

CODE & DAGGER

VOLUME I

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/ROOT/SUDO APT-GET INSTALL CODE_AND_DAGGER
READING PACKAGE LIST... DONE
BUILDING DEPENDENCY TREE
READING STATE INFORMATION... DONE
THE FOLLOWING NEW PACKAGES WILL BE INSTALLED:
    CODE_AND_DAGGER
1 UPGRADED, 1 NEWLY INSTALLED, 0 TO REMOVE AND 0 NOT UPGRADED.
NEED TO GET 1,337 KB OF ARCHIVES.
AFTER THIS OPERATION, 2,017 KB OF ADDITIONAL DISK SPACE WILL BE USED.
DO YOU WANT TO CONTINUE [Y/N]:Y
INSTALLING CODE_AND_DAGGER
TRYING URL 'HTTP://CRYPTORPG.COM/USER-GENERATED-CONTENT.TAR.GZ'
CONTENT TYPE 'APPLICATION/X-GZIP' LENGTH 1337000 BYTES <1337 KB>
OPENED URL
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DOWNLOADED 1337 KB

*INSTALLING *CODE_AND_DAGGER*
**PACKAGE 'CODE_AND_DAGGER' UNPACKED AND MD5 SUMS CHECKED
...DONE.

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CHANGELOG

CHANGELOG

In August of 2016, we held our nose and pushed the “publish” button. Cryptomancer was not without its warts, but it was the best we could do given the constraints we had. The alternative was to remain in development while the real world of cryptography, privacy, and surveillance passed us by. In the first half of 2016, we watched major technology brands defy government demands for encryption keys and built-in backdoors to popular consumer products. We watched a former Attorney General acknowledge that our era’s most loved and loathed leaker of classified data performed a “public service.” With all that was transpiring, we couldn’t sit on the game any longer.

It wouldn’t be long until a community of real-life cryptomancers, fellow nerd-warriors from around the globe, swooped in to make our game better than we could have done ourselves. Code & Dagger is the product of the Cryptomancer Architecture Review Board (CARB), a group of indie-game players and designers who submitted, reviewed, and/or tested new ideas that augment the core game’s rules and setting. The majority of content in this volume was created by or inspired by that group, but modified and/or rewritten by this author to maintain a consistent voice throughout. Individual CARB members are recognized for their contributions in each section of this book.

In Code & Dagger, you’ll find a wide range of new rules and setting materials for Cryptomancer, ranging from the unapologetically gamer-centric (e.g. crypto-gear cyberlimbs, new spells) to the staunchly technical (e.g. financial systems, automated teller machines, and cryptovault hardening). Perhaps most exciting are campaign rules permitting players to take the Risk Eaters head-on and storm the spire. However, the CARB’s work isn’t done. This is just our first volume of Code & Dagger. We hope there will be more and that they will contain your contributions Cryptomancer.

-Chad Walker
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CRYPTO-GEAR PROSTHESIS

OVERVIEW

Crypto-gear prosthesis is the exceedingly rare and exorbitantly expensive synthesis of crypto-gear mechanics and mundane (i.e. non-magical) medicine. Traditional prosthesis such as peg legs, hook hands, glass eyes, and the like have been reliable, if limited, prosthesis for mortals missing organs or limbs due to accident, combat injury, disease, or by chance at birth. Since the advent of the crypto-gear, machinists and medics have dreamed of fusing mortal with machine. However, only recently in the Modern Age have advances in crypto-gear miniaturization and contact cryptomancy (i.e. interacting with a shard without using one's hands) allowed for this dream to become reality. In plain terms, crypto-gear prosthesis is a replacement mechanical limb or organ that is operated by a shard. The patient controls the limb by issuing commands to its embedded control shard, which happens to be making physical contact with the patient's body, often the stump of the limb that has been replaced.

Contact cryptomancy was pioneered by famed dwarven cryptomancer Shylas GodOre. GodOre was stalked by and eventually eaten by the dragon Moxak'azhul after she tricked the one thousand year old beast into giving up its true name. The dragon was quickly subdued by GodOre's comrades and fed a powerful emetic, forcing Moxak'azhul to vomit out the cryptomancer's corpse. When GodOre was "put back together" for resurrection, one of her legs and both of her arms could not be recovered. Refusing to be severed from the Shardscape, GodOre committed to doing the impossible; interacting with a shard by using her foot. Channeling one's will through one's foot is not intuitive. It's the equivalent of a master painter relearning her craft by using a paintbrush between her toes. It requires a rerouting of one's mental pathways, only possible through months or even years of determined practice. Yet, GodOre proved it could be done. When a machinist witnessed her hold a shard with her foot and then contort herself so she could use the stump of an arm to encrypt her messages, the seeds

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tion is complete, the patient is able to subconsciously issue commands in such a rapid and fluid manner, she no longer realizes she is even doing so. She is also able to multi-thread: simultaneously issue commands to two or more crypto-gear prosthesis attached to her body, so long as they are part of the same shardnet.

The crypto-gear clusters inside a crypto-limb work a little differently than a stand-alone crypto-gear. Unlike a crypto-gear, which responds to a single encrypted passphrase to perform a single function, clusters respond to many passphrases, each performing different functions, but all encrypted with a single passphrase. This means that the patient must raise another limb towards the command shard and inject a keyphrase to establish an encrypted session. The crypto-limb will then respond to whatever commands the patient is sending it. Once the session is established, it remains in place unless something happens to tear it down (e.g. the patient goes to sleep, the limb falls off, or she establishes a connection to a different shardnet, etc.). Changing the keyphrase is as easy as pressing a “factory reset” button accessible only by removing the crypto-limb. When this button is pressed, the next clear-text phrase received becomes the new keyphrase.

