverse which again make generalizations very difficult. When you think about it, when we talk about terrorist groups, we're actually dealing with, in a sense, an abstraction that includes an enormous amount of variation. On one extreme end of this spectrum are those individuals who have no recognized links to a specific group. The buzz word in the press these days is "lone wolves". On the other end of the spectrum are highly organized terrorist groups that persist over a long period of time, have a well defined chain of command, have stable leadership. And in between this is everything you can imagine. There are small groups, shadowy networks, loosely connected organizations and so on. And all of these disparate entities on both ends of this imaginary spectrum are going through pretty much constant change. They're evolving, they're separating, they're splitting, and so on.

There was a recent case in California some of you may remember, it was in November 2013. Paul Ciancia opened fire on TSA agents in a terminal in Los Angeles International Airport. He killed one TSA agent, wounded two others and well as five civilians. Ciancia claimed responsibility, said that he wanted to instill fear in TSA officers, but he had no apparent help in planning or committing the attack and did not identify with a specific group or movement.

In these sorts of cases it's very hard to generalize. You think about what kinds of policy steps can you take to prevent an attack like then when it's such an eclectic, unusual, original event.

Even when we identify a specific terrorist organization there's tremendous variation. Since 1970, I mentioned a moment ago, the GTD has identified about 2,500, almost 2,600 separate terrorist organizations. But half of all of the organizations we've identified have lasted for less than six months. Only a small minority of terrorist organizations, about nine per cent of these 2,600, last for 10 or more years. So in contrast to the common public perception that terrorist groups are long lasting, the majority of them disappear rapidly. It

turns out terrorist groups are a bit like business startups. They have a very steep failure rate and that happens oftentimes within less than a year.

We might ask ourselves, "Why is the public so misguided on this point? Why are public perceptions so different?" I think it's because a handful of groups that continue to stage attacks for many years have become household names. Everyone knows Al Qaeda, ISIS , the IRA, the Eta. But lost in the calculation are the dozens of groups that stage only one attack and then quickly disappear.

Some of my personal favorites from the list of relatively unknown groups include the Anti-Capitalist Brigade, the Angry Fishermen, and the Revolutionary Flames. And I'm guessing most of you in the room will not know too much about those groups.

Complication number five. Martha referred to this a little earlier as well. Attributing responsibility for a terrorist attack is often ambiguous or impossible. In addition to the often uncertain nature of both the attacks and their perpetrators, it's often very difficult to decide who is actually responsible for a terrorist attack. In fact, we learned from GTD in more than half of the thousands of terrorist attacks since 1970 government authorities never knew for sure who was responsible.

You ask yourself, how can this be? Well, attacks may be launched by loners who are working more or less independently of a specific group, so there's no real group to be identified. In other cases they may have general information. They may be able to say it's muslim militants or protestant extremists, but the information is never sufficient to get any greater detail than this.

In still other cases, there may be false or multiple claims. More than one group may claim the attack or a group may claim responsibility when in reality it had no connection to the attack. Or a group may claim incorrectly that another group was accountable and we call these 'false flag' incidents. And of course we may simply never have enough information to get to the bottom of it, to end it, because there are just competing accounts.

A quick footnote on this, because my background is in criminology. If you study police reports you find very rapidly that you get the most information on cases that get all the way to the end of the system. If somebody's arrested and then discharged you know very little about it. If they go all the way through the trial you know a lot about it. It's the same with terrorism cases. It's partly that people have limited resources and if a case doesn't kill anyone, or if it doesn't kill many people, you're not going to spend a huge amount of investigative resources trying to get to the bottom of it. So we're more likely to get to the bottom only of the really high profile cases.

I'll give you one really famous example of this that many of you in the room will remember. This is the Pan Am flight over Lockerbie, Scotland in December 1988. The mid-air bombing of the aircraft killed 259 passengers

and crew and it also killed 11 more people on the ground. After a few years, by 1991, the United States and Great Britain felt they had enough information to issue indictments for two Libyans. Eight years later, in 1999, Libyan leader Muammar Gaddafi finally handed over these two suspects. In 2000 there was a trial before a special Scottish court sitting in the Netherlands. In 2001 one of the accused was acquitted but the other was convicted. Eight years later, in 2009, the convicted perpetrator was released by a judge due to his deteriorating health. And, by the way, he received a hero's welcome in Libya, where he died in 2012. But to this day there are still questions about the involvement of Muammer Gaddafi in the attack. Perhaps operating through the proxy of the Abu Nidal Organization, which is a Palestinian group. Or perhaps there might also be some responsibility from Iran via a group called The Popular Front for the Liberation of Palestine – General Command. Again, this case that was incredibly important received all kinds of publicity and still to this day we're not exactly sure what happened.

Of course governments are under enormous pressure to identify the guilty party and offer a swift response. And this is an area where getting it wrong can have serious and long lasting consequences. As Martha pointed out a moment ago, even the timeliness of these decisions can be important. This I think is well illustrated by the September 2012 attack on the US State Department facility in Benghazi, which resulted in the death of Ambassador Christopher Stevens and three other Americans and has a political impact that continues to this day. In addition to Rice, of course, it had some unknown impact on the candidacy of Hillary Clinton. The fact is we often do not know who exactly is responsible for an attack for a long time after it occurs, and sometimes we never know.

Finally, complication number six. I think in the last 15, 20 years, certainly since my colleague Martha has been in the field, we have actually made great strides in terms of building a scientific study of terrorism. We're much farther behind in terms of building a scientific study of counter-terrorism, which I think is still in its infancy.

While it's difficult to get an accurate grasp of terrorist threats it's even harder to evaluate the strategies used by governments to counter terrorism. Governments are incredibly secretive about their counter-terrorism policies and strategies so to this point there's certainly nothing like these global terrorism databases when it comes to counter-terrorism.

