**Jonah Spector — Journal 5 (total: 45 min. read):**

I highly recommend watching The Matrix. Out of everything, I would say it’s my favorite movie of all time. The new pencil did not help much with my handwriting, so I’ll just print this. I’ll try to improve it at some point. Supposedly, the tip (0.5mm lead) rotates routinely as you write to prevent a dull edge, but I think I write too italic for that to work properly. All of the digitized writing is on this document: tinyurl.com/ye24ywva

This is a revised version of the copy from the notebook (ch. 1): plot issues are mostly resolved, and imagery is more consistently detailed throughout. The fundamentals of how the Network works and how the Cipher works on top of it are constructed here, although reality is still not explored much. Skip past the exposition to the story (p. 11) if you would like. Having this as an assignment, although with low requirements, makes me do this more consistently. Hopefully, something will come of it.

I worked on the exposition largely until Wednesday (until forcing myself to take a break from it and actually writing something based off it), then I just started writing ch. 1 based on that world without having everything figured out, which hopefully will be more productive in developing the world further (by telling stories in it first to build it up). The chapters are really just short stories right now. I haven’t checked the non-narrative exposition for errors fully yet either. Font and margins small to reduce pages to print (limit of 8 double-sided at library). Nothing has been fully checked for grammar or spelling, and it’s probably very rambly.

The Cipherists, Anti-Cipherists, Dataists, Anti-Dataists, Networkists, etc. (more to be added) all allow the reader to identify with a certain part of the story, which will make it more engaging overall; it’ll be the classic “no good sides” story I think, but the ideology of the Dataists is of course the most in line with the modern open-source movement, although militarized.

**Non-Narrative Exposition (up-to-date, 20 min. read):**

(1) **The Network:** Constructed around 200 years ago, it is the modern interface by which people interact with the infrastructure of the internet, itself around 1000 years old. Using the internet as a base, the protocol is built on top of a special data-transfering distributed program, eventually forming a global ad hoc network. The sum total of humanities knowledge gathered prior to 100 years ago—including patented, top-secret, censored, pay-walled, or otherwise restricted information and data—has been available, distributed, and free to everyone since the Great Data War 100 years ago.

Other than data-centers (which only bounce data from hosts to signals, at servers or otherwise), servers allow signals to interact with each other in a unified environment. Those not using the servers can do other things of course, like private crypt-rooms, although the mental load on all participants for operating a peer-to-peer crypt-room outside of a server is extreme, and often only superficial for adding security. Servers often take up entire rooms, or have multiple load-sharing locations spread out; but individuals often only have low powered consumer equipment, which is not designed to handle as much as servers, even though servers have a larger number of signals to process. The host capacity of servers is the maximum number of hosts that can connect to form a signal on the server without exceeding computational power.

To mono-signals, connecting is completely immersive and indistinguishable from reality. Most environments mirror reality, but there is no limit to what can be constructed on the Network beyond what the human mind can withstand. People with the capacity to simultaneously be conscious and control both their signal on the Network, and body outside it are referred to as double-signals. Seemingly by the Adam Task, only few are granted this ability. To those without the gift, the feeling is indescribable to mono-signals: imagine yourself in a morning dream almost awake, in between unconsciousness and consciousness; and extend that to as if that dream were lucid, and as if you were not just beginning to awake in bed, but were mobile in reality. Double-signals can also fully immerse themselves in the Network like mono-signals giving up control of their actual body for more immersion whenever they want. They have existed since the foundation of the Network and initiation of the Adam Task making up around 5 percent of the Network. Being pulled out of the Network is not like The Matrix where you just die, nothing happens, and double-signals have the capacity to pull themselves out if needed.

People experienced and skillful in connecting to the Network and its many servers, overclocking their neural-modems, etc. are referred to as Networkists, equivalent to hackers today. Of Red Squad, three are Networkists (Elliot, Manoj, and Anita), and three have other delegations (Rafael, Jordan, and Habib).

(1.1) **Hosts and signals:** The host is a term used to refer to the neural-interface input and output which data-centers lock on to when sending the host (the raw essence of a user on the Network) to be realized as a signal elsewhere, not necessarily coming from the actual mind who exists as its signal on the Network. Each host has one and only one signal, therefore the signal is the presence of the host (not a user’s mind) on the Network. Users can use each other's hosts (physical connecting bodies) to connect and form their signal, basically using the other user as a proxy to form their signal. (They can also use their own body to form the host, which is more popular). So, any action taken against a host over the network does not necessarily affect the user behind the signal. If a person’s signal is traced to a host, depending on the security of the user behind that host, it can be manipulated and even killed (host termination) over the Network, since the nervous system is directly connected to the Network, and is therefore vulnerable.

(1.2) **The Cipher:** A global network of volunteers (normally 10 million-or-so daily users) using the Cipher Protocol. Formed during the Great Data War 100 years ago, each user on the Cipher volunteers their own host as a proxy for another user, randomly chosen for each session, and they themselves use another user’s host to connect and form their signal. Since the beginning of the Network, with some effort, tracing a signal’s host (un-proxied) was easy, regardless of whether or not it could be attacked effectively over the Network. But the Cipher makes it so that the host, if revealed, is not the signal’s actual user, but their proxy; and yet the user is a proxy and has a proxy on the Cipher, so finding a signal’s actual host is impossible. The proxy host of a signal can, of course, still be attacked over the Network, but it won’t affect the signal’s actual human user.

If a Cipherist relieves where they live or similar, then they can be assaulted in reality. Cipherists can also “reveal” themselves as people they are not, to trick people into attacking them instead of themselves. Attacking in reality is normally easier than trying to find their host—used as a proxy by someone else—and attacking it over the Network. During the Great Data War, this is how and why fighting moved from the Network to reality with the formation of the Cipher.

Because of this distribution of risk across a pool of people, the chance of any one signal having their host terminated is the same as the pool’s average rate: 0.1 percent, yearly (when the story begins, during times of conflict and peace the rate varies). If a user knows that their risk of host termination is higher than the Cipher average, using it will be beneficial as the risk of host termination decreases to the Cipher’s average. Even if during your session your proxy host is killed, you can start a new session with an identical signal immediately, as long as your own host is given to the Cipher. Whenever an odd number of users are on the Cipher, you will be put in a queue of length one until another joins or someone disconnects (this wait time is never more than a second). Latency is increased slightly by a few milliseconds, which causes some discomfort and it discourages the use of the Cipher. Sometimes it is easier to find the location of the person behind a signal on the Cipher without finding where their host is on the Network, than it is to actually find the signal the host is producing for someone else on the Cipher, and attack the host directly over the Network.

(1.2.1) **Cipherists:** People who swear by the use of the Cipher, and never connect to the Network without it; they disdain people who connect with their actual hosts. Both Elliot and Manoj consider themselves Cipherists, as they have never once used the Network without it. Anti-Cipherists believe that connecting is heretical because you sell your soul to the Cipher, putting your life in its hands. Anita, the third Networkist in the group, prefers connecting with her actual host as she is disturbed by the Cipher; but she still uses it occasionally.

