'Welcome to the Party, Pal': How *Die Hard* Can Help Us Design Cyber Deception Influence Models Built on Signaling More Than Infrastructure

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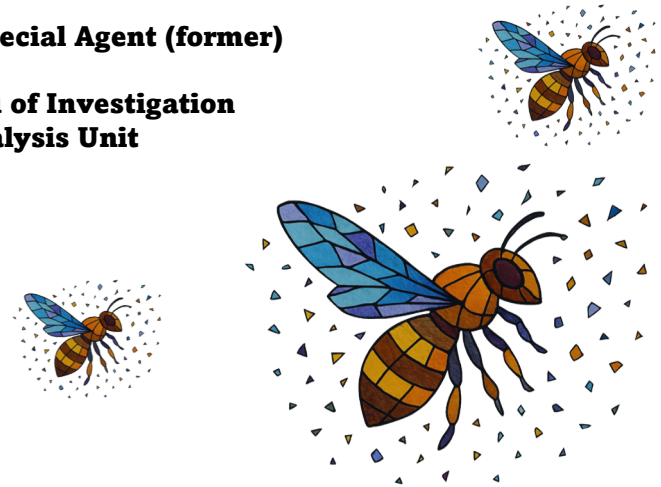

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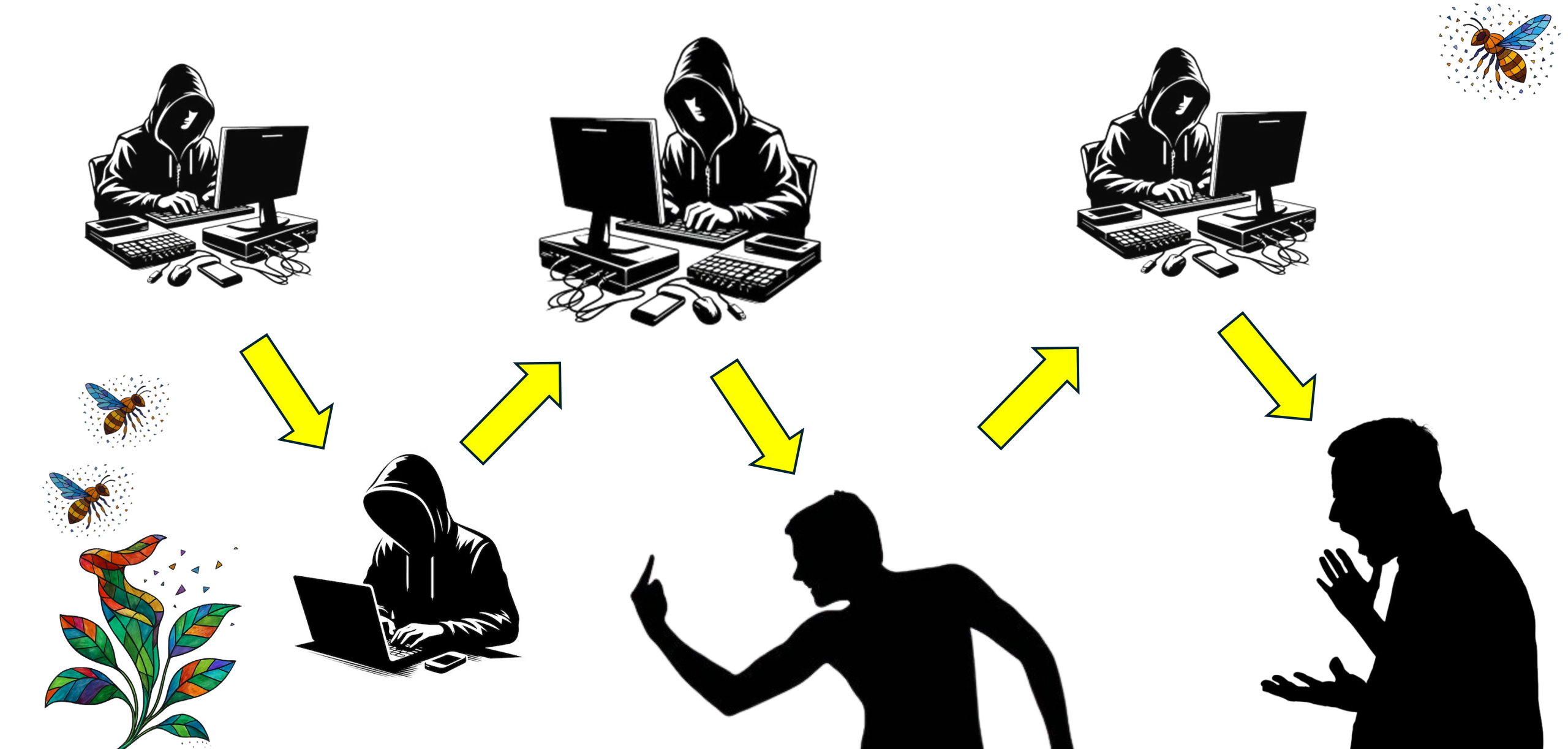
How does Die Hard help us understand deception and influence?