A patient with a crypto-limb is always connected to its command shard, unless she removes the limb or activates a (hard to reach) mechanism that creates a literal air-gap between her flesh and the command shard (which also severs the patient’s control of the limb). The connection is just as easily reestablished. This mechanism is standard issue in all crypto-limbs because otherwise, any time the patient interacts with another shard, she becomes a bridge between two shardnets. This can be problematic. Remember; an actor forming a bridge can observe the echoes traversing her, but cannot be an active participant. This means she couldn’t send messages to others, let alone send commands to her crypto-limb, even if she wanted to. Not only does the air-gap ensure she can communicate freely, but it also prevents hostile actors on the bridged shardnet from potentially issuing commands to her crypto-limb. Air-gapping crypto-eyes

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MUNDANE SECURITY CONCERNS

Unless a patient purposefully draws attention to her crypto-prosthesis (or has one that defies normal hominid dimensions), it should be considered concealable; that is, not readily apparent on first glance but easily detected by someone making a point to look for it. Prosthesis detected upon pat down are noted, announced to security forces, and monitored intently for sudden moves, but it is in bad taste to ask someone to leave a limb at the door. As a courtesy, however, it is expected that air-gaps be engaged when in discrete company, if only to prevent unwanted external communication. Good security protocols already assume anyone is capable of casting destructive magic or communicating over hidden shard, so trained spellbreakers and echoeater familiars are employed to manage these risks. Crypto-limbs are no different in this sense.

TALENTS

Contact Cryptomancy (2 Talent Points)

An actor is able to listen to and create echoes on shards making contact with any part of her body instead of just her hands. However, she still must raise a flesh-and-blood limb (or a residual limb) towards a shard if she wishes to inject a keyphrase, true name, or soul key for the purposes of encryption. This talent is a requirement before any type of crypto-gear prosthesis can be acquired. Must be acquired at character creation, or acquired during the narrative gap between campaigns.

aging the rules for social networking and gathering leads off camera. Of course, she is keeping her activities secret from the rest of the party, which can manifest in interesting ways. Perhaps she keeps coming back empty-handed when tasked to support the party and it complicates their upcoming operation. Consider another player character secretly tailing her during one of her mystery excursions and getting ensnared in the what should have been a personal drama.

A more dicey method to handle debt is to have the player spy on the party's patron and be assigned side-quests she must achieve during the party's operations. These side-quests might involve stealing precious objects, killing marks, or performing sabotage that is outside of or antithetical to the operation's objectives or rules of engagement. This can create some truly exciting complications for an otherwise straightforward mission.

We encourage GMs and players to design the debt-or faction together, because it is an important backstory and an ongoing relationship for the character in question. All the details of the organization need not be finalized or even shared with the player, but she should have a pretty good idea of who they are and why they agreed to invest significantly in her in the way they did.

Once a debt is paid, the diagnostic shard is handed over to the player, or if she wishes, destroyed utterly. Debtors are rarely foolish enough to renege on the deal. Remember, shardnets are, at the very least, a two way proposition. The patient can leverage cryptomantic spells like Tracer, Shard Scry, Shard Spike, or even Shard Warp to track down and punish those who continue to renegotiate the terms of their contract. They know how dangerous she can be. After all, they built her that way.

/ROOT/CRYPTO-GEAR PROSTHESIS/

RULES AND QUALITIES

Crypto-gear prosthesis are composed of rules and qualities, just like weapons and armor. The following sections describe the various rules and qualities for crypto-gear prosthesis, then provides sample prosthesis composed of rules.

SQL>SELECT * FROM

PROSTHESIS RULES

Prosthesis Rule	Description
Circulatory Stability	The prosthesis strategically managed the patient's blood supply. Mortal wounds are automatically downgraded to critical wounds and the patient is stabilized automatically if she has been reduced to 0 or less HP.
Damage + X	The prosthesis does a number of HP damage equal to the successes of an Unarmed skill check, plus or minus a value (e.g. 1).
Hardened	The prosthesis can be used to parry any type of melee attack, as if it was a shield.
Hardened (Martial Artist)	The prosthesis can be used to parry any type of melee attack, as if it was a shield, so long as the patient has the Martial Artist talent.
Managed	The prosthesis is air-gapped from the patient and managed remotely by a golem. The patient can use shards normally without worrying about the cryptomantic considerations.
Paired	The prosthesis comes as a pair, where each instance has its own command shard, both of which are part of the same shardnet.
Poison Proof	The prosthesis filters the patient's blood, making her immune to the effects of all weak poison, strong poison, truth serum, paralytic poison, and alcoholic intoxication.
Respiratory Redundancy	The prosthesis strategically managed the patient's oxygen supply. The patient can hold her breathe for the duration of a scene.

SQL>SELECT * FROM

PROSTHESIS QUALITIES

Prosthesis Quality	Description
(D)evolved	The prosthesis has a slightly less-than-mortal build: a digitigrade crypto-leg, an elongated crypto-arm, or crypto-eyes with hexagonal pupils.
Doll Parts	The facade of the prosthesis appears delicate or fanciful: an epidermis of soft porcelain, with painted-on palm lines and fingernails; equal parts beautiful and unsettling.
Ghost Sign	The prosthesis harasses the patient with sudden or nagging bouts of pain that appear to be triggered by external events, as if it is trying to tell her something.
Golem Skin	The facade of the prosthesis appears as if it was designed by machines: perfect symmetry, octagonal patterns covering layers of shiny metal chitin, and soft light emanating from seams.
Macabre Graft	The facade of the prosthesis appears grotesque and painful: exposed bone, rusty rivets hold torn strips of flesh to cables of fibrous metal; almost as if the body has rejected the machine.
Message	The prosthesis is embroidered/etched with an encrypted message, which the owner may or may not be able to decrypt.
Noisy	The prosthesis's construction, materials, and accessories make it particularly noticeable: hissing valves, grating clockwork, or the grinding of ball bearings.
Personality	The prosthesis has a tendency of acting on its own, malfunctioning in ways that impede, assist, or annoy its owner.
Precious	The prosthesis is constructed of precious materials and/or adorned with jewels, making it a public badge of affluence and likely coveted by the greedy.
Previous Owner	The prosthesis once belonged to someone else of significance or maybe had many owners over time, changing hands on purpose or by accident. They might even want it back.
Shoddy	The prosthesis appears to be worn down, rusted, chipped, and dull-looking, either the result of extensive use, poor maintenance, or purposeful display of humility.