(1.3) **Neural-interfaces:** A intricate system of wires connecting the nervous system to a single digital input and output port, located at the base of the skull. The old narrative exposition below describes this in more detail, although it is probably one of only a few things from the narrative exposition that I’ll keep (not including handwritten narrative first-person content, which itself is quite outdated, but a few things will remain from that I bet):

…Neural-interfaces are installed in the womb, as doing so later on in life with a less plastic brain isn’t possible as far as people know [this is why some people are “un-interfaced”, like Rafael, whose parents lived in Herresh, a refugee camp formed after the Great Data War, poverty stricken for a century]. The interface needs to be exposed to each unique nervous system since birth to make sure signals are handled properly. Their installation in the womb is standardized, at least one pin per hundred neurons—including the spine and peripheral nervous system, or less if one can afford it. Each pin is coated in a special substance to trick neurons into constructing connecting synapses. These coerced synapses also connect to each pin’s tubule for chemical neurotransmission.

A few dozen small autonomous spider-like robots bury into the womb, although if the birther has their own neural-interface, all feeling in the area can easily be disabled. The robots then incase the fetus completely. Each robot locks itself onto the creature, anchoring using bone and flesh to make sure the process takes place in a stable environment. Billions of pins thinner than a micrometer are pulled out of the robots’ stores and inserted delicately through the skin. The heads of these pins are slightly larger—around five micrometers—and they guide the pins into positions with their pre-programmed route. Only minor corrections are made on the journey by its onboard “computer”, if you could call it one, since it is little more than a single artificially engineered cell with cilia and a biological instruction set. The patient is to remain perfectly still during the procedure, which lasts around five-or-so minutes. Once the pins are in position, the heads self-destruct and the coating on the ends begins its work. The organic polymers of the pins are produced by most cells in the human body, so the coating serves to repair and maintain the pins’ position by tricking cells into maintaining the pins’ structures. When the coating runs out and the pin begins to drift, more can be sent down the tubule to the end. Neurotransmission only occurs at the end of each pin where the head dissolves, so only the end needs to be secured in place.

The pin roots, still attached to the robots, are connected to a single conductive wire—which runs down the spine and to the base of the brain, with each tubule expanding to a small reservoir connected to a few main reservoirs for replenishment. When more fluid is needed, it is injected using a syringe into the reservoirs which have self-healing walls. The same process is used for the separate supplementary eye reservoirs [this is part of the neural-vision idea, which I don’t know if I’ll keep]. Prior to insertion, each pin is designed to only respond to certain frequencies, with pins close to each other having similar but different frequencies. Therefore, all pins connect to the same cable, with frequencies being modulated on the cable to control specific pins. Pins are made of extremely high-strength materials, but the cable is normally just made of copper or some other cheap metal encased in silicone as it runs down the back. It is around a millimeter in size as opposed to the micrometer-sized pins. The cable—with small tubes for each fluid, gates at each pin tubule—and all the reservoirs fit in the back of the neck taking up only a few cubic centimeters; the cable leaves the body at the base of the skull. It is small (no more than the size of an average consumer cable port), and to accommodate for the user, the port is female. Only one signal [not to be confused with Network signals]—split into many frequencies—is passed in, and on a different set of frequencies the signal is read out again. The cable port is circular and around a centimeter in diameter with a small metal rim; it receives a small coax-like cable for connection.

Unmentioned and widely unpopular despite its functionality, is the use of neural-interfaces in human–machine interaction [outside and independent of the Network]. Plenty of devices can interact with neural-interfaces however, and their military application is obvious. Jets and other high performance vehicles are almost required to have support for piloting via neural-interfaces, otherwise their competitive statuses would plummet quickly. In spaceflight, neural-interfaces are often used to put the user in a coma during interplanetary voyages, or on ice (dead) for interstellar missions. As long as the position and health of the neurons is preserved on a journey when the pilot is put on ice, if the neural activity was recorded at the instant before the body was killed but preserved, these pins may be able to stimulate the exact same activity once the body is unfrozen. Of course, this has never actually worked, but that hasn’t stopped humans from damning their own kind to the void in hopes of fulfilling their colonial ambitions. Furthermore, the dreams of immortality held by the few are likewise fruitless…

(1.4) **Neural-modem** (adapted from the old narrative): These devices handle the input and output of the neural-interface (connecting via the port on the user’s head, or elsewhere) using a unique digital–analog codec. Varying in computational power, they can be stand-alone stationary devices, or portable ones which connect to the internet over ancient wireless networks (and possibly the Network, although portable Network-compatible neural-modems are pretty expensive), which themselves are often slower than an at-home wired connection. Some don’t connect to the Network at all, and some fit flush with one’s back, filling the port and preventing plug-jacking, while also providing limited capabilities like displaying weather updates or texts (which function without the Network over the internet, using ancient encryption and other protocols). Rubber plugs exist to completely disconnect one’s neural-interface from any computer, and some people weld metal plugs in, permanently disabling the neural-interface (people justify installation of neural-interfaces at birth because of the ability people have to just weld the connection shut). Some use a wire to extend to the user’s backpack or similar for a more powerful portable setup.

People also have the option to reroute the connector to anywhere on their body, such as their wrist or the palms of their hands. Multiple connection points can be installed as well, although only one can be used at a time—with the others often just plugged up when not in use. These can be decorated (like tattoos) or blended into the person's skin color. However, all interfaced humans have the standard port at the base of their head, which offers no real advantage.

(1.5) **Host termination:** By gaining access to the neural-interface via a already installed neural-modem or via plug-jacking, certain signals can be sent down the neural-interface’s pins in order to interrupt normal brain activity, and if the signals are able to completely stop brain activity, the person will die. Some people with high powered neural-modems overclock their neural-interfaces to a higher voltage, and so when their host gets terminated, they “fry”, colloquially: nerves catch fire and the whole body may be engulfed in flames depending on the level of overclocking.

(1.6) **Plug-jacking:** Placing a malicious neural-modem into any port on someone without their permission. Thought patterns and memories can be accessed without the person’s knowledge, and they can fry the person whenever as well. Normally, a person’s thought patterns and memories are protected when connecting to the Network, but if direct access over the Network over via neural-modem, then exfiltration is easy. To protect against plug-jacking or exfiltration over the Network (but not to protect against host termination), many people install encryption suites in dedicated, welded ports. These work by manipulating the engram formation pattern and general brain activity through a cipher pattern, and by ensuring neurons behave in a certain way as to understand the ciphertext.

With an encryption suite, neural-modems can’t access the neural-interface plaintext, and therefore have no understandable output. To authorize neural-modems to have the datakeys from the encryption suite, you basically just have to think of giving the datakeys to the neural-modems, so it’s not torture-proof, but you can use memory management suites (software only) to delete sensitive memories. Memory management suites are described in the narrative exposition, but they will definitely be revised. Memories can be digitized, sent over the Network or internet, cataloged, etc. The narrative exposition also describes what “neurons” (films) are: basically just recordings of senses, feelings, vision, sound, etc. at a certain detail level to be distributed for entertainment or otherwise. Depending on the detail level, seconds can be anywhere from a megabyte to terabyte.

(1.7) **The Adam Task:** The pioneers of the Network realized the need for a universal template for hosts’ signals to construct themselves from and connect to the Network. Its distribution is decentralized across each instance on the Network, and its function is referred to as the Adam Task. Revered by the users, it resides in every signal, and yet exists as one unified process. Devolution of the masses has led to worship of the Adam Task, and Her prophets, those given certain capacities on the Network, supposedly. This will likely be explored in more detail later in the story as some kind of interesting entity on the Network.

