Full transcript of
Amanda Ripley remarks, "Reacting to the Unthinkable"
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First of all I want to thank you for coming and I want to thank Angela and Kathe in particular for making sure I got here despite significant logistical challenges including up till just a few minutes ago so they never lost their cool and I am really glad to be here because you know I feel like I can imagine that many of you have a great deal of responsibility for the safety of people who are far from home and I can imagine that being challenging in all kinds of ways but in particular you can't control so many of the factors in those situations. So I thought what I'd do today is talk to you about the one thing you can predict. At least better than you probably think – which is human behavior, in crises. And it turns out, one of the most remarkable things that I learned in my reporting for Time from Manhattan on 9/11, from New Orleans during hurricane Katrina, and Rita and you know, even during the sniper shoots, which I covered here in D.C., or the heat wave in Europe, which I covered from Paris. What I found and what I was really surprised by is that the behavior of human beings, in extreme situations, is the same.

With some variance, the same patterns in very different situations. So whether you're in a shipwreck, or a burning building, or a plane crash, or a Honda Civic in a car crash, the behavior is very similar. And what I'm going to do today is tell you about the three phases, chronologically, that I think most people go through in different kinds of disasters. The big variable of course is how much time people have. So on one end of the spectrum you have hurricanes, where people have a great deal of warning, where the phase of, the first phase begins days, if not years before the actual event. And in other situations, like say a bombing depending on the situation, you may have very little time, so all those things are condensed. But I do find that those phases are very similar and they're not what we, most of us expect.

I got interested in this subject which I, I want to mention this background because it's so relevant to the date today. A few years ago, I went to a support group meeting for the survivors of 9/11, by which I mean some of the 15, 410 people who evacuated the Trade Center successfully. And I was doing a sort of you know, anniversary story for Time Magazine. I wasn't sure what I was going to do, well I thought I hadn't heard much. I'd done a lot of coverage of 9/11 but I hadn't heard much from the people who evacuated. And they were just sort of starting to come out of the woodwork. And I thought I knew what I was going to expect. And so I went to this office above Time Square and I was totally wrong. The people in this room had an agenda. They had an urgency about them. There were things that had happened to them – physically, psychologically, socially even that they didn't expect, and not all of them were bad. But they were very different from what they expected and they wished that they had known. And they wanted to share them with everybody else. And so they passed around a sign-up sheet so they could start a lecture circuit. And they started lecturing at local churches and offices. One of the most frustrating things they found was that many of the offices didn't want to have them lecture. They didn't, for a variety of reasons, didn't want to relive this trauma.

But I found that, unfortunately, the Trade Center is an incredible laboratory for human behavior under stress. And if we don't learn from these people's experiences, then we are just doing them another injustice, and ourselves. So I am particularly excited to be here on the anniversary because, you know, it's a difficult day, I think it is for everyone. But I feel like this is not a bad way to spend part of it – to learn from what some of these people had experienced and to try to do better from what they learned.

[4:24]

So I'm going to go through the three phases, and for each one I'm going to give you an example of what I'm talking about. But the broader context… [machine beeping] sorry, this is very sensitive… The broader context is that disasters are actually getting more common, around the world, and we can talk more about why that is if you want afterwards, but the main reason is because of how we live, and how we tend to live in big cities close to water more than we ever did before.

What we don't often realize in that context is that the most important people at any disaster, especially really big disasters are regular people. Not first-responders, or officials, or FEMA, but regular people. And they do the vast majority of life-saving at big disasters. And they do remarkable things – regular people, but it helps a lot if they have something in their head to work with before hand. [Let's see if I can do it, alright]. The major point that underscores everything I'm about to talk about is that panic among regular people even really bad situations, is extremely rare. It does happen, but almost never. And I looked for it, because all these disaster researchers and academics they told me "it never happens – get it out of your mind." And it felt like it was almost politically correct to say that like there's a real taboo around panic, in the small but important world of disaster research. And so I looked pretty hard for it because I didn't really believe them. And it's true. It's very hard to find it. And when you do think you've found it, the closer you get, the more people you talk to, the more reports you look at about what actually happened, or footage you look at, it's not actually what happened. So what *actually* happens, much more often is sort of the opposite of panic. Something that is sometimes called 'negative panic' – which is where people tend to move very, very slowly. Much slower than you'd expect. Many of them shut down and stop moving all together, which by the way happens to every animal that's ever been tested, as well. And there are good reasons for that, which we can talk about later. But it's the opposite of what we'd expect. And it's so important to understand before we design emergency plans, before we give out warnings, before we train first-responders, or before we train regular people. Because that is the hurdle.

Which leads us to the first phase of 'Disaster Think' which is sort of what I call it – Denial. And I don't mean like, Ophrah-style denial. I mean like hard-core denial, unlike anything most of us have experienced that's creative, that's resilient, that's tough to get past. So I want to introduce you to Elia Zedeno, as an example of this.

