Synthesis Lectures on Threatcasting

SYNTHESIS
COLLECTION OF TECHNOLOGY

Brian David Johnson · Natalie Vanatta · Cyndi Coon

Threatcasting

Springer

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Threatcasting

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SYNTHESIS LECTURES ON THREATCASTING #01

ABSTRACT

Threatcasting uses input from social science, technical research, cultural history, economics, trends, expert interviews, and even a little science fiction to recognize future threats and design potential futures. During this human-centric process, participants brainstorm what actions can be taken to identify, track, disrupt, mitigate, and recover from the possible threats. Specifically, groups explore how to transform the future they desire into reality while avoiding an undesired future. The Threatcasting method also exposes what events could happen that indicate the progression toward an increasingly possible threat landscape.

This book begins with an overview of the Threatcasting method with examples and case studies to enhance the academic foundation. Along with end-of-chapter exercises to enhance the reader's understanding of the concepts, there is also a full project where the reader can conduct a mock Threatcasting on the topic of "the next biological public health crisis." The second half of the book is designed as a practitioner's handbook. It has three separate chapters (based on the general size of the Threatcasting group) that walk the reader through how to apply the knowledge from Part I to conduct an actual Threatcasting activity. This book will be useful for a wide audience (from student to practitioner) and will hopefully promote new dialogues across communities and novel developments in the area.

Impending technological advances will widen an adversary's attack plane over the next decade. Visualizing what the future will hold, and what new threat vectors could emerge, is a task that traditional planning mechanisms struggle to accomplish given the wide range of potential issues. Understanding and preparing for the future operating environment is the basis of an analytical method known as Threatcasting. It is a method that gives researchers a structured way to envision and plan for risks ten years in the future.

KEYWORDS

Threatcasting, strategic foresight, future, strategy, strategic planning, risk assessment, futurism, long term strategic foresight, dystopian futures, applied futurism, framework foresight, science fiction prototyping, participatory design

Contents

Foreword by Andy Hines

Thank goodness we have futurists such as Brian David Johnson (BDJ) who are willing to stop, write down, and share with us their tremendous work. Like BDJ, I came to academia after a lengthy career in the professional space focusing on applied futures. I can attest to the challenge of making the time to catalog the work, given the constant pressure to move on to the next project. One of my major laments about the field is that it is practitioner-heavy, and practitioners are often too busy to catalog their work. I recall hearing about BDJ's early work at Intel. I was grateful that he published a key piece of that work in his book *Science Fiction Prototyping: Designing the Future with Science Fiction*. Then I started hearing about his new work, *Threatcasting*, which I have the pleasure of introducing here.

I recall the University of Hawaii's legendary futurist Jim Dator's concern about a decade ago that there hadn't been much new happening on the methodology front—except for CLA. I felt like there was some interesting, applied futures work happening, but that in some cases it was more tweaks than inventions, or for proprietary reasons that work simply was not getting reported. I eagerly jumped at the opportunity to see for myself in 2018, when I took on the methodology section of the *Knowledge Base 2020* update with Richard Slaughter. This gave me the opportunity to look for what had been happening over the last 15 years. As I suspected, a little digging revealed methodological innovation was indeed alive and well. Not surprisingly, I came across BDJ's work on Science Fiction Prototyping which we quickly snapped up and included in that volume. In conversations with BDJ related to that work, I learned more about Threatcasting.

It's one thing to be excited by the simple act of sharing; it's another to be excited by what is being shared. And I am excited by what is being shared. I have half-jokingly referred to myself as a practitioner in academics' clothing now that academic is my full-time gig. BDJ is moving in this very same direction, and I suspect may fit a similar description. This is great news for those of us who want a practical hands-on guide to doing the work.

As I reviewed the *Threatcasting* method, the approach immediately resonated with the Framework Foresight approach we teach at the University of Houston. I promise my students that they will learn to "diagnose" how any applied method explores the future, provided the method follows sound practice. A key aspect of that is how the methods align with the key foresight competencies that were identified in the APF Competency model work published back in 2017. In other words, a sound method is grounded and aligned with key foresight competencies. That is the case here with *Threatcasting*. At the same time, the method has BDJ's "special sauce." This to me is precisely what the field needs more and more of—aligned and grounded applied foresight methods that bring some new ideas and innovation. This, in my opinion, is how you build a field: new contributions that build upon and enhance a growing body of work.