(1.8) **crypt-room:** A protocol to enable encrypted communication over the Network. Rooms are constructed, and only those with valid keys—shared using ancient key-exchange protocols, akin to the modern Diffe-Helman scheme—can access it. Without the valid keys, entering the room is like entering into a dense fog of 3-dimensional digital static, flickering rapidly. People with valid keys in the room will be able to see the intruders stumbling around aimlessly blind, but can only deal with them to the extent they can deal with them outside a crypt-room on a server. Private crypt-rooms without any possibility of intrusion can be constructed peer-to-peer, but the mental load without the computational assistance of servers is extreme.

(1.9) **Programs:** Equivalent to enchantments and spells. Some are rare or hard to find a copy of, which depending on the source may be redistributable, although ancient DRMs (digital reuse mediators, a parody of digital rights management) often make copying the source difficult or impossible. These ancient programs may have limits to how many times they can be used or other restrictions (built into their DRM, if they have one). Programs include protocols like crypt-room, which is redistributable and modern, updated often. Programs can be used to put people on the Network (not to be confused with Networkists, who are described as such because of their skill on the Network) into specially designed environments intended to entertain them (not to be confused with “neurons”, which are just mental recordings of events), hurt them, kill them, assist them: by acting as a digital assistant, route guide, video and voice calling on the Network from sources outside it, etc.; attempt to break past hosts’ security, to trace hosts from non-Cipher signals, etc.

(1.10) **AI and other “future” technologies:** Today, we have ChatGPT, Midjourney, etc., which in a thousand years will definitely be on another level. This also includes quantum computers and post-quantum cryptography, which has been standard for a thousand years since basically today in time, so quantum computers will not be a major plot element. I don’t yet know how AI will work into the story, and a lot of the tech seems near-future and not a thousand years out.

(2.1) **The Great Data War:** Originally it began as petty disputes over data, data-centers, servers, etc. being denied access over the Network by nation-states, corporations, etc. (called the Anti-Dataists) under the pretext of protecting their interests. This also included the fact that the majority of the Network at the time (meaning the data-centers and servers) was under the control of these nation-states and corporations. These disputes have lasted since the beginning of the Network, but the formation of the Cipher gave both sides a valuable weapon, which also moved the fighting from not just the Network, but to reality, since the Cipher basically prevents targeted host termination over the Network. Rebels slowly grew resentful and began exfiltrating exabytes of data and taking over servers and other Network components using the newly formed Cipher to conceal their operations, which allowed them to operate without their known high risk of host termination. When the Cipher formed, millions joined immediately, including millions of civilians, often coerced to join by warring parties to increase the chance of a host termination on the Cipher being a civilian—to discourage host termination in general on the Cipher. As fighting over the Network intensified, massive popular movements (including some nation-states, although few) formed to retaliate against the corporations and nation-states. As these popular movements grew out of resentment coming from the Network, millions of people (Dataists) began arming themselves, organizing, and fighting against the Anti-Dataists, eventually leading to global conflict. Millions died in the fighting, and millions more were displaced after the Sixty Minute Exchange, the end of the Great Data War, where most of Europe was glassed by corporate and national ICBMs, and impoverished atomic bombs—over 100 million died in the initial blasts, killing much of Europe. A compromise was made at the end of the Great Data War between the corporations and the Dataists were all data would be made free and accessible, where servers and other infrastructure would still remain largely in the hands of the Anti-Dataists.

(2.2) **The Second Data War:** An upcoming war in the story, yet to be explored and developed. It will likely involve Red Squad, but beyond that I don’t know. I need to work on ch. 1 to establish the setting, characters, etc. at a basic level first.

(2.2.1) **Red Squad:** Elliot’s team alongside all the characters listed in the non-narrative character exposition. Mostly intended to be cool, an ensemble of members. A non-governmental and non-corporate organization which specializes in finding users on the Cipher (unmasking Cipher users). Clients include corporations, governments, and private individuals. Later to become paramilitarized for the Second Data War. Out of all the groups in Kernel, they are the most skillful and respected. The group’s headquarters moves routinely to avoid discovery, primarily near data-centers for low latency (data-centers connect to each other with massive fiber optic arrays), which helps with the added latency of the Cipher. Around a decade ago, Rafael based Red Squad (originally from Poland, later flattened) after his great-grandfather’s squad of the same name, who after his actions during the Great Data War, decided to leave his children and children’s children without neural-interfaces, not that their refugee status gave them much money to anyway; it originated in the Great Data War as a terrorist cell of extreme Dataists, which ended operations promptly afterwards. The name of Red Squad is revered by many devote Dataists of Kernel and elsewhere after its actions during the Great Data War, where its improvised nuclear bombs destroyed many corporate military establishments during the Sixty Minute Exchange.

(2.3) **Kernel:** An autonomous international city-state located in the desert—formed at the same time as the Network—where the original processes of the Network began operation. The desert in the 4th millennium is much cooler than now (but still as dry and void of clouds), following humanity’s tackling of climate change around 700 years ago. The climate is horribly dusty and crowded. The growing Network needed huge amounts of power, which a vast expanse of solar panels across the desert provided. Solar is cheap in comparison to most other power generation methods of the 4th millennium, and so a brightly lit desert is perfect for the exawatts of power needed to run the original burgeoning infrastructure. Water is desalinated and pumped from the Mediterranean Sea, and all food and resources are imported with financing coming from Network development. Desalination plants are constructed using massive mirror arrays (kilometers in size) fashioned from the sand of the desert; they also produce power on their own from the generated steam. Imported food is often low-quality, so many use hydroponics to grow fresher food. The currency is called a “dit” or “dits”, 1000 dits is around one dollar.

Latency is low and the host capacity is high; the highest computational power in the world resides here. High-grade infrastructure is developed, tested, and put into effect here before most other parts of the world. Since its formation, its growth has outpaced all other cities, eventually leading to a population of over 50 million people with a population density of around 5,000 per square kilometer (as to accommodate for scarce resources, and to maximize the efficiency of water usage by reducing surface area and therefore evaporation). Many dwellings are built underground in the cooler subterranean realm of Kernel, but most computers use ultra-high-temperature superconductors, and therefore operate ignoring high temperatures (at 300 degrees celsius or more). So, large industrial server rooms are inaccessible due to their scorching heat, enough to roast most humans.

It is split into 26 districts[[1]](#footnote-0): (1) Herresh: an impoverished century old refugee camp formed during the Great Data War, now a proper urban locale with around a million inhabitants. The citizens are mostly Anti-Dataists and Anti-Cipherists, blaming Dataists and the Cipher for causing the Sixty Minute Exchange. (2) Kanto: the first and largest district with 5 million inhabitants. The city’s center resides here with towering skyscrapers. Citizens here are Dataists and Cipherists. (3) … to be created when they are actually needed.

(2.3.1) **Kernelese (and other languages):** A creole of English, Neo-Arabic, Sinitic languages, Indian languages, European languages, etc. developed since the beginning of the Network in Kernel as well as over the Network itself. English has been preserved over a 1000 years as an unchanging standard lingua franca (also an excuse to write dialogue in modern English even though the story is around 1000 years in the future). Neo-Arabic is the modern descendant of Egyptian Arabic and many other varieties as Arabic unified over time into a more centralized standard language independent of more biblical and literary varieties like ancient Modern Standard Arabic.