[7:34]

She's a small woman in her forties. Quick to smile, big round cheeks, big round glasses. Her family brought her to America from Cuba when she was 11. They had spent many years trying go get out of Cuba, and they finally did. They came in the early '70s and they moved to a suburb of New Jersey where Elia could see the brand new Trade Towers almost everywhere she went. When she was 19, she visited the Trade Center for the first time. And she applied for a secretarial job for the Port Authority. She rose up through the ranks. She survived the 1993 bombing – the first terrorist attack on the Trade Center in an elevator. She was suck there for over an hour – a very frightening experience. But she got past that and on 9/11 she had worked in the Towers for over 21 years. She managed five employees on the 73rd floor of Tower One. She oversaw the Port Authority's engineering consultants. She got to work on 9/11 a little after 8AM as she always did. She checked her voicemail, she sat down in her cubical, she got settled. At 8:46AM an American Airlines Boeing 767 going 490 miles an hour struck the building 11 floors above her.

[8:53]

It's important to realize, I didn't realize this until I talked to a lot of survivors that that effect of that first impact in that Tower, for most people, was quite dramatic. It was not a small thing. So in her case, there was a booming explosion and Elia felt the building lurch dramatically to the South – something that had never happened. She felt like it was going to go over. She grabbed her desk and held on. She lifted her feet off the floor, and she screamed "What is happening?" And what she remembers is that she was filled with a conviction that she needed someone to tell her "Nothing." "Nothing is happening. You're overreacting. Don't be such a baby." That's not what happened, luckily for her. Her co-worker screamed at her "Get out of the building!" At which point she got up and began to walk in circles in her cubicle. This is also very common. She was looking for things to take with her. She was frightened. She knew that something was terribly wrong, but she did not want to leave. She took a mystery novel that she had been reading. She took her purse, she took a few other things – this is by the way, a huge problem on airplanes, where you know, most airplanes that crash end up on the ground on fire and you don't have a lot of time to get off, but people really, they go for their bags. And it's not because they're selfish jerks. It's because you know, what psychologists call a 'normalcy bias' where your brain works very hard to sort what it sees into its existing database. That's how we work - we identify patterns. It's really an elegant solution for day-to-day life. But it doesn't work well in exceptions. So we often return back to our same habits. It's could be comforting, but most of all, that's how the brain works, that's going to be automatic, unless you override it, unless you have something to work with before hand.

[10:50]

Eventually, she did begin to leave. She found the stairs. Most people in the Trade Center had never been in the stairways. This, despite the fact that it was a known terrorist target. And the stairways getting out of the Trade Center was not easy – as you may know. Anyway, the whole process from the moment of that impact was influenced heavily by what was going on in people's brains. So everything kind of changes instantly. Literally, the chemistry of your blood changes, and some of you know this already so I apologize if I'm repeating this. Your blood becomes thicker so that it can coagulate more easily, if you need it to. You get a shot of different hormones – especially Cortozol and Adrenaline, that give you almost bionic powers in some ways, but, so you can, you know, fight or flee, but it takes away a power or at least one or two for everyone it gives you. And one of them is that you lose the ability to process new information well – most people. There are some unusual people who don't lose that ability. But what is happening in your head, is that the amygdala, which is an ancient mass of nuclei located deep in your brain, has taken over. And this is not to be messed with, the Amygdule. It is a very powerful part of your brain that controls your fear response and it isn't easily interfered with by your higher executive functions.

[12:19]

So everything changes. Your perception changes. Your sense of sight changes. Your sense of sound changes. There's some great research that some of you may know about sensory distortion among police officers involved in shootings. What they report is that about 90 to 95 percent of them have serious sensory distortions so they'll lose peripheral vision for example – that's very common. So it looks like they're looking out of a keyhole. Their brain's focusing on the threat. They almost always experience a slowing down of time, or in some cases a speeding up of time. Many people experience better vision or worse. I talk in the book about a hostage – Diego Asencio, some of you may know about who was a U.S. Ambassador to Colombia, who was taken hostage for 60 days, in Bogota in the '80s. And he actually says

his eyesight got better, and for several months after the event they had to lower his prescription, his doctor, because his eyesight had changed and eventually it went back to normal.

[13:30]

So everything kind of changes and that influences how we behave and it's important, I think, to understand that in advance, or else we don't know why things like fire drills matter. On average, Trade Center survivors waited six minutes before beginning to evacuate. Lots of good reasons for that. About 1000 people took the time to shut down their computers. Once they got in the stairs, they took about a minute average per floor to descend. Which was twice as long as safety experts had predicted. And the buildings were half full. So it wasn't that they couldn't, that they were too clogged in the stairwell. There's a lot of reason, but I would argue – strongly, that the evidence suggests that one of the reasons are these first two phases and I'm about to get to the second one, but the denial phase, these phases recycle, over and over as you move out of the situation.