The book details the nuts and bolts of the *Threatcasting* method. Those nuts and bolts are also contextualized and illustrated in a way that drive homes not just the "what to do" but also the "why do it." Again, this resonates with what we preach here at the University of Houston Foresight program. We want to prepare people to do foresight work in a practical sense, but also know why they are doing what they are doing. I think BDJ would wholeheartedly agree that we are preparing chefs, not cooks.

Any doubts about what you are getting with *Threatcasting* should be quickly erased by the logo of the Threatcasting Lab at Arizona State University: "Envisioning Futures to Empower Action." It addresses the *what* we are doing—envisioning futures—and *why* are we are doing it: to empower action. Exactly!

The tone of the book is quite appealing. This is not one of those books written by a smart person who wants to convince you how smart they are. BDJ and his co-authors are very smart people who come off as people you'd like to have a beer or coffee with—people who are trying to help you learn. The entire book is structured and reads as if it was written by authors coming from the customer/reader perspective. How will they see this? How will they use it? Will this be clear to them? Those seem to me to be the types of questions that are being asked and are addressed in this book.

Let me share a few features I really like.

- **Actual project examples:** One of the cool things I like about what we are doing at Houston Foresight is that we get students involved in "real" paid project work. What better way to learn than to apply what you're working with in the classroom on a real project? I see this same idea in play here in *Threatcasting*. A key aspect of teaching the methodology is by working it in real projects. Not only is this practical experience priceless, but it also provides a platform to continually test and improve the method. I suspect we will see a second edition at some point.

- **Exercises:** The are exercises sprinkled throughout the work that give the reader a chance to try it out. I suspect many readers will be using it as a text, so having exercises is really helpful. Along those lines, the entire text is written in a way that will help teachers teach.

It's exciting to see leading practitioners openly sharing their work. It speaks to collegiality in the field and to the growing demand for foresight. Practitioners will find plenty to add to their tool kit, clients will find an exciting new way to explore the future, and we professors will have more good material teach. I could go on, but now I think it's time to pass the baton to BDJ, Natalie and Cyndi.

– Andy Hines, Associate Professor, University of Houston Foresight Program, July 4, 2021

Preface

Threatcasting is a method that enables multidisciplinary groups to envision and plan systematically against threats ten years in the future. Groups explore how to transform the future they desire into reality while avoiding an undesired future. Threatcasting uses inputs from social science, technical research, cultural history, economics, trends, expert interviews, and even a little science fiction. These various inputs allow the creation of potential futures (focused on the fiction of a person in a place doing a thing). Some of these futures are desirable while others are to be avoided. By placing the threats into a fictional story, it allows decision makers and practitioners to imagine what needs to be done today, as well as four and eight years into the future, to empower or disrupt the targeted future scenario. The framework also illustrates what flags, or warning events, could appear in society that indicate the progress toward the threat future.

In the early 2000's, Brian David Johnson (BDJ) was the chief futurist for the Intel Corporation. As a high-tech manufacturing firm, it took them about ten years to design, develop, and deploy a microprocessor. Therefore, it was of vital business importance for them to know what people would want to do with computers ten years in the future. As an applied futurist, he developed the necessary steps to move toward positive futures and away from the negative.

Early on, the company also realized that you could use the output from Brian's work for more than just silicon chip design It was used to explore, plan, and train the workforce the company would need to build the chip, develop the software to run on it, and develop the ecosystem of companies to make use of all the emerging capabilities of these new computational platforms. It illuminated what kind of partners might be needed to make the product successful. It showed what new capabilities would be needed (some of which were developed internally and, for others, this work served as guidance for possible mergers or acquisitions by the company). In fact, a number of patents were written based on the work. Ultimately, the marketing and PR team really liked the work because having a vision for the future can not only guide the company it can also capture the imagination of the consumer and get them excited for how it could impact their lives. The Threatcasting Method was created out of necessity. It solved a basic problem that can be applied to multiple industries and application areas: How do we envision the futures we don't want and then systematically work to disrupt, mitigate, or recover from them? The Method identified a range of negative futures and then allowed the organization to track the progress of these emerging threats and begin to take specific, measurable steps to stop them from occurring.

