Hello security writers.
For the next 20 minutes, I’ll be giving you a quick tour of some notable features of writing and editing that you may not have focused on before. Let’s check out a map of our general trajectory:
Underpants, You, The first draft, Space, the basics of editing yourself, and what to do if you need more.

If you want to tweet about this, it’s hashtag Step 2 Editing.

So our first stop: underpants.
The title of this talk is a reference to a meme that came out of South Park.
In an episode, a kid claims that tiny gnomes sneak into his room at night and steal underpants – why would they do that? Well the kids meet the gnomes and learn they do it because it is Step 1 of their business plan, which is missing a crucial middle part between collection and profit.

My conceit here is that you right now, have knowledge and expertise that you pour into your job, basically you hack all the things in step 1,
you want payment for that in step 3,

…but if you don’t consider the quality of your work, people will be less inclined to pay you. They’ll want to go back to step one and scrutinize what you did to make sure its worth paying for.

But if you edit in step 2, you look brilliant.
You’re a breath of fresh air, you allow progress to continue, and most importantly, you get paid for your work and can move on to the new thing.

Now this talk is not going to spend more time convincing you that editing is the true missing step. If you want more reasons why, you can look up my CactusCon talk from a few years ago.
It’s a jolly 20 minutes of information ... and disasters to consider avoiding.

For this talk, let’s just agree that doing things like calling them double ee breeches will cause problems in your career, and we’ll focus on the solutions.
So I want to just give you editing tips, but we need to build the foundation to get there. First you need to know yourself as a writer, then you gotta write the first draft, and THEN you can edit it.

The first step is admitting you’re a writer. You don’t have to say it out loud right now, but you are a writer. There are a lot of bad writers out there, and you might categorize yourself as that type. But that still makes you a writer. Acknowledge that it’s an aspect of your job – in emails, meeting notes, summary presentations, CFPs, cover letters, bug bounty reports. You write. You’re a writer. Know that.

Think about all the bad emails you’ve ever received. How they were confusing, dense, or vague. Awareness that you could use some work already has you a step ahead of most writers.

To achieve a gleaming palace of paragraphs you dream of, you first need to have a better grasp on who you are as a writer – what are your strengths and struggles... what is your process right now? If you don’t have an intentional process, there’s still a pattern you can notice about what time of day or place or format you choose to write in, what keeps you motivated and what stops you from trying anymore.
If you’ve never checked in with yourself about your writing, start to notice these patterns and emotions. You’re not trying to change your style in these reflections, 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 with caffeine or junk food?

Look at a recent email, blog post, or report, and see what areas you’re confident about and which ones you avoid or struggle with.
## AVOID THE EXTREMES IN WRITING

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Over time, you may start to see that you fall on one of the extreme edges of this chart. You might write too casually for reports, or too seriously in emails, you could leave the reader feeling like they haven’t gotten their money’s worth, or make them feel like they’ve just walked 5 miles and ended up in the same place.

Basically, you want to be somewhere in the middle on all of these ranges. If looking at your current writing style this way is tricky, you can make a list of things you enjoy or struggle with in writing. Let’s use me as an example.
WHAT ARE YOUR STRENGTHS AND STRUGGLES?

I’m great at:
- Writing conversationally
- Knowing my core message
- Coming up with clever titles
- Making it all work for a deadline
- Conveying my enthusiasm for a topic
- Knowing what I’m terrible at (see other list)

I’m terrible at:
- Finishing early
- Writing meaningful conclusions
- Writing short intros
- Keeping myself accountable
- Writing emails quickly
- Fixing my bad habits (see this list)

[drink water]

I love putting creativity into intros and titles and I’m pretty good at it. I enjoy speaking because I write in a conversational manner already, and in a talk, I get to convey that enthusiasm for the topic even more clearly.

and I know my weaknesses, like that I need outside accountability to keep me honest, and that I don’t write emails quickly.
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.

As I go through the next few sections, pay attention to which strategies vibe with you, which ones seem too difficult or unnecessary. Those can be indicators of what you look forward to and what you dread about writing.

First: know yourself, then: tackle projects in a way that makes sense for you that keeps you on schedule to make a final product you’re happy with.
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 native speakers already, so tackling it 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 to go through your writing process, ask for peer feedback, and take notes on what you learn from each document.