UPGRADES

Crypto-gear prosthesis can be upgraded with new functionality by anyone with the time, skill, resources, and imagination to do so. Crypto-limbs can be fitted with any number of options, including retractable claws, hidden storage, spanning reach, pop-up crossbows, auto-injecting soma quills, modular hand-attachments, and grappling hooks tethered to hand-turned winches, just to name a few. A crypto-heart could be configured to puncture implanted sacs of healing tincture after trauma, a crypto-lung could be modified to suck in poison gas so it can be belched out offensively later, and a crypto-kidney could be fitted with an external spigot to harvest filtered poisons. Code & Dagger does not and ought not cover all the possibilities here, but will instead provide a few guidelines.

Generally speaking, a single instance of crypto-gear prosthesis should only be permitted to have one upgrade. The exceptions to this rule are oversized and exotic crypto-gear prosthesis, the kinds that most mortals would be ostracized by society for possessing.

Players and GMs should refer to Cryptomancer's crafting rules and assume that all modifications to crypto-gear prosthesis are tough tasks with build-times equivalent to medium projects. At a minimum, upgrades to crypto-gear prosthesis require a forge, while upgrades to crypto-organs also require a healer's den (and someone else doing the operation).

We strongly recommend that GMs not permit characters to begin play with upgrades, if only because it provides players an exciting project to work on throughout the campaign, with a big payoff at the end. In the case where a player insists on starting with an upgrade because she has built her character around a very specific crypto-gear concept, GMs can feel free to add an additional 1-2 Strategic Assets to her debt in exchange.

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/ROOT/CD HACKS AND EXPLOITS  
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HACKS AND EXPLOITS

OVERVIEW

This chapter is a survey of creative ways to hack the various magical, mundane, and cryptomantic systems present in the Cryptomancer setting. By *hack*, we're not merely talking about breaking or abusing systems, but more generally about using them in ways that the creators of those systems did not anticipate when they were designed. What the reader will find here are new Shardscape architectures, new business models that could thrive in Sphere, new spells (and new combinations of old spells), and new ways to both create and solve problems for players and GM characters alike.

PROOF OF LIFE

A true name becomes a standard keyphrase when the owner of that true name dies. Therefore, true name cryptomancy can be used to determine if someone is still alive. This is particularly useful for determining if a hostage is still alive, if an assassin has actually fulfilled her contract, or if a loved one will be returning from the war. To test if someone is alive, a character can simply encrypt something written down using the target's true name, then examine the results. If only cipher-text can be observed, then she can be certain that the true namesake is still among the living. If she observes clear-text, she can be certain that the true namesake is no longer alive.

This reality also demonstrates yet another risk of using true name cryptomancy on the Shardscape. Given that echoes on the Shardscape last several months, all secret messages intended for a true namesake who has died can be queried just like any other keyphrase. "Grave-digging," as this practice is called, is done by criminals, gossips, and spies looking for ways to benefit from the passing of known spymasters, generals, merchants, regents, scholars, or celebrities. More than one secret organization has unraveled like a peeled onion when the power of true name cryptography failed in this manner.

/ROOT/HACKS AND EXPLOITS/

MESSENGER DRONES AND MAIL BOMBS

The helpful animal conjured by the Messenger cantrip can be turned into a high-speed, long-distance surveillance drone if the recipient (who's true name must be known) is in a location that the sender knows little about. A character can have a messenger deliver a shard that is part of one of her shardnets and then cast Shard Scry on this shardnet while the Messenger is in transit. The scryer will be able to watch the messenger's movements, determine what route they took, establish if the recipient received the shard, and take notes on observables noticed along the way. While the caster cannot control a messenger like she could a Scout Sprite, this technique can be used multiple times over the span of the several hours, days, or even weeks it takes a messenger to deliver its package.

Reconnaissance is just the beginning. Messenger also provides the recipient the shard, which could be a homing beacon (Tracer), a life-line they need to escape a difficult situation (Shard Warp), a mental mail bomb (Shardspike), or simply access to a secondary shardnet that has not been compromised. Given the many scenarios that are possible, as well as the fact that a messenger can be intercepted, both the sender and the recipient need to practice good Shardnet security when deploying or receiving a shard in this manner.

/ROOT/HACKS AND EXPLOITS/

SHADOW TERROR

The offensive capabilities of the spell Shadow Cache must not be underestimated. A demolitionist can access her stockpile of explosives, an assassin can access her lethal poisons, and a cryptomancer can access the shardnet she was not permitted to bring along. Facilities countering this threat deploy strategically placed torches, candelabras, and mirrors to limit the retrieval options of a potential shadow terrorist.

to understand that only transactions originating from these private networks are valid, and that transactions originating from the Shardscape should not be appended to the EchoChain.

Each EchoChain golem is in a fortified cryptovault that is staffed by the finest cryptoadmins the Couriers have to offer. However, there is still considerable risk to any golem whose true name is publicly known, especially risk in the form of shard storms. The EchoChain was designed to account for this. As soon as a golem X starts enduring an uncomfortable amount of mechanical stress inflicted by a shard storm, it creates a final entry on the EchoChain reading “Passing the quill to golem Y.” Golem Y will then take over the steady updating of the EchoChain while Golem X rides out the storm. Six golems provide considerable redundancy in case of subsequent attacks.