14:31

So Elia finally gets in the staircase. She starts developing narratives in her head about what's happening. Her first guess is that when she hears the plane hit the tower that the pilot had had a heart attack and crashed and she felt sympathy for this guy. And then about half way down, another plane hits the other tower. And she hears about this, she actually sees it, because she's in a cross-over lobby at the time. And she decides that the pilots must have been racing and she's now she's kind of ticked off. But you see how her brain is working to create a narrative that is reassuring and will keep her focused on getting out of there. Even though she has been in a terrorist attack. This is not a normal lady. Right? I mean, she has something; she's been in something similar. It was only later, as she got almost down to the ground that she realized that they had hit at different times – so they couldn't have been racing. And she was filled with dread. And then she just stopped thinking about it. So her brain worked really well to keep her going.

15:37

And then she gets down to the lobby, the ground floor and she's relived, you know, she finally got out of there, it was an epic journey, over an hour. And she looks outside, and she expects to see normal life. Also very common. We tend to think the disaster's just happening to the people right around us, and everything else is fine. And she sees of course debris and terrible things outside. And she's filled with horror at this sight. And at this moment, she stops moving, and she actually loses her vision. She stops being able to see anything. And she told me this and I said, "Oh, because of the smoke?" and she said, "No. I just stopped being able to see." And she's not frightened. She's not saying this in shock. It's just like matter of fact. And that's a really great example of a fairly extreme form of what I'm talking about. About these sensory distortions, which your brain is doing for a reason, and often it's a way to dissociate from the trauma, so that you don't get overly emotional, or get too deep into this fear response which can be debilitating.

16:50

At that point, she's standing right outside the Trade Center, not moving and not seeing, moments before the first collapse. And a woman, stranger, comes up, takes her by the elbow and says, "We're getting out

of here," and leads her away. And she ends up, her vision comes back as she hears a rumble, and it's the other Tower collapsing. She runs. She never sees this woman again. And she managed to get out of there without any severe physical injury. And she now leads one of the biggest Trade Center support groups. But I really like this story of the woman who comes up behind her, because that's a great example of the next phase of this process, which is very social. So people become highly affectionate and interested in each other, in these situations (which by the way, chimpanzees do too. But another story for another time. It makes sense. You want to stick with the group. Anyone who's been in a situation like this, or even in realistic training. I've been in a burn tower, you know, with firefighters, and you know, I can say that I didn't want to leave them. I wasn't frightened, because I knew it was safe. But when you lose the ability to see your hand in front of your face because of smoke, which is so often present in so many catastrophes, you know, it's very sensible, you need more people around you, you need more hands groping. You need more brains to try to work through this, and you will do almost anything to stay with that group.

18:31

So this period of deliberation is very important. I haven't met a survivor of the Trade Center that didn't have meaningful interactions with multiple strangers on their way out. And until you understand that, I think it's hard to design effective warnings and emergency plans. So let me give you a quick example, away from terrorism: we know that people will check with four or five sources, before evacuating for a hurricane. And that's after getting an official order to evacuate. So they'll check with friends, families, neighbors, co-workers and the TV news guy before they leave. And so, you know, again, not a bad idea, but it takes time, and it's important therefore to have warnings coming at people from multiple sources. To have them clear and consistent and to have them repeated many, many times. And ideally to have some wisdom in the culture before hand, so there's something to work with. I want to give you an example of how important it is to have something to work with before hand, and how social these experiences can be. The 2004 tsunami in Southeast Asia killed approximately 200,000 people. One of the worst disasters of our time. What people often don't know about tsunamis is that they often come with some natural warning signs. If the earth shakes for more than 10-15 seconds, or the sea recedes as it's doing here, and fish start flopping around on the sand, this is a very good sign that you have ten minutes or less to get to high ground before a tsunami. Some cultures, some villages in Southeast Asia has preserved this wisdom over generations, and any time there was an earthquake, they immediately went to high ground, and whether there was a tsunami or not, it was something that they were proud of, and it was part of the culture.

20:23

But of course, most people did not have this information. Especially tourists. It was not given to them by their hotels. Still isn't, in many places in Thailand, or in California, for that matter, which has tsunami inundation zones all over it – as does Oregon and Washington. Very simple wisdom that most people haven't retained. This is a picture taken moments before the tsunami, in 2004. So people, what are they doing? They're walking towards the water. They're talking to each other, they're pointing it out, they're curious. But unfortunately, no one on that beach knew what this might mean. This is a picture taken during the tsunami. I don't know if you can see, in the back there on the left side of the, upper left, the water is rushing forward. And again I don't know, you can't quite make it out cause of the lights here, but there's a little boy in the foreground in a red shirt. And if you can see his expression, you'll see that he's looking at this dive instructor – this guy here. See even in this moment he's looking at him

searchingly for cues. Even in this moment, people are looking at each other. This is a picture of some of the destruction of the tsunami.