- The terrorist group manipulated the building's security controls and protocols using deception and influence
- Yes, NYPD Det. John McClane literally killed everyone; however, he was effective because he observed behaviors and exploited their behaviors and affect
- Det. McClane used deception to overcome the limitations of his movement and weapons, including their decision making and cognitive biases
- With each dead terrorist, Det. McClane instrumentally compounded ambiguity and uncertainty in Gruber
- Det. McClane's deception and influence was effective because it was consistent and engaging

A cyber deception experience that really shaped me



Rare experiences in government and industry cyber deception

- **Former FBI profiler, supporting adversary engagement operations and communication**
- **Design and create content supporting industry cyber deception**

Why are signaling or displays so important in cyber deception?

- Whaley was a communication researcher before he was a deception researcher
- Signaling contextualizes the “domain” costs and benefits
- We don’t want to keep waiting until an attacker gets inside

Cyber deception influence model #1:

Introduce affective storylines and content that undermine attackers' trust and certainty

- **The first dead terrorist had a brother terrorist, and they were afraid to tell him because of how he might react**
- **The terrorists who found him appeared shocked that someone had killed one of them, and appeared to have information about which floor they were on**
- **Gruber was interrupted from his plan and narrative:**
  - **"…*We are in charge*…"**
- **Gruber is contributing to the uncertainty and ambiguity:**
  - **"…*A security guard we missed?*…*No, this is something else*"**

Cyber deception influence model #1:

Introduce affective storylines and content that undermine attackers' trust and certainty

- There is a hierarchy to content sharing based on emotions and affect and humor
  - You can drive private and public content sharing.
- Inducing emotional or affective overload is an element to cognitive overload, and perhaps quicker and more effective
- This works for individuals online, but especially for groups or teams
- 'Hard targets' like hypervigilant attackers are some of the most vulnerable targets to distrust and "sinister attribution error"

Cyber deception influence model #2:

Channel attackers' attention and sensemaking to reputational and performance stages

- **Det. McClane uses the terrorists' own communication channel to talk to Gruber, but all the terrorists can hear this communication**
- **How Gruber responds perhaps changes**
  - **He expected the police response, but he did not expect Det. McClane**
- **Det. McClane mentions the deaths of various terrorists for the first time before Gruber and his terrorists can confirm those deaths, introducing further uncertainty and ambiguity**
  - **"*How does he know so much about…*"**
- **Det. McClaine misdirects the terrorists' priorities and time to confirm his claims**

Cyber deception influence model #2:

Channel attackers' attention and sensemaking to reputational and performance stages

- **If you have their attention and can hold their attention, you can directly influence their sensemaking and next steps**
- **Sensemaking is like a filter, making sense of new information**
  - **These are aspects of *reflexive control* to manipulate this filter and manage attacker behaviors**
- **Injecting into their communication and pathways of information collection and processing can significantly influence them**

Cyber deception influence model #3:

Disrupt and influence attackers' storylines with your own powerful storyline

- **The terrorists prepared to escalate if necessary and did escalate**
- **The law enforcement response was not prepared for this escalation and was generally unable to do much from outside the building**
- **Det. McClane disrupted that escalation with an escalated response, using the terrorists' C4 explosives**
  - **"*It's not the police…it's him*"**
- **The local news media were present throughout the event, providing <u>live</u> coverage**

Cyber deception influence model #3:

Disrupt and influence attackers' storylines with your own powerful storyline

- ***Privileged moments*** **of vulnerability can influence attackers and law enforcement response if revealed publicly**
- **You should not depend on law enforcement assistance during an event**
- **Attackers may prepare for law enforcement response or be familiar with law enforcement response, but they will struggle to anticipate how you will respond once you *violate* their expectations**
- **Using an attackers' tools and techniques in response just short of 'hacking back' can cause confusion and uncertainty**
- **There are other real and imagined stories you can tell powerfully**

Discussion

- **These cyber deception influence models can be demonstrated by anyone, regardless of level of training or experience.**
  - **This is not ‘hacking back’, but it is a response.**
- **The psychological underpinning of each cyber deception influence model reflects attackers’ behavioral responses.**
  - **Communication incorporating those underpinnings can effectively signal or display these cyber deception influence models in most contexts.**
  - **It costs little, too.**

Discussion

- **These cyber deception influence models can practically or instrumentally augment any existing deception infrastructure and network defense enterprise practices.**
  - **These influence models also reflect operational research into effective deception online.**
- **Even in the absence of any deception COTS or deception infrastructure, cyber deception influence models can still misdirect or deter attackers.**

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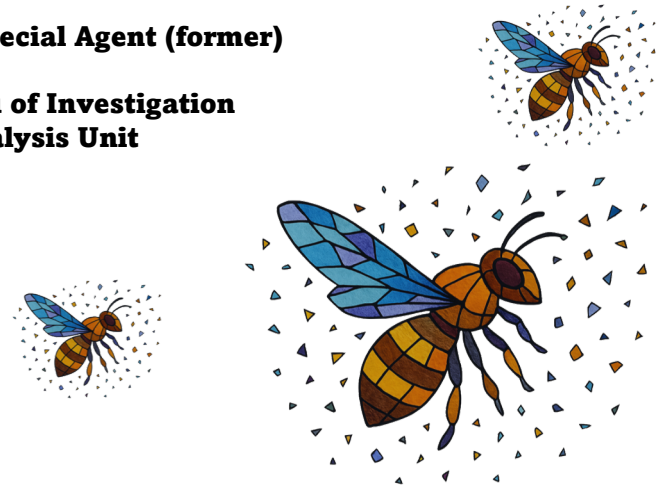

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