Hello security writers.

We’re here today to consider some aspects of writing and editing that, wherever you are in your career, you may not have focused on before. Let’s check out a map of our general trajectory:
Underpants, You, The first draft, Space, using Guides and Fresh Eyes to edit yourself, and what to do if you need more.
01
LET’S TALK ABOUT UNDERPANTS

So our first stop… underpants.
In an episode of South Park, tiny gnomes sneak into kids rooms to steal underpants – why would they do that? The gnomes explain that it is Step 1 of their business plan, which is missing a crucial middle part between collection and profit.

My conceit here is that right now, you basically hack all the things in Step 1,
And you want payment and closure for that in Step 3,

…but if you don’t use Step 2 to consider the quality of your work, if you turn in your first draft as your final draft, people will be less inclined to pay you and let you move on. They’ll want to go back to Step 1 and scrutinize what you did to make sure its worth paying for.

But if you have a real plan, if you make your work with care… you look brilliant in Step 3. You keep everything moving, and most importantly, you get paid for your time and can work on the next thing.

For more about what happens when you miss the middle step, you can look up my CactusCon talk from a few years ago called Chaos in the Machine.
It’s a jolly 20 minutes about the value of making security writing more transparent.

For this talk, let’s just agree that you should avoid writing breaches with a double ee, and we’ll focus on the solutions.

So what is our new plan? It’s a five step plan.
A REAL PLAN TO MAKE GOOD THINGS

1.
2.
3.
4.
5.

Our goal is to make something good, to produce quality content that reflects the quality *research*, business experience, and expertise that you put into it.

So first, we’re gonna focus on you.....
A REAL PLAN TO MAKE GOOD THINGS

1. Learn how you make things
2.
3.
4.
5.

...and how you make things.
A REAL PLAN TO MAKE GOOD THINGS

1. Learn how you make things
2. Make a thing
3.
4.
5.

Then we gotta make a thing.
A REAL PLAN TO MAKE GOOD THINGS

1. Learn how **you** make things
2. Make a thing
3. Learn how to make good things
4.
5.

Then we need to focus on how to make things good, how to set ourselves up for success so that in the fourth step,
A REAL PLAN TO MAKE GOOD THINGS

1. Learn how you make things
2. Make a thing
3. Learn how to make good things
4. Make that thing good
5.

We can execute on that plan, on the things we’ve learned and do them, resulting in a beautiful thing that does what you want it to do.
A REAL PLAN TO MAKE GOOD THINGS

1. Learn how you make things
2. Make a thing
3. Learn how to make good things
4. Make that thing good
5. Profit!

My hope is that by recognizing these steps, every time you walk through them you’ll be able to see the profit at the end of the tunnel.
So the first step of our new plan is knowing how you make things as a writer, and the first step of that is admitting you’re a writer. You might categorize yourself as a bad one, but that still makes you a writer. Acknowledge that it’s an aspect of your job – in emails, meeting notes, CFPs, cover letters, and bug bounty reports. You write. Admit that. Embrace that.

Before we can achieve a gleaming palace of paragraphs though, we need a better grasp on how you write – what is your process right now? If you don’t have an intentional process, there’s still a pattern you can notice about the time of day or place or format you choose to write in, what keeps you motivated and what stops you from trying anymore. It may be ad hoc, but it’s kept you employable, so let’s find the outline of your current underpants gnome plan before we flesh it out.
If you’ve never checked in with yourself about writing, start to notice your patterns and your emotions about them. Just get to know what you’re working with. Great at starting, terrible at finishing? Big procrastinator but you always pull it out in the end somehow? Maybe there’s somebody you bounce rough ideas off of, or someone you know to only show the final version to. You may even find you’re carrying around grammar pedantry from a teacher that’s not doing you good. Take inventory of your writing assets. They may seem small but they add up to a universe of productivity.

Look at a recent email, blog post, or report you’ve written, and consider what areas you’re confident in and which ones you avoid or struggle with. What’s working for you right now, today? How do you communicate on paper?
Over time, you may start to see that you fall into the extreme edges of the ranges here. You might write too casually for reports, or too seriously in emails, you could be so brief that the reader doesn’t feel that they’ve gotten their money’s worth, or you could write so much that they feel like they’ve walked 5 miles and ended up in the same place. These are independently moving ranges, all combinations are possible.