21:50

So I think, you know, there were places, actually there's a great story about a school girl from the U.K. who was on holiday with her family in Thailand when she saw the sea recede like this and she had just gotten a geography lesson about tsunamis, and they had watched a video of the Hawaii tsunami and learned about the natural signs. And she told her mother," I think there's going to be a tsunami." Incredibly, her mother believed her. Yeah. I'm thinking would I, I don't… And they begin to clear the beach, and tell other people to get away. And then they told the staff at the J.W. Marriott, which was where they were staying, which was on a beach. And the staff finished clearing the beach and nobody died on that beach. So it's a great example of how a school kid can manage this information, if it's given to them in advance. And there are so many examples like that.

20:48

The last phase is the decisive moment. What happens here is utterly dependent on what happens in the first two phases. And even in the years that come before the event. So I want to close with a story that is positive, to contrast with some of what we've seen. And the story – I don't usually talk this much about 9/11, but I figure I have a good excuse, so this story is about 9/11. And it's particularly appropriate I think for this audience.

20:23

Rick Rescorla was the head of security for Morgan Stanley Dean Witter, in the Trade Center. I think it's fair to say he was the wisest investment Morgan Stanley ever made. He was born in England, but he joined the American military because he wanted to fight the Communists in Vietnam. When he got there, he got a Silver Star, a Bronze Star and a Purple Heart. That's him on the cover there of the book, <u>We Were Soldiers Once and Young</u>. Morgan Stanley occupied 22 floors of Tower Two. And Rick Rescorla was worried. After the '98, '88 bombing on Pan Am over Lockerbie, he was convinced that the Trade Center would be a terrorist target. In 1990, he and a war buddy of his wrote a letter to the Port Authority saying they were worried about the vulnerability of the parking garage. They needed more security there. It'd be so easy to drive a truck in there with a bomb in it.

24:23

Three years later, as we all know, Ramsey Yousef drove a truck full of explosives into the underground parking garage of the World Trade Center. Rick Rescorla learned a number of things that day. After the bomb went off and it sent vibrations up through the tower, Rescorla stood in Morgan Stanley's open trading floor and he shouted to get everyone's attention, and everyone ignored him. Just as they had when he tried to run the fire drills before the bombing. So he stood on a desk, and there are different legends about this, but I think he actually did not drop his pants. I talked to a lot of people and there are different… but I'm pretty convinced that what he said was, "Do I have to drop my trousers to get your attention?" And the room quieted down. He handed out flashlights and directed the employees down darkened stairways and out. After that, Rick had the credibility he needed, to get Morgan Stanley to take full responsibility for their own survival – for all of those employees – something that happened almost no where else in the Trade Center. He understood the danger of denial. He understood the importance

of aggressively pushing through the denial period and getting to action. He watched his employees wind down the staircase in '93 and knew it took far too long.

For those of you who know about the '93 evacuation know it was a total fiasco. It took four hours for a lot of people to get out. Some things were learned from that. Like they put three dollar, you know, glow in the dark tape, along the edge of the stairwell. Huge. Made a huge difference in 2001. Other things, much more expensive things, not so much. But the focus even after that was on technology, and gear, and stuff, and not on people – except at Morgan Stanley.

26:21

He knew that Morgan Stanley was the largest tenant in the Trade Center and that they would need to take care of each other. There would not be enough first responders there to help them anytime soon. He started running the entire company through frequent, surprise, mandatory fire drills. Do you know how unusual that is? I bet some of you do. Even today – almost unheard of in New York City skyscrapers. And don't even get me started on the changes they made to the building code and did not do anything, in my mind, anything near what they needed to do on fire drills. He trained employees to not only go to the stairwell, but to go down the stairs. Almost unheard of – especially then. And he insisted that the highest floors evacuate first. Now this is a man who understood human behavior. Because what happens in disasters, even when there's smoke there, and people are really frightened, they become courteous to a fault, most of the time. So they let the people, coming in the door/stairwell below them, go first. Which is not great, because they have the longest to go. So you train them that the employees coming in below fall behind the employees coming down from above.

27:32

And you know, the radicalism of Rick Rescorla's drills really can't be overstated. Because remember, Morgan Stanley is an investment bank. This is not a non-profit, focused on, you know, safety. And each drill pulled the firm's brokers off their phones, away from their computers, they didn't like it, it cost the company money, and he did it anyway. Partly because of his military credentials, partly because of '93, partly because of his personality, which was larger than life. He worked right through that, and he bullied people out. Then he notice they were moving too slowly in the drills so he started standing in the hallway, with a stopwatch and telling people to move faster. And he kept doing it until they got faster. This became something of a joke. You know I talked to a lot of Morgan Stanley employees and the talk about "Ah, God, he made the…" you know, they had some "fire marshal volunteers and they all had to wear these really cheesy vests and flashlights, and we used to make fun of them." But they went and he wouldn't let them not go. And he also told Morgan Stanley that he thought that they should really move their headquarters to a low-rise campus in New Jersey. They thought about it, but they didn't do it, partly because their lease didn't end until 2006.