Not only do we face all the legal, ethical and political consequences that we face when we're studying terrorism, but in addition to that you have such a broad set of policy options and so many different metrics for measuring success. It's even difficult to say exactly what counter-terrorism is. It certainly, you would think, would include military actions and drone strikes. But arguably it would also include economic aid to highly politicized regions or peace accords with rebel groups.

We're beginning to examine the policy consequences of counter-terrorism, but the science here is incredibly new. I'll just site one example that two of our colleagues at the START center have been involved in, Laura Dugan and Erica Chenoweth, that some of you in the room will know. They analyzed Israeli responses to terrorist attacks from 1987 to 2004 by developing a seven-point scale which ranged from responses based on accommodation/concession, all the way over to deadly repression.

For example, under government and accommodation they looked at signing peace accords and pulling out of occupied territories. Under deadly repression they looked at things like killing suspected perpetrators, firing missiles and conducting raids and attacks. The researchers then developed a database that tracked the thousands of different responses the Israeli government took to terrorist threats over time and they used the Global Terrorism Database to then measure what happened in terms of terrorist attacks.

They found that more repressive actions on the part of the Israelis frequently increased rather decreased future terrorist attacks. They also found that more conciliatory responses were generally associated with decreases in attacks. So these were pretty interesting results but of course this is not to say that we would get the same results for all terrorist attacks. Or we would even get the same results in Israel in a different period of time.

Indeed, in some of their subsequent research, Dugan and Chenoweth are finding that results vary a good deal depending on the specific time period and conflict studied.

Nevertheless, I think we're going to see a lot of growth in this area and a lot more research attention being directed to counter-terrorism in the future.

I just want to conclude with a few thoughts. First, I hope we've successfully convinced you that compared with many types of behavior that produces violent outcomes, terrorism is an extremely rare event. And the number of attacks which result in mass casualties is rarer still.

To this point in human history, the coordinated 9/11 attacks remain the deadliest terrorist attack on the planet in nearly 50 years and our data _____ [0:39:04] up into 2016 and this is still the case.

In a database with now about 160,000 attacks only seven attacks have claimed more than 500 lives, so policy makers are really faced with this issue of not turning a particular event into a black swan event.

Early after 9/11, Cass Sunstein, an American legal scholar some of you will probably know, referred to something he called 'probability neglect'. This is the tendency of people to overreact to low probability risks. In other words, my favorite on this, is we worry more about being killed by a shark at the beach than being killed by other motorists on the way to the beach. We can't

dismiss this as being irrelevant, it actually has huge policy implications. For example, on the day after 9/11 President Bush's approval ratings more than doubled, the largest favorability increase of a US president since such records have been kept. It's not like these are just epiphenomenal things without serious implications.

I think also, even during the period when we were writing this book, and certainly we can appreciate here in the heart of Silicon Valley, all of these issues have been complicated by the increasing speed of communication. Today audiences learn of attacks instantaneously through social media platforms such as Twitter, Facebook, and others. Sources that are completely unmediated and instantly available. It's also a communication overload that's even richer because it now includes visual content, which makes it really hard for governments to frame terrorist attacks sensibly and to resist a kind of hue and cry to come up with extraordinarily serious responses.

The communication explosion also means we're exposed to terrorist attacks from around the world. I know from my 92-year-old mother … I'm going to Germany and she'd say, "Yeah but there was just this attack in France." So, all of Europe is off limits for a terrorist attack.

We're not making this up either. Think of the impact on public opinion that the attacks in Paris in 2015 and Brussels in 2016 and Nice in 2016 have had on public opinion. In the face of these pressures, it's more important than ever that we keep the threats of terrorism in perspective.

Terrorist non-state actors are indeed dangerous, I by no means want to say they're not, but the danger is not existential. It's not the equivalent of mutual assured destruction. Our analysis of public domain data shows that Americans at home are not seriously threatened by phenomena that often receive an incredible amount of media attention, including return foreign fighters, terrorists concealed among refugees, or a rash of deadly lone-wolf attacks.

Most plots in the United States over the past decades did not result in completed action, although there have been some lucky escapes. Martha referred to, for example, the 2009 Christmas bombing which could have been a real disaster.

Instead, the homeland threat we see by and large is episodic, sporadic and inconsistent. The fact that terrorist attacks are rare makes it difficult to formulate general policies and stymies reliable statistical analysis. Because responsibility for attacks is often ambiguous or altogether unknown, punishment for attacks is difficult.

Think about it. How do you do deterrents in a situation where you're not sure you've got the right person to deter? The fact that many attacks are carried out by individuals or groups that are short lived, inchoate, rapidly evolving, impedes consistent and rational policy responses.

These characteristics of terrorism I think help the enormous challenges governments face. I want to be really clear, and we try to make this clear in the book, that this is not by any means an argument for abandoning efforts to develop conceptual strategies. It's not an argument for not collecting reliable data and analyzing, quite the opposite. Instead we're arguing for a two-pronged approach: striving for the very best data and analysis possible, but also being candid about the limitations of any analysis we provide.

As Alexander Hamilton put it in The Federalist Papers more than 200 years ago, "Caution and investigation are a necessary armor against error and imposition." We are making a strong argument for the importance of data, analysis and science when it comes to understanding terrorism and counter-terrorism. But at the same time our reviews suggest the importance of transparency when it comes to what former secretary of defense Donald Rumsfeld famously referred to as the "unknown unknowns".

This means striving for higher quality science but also managing our expectations about the quality of the information that's available and our ability to make strong predictions based on this information.

Thanks very much.

[Applause]

Unidentified Male: You've been listening to a podcast from the Stanford Center for International Security and Cooperation.