Basically, you want to be somewhere in the middle on all of them. If thinking about your current writing style this way is tricky, you can make a list of things you enjoy or struggle with in writing instead. For example: I enjoy giving talks because I naturally write in a conversational manner, but I need outside accountability to keep me honest, and my talks always go over by a minute.
As you figure out your strengths, the strategies that might work for you will become more obvious, like if you feel lost when you sit down to write, you may need to take detailed notes as you’re doing the testing so you don’t have to remember the facts on demand. Or, you may need to let the experience simmer before writing, so you shouldn’t beat yourself up for not sitting down immediately after the event.
IF YOU’RE AN ESL WRITER…

- Celebrate small victories
- Give yourself even more time
- Actively ask peers for feedback
- Take notes and make time to review them
- Listen to formal English through podcasts and talks

Before I move on, I want to briefly address writers who learned English as a second or third language.

As I hope you can see from this talk already, writing is legitimately difficult for everyone, so tackling it in a second language takes real focus and work.

Make **small goals** so you can celebrate small victories of progress, and look back on old writing to see how you’ve matured.

Give yourself even more time for your writing process, ask for peer feedback, and take notes on what you learn from each document.

I also recommend that you get more formal English in your head. Little things like prepositions, irregular verbs, and idioms are hard to just **memorize**, but if you listen to things like Grammar Girl, structured podcasts about security, old DEF CON talks, or anything else you’re interested in, those little building blocks will come to you more easily when you sit down to write.
Alright. We’re all writers, and before we can make a good thing, we need to make a thing. Let’s write the first draft.
YOU VS. THE BLANK PAGE

How do you start writing though? Blank pages are terrifying.

Here’s how you write a draft: You WRITE it.
START WHERE YOU CAN START

DIVE INTO THE JUICIEST PART – FOR YOU

- Intro/context
- Conclusion/takeaways
- Outline/timeline of events
- The most critical vuln
- The coolest thing you learned
- The title/headlines
- The screenshots/diagrams
- The slide text/memes

You WRITE it. Jump in. Do work where you can do work RIGHT NOW.

Maybe you can knock out an outline, or the main point of the report in casual language like “Hey company, don’t use that third-party vendor!” or “Your scope was a joke. Do this test again with a realistic set of targets.”

In draft 2, you can make those phrases more diplomatic, but don’t censor yourself in draft one. Get the core guts of your message out on the page.
On that note, the biggest hurdle I see stopping technical writers is dressing up their language before they’ve even put on their underpants. Be comfy in your first draft. The stiff formalwear of these phrases can restrict your ability to move around in early drafts by focusing so much on the way you think you SHOULD be writing. Don’t worry about misspellings, don’t look for better synonyms, just use a verb you can readily think of and leave a note for later.

None of the things on this slide are inherently good or bad, but you might be over-relying on them to sound confident. Just consider that their repeated use and misuse may actually be weakening your points.

Don’t use bits you’re not sure how to use. Just write down what happened as well as you can, and save the formalwear for the editing process.
LEAVE NOTES FOR WHAT TO DO LATER

- Parts you don’t want to do now
  - [insert third example here]
  - [insert clever transition here]
- Parts that will be clearer later
  - Big picture takeaways
  - Client-specific requests
  - Images to grab

  - Mark these with comments
    - Harder to lose than bolding or highlights
    - Less obnoxious for other readers

For the things you don’t want to do or can’t immediately dive into in the first draft, mark them as spots to fill out or improve later. I recommend using Comments rather than highlighting or bolding text for this, because those tools eventually lose their power to stand out and can sneak through to final versions.
OK so you’ve written the first draft. Now what? Well to make things good, you have to make room to make them good. Like many business failures, errors often get through because “catching errors” wasn’t a defined part of the process. If it’s no one’s specific responsibility, it’s not surprising that it doesn’t happen. You have to make it a deliberate step.