Proving its efficacy at the Intel Corporation and in Silicon Valley, other organizations began to adopt and adapt the method to solve their own problems. The Method was refined due to collaboration with organizations like the United States Air Force Academy, where we modeled early explorations of cyber warfare and lethal autonomous devices, as well as nuclear proliferation. Also, with the Federal Emergency Management Agency (FEMA) we explored the future of wildfires and earthquakes, understanding that while we couldn't prevent these from happening, we could plan for their mitigation and recovery. In 2017, the Threatcasting Lab at Arizona State University was established to continue to develop the Method, convene workshops, and train practitioners and students.

This book is broken into two parts. Part 1 will give you an overview of the Threatcasting concept with examples and case studies to enhance the academic foundation. At the end of these chapters, you will find exercises to enhance your understanding of the Method and prepare you to apply what you learned. Part 1 ends with a project chapter where you can conduct a mock Threatcasting on the topic of "the next biological public health crisis." This will enable you to pull together the knowledge from Part 1 and apply it.

Part 2 is designed as a practitioner's handbook Chapters 9, 10, and 11 describe the three general sizes of groups with which you might want to perform a Threacasting activity. You can either read these chapters synchronously to understand similarities and differences between these situations or read them independently as a direct reference (i.e., handbook) when you are going to run a specific threatcasting session.

To illustrate the key points within the book, the following various ingredients are used:

- **Interviews** with participants, subject matter experts, facilitators, curators, writers, academics, artists, advertising agents, and other government and military officials are provided to offer a lens into the many different critical voices that are necessary to create Threatcasting results. They each have unique experiences with the process, and their stories are shared to enrich the text.

- **Stories from the Lab** are snippets of stories derived from conducting various Threatcasting activities over the years. The purpose of these stories is to highlight lessons learned and funny situations that have occurred during the application of the Threatcasting Method to a multitude of topics for various organizations over the years.

- **Exercises** give the opportunity to pause and work on building your threatcasting muscles before proceeding to the next chapter. Some of the exercises are considered "skill building"—focused on developing a skill or concept that will be useful when Threatcasting. Other exercises provide an opportunity to experience an aspect of the Threatcasting Method in an applied space.

- **Project** is a mock Threatcasting from beginning to end for the purposes of practicing and learning the Method. The project will contain all the elements in Part 1 so that the analyst(s) can rehearse, experiment, and practice the Threatcasting Method in a contained environment.

How To Get the Most From This Book

This book is broken into two parts. Part 1 will give you an overview of the Threatcasting concept with examples and case studies to enhance the academic foundation. At the end of these chapters, you will find exercises to enhance your understanding of the method and prepare you to apply what you learned. Part 1 ends with a project chapter where you can conduct a mock Threatcasting on the topic of "the next biological public health crisis." This will enable you to pull together the knowledge from Part 1 and apply it.

Part 2 of the book is designed as a practitioner's handbook. Chapters 9, 10, and 11 describe the three general sizes of groups that you might want to perform a Threacasting activity with. You can either read these chapters synchronously to understand similarities and differences between these situations, or you can read them independently as a direct reference (i.e., handbook) when you are going to run a specific threatcasting session.

Interview

Throughout this book, you will find Interviews. These are conversations with participants, subject matter experts, facilitators, curators, writers, academics, artists, advertising agents, and other government and military officials. These interviews are provided to offer a lens into the many different critical voices that are necessary to create Threatcasting results. They each have unique experiences with the process, and their stories are shared in order to enrich the text.

Conversations in the Lab

Similar to the interviews, conversations between members of the lab are captured to provide an applied understanding of the intended use of elements in the Threatcasting foundation. These conversations are shared in order to enrich the text.