28:57

On the morning of 9/11, Rescorla heard an explosion, he saw Tower One burning from his office window. A Port Authority official came over the public address system and urged everyone to remain at their desks. He grabbed his blow horn, his walky-talky and began systematically ordering employees out. And they already knew what to do. One of the executives of Morgan Stanley said it to me best. He said, "One thing I learned is that you don't want to have to think in a disaster, because it's not going to happen." Or it's going to take forever. Rick Rescorla is, he's here, on his blow horn. He's singing to his employees.

He's singing old Cornish songs from his youth, which is the same thing he did at night in the Viet Cong–controlled central highlands of Vietnam.

29:50

He knew the brain responded poorly to extreme fear, so this would help tamp down that fear response so it was in an effective zone, and not overwhelming. In the crowded stairwell, his sweat leached through hi suit jacket. Somebody offered him a chair, he wouldn't take it. A few minutes later, he successfully evacuated the vast majority of Morgan Stanley employees. And then he turned around to make sure he hadn't left anyone behind and he was last seen on the tenth floor heading up. His remains have never been found – the collapse happened shortly after. Only thirteen Morgan Stanley employees, including Rick and four of his security officers were inside when that Tour collapsed. This is a company that had 22 floors - very high in the Tour. 2687 people were just fine.

So, I want to wrap up now because I want to make sure we have lots of time for questions. But before I do that, I want to just remind you what Rick Rescorla probably, based on talking to his widow and people who knew him, would have wanted us to learn about this. He would have wanted us to learn that fear alone is not enough, and it's often our biggest obstacle. He would have wanted us to learn that the chances of a terrorist attack unfortunately don't diminish with each passing day after the last terrorist attack – despite the fact that our brain works that way. He would have wanted us to learn that the most important people in a disaster are regular people. And if you trust them with the information they need, they will do wonderful things. I can't tell you how many times, I have heard high-ranking officials in the government, airlines, private sector, you name it, say that they were worried about telling people something because they were worried they might panic. Or they might not buy tickets on that airplane. There's a guy Denis Mileti, who's probably the world's biggest expert on how to issue public warnings to that people listen to them. And he said to me once, "You know how many people have died because someone thought they were going to panic?" Way more people than the number who have died from panic. So I guess I would urge you any time you're in a meeting and somebody says, "well we don't want people to panic," maybe a little alarm should go off in your head. This is important – They're not going to panic. And they're especially not going to panic if you've trusted them, you've respected them enough to know how to perform well under extreme stress. The more realistic training you can give them, the better, but at least help educate them about what it going to feel like. And what's not going to happen, so that it's not all a surprise.

32:51

I am very eager to hear any thoughts that many of you might have. So I am going to stop talking, in case we run out of time, or in case there's anything you want to say that you don't want to say in front of everybody else, this is a way to reach me. One of the great things actually about writing this book is that, I was just talking Ray before about this, you spend years, you know trying to get stories, and information and data. I spent a lot of time talking to neuroscientists, military, trainers, psychologists, firefighters, you name it. And lots and lots of survivors. And then the book comes out and they come to you. And it's great. It's fascinating. I mean, I got an email today from an airplane crash survivor who was a journalist and, maybe because of that, afterwards she, it was a pretty grisly crash… famous crash, she wrote down everything that had happened in her brain at this time, so time often slows down for people, right? And anyone who's been in this situation knows. And so you're just, you're absorbing all these details. Strange, but also often reasonable things are going through your mind. And she wrote it all down, which is really rare. And very soon afterwards, which is really valuable because otherwise, you know, the

memory changes and fades. And it was incredible. I just sat there riveted reading it. And it took my breath away. I wish I could've had it before, but I can promise you, what I've been doing with a lot of this stuff is putting it up on the website, so that at least there's still kind of a conversation. I mean there're comment s posted from survivors of different disasters, and that is really cool – to have people saying, "Yeah, that is what it felt like, and here's what happened to me..." and so I'll put a link up there as soon as I get a chance, probably tonight or tomorrow, to this woman's essay, cause you know, it's really quite valuable I think.

34:46

So, thank you very much for coming today. I really appreciate it. And I'm anxious to hear anything you have to say - if you disagree with me, bring it on, I want to hear it. If you, you know, experience something very different, let me know. Anything you want to share with me, or any questions you might have I look forward to hearing.