(2.4) **Climate Change:** Solved 700 years ago by the defunct United Nations and its mass criminalization of fossil fuel, resulting in the Great Climate War, which resulted in the dissolution of tens of nations and the establishment of the New International Charter to replace the United Nations. The corporations (and their nation-state allies) fought viciously against their opponent nation-states and rebel groups, but eventually they were defeated 700 years ago after less than a decade of fighting. As a compromise to peace, corporations and their nation-state supporters were not disbanded after the war, and have grown only more powerful. The New International Charter has lasted around 700 years, as opposed to around 350 years of United Nations rule. Following the violent abolition of fossil fuels, massive geoengineering projects were undertaken to undo the last 500 years of degradation. As a result, global temperatures have stabilized, and weather has normalized.

**Non-Narrative Character Exposition (up-to-date, 3 min. read):**

| First | Last | Sex | Age | Ethnicity | Height | Size | Double-signal? |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Elliot | Fetterman | M | 25 | American | 5ft 7in | Average | Yes |
| Rafael | Bosak | M | 30 | Polish | 6ft 1in | Average | No (un-interfaced) |
| Manoj | Ramanathan | M | 20 | Indian | 5ft 10in | Lanky | No |
| Anita | Signh | F | 19 | Indian | - | - | Yes |
| Jordan | Hayes | F | 23 | American | - | - | No |
| Habib | Khalil | M | 27 | Moroccan | 5ft 11in | Muscular | No |

Elliot Fetterman: Looks similar to Adrain Grenier[[2]](#footnote-1): black, unstyled, matte dry, medium length hair; stubbly, rough-but-rounded, slightly-wide face; blue eyes; tanned; slightly thick eyebrows. Speaks: English, Neo-Arabic, Kernelese; raised in America, moved to Kernel at 22 at the behest of Rafael, leader of Red Squad, to expand operations with Red Squad, which all the characters listed here are in. A skilled double-signal; mentor of Anita. He is outgoing, sly, and charismatic, not serious in any regard; his focus is not always full during missions, something possibly attributed to the dream-like process of double-signals. Possibly the initial narrator, although I’m not sure if I should switch between characters to tell the story in the first person, or if it should be in the third person.

Rafael Bosak (the most fleshed out so far I think): Looks very much like a younger Grigori Perelman: long, messy, frizzy, slightly balding, dark brown hair; very thick eyebrows, faint unibrow; blue eyes; slightly unkempt, medium-short length full beard; not tan or pale, white. Born in Herresh around 70 years after the Great Data War, his grandparents fled Poland as children after the Sixty Minute Exchange, partly caused by his great-grandfather, Aleks Bosak. He is un-interfaced given his great-grandfather's wishes, and more because of Herresh’s impoverishment. However, he is a skilled un-interfaced Networkist, who knows all there is to know about the Network, but can’t use it himself. He considers himself a Dataist (nostalgic for the Dataists of the Great Data War, which caused his resurrection of Red Squad), something his great-grandfather gave up at the end of the war, vowing never to have such violence repeat. He is serious and cold, overly to the other members of the squad. Out of everyone, he is the most knowledgeable and skillful with computers, having dedicated himself to learning everything he could via the internet and its ancient texts (kind of forced for the plot, but people cannot download skills into their minds over the Network like in The Matrix as effectively as if they actual put in the work to learn it themselves). He resents his parents for not giving him a neural-interface (his parents lack them too), as so the rest follows.

Manoj Ramanathan: (Appearance to be described later, not important). Born in Kernel (in some undecided district), a young Networkist, second newest member to Red Squad, who often stays in-Network for weeks at a time. He writes and maintains some popular programs including quick-crypt, which is a lightweight version of crypt-room which only renders signals and not an environment to fill up the crypt-room (meaning it is easier for people to run peer-to-peer). He is irritable and obsessive about things, often forgetting himself at times; he’s not introverted, but eccentric.

Anita Signh[[3]](#footnote-2): (Appearance to be described later, not important). The newest member of the squad, and only other double-signal, she was born in Kernel (in some undecided district). More skillful (focused) than Elliot, although hesitant and introverted. Comic relief character?

Jordan Hayes: (Appearance to be described later, not important). The team’s negotiator and spy, similar to Elliot. Corporate sleeper agent (for Red Squad or corporations)?

Habib Khalil: (Appearance to be described later, not important). The team’s shooter, he assists with real world operations.

**Narrative Exposition (outdated, 14 min. read):**

In this day and age, people consider themselves blessed by their mechanical eyes. The average set is within the average means, and so, onto every newborn—as if it were circumcision—a set is weaved. The intricate machinery of installation takes no more than a minute to gift a person with their new eyes. The apparatus is placed on each head with vice grip pressure; metal bands circle right above the ears. Connected are two flat metal rings which slope off from the metal bands smoothly. They each hover over an eye with the same profile as the metal bands; the mandibles reside on its edge, each with a mind of its own, each pulsating on its own clocks. The violence of extraction is short lived: each eye is drained of its fluid via a large extendable syringe attached with a tripod to the ring. Tubes run from the end of each syringe to a small flask placed on either side of the patient. The mandibles handle the remaining flesh quickly cutting it, with a few hoisting the trimmings out of the socket. As they are trimmed, the nerves are handled with extra care, and after completion, the careful dance of each wire follows. Hundreds of mandibles sever nerves and stitch them to millions of wires, each with an attached tubule for the transmission of miscellaneous fluids. Busying away, they have a pleasant clicking sound like metallic raindrops. Finally, the wires are quickly soldered by the mandibles onto the back of the new eyes as they descend into the socket. Lubrication follows: a sticky fluid is pumped under each eyelid by an operator, and the body is forced to accept the new eyes through careful manipulation and calibration of the fluid prior to its injection. Furthermore, the eyes are carefully designed to have the same size and pressure as the original, so the muscles don’t take long to adapt. Since the operation is often performed on newborns, the backplate of each eye is removable so the eyes can be swapped out when needed, although the back plate cannot. Thus the process is complete, the new eyes swivel limply for a few seconds before the muscles and nerve endings are reactivated.

The pupils of each eye are false, a camera resides on the inside, usually surrounded by mineral oil. Colors and the design can be customized to personal preference, but the first set is designed to look identical to the original eyes. With such powerful sensors, most eyes record with over a hundred million pixels, and thousands of captures each second. The eyes can switch between high capture rate and high resolution at the behest of the user: at higher resolutions, the extra captures are interlaced with previous captures to produce a better image, reducing the number of captures while improving each image. Small refillable reservoirs of chemicals reside in the back of the eyes for transmission down any tubule whenever necessary. Lenses also allow the user to zoom to different magnifications, as well as see in other light spectrums, mostly infrared. But, the biggest use case of these machines—colloquially called “neural-vision”—is their ability to work in tandem with a “neural-interface”, which connects to the spine and brain. Neural-interfaces are installed in the womb, as doing so later on in life with a less plastic brain isn’t possible as far as people know [this is why some people are “un-interfaced”]. The interface needs to be exposed to each unique nervous system since birth to make sure signals are handled properly. Their installation in the womb is standardized, at least one pin per hundred neurons—including the spine and peripheral nervous system, or less if one can afford it. Each pin is coated in a special substance to trick neurons into constructing connecting synapses. These coerced synapses also connect to each pin’s tubule for chemical neurotransmission.