Exercise

At the end of the Part 1 chapters, you will find Exercises. The purpose of providing exercises is to pause and work on building your threatcasting muscles before proceeding to the next chapter. Some of the exercises are considered "skill building"—focused on developing a skill or concept that will be useful when Threatcasting. Other exercises provide an opportunity to experience an aspect of the Threatcasting Method in an applied space. Each time you find an exercise, plan to run through it yourself or with a group, capture notes, and reference them when you are building your own threatcasting models. Completing the exercises in order will help build the skills needed for the next chapter and the next.

Project

At the end of Part 1, there is a project. This project is a mock Threatcasting from beginning to end for the purposes of practicing and learning the Method. The project will contain all the elements in Part 1 so that the analyst(s) can rehearse, experiment, and practice the Threatcasting Method in a contained environment.

Stories from the Lab

As the interviews enhanced the foundational concepts in Part 1, throughout Part 2 there are snippets of stories from the Threatcasting Lab. These stories are derived from conducting various Threatcasting activities over the years. The purpose of these stories is to highlight lessons learned and funny situations that have occurred during the application of the Threatcasting Method to a multitude of topics for various organizations over the years.

LET'S GET STARTED!

The best way to get to know and use Threatcasting is to conduct Threatcasting sessions. It's like fishing: the first time you go out, someone has to show you how to put the three pieces of the pole together, attach the reel, thread the line, attach the hook and worm, and how to cast. Then there is a whole conversation about what to do while the worm is in the water. You need to fish a few times to get the hang of it. Generally, each time the pieces are the same and go together the same, but the outcomes could leave you with a big fish story!

In the second part of the book, we will show you how to apply Threatcasting to multiple situations, including running a session or workshop by yourself, in a small group, or in a large group. Each of these types of sessions have pros and cons. The goal of the book is to get you to start Threatcasting right away.

Threatcasting is a method with two high-level segments. The first segment imagines possible futures by gathering together a broad range of multidisciplinary inputs to model a range of possible and potential threats 10 years in the future. The second segment then backcasts—specifying what needs to happen over the next 10 years to monitor, disrupt, mitigate, and/or recover from these threats. As Threatcasting is an applied futures methodology, these actions are specific to an organization, group of people, or research agenda.

This book combines method explanation (Part 1) and a "how to" section (Part 2) so that you can apply it to specific problems.

Key Terms

This book will use specific terms and descriptors to outline Threatcasting.

The Use of Parenthetical Plurals (s)

When specific people are referenced in the book, most will be followed by an (s) symbol or parenthetical plural. This is done to show that the task can be performed by a single person or multiple people.

Analyst(s)

The analyst(s) role in Threatcasting is to lead the effort. Typically, the lead analyst will run the effort from definition, planning, curation, execution, post-analysis, and reporting. Other analysts can be brought in to support the lead analyst in some or all tasks. These support analyst(s) can be a benefit if the Threatcasting is larger in scope and size. Specifically in the post-analysis stage, support analysts can be brought in to augment and broaden the lead analyst's perspective.

Participant(s)

The participant(s) are brought in by the analyst(s) to take part in the Threatcasting Workshop. Participant(s) are typically involved in the project only during the workshop. However, some participant(s) might also take part in a peer review of the final findings after the analyst(s) conduct the post analysis.

Subject Matter Expert (SME)

A Subject Matter Expert (SME) is a person with a particular expertise, perspective, or opinion that the analyst(s) selects as a prompt for the Threatcasting Workshop. Generally, SMEs do not participate in the workshop. They can, however, participate in a peer review of the final findings after the analyst(s) conduct the post analysis.

Threatcasting Foundation

The Threatcasting Foundation consists of the primary topic, research question, and applications area that the Threatcasting Method will cover. It also lays out how the output will be used. This is discussed in Chapter 2. Establishing a robust, researched, and focused foundation is an important skill for any research project. The better defined the foundation, the more efficient and effective the application of the Threatcasting Method will be.