If and when a golem must expire its true name, that true name becomes a standard keyphrase. In the early days of the EchoChain, fraudsters called “prospectors” would create fake transaction echoes on the Shardscape and encrypt them with the true name of an EchoChain golem. The golems ignored these invalid transactions, but when the golem changed names, it became impossible to tell if previous echoes were actually encrypted by the golem’s former soul key (known only to itself) or its true name (known by everyone). In the ensuing confusion, fake transactions would eventually be adopted into the EchoChain. For this reason, banks still employ armies of accountants to investigate these anomalies. Woe to those customers who are visited by the Auditors: a paramilitary group of financial inquisitors funded and directed by a conglomerate of banks.

The EchoChain has proven to be extremely resilient and to date, it has never been brought to its knees. The closest it came to doing so was during “The Tempest,” the most concerted, enduring, and expensive shard storm in the history of the Shardscape. The Tempest occurred during a massive popular uprising against banking as an institution. At the peak of this massive event, five of the six golems were smoldering ruins, but the EchoChain endured. No debt was forgiven, and neither were any of the conspirators who orchestrated this massive attack.



TELLER GEARS

Teller gears are the automated teller machines (ATMs) of the Cryptomancer setting. They are shardnetted dwarven crypto-gear machines found in population centers in all three of the realms, remotely monitored and managed by bank golems. Their primary function is to dispense physical coin to bank customers at all hours and in locations where a bank branch is not conveniently accessible. Given that most business in Sphere still happens “off the grid,” a swollen bank account is no good unless it can be converted into cold, hard coin.

Using a teller gear is pretty simple. A bank customer simply walks up to the teller gear, observes its name (prominently written on the machine), and then she uses her credit shard to instruct her bank to transfer X funds from account Y to teller gear Z, encrypted with the correct keyphrase. The bank golem then confirms it is a valid transaction and that adequate funds exist (by checking the EchoChain). If everything checks out, the golem instructs the teller gear to dispense the appropriate amount of coin by engaging its crypto-gears.

Teller gears have their coin supply reloaded on a daily or weekly basis by heavily armed technicians who know the extremely strong keyphrase needed to open their crypto-locks. These technicians only operate in broad daylight and arrive on scene in an armored carriage. There is frequently a scrying shard posted high above a teller gear so that the bank can monitor and respond to criminal activity, whether it is tampering with the device or staging an ambush on a re-supply crew. The coin dispenser mechanism itself is a tamper-proof crypto-gear designed to melt its contents with acid (the bank can always mint more coin).

While banks are somewhat resilient to attacks against teller gears, bank customers are not. Making withdrawals is the fastest and easiest way to monetize a stolen credit shard (assuming the attacker also compromised the

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keyphrase). A popular technique is to check if a stolen credit shardnet still contains encrypted echoes and then bring it to a codebreaker farm to extract the keyphrase. Given that most credit shardnets are composed of two shards, criminals typically have less than two hours to execute this attack. Shaking down people who just made a teller gear withdrawal or forcing captives to make withdrawals for their captors are also relatively common. At any time, a customer can instruct the golem at the other end of the credit shardnet to lock her account, rendering her credit shard useless until she visits a bank branch to reactivate it. If she fails to leverage this feature, she is on the hook for any and all losses incurred due to fraud or theft.

Clever thieves have been known to deploy fake teller gears marked with the name of a legitimate teller gear they happen to be in control of. When an unsuspecting customer walks up to the fake teller gear and makes a valid withdrawal, the coin will be dispensed to the legitimate machine and the thieves will receive the coin. Another method of redirecting coin involves creating a convincing-looking overlay with the wrong name and placing it on a teller gear. Again, a victim would be making a valid transaction and the coin would be dispensed at a different teller gear. Unfortunately, the customer is also on the hook for losses incurred by this type of fraud. At any time, a customer can instruct the bank golem to have a cryptoadmin cast Tracer on her credit shard to confirm that her physical location corresponds to the location of the teller gear she is naming (for a nominal fee of 75 coin, of course). Customers refusing to leverage this service have no legal recourse against the bank in the case of misdirection.

CRYPTOVAULT HARDENING

The cryptovault is the operational nerve center of any organization, big or small, that requires communication between multiple shardnets or on-demand access to the Shardscape. This facility houses the organization's cryptoadmin, golem, registry (containing keyphrases, passwords, true names, etc.), and at least one shard from each managed shardnet. As such, a compromised cryptovault can be a deathstroke from which an organization is simply unable to recover from. Cryptovault hardening is the application of security architecture and protocols to mitigate direct threats to this sensitive location. Though most cryptovaults are located in secret, remote, and fortified locations, the most dangerous threats to them don't come from the outside, but rather, arrive over shard. A secure cryptovault is one that is hardened against Shard Scry surveillance, Shard Spike attacks on cryptoadmins, and Shard Warp infiltration.

Shard Scry permits an attacker to look inside a cryptovault and glean sensitive information that can be used against it. For example, an attacker could observe the cryptoadmin (potentially identifying her), an open page of the registry (to harvest user names or keyphrases), the number of shards (and thus, shardnets) the golem is managing, and the physical security controls inside the facility. A cryptovault hardened against this type of attack will employ excessive darkness, excessive light (amplified by mirrors), props that exaggerate the facility's defenses (e.g. scarecrow guards), and obstruction to block views. For example, a golem can be instructed to reach into a bucket to touch and interact with a shard, meaning that anyone scrying through a shard will only be able to see the facility's ceiling.

Shard Spike permits an attacker to administer a lethal psychic attack on a cryptoadmin, an attack she may not be able to recover from if she is alone (which is very often the case with cryptoadmins). While a handy strong healing potion might be enough to stave off death, she will be very hesitant to interact with that shard again, which may sever

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her connection to operatives in the field relying on her. She needs to be ready to distribute keyphrases or intelligence (e.g. "someone is trying to kill me") to the field through other means, such as Messenger or Share Sight, or have her connection with all shardnets be mediated by a golem.