35:03

[Applause]

Kathe: Thank you very much

[Applause]

[Conrad]: Okay, you have your 3x5 cards, and we have two mics, so we will... If you pass your 3x5 cards, if you've got your questions on them, over to the end. Or if you want to make a comment, raise your hand and we will hand you a microphone.

[Ripley]: Why don't I, if you don't mind, I'll start with a couple that we got, before I started. Excuse me. "Your book is phenomenal –"Thank you. I didn't write this myself. I mean, I just realized that it sounds like I did. "How do we keep sharpening our skills?" Which is a good questions because it's not so easy often to create realistic scenarios for some of the threats that you or your people face. The more realistic it is, the more often you do it, the more of a surprise it is each time, the better it's going to be. The more effective it's going to be. But I spent some time with a really interesting guy in Colorado, who was a competitive racecar driver for many years. He loved driving fast. When his daughter was sixteen he got the call everyone dreads late at night, that she'd been hit by a drunk driver in her car, and her car was T-boned and she was killed instantly. He quit what he was doing. He opened a chain of driving schools called Master Drive. To teach, kids especially, but anyone who'd been in an accident as well, how to drive according to how their brain actually works. Which I think is really important, since we do lose 40,000 people in this country to this particular calamity, and most of them are young people. And what he learned is, and he also trained race car drivers who'd been in wrecks who are having trouble getting past that. What he learned is yes, it's best if you can take people out, and we did go out on a skid track and you know, he put me into a skid 15 times, and it was great, but if you can't do that, what he does is a lot of visualization with people. So get into a situation as close as it can be to the real thing and work to visualize. Just like athletes do. Very effective. The brain is quite imaginative and quite flexible. You know, this is one of the coolest things about what neuroscientists have learned in the last ten years is that the brain changes all the time. So if you learn how to juggle, you spend two weeks learning how to

juggle, part of your brain, the geography of your brain is actually different – there's more gray matter in a specific place. So there's a lot of room for improvement, but most of it we learn by doing if possible.

37:49

"Did the specific response mechanisms you describe in your book correlate with certain levels of resiliency or ability to process the disaster?" That's a great question. I also did not write that. Uhm, yes. And this is another reason why this is so important. I think what we're trying, what we're starting to understand about post-traumatic stress disorder is that the better you performed or the better you perceived you performed in a crisis, the more fully you recover afterward. So the more experience you have in a situation before, the more knowledge you have, the more confidence you have, the less fear you have, the better you perform, the more fully you recover. So all of these things kind of lead to the next. And a lot of it comes down to confidence and a belief that you did everything that you could. Which is not only helpful afterwards, but really helpful before. So it's hard to isolate what makes some people more resilient than others. There is some evidence for a genetic component as there is to almost everything. But we know that experience before hand matters probably more. Even situational awareness, even if you don't have exact experience. If you're just more aware of where the exits are and how to get out of a place than the average Joe, you're going to move more quickly and more effectively and you're not going to feel as passive, so a sort of forward stance really does help people, before, during and after.

39:34

Yes.

[Audience Member]: Many of us go overseas with our families, and young children, and sometimes the situations occur, not in our workplace, but in our residence, compounds, and such. Do a lot of these same things and the issues of drills, can they also be applied to children in the same way and do their reactions tend to be the same as well?

[Ripley]: That's a great question. I think one thing we do pretty well, in this culture, is train kids to perform well in emergencies. I mean well relatively to how we train adults. And kids, for anyone, I mean you remember fire fighters and police officers coming to your school right? And kids get into it. And they love it. You know, and they tell them to stop, drop, and roll and they actually do it, whereas adults you know, not so much. And so they have a physical memory, they're into actually role-playing and pretending and it's very constructive. So I think kids are wide open to this stuff. There was a tornado at a Boy Scout camp a couple of months ago, you remember that? And four kids I believe died. A real tragedy. But it was really interesting to hear about the context. There was a boy scout who was interviewed by a TV reporter the next day and he said, "You know, if this had to happen somewhere, I'm really glad it happened at a Boy Scout camp, because we were prepared." You know, they had an emergency drill the day before. When one of the staff members saw the funnel cloud approaching, he flipped on a siren and everybody started running for shelter, you often don't have very much warning of course with tornados, unfortunately. And then afterwards, this is really key I think to their psychological recovery, everyone just kind of jumped into action. They had first aid kits, they knew how to apply tourniquets. They knew what to do – which is a much better place to be you know, physically and psychologically, than just being frightened. So I think what discourages me, is that we somehow lose that culture as we get older. But the only other thing I'd say specifically about children – so I think they perform pretty well – I do. And they are very susceptible to good training. The only thing about children

that I think we don't realize often is that it's important that they don't watch footage of disasters – especially not more than once. So there was a great study of the Oklahoma City bombing aftermath. And they found that children who lived in the area, the greatest predictor of post-traumatic stress disorder was not whether they had known someone who died, but how much they'd watched it on TV Because first of all, I think no one should watch a lot of this footage. I don't care what age you are. But second of all, kids can't always understand that it's not- it's the same disaster. So they see the Trade Center Towers falling over, over, over. They think it's happening a thousand times. I wish, I think CNN and Fox should run a warning, I mean they're running everything else on that screen, not to let your kids watch this stuff, because their brain processes it differently.