Science Fiction Prototype

Science Fiction Prototypes (SFP) are plausible science-fiction futures based on the Threatcasting research that allow the participant(s) and reader to explore the ethical, cultural, policy, and security impacts on people. The specific events depicted exist only in the imagination of the authors. The locations are selected merely to dramatize the storylines and could just as easily be any city or nation confronting external threats.

These SFPs are used as a part of the Effect-Based Model (EBM), to give participant(s) a process that elicits details about the future

Effect-Based Model (EBM)

The central device used in the Threatcasting Method is the Effect-Based Model (EBM). The EBM is a qualitative model wherein participant(s) use the prompts and the Research Synthesis Workbook (RSW) data to imagine possible and potential threats in the future.

An EBM is a structured database (e.g., spreadsheet) that poses to the practitioners a series of questions and requires a list of tasks to fill in to create the qualitative threat model. Moving from the high-level research (prompts) and participant(s)' perspectives in the RSW, practitioner(s) focus on a specific threat future. Moving from the macro-level to the micro-level, practitioner(s) explore a person in a place experiencing a threat.

The EBM uses Experience Design Methods and Effects-Based Operations methods, tools, and approaches to guide the participants through the futurecasting and backcasting exercises.

Project Documentation

Project documentation is a collection of files that analyst(s) use throughout the Threatcasting Method. These types of documents can be text docs (e.g., MS Word, Notepad, Google Docs), spreadsheets (e.g., MS excel, Google Sheets), or slides (e.g., MS Powerpoint, Slides). The type of document doesn't matter so much.

The analyst(s) uses the project documentation to keep track of every step on the Threatasting process such as:

- capturing the Threatcasting Foundation;
- generating a list of possible prompts and Subject Matter Experts;
- listing out possible participant(s);
- generating the various workbooks; and
- capturing analyst(s)' notes during post analysis.

Proper and diligent project documentation will allow the process to go smoothly, ease communication with others, simplify tracking, and ensure there is complete data transparency at the end of the process.

Why Poetry Matters

The Arizona State Threatcasting Lab was launched on Valentine's Day 2017.

As a general rule, each Threatcasting project has a poem (sometimes more than one) used to kick off major meetings. We do this for a few reasons. First, it's unexpected. When you arrive in the desert to one of our events, expecting to explore threats a decade into the future, you don't expect to be met with poetry. Unexpectedly hearing poetry makes people a little uncomfortable and takes them out of their normal day-to-day routines. That's an important part of Threatcasting. To get people thinking ten years into the future, we need to leave the present behind.

The T.S. Eliot poem "Burnt Norton" was the first one we ever used.

Burnt Norton

Time present and time past
Are both perhaps present in time future,
And time future contained in time past.
If all time is eternally present
All time is unredeemable.
What might have been is an abstraction
Remaining a perpetual possibility
Only in a world of speculation.
What might have been and what has been
Point to one end, which is always present.
Footfalls echo in the memory
Down the passage which we did not take[1]

T.S. Elliot

Why This Poem Matters

I have been using the T.S. Eliot poem "Burnt Norton" for many years when I kick off Threatcasting sessions. It is my go-to poem, especially when I can't find another that is more appropriate. That's always the goal: kick off a Threatcasting Workshop or "big meeting" with a poem that says something about the lead analyst's motivations for the project or that highlights something about the project in general.

Written in 1935, this passage was part of a larger work called the "Four Quartets." The poem focuses on time: time past, present, and future. It gets the reader to consider the qualities of each.

[1] Excerpted from Eliot, T.S. (1936) "Burnt Norton," Four Quartets.

It also explores the different possibilities of the past, present, and future. It races around and plays with time in a way that pushes the reader to think differently about time itself.

Finally, the verse ends by bringing us back to the people. "Footfalls echo in the memory Down the passage we did not take." The metaphysical conversation about time becomes about the humans experiencing that time because they are the center in the experience of it.

Eliot's verse captures many important aspects of Threatcasting. The understanding that time is not fixed, that time can be discussed, and that ultimately all time is about people helps to center us on some of the core values of Threatcasting and this applied futures way of thinking.