I also recommend that you get more English in your head. Little things like prepositions, irregular verbs and idioms are hard to just memorize, but if you listen to things like structured podcasts about security, old DEF CON talks, Grammar Girl, 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 edit, we need to write a draft.
03
THE FIRST DRAFT IS FOR YOU
The second draft is for your future reader

Trying to make your first draft simultaneously into your final product is painful and ineffective, so let’s separate those tasks. The first draft is for you, and after that we can consider formalizing things for your reader.
YOU VS. THE BLANK PAGE

You can’t edit a blank page. You have to write something first so you can improve 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

Here’s how you write a draft. You WRITE it. Jump in. Do work where you can do work RIGHT NOW.

Maybe you can knock out the main point of the report in casual language like “Hey company, don’t use that third-party vendor!” or “You’re doing pretty ok but you could be better.” or “Your scope was a joke. You may pass technical compliance but you should 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.

If you’re making a presentation...
you might be inspired to make a title page, or make a slide for image, or topic you want to cover. Make those slides! Even if you edit them out later like I did with these, they still get your momentum going and give you something to improve on later.
LEAVE NOTES FOR WHAT TO DO LATER

▷ Parts you don’t want to do now
  • [insert third problem here]
  • [insert clever transition here]

▷ Parts that happen later in the project
  • Big picture takeaways
  • Client-specific requests
  • Images to grab

▷ Mark these with comments
  • Less easy to lose than highlights
  • Less obnoxious for other readers

For the things you don’t or can’t immediately dive into, mark them as areas to fill out later. I recommend using Comments rather than highlighting or bolding text, I find those can be lost or forgotten over time as in this Cambridge newspaper headline.
The biggest hurdle I see writers trying to overcome in the first draft is dressing up their language before they’re ready. Again, the first draft is for you. This is a rehearsal. Be comfy in your first draft. Wearing the stiff formalwear of these phrases will restrict your movement and distract you. Don’t worry about the red squiggly lines, don’t look for better synonyms. Just use a verb you can readily think of and leave a note for later.

This slide is a list of common fancy traps that people fall into. None of these are bad on their own, but you may realize that you’re over-relying on one of these to sound confident, but you should know that their repeated use and misuse actually weaken 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.
OK so you’ve written the first draft. Now we edit? Well. It depends if you’ve set up the situation to allow yourself time to edit.

The biggest point of this talk is that if you want to edit your work, you gotta make space for editing first.

Like many business failures, errors often get through because “catching errors” isn’t a defined part of the process. Who was supposed to do that? Whose responsibility was it? Whose job? Nobody specifically, so not surprising that it didn’t happen. You have to carve out time and make it a deliberate step if you want it to happen.

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
  - Teachers may have been harsh
  - Peer editors can be vague or mean

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

It’s good to admit first that you 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 about your work.

You may have had a teacher dismiss you as a writer, or a colleague give you vague comments like “This is bad. Fix it.” I can’t undo that hurt. Receiving an edited text can be demoralizing from unskilled editors.

And yet... editing is still a crucial part of refining your craft and succeeding at your job. The best you can do is learn to translate the useful feedback from your peers, and be grateful when you get to work with professional editors.
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 facts

To actually have time to edit, you’ll first need to know how much time you have total. This can seem simple, but little details that cut off fractions of the day at the ends of projects can really affect how well you can finalize your work.

Get that information up top, and clarify when necessary. If your boss wants a good final product, you need to know the parameters. It’s really difficult to succeed if you don’t know how it’s supposed to wrap up.
MAKE SPACE BY: LETTING IT BREATHE

Let your work sit for as long as it makes sense

- 5 minutes
- 30 minutes
- A day
- A weekend
- Until after a relevant event

Then, once you know the timeline, breathe.

Write an outline or draft of that email, presentation, or report, and then let it cool down.

The amount of time here is not crucial, you just want to give yourself the chance to separate yourself and live a little so you when you come back you can experience the document as a different person than the one who just wrote it. If you edit right after writing, you’ll miss oodles of errors, and at the same time, burn yourself out.

Sleeping on it really does help, but going for a walk, playing a game, eating something, singing or dancing can really make you feel like you have something new to offer when you come back.
MAKE SPACE BY: ASKING FOR ACCOUNTABILITY

- Set an early fake deadline
  - Have a panic dress rehearsal
  - Tell others for accountability

- Set up check-in meetings
  - You might not have made progress
  - You can make progress during that timeslot

- Set up peer review time
  - Give them time too

You can also make space by creating your own schedule within the official timeline.

Set up time to practice your presentation so you can get out your jitters and procrastination. I made a Facebook event in May to make sure I was ready for today.

Set up check-in meetings with your project partners – you may start out the meetings feeling bad you haven’t made progress, but if you keep the meeting short, you can use that blocked off time to make headway while you can still feel that heat of delayed work under your seat.