A few dozen small autonomous spider-like robots bury into the womb, although if the birther has their own neural-interface, all feeling in the area can easily be disabled. The robots then incase the fetus completely. Each robot locks itself onto the creature, anchoring using bone and flesh to make sure the process takes place in a stable environment. Billions of pins thinner than a micrometer are pulled out of the robots’ stores and inserted delicately through the skin. The heads of these pins are slightly larger—around five micrometers—and they guide the pins into positions with their pre-programmed route. Only minor corrections are made on the journey by its onboard “computer”, if you could call it one, since it is little more than a single artificially engineered cell with cilia and a biological instruction set. The patient is to remain perfectly still during the procedure, which lasts around five-or-so minutes. Once the pins are in position, the heads self-destruct and the coating on the ends begins its work. The organic polymers of the pins are produced by most cells in the human body, so the coating serves to repair and maintain the pins’ position by tricking cells into maintaining the pins’ structures. When the coating runs out and the pin begins to drift, more can be sent down the tubule to the end. Neurotransmission only occurs at the end of each pin where the head dissolves, so only the end needs to be secured in place.

The pin roots, still attached to the robots, are connected to a single conductive wire—which runs down the spine and to the base of the brain, with each tubule expanding to a small reservoir connected to a few main reservoirs for replenishment. When more fluid is needed, it is injected using a syringe into the reservoirs which have self-healing walls. The same process is used for the separate supplementary eye reservoirs. Prior to insertion, each pin is designed to only respond to certain frequencies, with pins close to each other having similar but different frequencies. Therefore, all pins connect to the same cable, with frequencies being modulated on the cable to control specific pins. Pins are made of extremely high-strength materials, but the cable is normally just made of copper or some other cheap metal encased in silicone as it runs down the back. It is around a millimeter in size as opposed to the micrometer-sized pins. The cable—with small tubes for each fluid, gates at each pin tubule—and all the reservoirs fit in the back of the neck taking up only a few cubic centimeters; the cable leaves the body at the base of the skull. It is small (no more than the size of an average consumer cable port), and to accommodate for the user, the port is female. Only one signal [not to be confused with Network signals]—split into many frequencies—is passed in, and on a different set of frequencies the signal is read out again. The cable port is circular and around a centimeter in diameter with a small metal rim; it receives a small coax-like cable for connection.

Unmentioned and widely unpopular despite its functionality, is the use of neural-interfaces in human–machine interaction [outside and independent of the Network]. Plenty of devices can interact with neural-interfaces however, and their military application is obvious. Jets and other high performance vehicles are almost required to have support for piloting via neural-interfaces, otherwise their competitive statuses would plummet quickly. In spaceflight, neural-interfaces are often used to put the user in a coma during interplanetary voyages, or on ice (dead) for interstellar missions. As long as the position and health of the neurons is preserved on a journey when the pilot is put on ice, if the neural activity was recorded at the instant before the body was killed but preserved, these pins may be able to stimulate the exact same activity once the body is unfrozen. Of course, this has never actually worked, but that hasn’t stopped humans from damning their own kind to the void in hopes of fulfilling their colonial ambitions. Furthermore, the dreams of immortality held by the few are likewise fruitless.

Unlike the actual neural-interface, a neural-engine can be replaced whenever, or entirely avoided. People often call the neural-engine the “neural-interface”, even though they’re different. Neural-engines can be swapped out whenever by just unplugging one and plugging another in, but they should be turned off during this swap to avoid any issues. People often use different neural-engines for different things: low-powered ones can fit flush to a person’s back, even blending in with a person’s skin color or hosting elaborate designs; high-powered stationary setups that take up entire rooms can give users more power for whatever use they may have; group-use neural-engines have multiple ports to connect users to each other's minds with low latency; hidden ultra-low power neural-engines which fit into the actual plug flush against a person’s back, although these are mostly used to protect against any person trying to connect something to your cable port (“plug-jacking” done by “plug-jackers”). These ultra-low power neural-engines normally can’t do more than overlay a task list or what the weather is in your vision space. Neural-vision, and most other standard sensory replacements work without external software, but with the addition of a neural-engine and a neural-interface, the output can be modified however the user wants by simply passing the output directly into individual specialized pins for processing. This is normally already setup if pins are placed in the ocular nerve; the mandibles automatically connect a few of them, and once the new eyes are in position, they will send an initialization signal down the pins to tell the neural-engine that “these pins are in use by me”, or in reality, a high-voltage signal that the body cannot naturally produce, then a binary–analog signal which gives information about the hardware and that it is operational.

Neural-engine software varies in impact from just an overlay in your vision, to complete immersion in another environment. Databanks can be attached externally for mass data storage, such as books and indexes of information. Most neural-engines have at least a few terabytes of storage, but with home setups, it can balloon to hundreds or even thousands of terabytes. Neural-record software also allows you to record your mind, that being the sum total of your experiences, emotions, and sense of the world during the recorded period. Different resolutions can be selected when recording your mental state: at low resolutions, the experience may just feel like a dream, but at high enough resolutions—which often take terabytes per second to record—it’s indistinguishable from reality. This is the modern equivalent to cinema; production houses often buy out huge databanks to record weeks or even years of neural-records, which are normally called “neurons”. These ultra-high-quality neurons often need to be streamed over the network since most people don’t just have a few exabytes of storage sitting around. The playback speed when reliving a neuron can be set to whatever you want, with the experiences in your mind still taking just as long. Many people put themselves into week-long neurons and come out as if just a few seconds passed. Of course, the obvious use of this technology is pornography, and the vast majority of neurons on the network amount to nothing more than this.

It is standard to give a neural-interface to every baby, but it is less standard to install any sensory devices beyond neural-vision. Many other such devices do exist, but the core functionality neural-vision allows for is critical to most modern jobs and education, so it is installed by default. Most modern academies now exclusively use neural-vision overlays for teaching. There is a movement against this, but it is small, and no noticeable movement exists against installing neural-interfaces by default, since they can be disabled by just filling your port with any non-conductive plug, and since they can only be installed in the womb. Overall, artificial enhancements are broken down into two categories: physical and cognitive. These are broken down into further subcategories such as: sensory, memory, endurance, strength, etc. Many people chose to install more invasion physical enhancements: skull, rib, and bones, fitted with reinforced plating and special membranes to allow blood and other fluids to flow; high-performance hearts for increased stamina; synthetic livers, intestines, kidneys, and other digestive organs for aid in processing less-than-high-quality food as well as improving nutrient uptake and retention; artificial neural-audio implants for enhanced hearing. Olfactory enhancements exist, but they are yet to be on par with natural smell. Cognitive enhancements—which often function without the need for a specific neural-engine—are often more popular: “calculator” add-ons to allow a user to do basic math without needing a neural-engine; digital memory storage in the brain to preserve long term memories outside of any system via neural-engine; encryption suites which account for the plaintext nature of unciphered organic memory, often installed with parental consent or at adulthood; organic memory management suites intended to annihilate or recover organic memories; deadman switches with the ability to annihilate digital and organic memories postmortem. Plenty more exist.