Shard Warp permits an attacker to magically teleport into the cryptovault and attack the cryptoadmin directly. While most cryptoadmins are prepared for this reality, they are rarely a match for those brave and skilled enough to risk this type of assault. The best defense against this is to not let it happen in the first place. A shard warper needs to be able to decrypt a message in order to travel to its origin, so true name cryptography prevents the attack by anyone other than that true namesake, while very strong keyphrases defeat all but the most targeted of codebreaker attacks (by targeted, we refer to codebreakers who have studied their targets obsessively to develop custom keyphrase attacks). A precaution that many cryptoadmins take before creating an echo is to cast Tracer to ascertain if an unauthorized bridge is in effect or if any of the shards in question are not in the approximate geolocation they should be (suggesting that one is in enemy hands). If the shardnet configuration is suspect, a cryptoadmin might reconsider how, and if, she replies to messages, or drop a strongly encrypted Shard Spike as a defensive measure.

However, even if a cryptoadmin never makes mistakes, golems present a challenge to Shard Warp defense strategies. While no one can warp *through* a golem, they can certainly warp *to* a golem if they have acquired a shard from a shardnet that the golem is managing. This is where literal security architecture comes into play. A golem surrounded by a deep moat full of carnivorous fish is a wonderful way to great shard warpers who leap before they look. However, the cryptoadmin will still need a working draw bridge to approach and maintain the golem, either to switch out shards or perform emergency maintenance during a shard storm. A patient attacker will scry and wait for this opportunity (or manufacture it with a shard storm).

NEW SPELLS

Kill Arc (Basic Spell)

A spell that transfers a blinding arc of destructive magical energy from one shard to another, lashing out against anyone caught in between these two nodes. Caster clutches a shard, focuses on a fresh echo (that is, an echo that was just created during the current turn), and makes an opposed Willpower skill check versus a group's Resolve ranks (use the opposed skill checks vs. groups mechanic to resolve): each success results in 2 HP damage, ignoring all armor, to every actor that is directly in between the caster's shard and the shard that was the source of the echo she focused on. The spell requires that the source and destination shards are no further than long range from each other. This spell requires far more coordination than "Kill Bolt," but does permit the caster to inflict magical damage on multiple targets simultaneously. This spell does work over bridges but does not work on the Shardscape or traverse golems.

Kill Zone (Greater Spell)

A spell that transforms the geometric space between the shards of a shardnet into a cauldron of destructive energy, to the peril of anyone caught within this space. Caster clutches a shard and makes an unopposed Willpower skill check of tough difficulty. Upon 1 or more success, a dull hum drowns the space, dirt and pebbles levitate from the ground, and bolts of ethereal magic rapidly bounce back and forth from every shard composing the kill zone's web. Destructive energy amplifies all forms of physical harm that occur in the kill zone. Every actor in this space suffers an additional 1 HP damage to any physical or magical damage they sustain. The effect lasts 2 turns for ever successes rolled. The spell ends immediately if the caster lets go of her shard or if any of the member shards are relocated in a way that makes any of the lines outlining the kill zone cross. Further, the spell requires that none of the shardnet's shards are further than long range from the caster.

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For a kill zone to be effective, the shards composing the impacted shardnet must be distributed in a way that forms a triangle, square, or some other type of polygon that surrounds the targeted space. Only the caster must be holding her shard in hand for the kill zone to stay in effect; other members of the caster's party (perhaps those who positioned themselves for maximum effect) need not be holding onto their shard. While this spell does not have the immediate destructive potential of the "Kill Ball" spell, it does permit attackers to deliver surgical devastation with spells and missile weapons in a way that avoids collateral damage to structures, treasure, hostages, or bystanders. This spell does work over bridges but does not work on the Shardscape or traverse golems.

Possible dramatic failure outcomes: the kill zone instead becomes a salubrious and fortified space, magical feedback instead strikes every character possessing one of the shards, a vortex is created that pulls the characters toward the center of the kill zone without their shards, etc.

Shard Balm (Basic Spell)

A spell that embeds a magically healing echo inside a shardnet, providing restoration to the first recipient to decrypt it. A caster holding a shard infuses the spell in the shardnet and then encrypts it. It appears to be just another encrypted echo. When the spell is decrypted by anyone other than the caster, the recipient is magically healed. Caster can opt for shared key or true name encryption, but can never be the recipient of her own shard balm. The caster makes an unopposed Willpower skill check with a task difficulty equal to the size of the shardnet: trivial for less than 6 shards, tough for more than 20 shards, and challenging for anything in between. The spell instantly restores a number of HP equal to the successes rolled, but unlike healing potions, does not stabilize wounds. A caster can have only one shard balm active at a time, and the recipient needs to be able to consciously decrypt the shard balm (i.e. it doesn't work on incapacitated characters clutching their shard). This spell does work over bridges but does not work on the Shardscape or traverse golems.

/ROOT/HACKS AND EXPLOITS/CD ..

/ROOT/CD THREAT INTEL

/ROOT/THREAT INTEL/LS

-RW-RW-R-- ROOT ROOT VAMPIRES (TOUGH).....31

-RW-RW-R-- ROOT ROOT JUGGERNAUTS (TOUGH).....32

THREAT INTEL

VAMPIRES (TOUGH)

Vampires are cursed undead creatures that covet and hunt for the thing that mortals possess but they do not: true names. They resemble hairless dwarfs, elves, and humans - whatever race they were originally - with pallid gray skin, bat-like ears, and lumpy clay-like faces fixed with wide maws full of hollow, needle-like teeth. They dwell in the underbellies and outskirts of civilization, hiding in sewers and abandoned hovels, waiting for an opportunity to feed. Vampires thrive on mortal blood for nourishment, but more importantly, feeding permits vampires to reenter society, however temporarily. If a vampire can drink straight from the veins of mortal, it has the option to steal its victim's soul key.