The biggest point of this talk is that if you want to improve your work (which is what editing is), you gotta make space for it.

Such a downer. I know.
ADMIT THAT EDITING HAS SOME KNOCKS AGAINST IT

- It’s not the fun stuff
- It’s an obstacle between you and what’s next
- Feedback is scary

- **BUT!**
  - If you avoid it or rush through it, it will come back to bite you

And it’s good to admit that you might hold a grudge about editing – it’s not the reason you get up in the morning, it’s a barrier between you and the next fun thing, and honestly, people can be cruel in their blunt feedback.

You may have had a teacher dismiss you as a writer, or a colleague give you a vague comment like “This is bad. Fix it.” Reviewing an edited text from unskilled editors can be demoralizing.

And yet... editing is such a crucial part of refining your craft and succeeding at your job. **Rebound** from those literary traumas by learning to find the useful feedback below, and be grateful when you get to work with professional editors. So let’s make some space for editing!
MAKE SPACE BY: KNOWING HOW MUCH SPACE YOU HAVE

• Get the details early
  • When exactly is it due?
  • What format will it be in?
  • Who is the authority for disputes?
  • Who is finalizing this?

• Have a post mortem if you were missing answers

We’re gonna focus on 3 ways to make space here.

First, you need to know how much time you have total so you can carve in time to edit. This can seem simple, but little admin tasks can cut off fractions of days and can really affect how well you can finalize your work before the deadline.

Get that information up top, and clarify when necessary. You need to know the real schedule so you can plan your attack and wrap it all up at the end.
MAKE SPACE BY: ASKING FOR ACCOUNTABILITY

- Set an early fake deadline
- Set up check-in meetings
- Set up peer review time

Two: You can **make space** by creating your own schedule within the official timeline.

Set up check-in meetings with your project partners. Talking through your topic can often clarify your message or shake our forgotten points. Keep the meetings short and you can use the blocked-off time to make headway on the next section or review your work with fresh eyes while you feel that momentum.

And, build out a generous amount of time in your schedule for your colleagues to review your work. Peer editing can be rough, so keep it focused by asking for feedback on specific areas you’re working on - your introductions, transitions, or technical explanations.
MAKE SPACE BY: KNOWING YOUR TOOLS WELL

- Set up Word (etc.) to your advantage
  - Use autocorrect shortcuts like macros
    - `.figcap = “Please add a figure caption.”`
  - Customize your spellcheck
- Keep what you need handy
  - Customize your Quick Access Toolbar
  - Get efficiency tips from Rhonda Bracey (@cybertext)
- Get comfy with Track Changes
  - All Markup/No Markup
  - Comments

Three: save time during editing by spending time now getting to know your tools better.

All word processors have little tricks that you may not be taking advantage of. Set it up so it’s your friend, not your enemy during deadlines. If you’re using something daily, it’s worth looking up tutorials to get comfortable with the various ways to view and format your work.

Some examples: How to customize your spellcheck settings. How to bring the common functions you use onto the Quick Access Toolbar (shown here). How to use Track Changes and its different Markup views, how to talk in Comment threads, and how to Accept Changes.

OK so you allotted time for editing and you’ve written the first draft.
GUIDELINES AND FRESH EYES

It may not be pretty, or concise, or completely filled out, but it has the beating heart of the message you’re trying to get across. Now we can talk about making it good.

First drafts do not make good final drafts because they’re really you telling the story to you – you can use shorthand, you can assume that the timeline makes sense, and just focus on the parts that interest you because you’re the one who experienced the exploit. It’s like if you write a shopping list that just says “Milk” but then someone else goes to buy it. What percent? What size? Did you mean almond milk?

These are the kinds of clarifications that a technical editor would ask you about, and that you have to take a step back and ask yourself if you’re going to edit your own work. And to do that, you need to be different from who you were when you wrote it.