Installation of cognitive enhancements is usually the least invasive, and therefore more popular. Since a neural-interface is sure to already be installed, chips—no more than a centimeter in size—are encased in a protective material and “injected” at the base of the neck through a small slit which is opened prior. To best utilize the operation, it is common to get many enhancements at the same time. The chips have their own mobility through their own “spider legs”, which once inside the brain case, go to work positioning the chip onto, or in the brain itself. The legs then split into a few dozen mandibles each for use in finding neural interface pins to disconnect from the main bus and onto the chip, or, if the chip is intended for use alongside a neural-engine and not independent of it (which is rare), a dedicated wire unspools and connects to the neural-engine’s main wire. More physical enhancements often have to be installed by a human operator through actual surgery, like bone plating, which is installed by cutting into the torso and every limb down to the bone, and then pouring molten metal (with its spread contained by small buffers placed on the flesh to either side of the bone) onto them. This has to be repeated from all angles to cover the entire bone, and it often takes days or even weeks to fully install, but the patient can be put into a temporary coma using their neural-interface, so the procedure can go uninterrupted. Organ replacements are likewise quite invasive.

[[4]](#footnote-3)Encryption suites work with both organic and digital memories: for organic memories, the specific engram[[5]](#footnote-4) formation pattern of neurons is manipulated into a cipher pattern. Neurons are manipulated to interact differently with ciphered patterns. Digital memories are, of course, much easier to encrypt, and more secure, as the position of information is lost completely upon encryption, unlike with engrams where the position of neurons can only be ciphered to a limited degree without the information being lost. The highest security available on the market for organic memory encryption is around eighty-five bits of security, which with modern technology would take beyond a responsible time to break anyways, but for digital memories, the security is at minimum two-hundred and fifty-six bits strong, impossible to break by all known theoretical means. Thought patterns and general brain activity are also ciphered by the encryption suite to make mental activity secure, this is less secure then individual memory encryption since it is encrypting the patterns of neurotransmission on the fly, and the attack surface is much larger, that being the entire brain. So, if an adversary were to place a malicious neural-engine into their victim, if they have their organic memory encrypted, without access to the encryption suite (which is not connected to the neural-engine; the user uses it in tandem with the neural-engine as middleware) and the neural-signal, decrypting thoughts and memories is impossible. The encryption suite also stores its datakeys off the neural-interface in a protected chip, but older models do have plenty of vulnerabilities in their security chips, and the datakeys are still accessed—although to volatile storage—by the system when encrypting organic or digital objects.

All humans also have slightly different neural characteristics, often referred to as a whole as the “neural-signal” of a person. This neural-signal is used by encryption suites in lieu of an organic memory password—which, as with all organic memories, is encrypted by the suite already—with the datakeys stored on the security chip. Impersonating another’s neural-signal is incredibly difficult, but possible with enough time to directly access their neural-interface. Another mind can infiltrate their target’s mind and impersonate them to decrypt their engram pattern and steal their memories, but, even with the neural-signal, if the target is secure enough, infiltrating their system in the first place may prove to be even more difficult. There is really no exfiltration proof way of storing information, and with enough work, any person’s security can be broken. Many enhancements require special, or even proprietary neural-engine software to function—but many can function (fully or limited) without the use of a neural-engine, such as neural-vision and most cognitive enhancements. Plenty of honeypots have been created by different organizations, but as long as a user sticks to their own homegrown software or software from trusted sources, getting yourself stuck in a honeypot is incredibly difficult.

Besides individual use of neural-engines, people often connect to what is called the “net”: a collection of computers each running an instance of some communication protocol, normally the “network protocol”, which allows for other protocols to run on top of it. Connecting requires a direct line between your neural-engine and the computer serving your local hub—which connects to other hubs and so on eventually forming a global ad hoc network. Plenty of computers have open lines when connecting to hubs to allow other users to interact; this is the main way people use the network. Various social hubs, archives, entertainment and the like exist on these different hubs, the most popular sometimes hosting thousands or even millions of users at a time. Unlike physical connections with group-use neural-engines, hubs have some amount of latency depending on the number of hubs your connection has to connect to on its journey, which when attempting to interact in real time with the environment or other users can definitely break emersion to some degree if you’re deranged enough. Plenty of hubs also let you open datastreams[[6]](#footnote-5) into neurons or other things to give you access to more data than your neural-engine’s maximum capacity.

Various overlay communication protocols exist for different purposes. Some allow two or more users to inhabit the same avatar in a hub, both having their neural-interfaces meshed together—two minds in one body. Others allow you to have a “proxy” avatar—which appears as you or a pseudonym—but is nothing more than a replica intended to protect you from any net-hackers[[7]](#footnote-6) by redirecting their attacks. There are protocols which allow two users to create a “virtual” hub across the network for personal use, such as crypt-room, and many others for secure one-on-one communication outside of hubs. Most importantly, some, like the infamous “Cipher” (which uses its own proxying system), allow users to visit hubs anonymously, with persistent avatars if desired. The implications of Cipher are horrifying to most, and to some, a gamble worth taking: they are the primary motivator behind the usage of the protocol.

**Ch. 1 — The Cipher (revised and expanded, 15 min. read):**

The server room Elliot Fetterman overlooks glows red-hot, the air perturbed by the heat, no light other than blazing heat. An array of computers is sunken down into the ground, slightly, and his view of it is obscured by the reinforced metal framing of a thick acrylic window, tilted overlooking the expanse. Each box flickers, and the whole valley of computers fades into the dark fog of the background.

Elliot and his crew are hunkered down at the moment, preparing for an assignment. One-hundred million dits; in fact, it is the biggest gig in the last three months. He hopes it’s enough for Red Squad to take a much needed break. Manoj Ramanathan and Elliot are in-Network, working on confirming the target’s person one last time. Manoj lays unconscious, elongated by his frame, in a cushioned reclining chair, plugged in from his wrist to his “portable” neural-modem, his favorite one in fact, which in reality weighs three hundred pounds. The tens of unorganized wires protruding from his wrist resemble red muscle fibers. Elliot, on the other hand, has his wireless (although wired in the faraday cage) ten pound neural-modem in a backpack, plugged into the back of his head; he’s refused any enhancements beyond the standard neural-interface. Unlike Manoj, he relaxes sitting on the edge of the window, one leg on it as he looks over the quiet inferno of the data-center’s computers.

Out of the dark, Rafael Bosak reveals himself and begins talking, absentmindedly, “Elliot, get your stuff, let's go; Habib’s your escort, you’ve got the comms with Manoj. He’ll handle the rest on the Network end, don’t keep yourself too deep in now, just enough for him to guide you guys.”

“Alright, nothing’s changed then? All good?”

“Yes. Say your goodbyes to this spot, it’s lovely, we’re gonna move right after this.” He, too, looks out the window at the computers, humming in their splendor. A large cable, with its end splitting to all the Networkists, pierces through a hole in the concrete into a databus running to the data-center’s core. It’s the best connection to the Network possible.

Elliot gets up from the sill and walks over, patting Manoj on the shoulder, before moving towards the door of the maintenance room past Rafael, who looks over the room once more. Provisions litter the place, now long consumed and discarded in the small room. On the stepped concrete floor, two others are busying themselves. Habib awaits at the door as the two others arrive, holding his rifle—an ancient design, single-shot and bolt-action with a lensed scope, no computers or electronics anywhere in it. All three walk into the corporate maintenance hallways of the data-center, one of hundreds throughout Kernel offering low-latency connections to the Network. The hallways are plain gray, concrete, and claustrophobic; dimly lit by faint red LED strips.

As the door closes, Anita Signh wishes good luck to them before she and Jordan Hayes go in-Network to help Manoj, although most everything is already covered. The door closes with an airtight squeal and they lock remotely as Rafael fingers his screen rapidly entering the passcode. After a few minutes walking down the twisting hallways, the three arrive at their tunnel, hidden behind a tarp marked “caution”, surrounded by cones and tape. No one wanders these halls, except maybe every fifty-or-so years. The three are quiet with anticipation, crawling out of the small tunnel to the larger tunnel of Kernel’s sewage system, which resides above most data-centers and servers. Near the tunnel’s exit is a ladder leading out to the street above.