While in possession of a stolen soul key, a vampire gains knowledge of its victim's true name and can encrypt and decrypt messages with the stolen soul key. Further, the blood of mortals is used to power a vampire's physical mimesis. They can transform into the exact physical likeness of the soul key's original owner, as if casting the Glamour spell, but the transformation cannot be detected through magical means (e.g. Astral Eyes). So long as a vampire has fed in the last 24 hours, it can maintain this facade.

The vampire's victim, meanwhile, has completely lost access to her soul key. She does not remember the vampire's attack (which distorts memories like the Mind Write greater spell). She is a somewhat pale, disheveled version of herself, and could almost be mistaken for someone else. She'll try to carry on as if nothing happening, but it won't be long until she realizes that someone masquerading as her has met with her friends, drained her bank accounts, opened lines of credit in her name, and perhaps committed offense which she is now accountable for. The victim's soul key is restored to her if the vampire is slain or has found a more useful soul key to harvest. Either way, she'll have to pick up the pieces of having her identity stolen. If she can't recover her soul key in 30 days, she becomes a vampire.

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a steam-spewing, rusting, crypto-gear'd implement of war, though many have exotic prosthesis such as prehensile tails barbed with jagged blades and arachnid legs supporting their massive frames. They are always followed by, and frequently swarmed by, a legion of diminutive orcish tinkerers charged with repairing and maintaining the juggernaut's monstrous frame. The single uniform feature of all juggernauts is their hammering crypto-heart, desperately pumping black ichor through the veins of these monstrosities and keeping them alive and fighting.

The orcs, of course, should not have the expertise or the intelligence to manipulate crypto-gear. While their steamwork has always been impressive for the brutes they are, their acumen in cryptomancy is laughable, only slightly more advanced than that of goblins. The orc language has very few words and instead relies on variations of pitch, volume, and speed; all things that cannot be articulated in echoes. For these reasons, the orcs never truly adopted the Shardscape in their battle plans. Someone (or something) else, then, is funneling this technology to the orcs, training them in its use, and managing the remote golems sending the steady signal to the crypto-hearts of juggernauts. These walking siege-engines have been a blessedly rare sight, but scholars and generals are justifiably nervous about their implications for the next Calling.

GMs should run juggernauts as rampaging natural disasters. They are siege engines that can punch through bolstered doors, scale fortress walls, and hurl suicide-sappers through the windows of battlements. Juggernauts have 40 HP. The combination of heavy armor plating and unnatural pain tolerance gives them 2 points of Damage Resistance. Their crypto-hearts downgrade all mortal wounds to critical wounds. Melee attacks against them should be considered ineffective unless an attacker succeeds at a tough Athletics or Acrobatics skill check to climb up one of these titans and deliver blows directly to its head and torso. It should simply be too difficult or costly to engage a juggernaut head on, especially if it is flanked by a endless waves of orcish warriors. The key to defeating a juggernaut is discovering the name of the golem managing its crypto-heart and shard storming it long enough to give the creature a fatal heart attack.

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/ROOT/THREAT INTEL/CD ..
/ROOT/CD ENDGAME/
/ROOT/ENDGAME/LS

-RW-RW-R-- ROOT ROOT STORM THE SPIRE!.....
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/ROOT/RM -RF /ENDGAME
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/ROOT/GIT CLONE SPIRE_TOOLS/CRACKER
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ENDGAME

STORM THE SPIRE!

The public execution of the elf Vyndreck, esteemed speaker of tribes Tereskhan and Mrozow, slayer of dragons Karak, Zogli'ark, and Aasomirandr, and silencer of the 17th Calling, was nearly as bloody and grandiose as his storied career. The barbarous torments inflicted upon his body by cryptomantically dissembled executioners, all before a cackling crowd of drunken humans, will be mercifully absent in this account of his last moments. What history ought not forget, however, and what I will never forget, are his final words, belted out with nigh-insane fury and disbelief:

“WE OUTNUMBER THEM!”

Vyndreck wasn't speaking of the elf sympathizers in the crowd. In fact, there were few. Tensions between the races had eclipsed all reason. Weeks earlier, the Tereskhan and Mrozow tribes took turns firebombing the city in an effort to slow anti-elf and anti-dwarf pogroms that broke out after the violent assassinations of the Duke and Duchess of Lampestad. Parts of the city still smoldered, and columns of black smoke crisscrossed the sky like colossal gallows.

No, Vyndreck spoke to humans, men and women who, like me, recognized all the parties that gained from months of carnage leading up to that very moment. The Guild of Builders, an unlikely alliance of laborers representing all three of the noble races, had been shattered by racial animosity just as it was making headways against the barons of their industry. A city in ruins was about to stuff the coffers of foreign clanhalls eager to rebuild it to their own designs. The elves had traded in Vyndreck, their spiritual head, to the Constabulary to ensure the Temple's new moratorium on Soma wouldn't be enforced by secular power. And the new Duke and Duchess, stiff, powdered, glimmering in finery, looked positively radiant as they watched the execution from a balcony.

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The apocalypse had come and everything, *everything*, was exactly as it had been, save for the destroyed homes and poisoned wells the rest of us would trudge back to after Vyndreck expired.

You know the next part of my story, because you lived it yourself. The creeping paranoia, the sideways glances, the flapping shutters of a ransacked dormitory... all oddities dismissed until they crescendoed in the clashing of blades with dissembled assassins. Like you, I found others who were hunted. We protected each other as best as we could, but you know how relentless they can be.

You also know what happened next, because you were given the keyphrase that decrypted this message. We found another cell, exactly like us, fleeing the same pursuers, and flailing against the darkness, like ants thinking they could bear the weight of the boot about to crush them. Two cells became three, three became four, and soon, we had a veritable army, distributed and silent, slaughtering our oppressors in their rats' nests. We took many heads, but you know how cunning they can be.