Anything else?

Leki: There are more cards there.

Ripley: Oh yeah. There was also another one on here. "For those of us faced with putting together crisis management teams on the fly, any hints?" That's interesting. Somebody was just telling me this. I think it was a bio-security specialist, he was saying one of his greatest frustrations is that crisis management teams are put together on the fly. And I guess you guys know this right? Like the whole phrase "crisis management" is sort of about in the moment, or after the moment and not before. So I mean, I hate to say it, you knew this was coming but it's too late then. I tell this to people about reporters too, when I sometimes talk about how to deal with the media in crises. You know, if you're just dealing with your local reporter, or your beat reporter for that city during or after - that's too late. There's a saying about, the same with first responders – the last thing you want to see at the scene of an emergency is first responders exchanging business cards, you know. It's too late. So it's just, you know. You need to have relationships, trust and visibility into what each other's facing before hand. And I, this is a big problem, obviously with media coverage cause disasters aren't considered a beat. So it's just, this is why we cover each hurricane like it's never happened before, you know. Oh my God, it's so windy. And there's a slicker and rains horizontally, and there's no kind of context for what had happened before and what we should learn about how we did things wrong. Mooding is almost always exaggerated for example in the early reports after a disaster and that when you go back six months later, and do a study of it it turns out it was really not a big deal. But then no one's really paying attention at that point. So it's really important to have relationships with the media before hand, especially TV media – which I hate to say because I'm not TV media and I'd like to have really good relationships with people too but I don't matter as much in a crisis like that. That's people get their information mostly from TV and a model for this is the coast guard by the way. They are great at this. Before, during, and after. They have a very open, confident culture when it comes to media - most of the time. And to give you a quick example, when I was headed down to New Orleans after Katrina, we got a call from the Coast Guard and they said that they wanted to know if I wanted to be "imbedded" with Admiral Allen, who was at that point running, he'd taken over from Mike Brown and was running the Federal Response. And this was so weird and unusual that I was suspicious. I was like it's going to be orchestrated and it's not going to be real, and it's a waste of time, and… But then they said that I could go up in a helicopter with them and so I said you know okay. Any day I can go up in a helicopter is a good day, and plus it was a really important way to see the extent of that particular disaster. So we did it. And I was amazed at how open this guy and all his people were. We flew around to different little towns that had been decimated. We went to meetings, we talked to people, you know. I talked to them quite a bit, and I wrote probably the most

positive story of my career called “How the Coast Guard Gets it Right,” in Time Magazine, because A) they did get it right, and B) I now had some compassion for what they’re up against.

46:40

Conversely, and this has gotten better since, we couldn’t get FEMA to return our phone calls, so we were calling them, just to find out if things were right, you know? And we could not get them to return our phone calls, and I’m thinking “Okay, they’re overwhelmed, that’s fine.” But then, when a couple of reporters at Time started looking into Mike Brown’s resume and saw some things that were not exactly, entirely, 100% true. They started calling us up and screaming at us – these FEMA press people. So they apparently have the bandwidth to respond to a PR crisis, but not to a life or death crisis. So I was really distressed by that, and the contrast was quite stark, even though, you know, they’re obviously two very different outfits.

47:30

Yes.

[Audience Member] Hi, I just left the Congo, and I’m going to Haiti, American embassies overseas have what we call emergency action committees, basically everyone knows what their role is going to be in the case of a crisis. However, because of the hierarchical nature of the institution, we also look to the leader, whoever that happens to be. My question is, “What do you do when that leader’s not there? What if Rick hadn’t been at the Towers that day?”

[Ripley] That’s an interesting question. I mean I think I wish I’d asked that of some of the employees, I think that’s a great question. I mean my suspicion is that because they knew what to do before hand they would have kept doing that but I don’t know if they would have gone as quickly, I don’t know if it was clear who was supposed to step into those shoes. I do know that in most emergencies, the pre-existing hierarchy – the chain of command, I mean in the midst of a crisis – during the most frightening parts becomes more and more important, not less. So people really tend to stay with the roles they have. So for example, in movie theatre fires, shopping mall fires, people will wait to be told to leave. So they take a very passive role.