“1021 West Morley, Kanto,” Rafael says, “it’s a forty-five minute drive from here, Manoj’s got him occupied in-Network.” He reaches into his pocket to grab his screen again, unlocking his car and vanguarding the route.

“From all we’ve gathered, he has no enhancements beyond the standard neural-interface, right? An old air-powered shot will do the trick, silent too.” Habib states rhetorically, now in the car’s dusty interior, cleaning his rifle excessively and loading an air-cartridge bullet. The car moves silently, powered by hydrogen, but it vibrates and shows its age nevertheless. It’s make, disintegrated during the Great Data War; it’s model out of production for at least one-hundred years.

“You only get one shot, Habib, make it count. Manoj and Elliot have been working on this for four weeks now.” Rafael says, while waving his hand to the back seat where Habib sits. He drives through the narrow streets of Kanto, where he and the others have been for some weeks.

“Yes yes.” Habib continues cleaning his rifle.

The streets are dusty like the car, and near the outskirts of Kanto, the buildings are short, no more than five stories, all plain and sandy in color[[8]](#footnote-7). Ancient antennas litter the rooftops, and small powered scooters litter shop fronts and residences. Wires criss-cross between buildings, some running underground towards data-centers. Out of all the districts in the city of Kernel, Kanto is the most populous, mostly because of the district’s center where the heart of the city lies. West Morley resides in this core, affluent and glittery.

“You guys should visit Herresh! Kanto basically looks like it nowadays, although we are on the outskirts of the district.” Rafael jokes. He was born in Herresh and was never given a neural-interface before birth. Because of this, he resents his parents, becoming a devout Dataist, even after the actions and against the final wishes of his great-grandfather, Aleks Bosak.

“Don’t go on about your whole spiel about Dataism, Rafael.” Elliot looks out his window to his right and sees some people playing with a ball, seemingly un-interfaced, “Warsaw was glassed a hundred years ago, and the Dataists caused it as far as I’m concerned.” Elliot says this to annoy the ideologue, not actually caring initially.

“Your capacity for nuance amazes me, Elliot,” Rafael says, gripping the wheel tighter, “now, our corporate target you can agree must go, correct?”

“Of course, the rich bozo owns half the Network infrastructure in Kanto; and we’re being paid handsomely anyways. We get to keep the datakeys too, per the contract.”[[9]](#footnote-8) The car pulls around a corner, lit by the dim red glow of the street lights just awakening as the sun sets. “Once we get them, though, we’ll give them *away* per your morality, right? I’d prefer to actually keep them (and I bet everyone else too), but I know you wouldn’t allow that, mister righteous one.”

From the backseat, “And what would you have us do with them, Elliot? Just turn the servers into our personal fief? Of course you would—the consequences of not holding yourself accountable.” Habib shares many views with Rafael, despite not being a Networkist like Elliot and Manoj; and Anita, although she is still a trainee. Rafael and Habib consider themselves Dataists.

“Benevolent dictators.”

“Oh really,” Habib laughs, “so why not just leave it with the other guy, would he not be considered such?”

Elliot continues with conviction this time, going into a spiel about Dataism, ironically, now thinking about how he himself could benefit from consolidation. “No, and we would be able to accomplish a significant amount with complete control: first, with control over the infrastructure exclusively, we could organize expansion projects easily. Just think about where we were, that corporate data-center. Could someone have built that without exclusive control over its datakeys? Most definitely not. Second, who would we even give the datakeys to? Just random people on the Network, over itself; or would we distribute them ourselves in reality. Third, the money we could make with the datakeys we could use to build up the Network, and it would be a lot more than if we just gave them away to random people without the capacity to make that much money.

“Now, tell me what good have the Dataists done in the quest for the liberation of the Network? The Great Data War? A glassed Europe? The data’s already free now, and wasn’t that the primary mission of the Dataists? I can go to any library server and find any text, film, photo, or whatever else instantly and with no restriction per international law formed from your guy’s compromise with the Anti-Dataists, to let them keep control over the infrastructure. Now, tell me what good we’ve done for the Network to hold ourselves with such high regard—so morally righteous?”

Habib continues before Rafael can interject. “The Dataists have always believed in both data freedom and non-corporate control over the Network. You have failed to explain how our control would differ at all from his. What stops him from being so benevolent like you? If we can so easily be as such, then why not try to convince *him* to act as such? No, the idea of a ‘benevolent dictator’ means putting the Network in the hands of someone you *must* trust, and I’d prefer to have it so no one has the capacity to control everything, but of course no matter how much we distribute datakeys and break everything up, people will inevitably consolidate.[[10]](#footnote-9)”

“Yes, so why not consolidate it first ourselves?” As Elliot says this, in the back of his mind, like a morning dream, Manoj tells him to shut up. “Alright, enough talk, Manoj’s harassing me.”

Manoj does not consider himself a Dataist, similar to Elliot and the rest of the crew, but everyone in the crew agrees in regard to the use of the Cipher. The implications of Cipher are horrifying to most, and to some, a gamble worth taking. Regardless, they are the primary motivator behind the usage of the protocol, invented during the advent of the Great Data War in order to protect fighters from host termination over the Network by scrambling their signals’ hosts. An attack on a Cipher user’s host will affect a random person on the Network using the protocol and vice versa. Each participant gives up the host of their neural-interface, that being the interface’s connection to the Network, and uses another’s to connect. Therefore, each uses has a proxy to receive all harm instead of them and they themselves are a proxy.

Going through lower Kanto, as it’s called, Rafael navigates the erratic unmarked streets towards central Kanto, where the target lives. As the car approaches, buildings grow taller and more metallic, chrome and glossy. The silver buildings turn on dim, expansive flood lights for the night. The cacophony of the city grows with the thousands of pedestrians in the city growing nearer. Edges are smoothed and modern, fitting with the uniform silver. Streets expand to multi-lane roads, and they begin to stack themselves, no more than three or four layers though.

To-do: Target has datakeys to Network infrastructure, goal is to extract that too

To-do: Guerilla war—something

*Old unrelated unorganized items below, out-dated.*

The AC of my apartment whirrs with a soft metallic clicking. Something’s surely disconnected from its attachment inside <I need to come back to this in a “losing yourself”—that being the disconnection between the host and the signal, influenced by the use of a proxy host via the Cipher—type motif in the story at some point>. Window blinds are pulled down around the nuisance, itself precariously hanging from a few straps. My window’s split into two small sections with the far-left one hosting the broken AC, and the other one simply not opening. The lights are off, and what little warm light makes it through the window illuminates standing dust in the air. There’s an organic essence to this room in the mornings, something lost most of the day. My apartment’s in one of the biggest population centers in the world, so the cacophony of the city is overwhelming sometimes. Other than that, it’s small, no more than three times the size of my bed—which itself is held aloft by some cables so that it can be folded up against the wall. It has no mattress, just a mat; but I’ve got a nice thick blanket that I cram against the wall and bed mat. It’s very nice to have in the winters, since there’s no heater to speak of. Luckily, I have my own bathroom. It’s little more than a toilet-sink combo and a standing shower, however occasionally there’s hot water. There aren’t really any other amenities, not even laundry. Normally, I just wash my clothes by hand and let it dry next to the AC. Things are haphazardly plopped around, some gather in the corners. There’s a single-seated table placed near the window which is seldom used for eating; the rest of my apartment would horrify even the most ascetic ascetic.