So first thing is let’s use some of that space we allocated earlier to let our draft rest so we can really improve it.
LET YOUR DRAFT BREATHE

- Let your work sit for as long as it makes sense to
  - 5 minutes
  - 30 minutes
  - A day
  - A weekend
  - Until a relevant event happens

The amount of time here is not crucial, you just want to give yourself the chance to separate yourself and live a little so that when you come back, you can experience the document like a new thing. If you edit right after writing, you’ll miss oodles of errors because you haven’t distanced yourself enough, and at the same time, you’ll burn yourself out.

Sleeping on it really does help, but going for a walk, playing a game, singing or dancing can really make you feel like you have something new to offer when you come back.
### SEE YOUR WRITING THROUGH FRESH EYES

- **Let it breathe**
  - Take a break
  - Sleep on it
  - Show it to someone

- **Hear it**
  - Read it out loud to yourself
  - Listen to the computer say it
  - Read it out loud to a rubber duck

- **Change its format**
  - View as a PDF
  - Print it out
  - Zoom in
  - Change the font
  - Change to “No Markup” in Track Changes

If you’re short on time, consume the document in a new way by listening to it out loud, or changing the format you’re viewing.

Reading **out loud** or having your **computer** speak it back to you is the **absolute** best way to edit yourself. Why?
When you silently read something back to yourself that you’ve just written, you fill in gaps and you miss words. This triangle is a classic example of that.
NOW READ THIS OUT LOUD

I love Paris in the springtime. Oh dang. There are two the’s in that triangle, but because of the line break, your brain kinda half remembers that little word and lets it sliiide during a quick scan but it sticks out when you read aloud. You’re so embedded in the topic, you won’t see or hear the little connecting parts that you assume are right.

Beyond typos, there’s a lot of eccentric jargon in security that you may not hear as strange anymore. When those terms (like sniff or unpickling) pop up out of context, they can confuse new readers or be unexpectedly suggestive. The words that make them up don’t have to be inherently vulgar, but in infosec, terms I recommend watching out for are penetration, dump, leak, jack, and dongle, 4 of which were combined in an Engadget headline last summer:
...according to a hot dongle leak, yeah.

A slogan for editors is: **read stupid, think dirty**. If there’s a confusing or vulgar interpretation of a sentence, people will find it, and then they’ll talk to you about that, instead of what you intended for them to focus on.

These phrases make you **memorable** as a writer, but it’s probably not the kind of attention you wanted, so read your work out loud to hear what it **really** sounds like.
By letting it breathe and reading it out loud, you get to experience this document like you’re totally new to it. And when you hear it for that first time, capture your reactions. If something seems off (like this map), it’s probably off.

You don’t need to know solution right away, but you do need to mark the problem before you get too comfortable in the document again and forget. Some questions to ask yourself: Is the sentence so long I run out of breath? Do new topics appear out of nowhere? Are terms used inconsistently? Are there repetitive phrases about attackers attacking and users using?

Write those initial reactions down, even if it’s just a keyboard smash comment in the relevant place. (That’s what I do.)

You can run spellcheck to mark potential problem areas too, and while we’re on the subject, let’s look at what guides and tools can and can’t do for you in the writing process.
USE CHECKLISTS OR BUILD YOUR OWN

WHAT CAN YOU TURN TO FOR GUIDANCE?

- Use a reference work
  - Newton’s Telecom Dictionary, AP Style
  - Your company style guide (Apple, Google, Microsoft)

- Use an existing tool
  - Yr spellcheck
  - PerfectIt, Hemingway, Grammarly

- Make your own checklists
  - In Trello, Asana, GoogleDocs, Notes, wherever
    - For emergency triage situations
    - For finalizing

There are so many grey areas and nuances to language that unfortunately, no one tool can fully replace a human editor, so I recommend you use a combination of reference works, existing tools, and your own custom checklists during your editing and finalizing phases. [fazes]

The benefit of using an existing tool is: it already exists. The possible negatives are: that they don’t work with your specific vocabulary or custom formatting, and in the case of a tool like Grammarly, they check your writing remotely, so if you’re dealing with client-sensitive NDA-type information, it’s not the tool for you.
If you are in the market for some readily available guidance, I’m going to suggest two that I helped create.