The lab's Chief of Staff opens with this verse from Roald Dahl as a reminder that our gift of imagination is what allows us to step into the future.

And above all,
watch with glittering
eyes the whole
world around you
because the greatest
secrets are always
hidden in the most
unlikely places
Those who don't
believe in magic
will never find it.[2]

Roald Dahl

Why This Poem Matters

Dahl's poem reminds the participant(s) and ourselves that Threatcasting is all about people. Everything we do in life is about our fellow humans; it begins and ends with people. There might be some technology, companies, processes, and procedures in between. But ultimately it is a focus on humans and making them safer and the resulting future better for all.

There is magic to be found in the interactions between people, in the conversations and arguments and even in the tense silences. Threatcasting is about people and it's also about people

[2] Excerpted from Dahl, R. (1991). *Billy and the Minpins*.

working together and being open to new ideas. Dahl challenges everyone who participates in Threatcasting to believe in the magic of humans so that we may then find it.

This final piece of verse is from the lab's senior advisor. It helps us remember that it is also extremely important when you are Threatcasting to have a sense of humor. Chumbawamba is an English rock band that had a very popular song in the late 1990s.

Tubthumping

I get knocked down, but I get up again
You are never gonna keep me down[3]

Chumbawamba

Why These Lyrics Matter

Lyrics are poems for the soul. I am not a poetry expert—in fact, the last time I probably read and analyzed poetry was in college for a Humanities requirement. Instead, what speaks to me are song lyrics ... not those catchy tunes that draw your ear in, but the lyrics that speak to your heart.

Ignoring the fact that a Rolling Stones poll[4] *names this song in the top 10 worst of the 1990s, the lyrics remind us all to be resilient and that we have the power to overcome our threat-filled visions of the future. Over the course of a Threatcasting project, you will see the participant(s) achieve highs and lows in their emotional state as they can be overwhelmed in the grim futures that they envision. They especially start to feel horrible for the person they have created who has to live in that world. Having a reminder about the innate resiliency of humankind is important—to know that we are not just going to picture the horrible side of life, but that we are also going to develop a path for that future never to happen.*

It is not just participant(s) but also the analyst(s) that need to be reminded of this lesson—that it is possible to get back up. When performing the post-analysis activities, it is easy to get low and feel there is no way past these challenges. I like to play loud and inspiring music during post-analysis to remind myself that nothing is going to keep us down—we will find a way to succeed, and this work is going to help us all.

[3] Read the full lyrics at https://bit.ly/3zW5SPI.
[4] https://www.rollingstone.com/music/music-lists/readers-poll-the-worst-songs-of-the-nineties-11176/

Part 1

Threatcasting:

Method, Framework, and Process

CHAPTER 1

Threatcasting

"Humans create their futures every day of every year; only you can alter your worlds."
—Janet Ellen Morris, author

The past, present, and future

Brian David Johnson

It was a cold, clear, winter day. Walking the ground of the United States Military Academy—West Point is a heady experience. Strategically perched at a bend in the Hudson River, the military fort was integral to the then fledgling United States' victory over the British in the Revolutionary war. When you walk the winding paths and enter the solid stone buildings, you know you are walking where George Washington walked. When you look down over the river you realized this is where General Patton did the same thing. Everywhere you go on the campus at West Point you are walking through both the present and the past.

For me this is particularly disorienting. I'm a futurist. I work with organizations to model the future. It's been said I live my life 10 years in the future and commute home on the weekends. The reason I was at West Point was to model the future. In particular, I was working to model potential threats to the United States' national security. In effect, on that winter day I was walking through the past, present, and future.

Walking up the steps of the West Point library, I was returning to the space where a few months before I had led a team of soldiers, security professionals, and even a science fiction comic book writer through a threatcasting session to explore the future of cyber warfare. At the top floor of the library there is a large, open, event space surrounded by windows that overlook the campus. At the top of the steps I ran into General Rhett Hernandez (ret.)

"BDJ," he hollered in his big deep voice. Everyone calls me BDJ. General Hernandez is a towering figure both physically and in his accomplishment. Among many of those accomplishments is that he was the first commander of US Army Cyber Command until he retired. But Generals really don't retire. He remained active and I was fortunate enough to have him as a part of the Threatcasting session.