I live in a small building, no more than twenty-or-so inhabitants. The buildings to either side tower over it. All, however, are made of the same cheap gray concrete with various power lines and cables strung about. The alleys between the buildings aren’t wide enough for any car to get through, and normally getting by the mass of people is the most laborious task of the day. The roads, if you could call them that, are little more than dust covered strips of solidified dirt. Likewise, the dust gets kicked up during rush hour to an unbearable degree. Seeing beyond a single block means it’s a clear day. This favela spans a few hundred square miles; I would say at least fifty million people live here, but not one dares attempt a census.

I spend most of my time on the Network connected with my actual host—exposed and utilized by the Cipher. It’s a gamble, but who am I to regard myself as too good for it. Whatever ancient hardware facilitates my escapades, labors nonetheless. At this point I bet the fragment of my signal on the Network is more me than myself, although how would I know without the termination of its source. Regardless, I’ve got to focus right now, the target won’t do my job for me as far as I know.

He’s sitting and reading something on a bench a few meters away from me. The lights here are stale and bright. He’s sitting legs apart hunched over. I’m busying myself looking at some nearby shelves. The books can appear near me on shelves if I wish for some query. Right now, it’s easy enough to just think of history textbooks to make myself blend in. His signal looks like Elvis, mine changes with every connection including my name, although I have certain pseudonyms for use with consistent contacts. Since he always connects with the same signal—and different host each time given that he’s using the Cipher too—tracking him was easy enough. Finding his actual host took no time at all compared to a lot of criminals. Before he started using the Cipher to mask his host, he connected plaintext with the same Elvis-like signal. His old connection habits then were poor, and I managed to find his location easily by asking some of his old friends. Anyways, I need to go confront him while I get the work done.

Walking up on him I see him reading mythology about the internet—a relic of the Network today. I sit on the bench across from him and sit crossing my legs with my hands on my knees. He looks up and then down at his book again.

“Hey!” I say. It’s weird that he’s just here reading, but who knows, it’s not like he has any idea about what’s going on.

“What do you want? I’m busy.” He’s annoyed.

“Oh nothing, I thought I might just meet you on the Network to confirm some things. You’re that famous serial killer right?”

“Hah, good luck finding my host—you won’t, and my signal isn’t much for you to go with”

“You find out the hosts of plaintext users right?”

“Yeah,” I don’t know intend to kill you so go away”

“Why not kill Cipher users? That seems like a much safer method”

“Too hard, and there’s no satisfaction in killing a host you don’t intend.” He finishes his book and gets up; it’s weird talking to him here, but he seems confident that his actual host is protected. I get up too and start walking with him through the shelves, which are of course just aesthetic since queries will find whatever you want instantly.

“How long have you been at this?” I say manifesting <it appears out of nowhere, rendered into environment> a notebook into my hands.

“I don’t know, maybe three or four years. You some kinda journalist? I see that you’re using the Cipher too, so no danger in meeting me. I’d love to give one for the presses, no problem.” He’s definitely overconfident in his abilities and is definitely completely checked out of reality <literally>.

“Certainly, now can you describe how many victims you’ve killed?”

“Fifty give-or-takes, I find most of the one’s with unprotected hosts at bars and the like where the drunkards haven’t a clue as to what’s going on—it’s easy enough to just ask them to show me their actual hosts and then I can get them.” <issue with the plot here, are the bars in the Network or reality? Or both? I don’t know. If it’s in reality, the antagonist would definitely not say anything about their crimes because of the possibility of capture> We continue walking. I scribble his confession real-time. “Normally I use this signal, but other times I’ll use signals tailored to be attractive to whomever.”

“Interesting, now have you any remorse for these actions, or was your motive just the thrill of the hunt?”

“Thrill of the hunt I guess. Once I get these feeble minded hosts to expose themselves, it’s always fun to let some program lose on them and watch the carnage—in the Network of course, I bet they’re just drooling wherever they sit in reality.”

“What kinds of programs do you use?” I look up from my notebook as we approach the reception area.

“Normally just the standard seek-and-kill ones, but there are plenty of pretty awesome ones that I use sometimes.”

“Ok, did you kill Mark Vue? <random name of victim from investigation, there is no justice by trial>”

“Yeah, a few months ago, it was quite fun. He was oblivious to most things and the program I used was fun to watch.”

“Alright nice, now you live down in Texas right?”

“Ha, what do you mean?”

“I mean looking at someone so famous <can’t read what I wrote here mostly>, I’d love to meet you in person.”

“Great plan, come and find me, I won’t mind, if you can, that is, ha ha!” He puts his hands on the back of his head as he walks with me showing no signs of anything. Suddenly he gasps, he knows I’m not playing around.

My hands are holding a knife right up against his throat. His body is limb here <reality>, and his Elvis persona looks nothing like him. He’s confessed everything, so I’d say that I’ve got the go ahead.

“You’re one of those double-signals <can’t think of a word for someone how can exist consciously in Network and reality>, what do you want from me? Please, you’re crazy!”

“I’m not interested in your chump change.” He’s got his arms at his sides as I look at him in the library.

“How’d you even find me out? I’ve always used the protocol, what kinda witchcraft magic is this?” He’s frightened now, and I bet he still thinks there’s a way out.

“You really are terrible that’s all, your Elvis persona here doesn’t really protect you from your past self, which is of course the same person off the protocol.” I still think he’s ready to bargain, but I’m already getting paid plenty and my job’s great. “So anything else you wanna say?”

“Fuck you!” Typical. My knife moves quickly where he sits plugged into the network. His body spasms for a second while going limp in the library. That’s one done for the month, I’ve got three more. <plot issue: killing hosts in reality or over the Network? Why would Elliot go to the serial killer's house?>

Ch. 2 — The Server Room

Ch. 3 — The Adam Task

Ch. 4 — The Second Data War

Running Notes

1. My family always talks about how young-adult fiction always breaks the setting up into “parts”, like the Hunger Games with its districts, Divergent with its factions, etc. [↑](#footnote-ref-0)
2. Something my dad noted recently is that descriptions should not be excessive, referencing Frank Hurbert’s Dune as an example to follow. This is something I definitely should work on, that being: not over describing everything, like everyone’s appearance. [↑](#footnote-ref-1)
3. Rushing the rest of this so I can actually start the story and stop the exposition dump—Wednesday. [↑](#footnote-ref-2)
4. The next two paragraphs make absolutely no sense, I don’t know what I was smoking. [↑](#footnote-ref-3)
5. Engrams: The physical neurons that make up memories. [↑](#footnote-ref-4)
6. Datastreams, datakeys, databanks: cool sounding. [↑](#footnote-ref-5)
7. Find a better “cool sounding” term. [↑](#footnote-ref-6)
8. Expand description? [↑](#footnote-ref-7)
9. This reasoning is faulty as will be revealed later (the client who hired them is just another corporate agent, only interested in consolidation; cliche, but will be expanded into all out war or something novel, I don’t know currently), although I don’t think I’ll have that part done in time. [↑](#footnote-ref-8)
10. This idea may be expanded into a more extreme version of Dataism, were federation is not the goal. [↑](#footnote-ref-9)