In the Trade Center, the manager was a very important determinant of how quickly people moved. And if people felt empowered before hand, they were more likely to leave quickly. So for example, some of the last people to start evacuating were temps and people low on the totem pole because they didn’t have the confidence that their gut was right. Many of them worried that they might get fired, or docked pay or in trouble if they left and it turned out to be nothing. So I think you need a culture that prioritizing safety above everything else. And gives regular people a lot of confidence in their own ability to make a decision in the absence of a leader – which, by the way, the Coast Guard also does, so. I think I’m getting this right – anyone, any Coast Guard member is authorized to make a decision, regardless of whether they’ve gotten approval. If they’re the only one around, or if there is no one else to give them approval. They’re empowered in a way that most people are not. Which I think is why they saved so many people in Katrina without waiting for clearance. Or waiting for that matter for the weather to be safe to fly.

50:21

There’s a couple more here that I… “Do people react differently in natural vs. man-made disasters? When you can see the face of the reason for the disaster or crisis?” That’s interesting. My first answer was no.

They react the same – terrorism, plane crashes, hurricane. But I do think that there are certain kinds of man-made disasters like nuclear, chemical, or biological where the threat is invisible, where you can get different patterns of behavior. Now unfortunately there's a lot we don't know about this. There've been some interesting studies about how people say they'd behave if there was a Smallpox outbreak. And less than 50% said that they would go to the appointed sight and get vaccinated. Which gives you some insight into the fact that there's a lot going on in their decision. And a lot of people have health issues, they have distrust of people giving the vaccine. There's a lot of distrust of vaccines right now in general. But that's important to know before hand, right. Because, they're not going to just follow the order. So I think that where the threat is invisible is difficult. But there some interesting insight with hurricanes actually, because you have to evacuate when it's still sunny – in most places and that's hard for people to understand. People are very, as you would expect, very, for a species that is evolved, very responsive to weather. Actually there's a great study about how the stock market goes up a little if it's sunny in New York City. It's a great study on that, but anyway, don't let me get too distracted here. The difficult thing about modern disasters is that we often have to evacuate dense vertical cities before there's bad weather. And that's new – our ancestors didn't really have to deal with that. So you can overcome it, but I think it helps to know how your brain works. How your brain processes risks. And explain that to people you know, and our brains have blind spots when it comes to certain risks. We prioritize emotion and personal experience. And once you kind of understand that, you can work past it. For example, all of the risk experts that I've talked to, I ask them, well how do you… and many of them, most of them are financial risk experts, which is a little different, but some of the lessons are transferable, and I'll say, "How do you change your own behavior so that you know you'll perform appropriately?" And they almost all say they don't watch TV news. Especially financial news or any kind of news because they know that the medium of television is an emotional medium, and it will help you worry about things that you don't need to worry about. So they try, whenever there is data, they rely on data and I think that's a good lesson.

53:17

Uhm, let me see here…

"How did you come up with the idea to write the book? How long did it take you to write it?" I came up with it starting with that 9/11 evacuee support group, and then I found out that the CDC had sponsored a small study to interview the evacuees out of Columbia. And I met with that woman - many times, until she really would not return my calls anymore, but I was totally fascinated by that and there's been some great – really interesting research that's come of that – some o f which is what I shared with you. And then I started getting obsessed with other kinds of disasters to see if the behavior was the same. And as I mentioned to you, it was as I had explained I just felt like you know, I covered Homeland Security and risks for Time Magazine.

And you know, I go to these you know, official conferences, and I read these official reports and there's this huge gaping hole in the conversation and that's about how regular people actually behave. So the emergency plans – this was a great lesson out of the July 7 bombings in London. The emergency plans are writing for emergency officials. You don't realize your' in doing in really. But they're regular people aren't at the table. So for example, the first aid kits in the tube in London were locked in the supervisors' offices. They weren't on the trains. And it was very difficult for the people on the trains to communicate to the conductor that there had been a bombing. There was no way to do that. Anyway, that was the fundamental lesson that the official report into that – those bombings found. The plans had been written for the people in charge. For their point of view and their convenience. So I felt like you know this is

ridiculous. There is some really mysterious and intriguing things going on with regular people and we don't understand what they are.

So I think we need to stop having the same conversation about disasters and terrorism and stop just spending 23 billion dollars on equipping first responders, although I think it's important, it should be commensurate with what we're doing for regular people, and very little of any intelligence has been done with regular people. Or very little has been done to explain to the people in charge that they need to trust regular people.

And you know, Steve Flynn, who writes a lot about terrorism makes this point that, you know, it's no small amount of irony, that on 9/11, neither the White House of the Capitol was saved by regular Americans. Not the other way around. And those on Flight 93 were the people who had the most information. And they had the information and they acted on it. No panic. So I think that's an important thing to remember, especially today.

And it took me… how long did it take me to write it? It probably took me three years, I took a year off from Time and that was the bulk of it, but probably three years in total.

Anything else?

[Conrad]: Okay, if not, I thank Amanda Ripley for coming to see us on this special day.

[Applause}