"Hello, sir," I replied.

"Call me Rhett," he smiled, shaking my hand.

"Yes, sir," I replied.

"Hey, did you see?" he started. His eyes lit up with excitement as he explained some breaking international news related to a new technology.

"I did see that," I replied.

"But that's exactly the thing we talked about in the threatcasting session months ago," he continued. "We said it could happen."

"Yes sir, that's what we do."

He shook his head as if I wasn't understanding. "No, the thing is, we know what to do. It wasn't a surprise. We have a plan."

"Yes sir, that's why we do threatcasting," I smiled.

"That's great," he slapped me on the shoulder. "I guess you're right. Now come with me there's a person I want you to brief…"

1.1 THREATCASTING OVERVIEW

Threatcasting is a method that enables multidisciplinary groups to envision and plan systematically against threats ten years in the future. Groups explore how to transform the future they desire into reality while avoiding an undesired future. Threatcasting uses inputs from social science, technical research, cultural history, economics, trends, expert interviews, and even a little science fiction. These various inputs allow the creation of potential futures (focused on the fiction of a person in a place doing a thing). Some of these futures are desirable while others are to be avoided. By placing the threats into a fictional story, it allows decision makers and practitioners to imagine what needs to be done today as well as four and eight years into the future to empower or disrupt the targeted future scenario. The framework also illustrates what flags, or warning events, could appear in society that indicate the progress toward the threat future.

Threatcasting is a human-centric process, and therefore the humans that participate in a threatcasting session are critical. Regardless of age, experience, or education, all participants are considered practitioners. Threatcasting is a theoretical exercise undertaken by practitioners with special domain knowledge of how to specifically disrupt, mitigate, and recover from theoretical threat futures. Additionally, a few participants are curated to be outliers, trained foresight professionals, and young participants for a fresh and multi-generational perspective in the groups. When using threatcasting on military problems, the mixture of participants should span academia, private industry, government, and the military.

1.2 THREATCASTING OVERVIEW: AN ONTOLOGICAL DISCUSSION

To introduce Threatcasting it might be helpful to have an ontological discussion. When it comes to information science, an "ontology encompasses a representation, formal naming, and definition of the categories, properties, and relations between the concepts, data, and entities that substantiate one, many, or all domains of discourse. More simply, an ontology is a way of showing the properties of a subject area and how they are related, by defining a set of concepts and categories that represent the subject." (Ontology, 2021)

For our Threatcasting discussion, we are going to review what Threatcasting is. For our purposes, Threatcasting is a method, a framework, and a process. By exploring how Threatcasting has the properties of each of these, we can get a better high-level understanding of it before we dig deeper into the details.

1.2.1 THREATCASTING AS A METHOD

> *"A method is simply a research tool, a component of research – say for example, a qualitative method such as interviews. Methodology is the justification for using a particular research method."*—Deborah Gabriel (2011)

> *"A methodology is an approach to "doing something" with a defined set of rules, methods, tests activities, deliverables, and processes which typically serves to solve a specific problem...Methodologies demonstrate a well thought out, defined, repeatable approach."*—Scott Ellis (2008)

Threatcasting as a method provides analyst(s) with a series of defined steps, tasks, systems, and ultimately outputs to identify a range of possible and potential threats, along with actions to be taken and indicators to be monitored. Threatcasting is an applied futures or foresight method that not only identifies a range of possible and potential futures but specifies indicator(s) and action(s) for a specific audience. Meaning that Threatcasting Projects are conducted for a specific group or organization so that they can put them to use. Threatcasting identifies these possible and potential futures for a specific organization so that they can take action.

Threatcasting is an analytical method that explores tomorrow's threats today, in order to give organizations and communities time to detect, prepare, disrupt, mitigate, and, when needed, recover. The goal of Threatcasting is not to predict the future. It is not a crystal ball that will definitively find the exact threat picture 10 years from now. Instead, it provides a range of threats that you might not have been aware of in order to do something about it.