One of our numbers, an artisan of death, had choreographed and participated in the assassination of countless Risk Eaters. Her skills peerless and her loyalty unquestionable, she became our chief spymaster. Her unquestionable loyalty, however, was to them, not us. Such was her dedication to the mission, that she slew her peers gleefully in order to infiltrate our inner circle. Her final masterpiece was simultaneously directing every one of our cells right into a deathtrap so elaborate and devious that even a Cloak would be green with envy.

They are coming. Hundreds of them. There is no way we can win this fight. The twelve of us will hold this rickety keep and kill as many as we can. But that is where my story and your's part ways. You will find others like you. You will raise an invisible army that outnumbers them. You will not make the mistakes we made. You will storm the Spire.

You are going to kill every last one of them.

/ROOT/ENDGAME/

THE PATH TO VICTORY

For those who want to play Cryptomancer but find its thematic death-spiral a little too nihilistic for their gaming group, we now introduce a path to victory which permits a party to complete a campaign on a triumphant note, *if* they play their cards right.

The path to victory makes no fundamental changes to Cryptomancer's Risk mechanic. The setting's tension and paranoia remain intact. Risk is still generated by player choice and bad operational security, and failed risk checks still cause the Risk Eaters to attack with the same level of ferocity. The primary difference in this type of campaign is the fact that the player party is not alone. There are several other groups in equally dire straights, fleeing for their lives, slowly building their shadow fiefs by doing the dirty work of patrons they have no love for. However, they are slowly and quietly being folded into a resistance army by an organization even older and more patient than the Risk Eaters.

/ROOT/ENDGAME/

THE COURIERS

It's easy to not even realize they are there. These unassuming satchel-carriers make meager wages to travel from town to town nailing notices to boards, all to maintain a plodding communication system rapidly falling out of vogue. Indeed, if the Risk Eaters are hand-chosen from the most remarkable members of the noble races, those who form the Couriers might just be the most unremarkable. However, they have a code they commit to with more zeal than even the most devoted Risk Eaters could muster. They see frank and unrestricted communication as a moral imperative, not only as a means of stabilizing relations between the realms, but as a check on those who have power and would abuse it. Their commitment to this ideal is stronger than the Risk Eater's devotion to their mission, primarily because it was chosen instead of impressed upon through violence,

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THE BLIND SPOT

The Courier's code of never eavesdropping on the communications they are charged with delivering is not broken lightly. It's akin to blasphemy and a betrayal to the very civilization they wish to elevate. One of the more noteworthy instances of this blasphemy, however, was the confiscation of a missive sent by one of the dwarven engineers consulting on the restoration of the Analytic Engines. They learned that these machines churn through innumerable future scenarios and create an output, a papyrus scroll predicting the future, based on input, which is the collected intelligence of Risk Eater operatives spanning Sphere. An army of scribes takes incoming communication and transcribes it onto scrolls as machine-readable runes. These scrolls are then fed to the engines. The Couriers intuited that if you control the engines' input, you control their output.

Armed with this knowledge, they briefly considered using their position as Sphere's most trusted communications conduit to review and rewrite intercepted intelligence and turn the engines against the very organization slavishly mitigating the portends they generate. After much deliberation, the Couriers wisely opted against this plan of action. The cryptomantic mastery and honed-paranoia of the Risk Eaters made the plan infeasible as anything but a short term strategy. The veracity of intelligence reports and the validity their authorship are checked, rechecked, and checked again before being fed to the engines. If the Couriers could not effectively meddle with intelligence in transit, they needed to find a way to meddle with it before it was even transmitted over scroll or shard. To make an agent write the wrong thing, they needed to see, think, and believe the wrong thing.

The Couriers found a way, but doing so would require making a deal with devils: the Cult of Cassandra.

THE CULT OF CASSANDRA

Before the voracious consumption of news and gossip on the Shardscape became the primary form of intrigue and entertainment throughout the realms, wandering caravans of minstrels, thespians, troubadours, dancers, illusionists, and soma-inspired oracles brought mystery and delight to rural podunks and sprawling cities alike. The narratives weaved by these performers were so compelling and so influential that rich patrons would contract them to subtly promote their own agendas. It was a very successful strategy. Even the most cunning of politicians were thrashed in the court of public opinion by political novices who could pay off the season's most popular artists. Theatre, street performance, and publication became political weapons wielded by the highest bidder.

An aged and revered troupe of performers lamented what was transpiring. To them, the mercenary nature that their craft had adopted was not just killing art, but also free expression and rational thought. They retreated to a steppe wasteland, far away from the influence of politics and money, to develop a more pure form of art. After two decades of isolation, they were all but forgotten. Under the clear skies of the steppe, however, they had been communing with something very ancient and very distant. And they changed. What finally returned to society was not a troupe of performers but the Cult of Cassandra.

The acolytes of the cult are enigmatic purveyors of a universal antithesis: every single political, social, economic, or scientific authority is simply a fount of lies. Nothing and no one is to be believed. Their maxims are ever-changing and eminently incongruous. They'll declare that scientific progress is moral regression, but in same breath, declare that piety is a mental shackle. Today, poverty is liberation, but tomorrow, charity is a disease. While cult acolytes do sometimes perform in traditional venues, the world is truly their stage. They choreograph infidelities, script insurrections, pen suicide notes, and paint tapestries of carnage.

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What is left in their wake are shattered wills, swollen egos, maelstroms of doubt, and confused choruses proudly echoing inane falsehoods.

When the cult comes to a settlement, they have a single goal: to convince people that what has happened didn't, and what will happen won't. Overt performance is one method of achieving this (cult acolytes are almost supernaturally gifted performers). However, they prefer more intimate methods: seduction, gossip, masquerade, somadellirium, blackmail, and sometimes murder. They hide bodies, plant evidence, forge alibis, and magically write new memories. They discretely change history one evening at a time. The burning fortress? A horse kicked over a lantern. The dead regent? He's actually alive, just living as a pauper to better understand his subjects.