The cybersecurity style guide is a friendly PDF with 2,000 terms, how to write and pronounce them, what they mean in different contexts, and which ones to consider avoiding. Here is a page of entries from bootloader to BSides. An appendix at the back has further resources for technical writers – books I recommend and other modern style guides that can support your work.

The second tool here is cyber.dic, which is a dictionary file that augments your word processor’s spellcheck by adding all those 2,000 terms from the style guide directly into your local dictionary. That can help keep away those distracting red squiggly lines while you’re working on your drafts.

These are both available now for free. I made them to make my own life better, and I’m happy to make the writing process less painful for you going forward.
The reason I recommend using a combination of reference works, tools, and custom checklists to navigate through writing is because there are no rules, only guidelines, I really mean that. English is a wild and greedy language, and there aren’t many hard rules. It’s good to reference industry standards, but you shouldn’t feel trapped by them if they are outdated or don’t apply to your situation.

Sometimes in writing it feels like you’re searching for that one perfect word or phrase, but the reality is, there are a thousand ways to write a sentence that could serve your purpose. Many answers are right… it just depends on your goal, your audience, and your timeframe.
It’s an editor’s job to keep the final audience in mind all the time. The changes they suggest are not really about an editor’s personal peeves or preferred sentence structure – it’s about fighting for the user. Like Tron.

**You want** your future reader to get your message. To do that, you need to keep them engaged, focused, and on track.

Sometimes this means cutting out parts you loved but aren’t relevant, or rearranging your structure to explain the basics up top before diving deep.

A lot of this comes down to keeping a specific audience in mind – is this for CISOs, developers, Instagram influencers, or your elderly family members? Even if you **hope** everyone will read it, you should be realistic about what level of reader you’re aiming for – it affects everything from word count to format to how many of those fancy trap words you feel obliged to put in the final draft.
CREATE A ROADMAP FOR YOUR READER

- Use parallel structures
  - In the table of contents
  - In the title hierarchy
  - In transition words
  - In bullet points

The best way to fight for your user and keep them on track is to give them context so they know what you’re going to tell them in what order and why it’s important.

A common overall strategy here is to use parallel structures. If you were making 3 points, you should use a single system, not point one, point B, and lastly.

Including sections like a TL;DR or walkthrough up top are good ways to clarify time and place. Make sure you don’t suddenly teleport your reader without warning. Laying out all these roadmaps is about setting expectations and then meeting them.
If you don’t provide a roadmap, you might lose your reader in what are called garden path sentences, which lack a clear path and wind around unexpectedly.

You, the writer, know what it SHOULD say, but the twists in garden path sentences mislead until the end, which can make your reader do a double take. Let’s look at two.
The team found. Oh! The team found something. A vuln? An endpoint? A portal?
“The team found the Sample application

Oh they found the Sample application, where was it hidden, why does it matter?
EXAMPLE #1

“The team found the Sample application had a problem.”

Oh. This sentence is not about finding an application. It’s about finding something within the application. Let’s add a little word up top to make that more clear early on.
The team found that the Sample application had a problem.

In this example, the name of the team, application, and problem are short, but this type of sentence structure appears all the time in technical writing with complicated noun phrases in each slot, and your readers will get lost if you don’t keep them in mind and hold their hand through long sentences.
EXAMPLE #1

“The team found that the Sample application (which was running on an outdated version even though they said they patched it) had a problem.”

If you find yourself needing to give extra context in the middle of an important sentence, put it in parentheses, in its own sentence, or in the footnotes.

Separating secondary facts in parentheses or note sections keeps your main message clear and keeps your reader on the path.

Ok example 2.
“The overall security of the external network was excellent.”

Sometimes a sentence itself is clear, but its true meaning isn’t known until something later.

If I read this as the client. I’m happy, I’m mentally resolving this report in my head and moving on with my day. Next sentence.
“The overall security of the external network was excellent. **The team extracted 60,000 SSNs from the internal network.**”

“The team extracted 60,000 Social Security numbers from the **internal** network.”

Dang, you just suckerpunched your reader. That’s not very kind, and now they feel betrayed. Why did you sweeten them up with a compliment if the rest of their organization is on fire? Let’s rephrase this.
EXAMPLE #2

“Although the external network was well secured, the team extracted 60,000 SSNs from the internal network.”