A good example of the power of this kind of thinking was expressed by General Dwight D. Eisenhower on November 14, 1957 in a speech to the National Executive Reserve Conference in Washington DC.

> *"**Plans are worthless, but planning is everything**. There is a very great distinction because when you are planning for an emergency you must start with this one thing: the very definition of 'emergency' is that it is unexpected, therefore it is not going to happen the way you are planning."*

President Eisenhower is highlighting the idea that planning puts people in a position for success. When events or threats unfold, people are that much closer to making the detailed decisions to ensure a successful outcome. The action of planning allows people to hone their minds intellectually and to be seeped into the character of the problem so that they can quickly make changes on the fly.

Why 10 Years in the Future?

The Threatcasting Method focuses on ten years in the future. This is a conscious timing decision in order to reduce innate biases from participant(s) when they participate in the Threatcasting Workshop and explore possible threat futures. The ten-year time horizon allows for, and overcomes, plausibility concerns. For most, envisioning ten years into the future is an intellectually freeing experience, allowing participant(s) to imagine a broader range of futures beyond their current state. Typically, the ten-year time horizon is freeing because it is past the duration of:

- political administrations;
- corporate executives' appointment;
- the life cycle of most projects; and
- the current career or life position of the participant(s).

Using the Threatcasting methodology, the participant(s) can free themselves from the baggage of their emotional and intellectual connections to the present, allowing them to envision the future.

The 10-year time horizon is also a helpful guide when curating the prompts that will be used to influence the participant(s). A decade is near enough that current research applies and not so far away that the prompts would be implausible.

Many organizations and businesses will plan for the future, but their planning is generally a few fiscal quarters out or possibly two to five years. These strategic plans focus on current conditions, incremental change and business metrics. The ten-year horizon can help these planners "leapfrog" their current planning activities, expanding the range of the possible and probable futures. This expansion could identify threats that had been previously missed.

Ten years is also important as this method develops many harsh visions of the future that could be full of death and destruction and/or a significant change to our way of life. But ten years is enough time to derail these futures. Participant(s) are empowered to develop solutions to ensure that these negative futures don't occur.

The Six Phases of the Threatcasting Method

The Threatcasting Method is broken into six steps or distinct phases that contain tasks and activities. These phases are meant to provide the analyst(s) structure and guidance to conduct the Threatcasting. They are rigid and need to be followed closely. A phase cannot be omitted or skipped. The tasks and activities inside of each phase need to be performed before the analyst(s) can move on to the next phase.

The phases are numbered zero through five. For some, the idea of starting with a Phase 0 (zero) might seem strange. Phase 0 is full of the preparatory actions before the Threatcasting Workshop and other activities begin. In the military, Phase 0 is defined as "shaping the environment" and contains activities designed to set the conditions for success in future phases. For technology development projects, Phase 0 is the scoping and preparation part of the project. Often this is seen as the most important phase as all the following phases build upon it.
Note: We will go into greater detail in the upcoming chapters of the book.

Phase 0: Preparation and Curation (Pre-Workshop)

The beginning phase of the method consists of the preparation of the project and the workshop. This phase also includes the curation of the team, participant(s), and research prompts.

The initial action for the analyst(s) is to develop the **Threatcasting Foundation**, consisting of:

- the topic area to be explored;
- the specific research question; and
- the area(s) where the findings will be applied.

Informed and guided by the foundation, the analyst(s) pulls together a team, determines who should participate in the workshop, and decides what research or inputs should be used as prompts to envision threats 10 years into the future. Finally, the materials (e.g., workbooks, presentations, support materials) are created to conduct the workshop.

Phase 1: Prompt Presentation, Research Synthesis, and Discussion (Workshop)

The next phase begins the actual Threatcasting Workshop. Analyst(s) use the prompts and materials to engage in a participatory design session with participant(s). This activity presents the prompt to the participant(s) and then leads them through a session to explore the ramifications of the prompts, capturing their discussion in workbooks for use later by both the participant(s) in the following stages of the workshop and by the analyst(s) in the post workshop phases.