Even though peer editing can be rough, keep it focused by asking for feedback on specific areas- your introductions, your transitions, your technical explanations. Be sure to build out time in your schedule for your colleagues to review your work too.
MAKE SPACE BY: KNOWING YOUR TOOLS WELL

Set up Word 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 for editing by knowing your own 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. If you’re using something daily, it’s worth looking up tutorials on Lynda.com, YouTube or elsewhere to get comfortable with the various ways to do it.

For example: Customize your settings to flag words that contain numbers. Bring the functions you need onto the Quick Access Toolbar. Use autocorrect shortcuts that expand into phrases you find yourself repeatedly writing (like notes about images to add later) and customize your spellcheck so that the words with red squiggles get added to your local dictionary.

Use track changes, and become comfortable with the different markup views, how to talk in comment threads, and how to accept changes.
OK so you allocated time for editing and you’ve written the first draft. It’s ugly. It’s too long. You repeat yourself, and you’re missing some screenshots, but it has the beating heart of the message we’re trying to get across. Now we can talk about editing.

First drafts do not make good final drafts because it’s 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 was there, 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 editors would ask you about, and that you have to ask yourself if you’re going to edit your own work. And remember that to do that, you need to be different from who you were when you wrote it. Like a version of yourself from the future who’s come back to improve the course of human history through clear sentences.
Having time away from the document can help you see it with fresh eyes, but if you’re short on time, you can listen to it out loud, or change the format so that you’re consuming it differently somehow.

You want to experience this document like you’re totally new to it, and then capture your reactions. Does a sentence go on for 4 lines so you run out of breath? Do the titles of sections flow together? Are there gaps in logic that you, the writer, meant to put down, but you as the reader are confounded by?

Write those initial reactions down, even if it’s just a keyboard smash comment in the relevant place, because you’ll never hear those jarring phrases as clearly as you do in the first pass.

Reading out loud or having your computer speak it back to you is the absolute best way to edit yourself.
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 connecting word and lets it slide during a quick scan. When you’re writing and rewriting sentences, you often leave little word remnants behind that your mind will skip over because you know what should be there.

Let me give you two real world examples where you may only catch that they are off if you read them out loud.
Students get first hand job experience.

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.

In this case, firsthand isn’t clearly a unit, so it looks like this might be about students getting their first hand job experience.

The words don’t have to be inherently vulgar, but in infosec, terms to watch out for are penetration, dump, leak, jack, and dongle, 3 of which were recently combined in an Engadget headline:
Last week, everyone was tweeting about the phrase “hot dongle leak”, not the content of the article. It’s publicity, sure, but it’s probably not what the journalists at Engadget ultimately want to be known for.

With so many ways to go wrong, it can be hard to feel there’s any possibility of getting this right, and so people often hope that editing can be replaced by automated tools.
Unfortunately, there are so many grey areas and nuances to language that no one tool can replace a human editor. I recommend you use a combination of reference works, existing tools, and your own custom checklists.

The benefit of using an existing tool is: it already exists.
The possible negatives are: that they don’t address your specific vocabulary or custom formatting conventions, 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.

None of them are perfect, but they are worth pursuing to lighten your load as you work to improve your output.

And... IF you’re in the market...
If you’re in the market for some readily available guidance, I’m going to suggest two that I helped create.

The cybersecurity style guide! It’s a friendly PDF that contains 2,000 terms, how to write them, how to pronounce them, what they might mean in different context, and why you might want to avoid some of them. We’re working to publish V2 of the guide this fall, and you can see here a page of the entries we’re drafting in D, including the Diana Initiative.

The second tool here is cyber.dic, which is a dictionary file that we published on GitHub just this week. It 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.

These are both available now for free. I made them to make my own life better, and I’m happy to be able to share them with you now.
THERE ARE NO RULES, ONLY GUIDELINES

The reason I recommend using a combination of reference works, tools, and custom checklists to navigate through writing is because when I say there are no rules, only guidelines, I really mean that. English is a wild and greedy language, and there aren’t many hard rules.

There are a million example of English writers playing with language, and the one thing they have in common is that they knew what the guidelines were, and then they intentionally flipped them around. It’s good to reference industry standards, but you shouldn’t feel trapped by them.

When you are writing, it can feel like you are searching for that perfect word or phrase, but the reality is, there are a thousand ways to write a sentence that could serve your purpose. Many answers that are right... depending on your goal, your audience, and your timeframe.

Check real usage of terms by checking industry talks and conversations online – the audience you’re writing for will have certain expectations. They’re the authorities you really need to keep in mind as you write and edit.
Editors keep the final reader in mind all the time, in fact they often think of themselves as advocates for the reader, on top of their relationship with the writer. It’s not about the editor’s personal peeves or preferred sentence structure – it’s about fighting for the user.