*Although* the external network was well secured, the team extracted 60,000 Social Security numbers from the internal network.

Now we anticipate the bad news, we’re not whipping the reader’s expectations around.

It’s the same core information, but you’ve given it context, you’ve prepared the reader for bad news with *although*, and you look like a professional.

You haven’t ruined someone’s day, you just laid out the strengths and weaknesses to a CISO so they can act on this information.
USE YOUR SCISSORS TO CUT AWAY

CLEANING UP YOUR SENTENCES

• Break up long sentences
• Use strong verbs
• Use bullet points
• Use transitional words

This level of paying attention to sentences that sound off can be daunting, but in general, editing technical documents comes down to simplifying your structure, so that the only thing the reader is having to spend brainpower on is the concepts in your sentence, not your sentences themselves.

Break up sentences, use strong verbs, pull long lists out into bullet points, and use transition words to keep your reader flowing smoothly through your document.
As you’re wrapping up your close reading of a document… go back and read the beginnings of everything. Not just the intro paragraph, but the first sentences of every paragraph, and the headings for each section.

Reading those bits back to back separate you from your role as writer again, and let you see what the reader will likely take away from your piece in the end.
Lastly, go through a finalizing process you’ve decided on ahead of time that uses a combination of spellcheck, premade tools, and custom checklists.

If you can, look at your work in a PDF and scan it for visual consistency and to make sure all the figures look right. Proofread the cover page, the dates, all the heading titles, the table of contents, and figure numbers to check their parallel structures and consistency. Headlines are a common blind spot. That’s why you get hot dongle leaks.

And, it’s good to check that your legally covered – make sure your redacted content is really redacted and not just covered with a black bar – those can be removed from PDFs. And remove metadata so clients don’t know you named the image “idiotclient.jpg.”
You can edit forever, and there’s always something to consider improving in a document, but at some point you have to stop.

There are a million tips and tricks in editing, but I don’t want you to be overwhelmed here. This talk is to help you view the width of what an editor considers so that you know in the future that there are strategies and resources to turn to. It’s not just you struggling to write, it’s everybody, and even editors argue about what matters most.

So with you as my reader, as my intended audience in a movie theater, let’s take a step back and look at the big points of editing before we wrap up the whole talk:
HOW TO EDIT YOURSELF

• Read it out loud
• Capture your initial reactions
• Read stupid, think dirty
• Use references, tools, and checklists
• Remember your audience
• Keep your actions clear
• Read the beginning at the end
• Finish strong

For Editing: Read your work out loud, capture your initial reactions, read stupid, think dirty, use a combination of guidance, remember your audience, keep your actions clear by keeping your sentences short, read the beginning at the end, and finish strong with a checklist so you don’t undermine all the good work you just did.
What if you need more than your own editorial abilities can offer?
There are amazing freelance technical editors in the world that can help you. Hire them.

If you do that, or if you have already access to an editor through your work, you should give your work to them in the best possible condition, and include notes about what’s missing and the aspects of writing you’re working on. Editors are powerful but they are not omniscient.
So. The new plan to fully dress up our documents in more than underpants,
A REAL PLAN TO MAKE GOOD THINGS

1. Learn how you make things
2. Make a thing
3. Learn how to make things good
4. Make that thing good
5. Profit!

ONE. Learn how you make things by knowing yourself as a writer.
TWO. Make a thing, in this case a bad rough draft.
THREE. Make space for editing and prep your tools so that in
FOUR, you can edit and finalize that doc, and profit from your hard work.
I thank you for your patience through this obstacle course of writing. Writing is ridiculously hard. It’s hard for me. Just know that there are resources and strategies you can implement today to make this aspect of your job less painful, and there are things you can quantify about yourself that you can use to decide which of those will be most likely to help you.

You’re all writers, and I wish you the best as you continue your lifetime of writing. Editing is hard, and I empower you to improve your own documents.
Thank you for your time.
Here are the details where you can find me and these slides in the future.

Thanks.