You want the user 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 to the subject.

Sometimes this means writing a whole new section or rearranging your lists so that the order will be more relevant to their experiences.

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 need to 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.
WRITE IT DOWN OR YOU WILL FORGET

CREATE A ROADMAP FOR YOUR READER

Use parallel structures
• Table of contents
• Title hierarchy
• Transition words
• Bullet points

Three points:
• First
• Two
• Lastly

We recommend:
• Stop doing that
• Starting another thing
• Points you make

The best way to keep the reader 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 one system, not first, two, lastly.

If you’re making a list of recommendations, start all the items in the list in the same way, whether that’s the command form of a verb, or having them all be plural nouns.

Sections like an TL;DR or walkthrough up top can also help clarify time and place confusion later on. Make sure you don’t suddenly teleport your reader to another location on the map without warning them. It’s all about setting expectations and then meeting them.
If you as the writer know in your head what a sentence SHOULD say, sometimes you’ll miss how unclear it is for your reader.

The academic term for sentences that subvert the expectation of the reader are called garden path sentences, routes that lead you to the wrong conclusion.

Sometimes a sentence doesn’t make sense until the end, which can make your reader do a double take...
EXAMPLE #1

“The team found

Sometimes a sentence doesn’t make sense until the end.

The team found Oh! The team found something. A vuln? An endpoint? A portal?”
EXAMPLE #1

“The team found the Sample application

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

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

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 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.

If you find yourself needing to give extra context in the middle of an important sentence, put it in parentheses... or its own sentence
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, or its own sentence, or in the footnotes. Long sentences magnify the structural issues that wouldn’t lose the reader in short ones. Parentheses let readers know they can warp from the beginning to an end of a sentence ignoring the parentheses, and keeping the main message clear.

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

Sometimes a sentence itself is clear, but it’s 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.
EXAMPLE #2

“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.
This level of paying attention to sentences that sound off can be daunting, but in general, it 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.
This last thing I recommend to build into your editing process can be part of your editing process early on, but definitely as you’re wrapping things up... 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.

There are so many other little tips and tricks to keep in mind, and I’ll be sharing further resources on my site, but I don’t want to overwhelm you. I want you to feel like you’re viewing the width of what an editor considers so that you know in the future that there are references to turn to. It’s not just you struggling to write, it’s everybody, and even editors argue about what matters most.

So the big points of editing are:
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, and read the beginning at the end.

You can edit forever, there’s always something to consider improving in a document, but at some point you have to stop.

How do you know when it’s done? Here are some final checks.
Go through your custom checklist to make sure your company products are spelled correctly. Run spellcheck several times, because in changing one phrase near the end, you may cause a problem to its neighbor.

Proofread the cover page, the dates, all the heading titles, and table of contents, and figure numbers for parallel structures and consistency. Headlines are so big we assume they’re correct, so they’re a common blindspot. That’s how you get first hand job experience, or spelling publicly as pubicly.

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. You can scroll and your eye will find the unusual things. Just only look for one thing at a time or your eyes will get overwhelmed.

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. Remove metadata so clients don’t know you named the image “idiotclient.jpg”.
06

WHAT IF YOU NEED MORE HELP?

Get an editor to help, but still help yourself
GET HELP, BUT DO YOUR PART ANYWAY

Even if you do have access to an editor on staff or as a contractor, you should still give your work to them in the best condition you can, including comments about the issues you’re working on or parts you’re still missing.
GET YOURSELF AN EDITOR

- Find an editor
  - ACES, EFA
- Write a first draft
- Clean it up and leave notes for the editor
- Be ready to give your editor guidance

If you give an editor your messy V1, they’ll spend their fresh eyes trying to make sure it can function in a basic way, but it will take more drafts and sweat and frustration to make it remarkable.

But with your effort and guidance, their role can change from triageing the embarrassing errors to helping you craft an engaging narrative that really sings.
07
YOUR STEP 2 TAKEAWAYS
Keep the big picture in mind
I thank you for your patience through this obstacle course of writing. Writing is ridiculously hard. Writing about writing has been hard for me this year but sometimes you just gotta jump in. Just know that there are resources and strategies you can implement today to make your writing and editing time more tolerable, and there are things you can quantify about yourself that can help you decide which of those will most likely help you.

You’re all writers, and I wish you the best as you continue on your journey as a writer.

Writing is hard, and you’re all writers. Editing is hard, and I empower you to improve your own documents.

Thank you for your time.
Thank you for your time.
Here are the details where you can find me and these slides in the future.