The Risk Eaters have been watching the Cult of Cassandra since its inception. They know very well that this cult could be problematic, especially if the Analytic Engines predict a threat so grave that the Risk Eaters must come out of the shadows and rally all of the realms. As it stands, however, the cult's bizarre campaign of disinformation and destabilization actually furthers the Spire's ends. What the Risk Eaters don't realize, however, is that the cult's primary benefactors are the begrudging Couriers, who trade almost all of the coin they generate from managing the EchoChain for the Cult's cloud of confusion. The Cult is the sole reason the Couriers have not been outed by the Analytic Engines. Its acolytes work feverishly to obliterate all suspicion cast on the Couriers. As far as the Risk Eaters are concerned, the Couriers are, and always will be, parcel-delivering bumpkins and second-rate cryptoadmins.

The Couriers are growing restless, however, as the Cult continues to amass power and honor their alliance in increasingly troubling ways. The Risk Eaters have a code, at least, as twisted and misguided as it may be. The Cult, however? Know one knows what they are hoping to achieve. Yet, every day, there is more urgency to facilitate a march on the Spire, if only to sever all connections to this band of useful sociopaths before their madness creates bigger problems than it is currently preventing.

SQL>SELECT * FROM

NEW CELL

Cell	Description	Strategic Assets
Cult of Cassandra	A cell of hypnotists, illusionists, and meddlers that will cover one of the party's operations with a one time campaign of misinformation, manipulation, and evidence-disposal. They will negate Risk generated by operational security failures (but they do not negate Risk generated by converting botches to successes). After an operation is complete, make a skill check on their behalf, the difficulty of which is determined how many witnessed need to be "re-educated" (e.g. trivial for less than a dozen, tough for hundreds, challenging for anything in between). The number of successes determine how much Risk generated during that operation is negated.	1

/ROOT/ENDGAME/

ENDGAME MECHANICS

The campaign mechanics behind the endgame are very simple. Every time the player party successfully performs an operation for their patron, they are introduced to a resistance cell: a group of cryptomancers who, like the players, are on the run from the Risk Eaters and have been fortifying their safe house and amassing a small army of support cells. The introduction occurs through a courier who provides secure keyphrases to connect over the Shardscape. The resistance cells never actually meet face to face. They are too busy (and it is too dangerous) to collaborate during the normal course of a campaign. However, they will agree to march on the Spire when the player party does. Once the players decide it is time, the Couriers will reveal the location of the Spire, and a truly epic battle will transpire.

It takes a minimum of 5 loyal resistance cells to successfully siege the Spire and provide enough cover to permit the player party to sabotage the Analytic Engines and kill or capture the Risk Eaters' high seers. Loyalty is of key impor-

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tance here, for the Risk Eaters are actively infiltrating the resistance throughout the course of a campaign.

When the final battle is declared and the rag-tag armies of the resistance march on the Spire, one risk check is made per resistance cell, to determine which of them, if any, have been infiltrated by the Risk Eaters and turn on the resistance in the moment of truth. For each resistance cell, if the risk check result is lower than the party's risk rating, the cell has been infiltrated. For this reason, the player party is still incentivized to keep their Risk rating to a minimum and will likely want to establish contact with more than 5 resistance cells with the assumption that some or many will betray the cause. If the party is left with less than 5 loyal resistance cells after this final risk check, the assault will be doomed. The player party will never actually breach the Spire and the resistance will be routed. It's time to end the campaign on a very grim note.

However, if 5 or more resistances cells remain loyal after these final risk checks, the resistance survives betrayal, overwhelms the Risk Eaters' defenses, and allows the party to breach the Spire to carry out their last and most important operation. At this point, players are no longer able to buy successes with risk, but each player is given a pool of 20 points to convert botches into successes or negate any GM character successes at a rate of 1 to 1. The wind is at their backs and they have turned the tables on the organization that has persecuted them. Even if they die during this last push, the armies of the resistance will flood the Spire and finish the job for them.

We leave it up to the GM to define what the final siege actually looks like, with the assumption that it will be an orgy of fantasy destruction. Thrall armies, orcish hordes, dragons, siege engines, shard storms, magical airstrikes, sky-blotting volleys of arrows, raging fires, mountains of corpses, and wounded defenders raining from the Spire's flaming parapets. The Risk Eaters will neither flee nor surrender. If the Spire is lost, so is their entire cause. They fight to the last. This is the single most important moment of the Modern Age, and potentially the beginning of a new era.

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/ROOT/SSH NAMELESS@SPIRE
VERIFICATION CODE:
PASSWORD FOR NAMELESS@SPIRE:
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LAST LOGIN: YESTERDAY
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HAIL, NAMELESS. ALL ACTIVITIES ARE BEING LOGGED AND MONITORED.
#####
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[NAMELESS@SPIRE ~]$CD REPORTS
[NAMELESS@SPIRE ~/REPORTS]CD TOMORROW
[NAMELESS@SPIRE ~/REPORTS/TOMORROW]LS
```

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-RW-RW-R-- ROOT ROOT IT STILL COMES.....45
```

AFTER THE SPIRE

IT STILL COMES

The high seer had arrived. He slowly rose from a kneeling position as soon as the arcs of electrical magic stopped coursing his naked flesh. Two loin-clothed thralls, cryptomantically disfigured, immediately converged. One wrapped the seer's frame in a black, regal mantle and the other placed a gnarled scepter in his open hand. Without even acknowledging the several agents who knelt before him, he walked to the propped door, towards the sound of massive waves beating the cliff below the fortress in which he stood. Mist swept across his face. The storming sky was the color of his eyes, milky gray, like a hurricane being baked by the sun. The monster was gliding in slowly, its massive wings seemed to span the horizon. It could have careened into the fort like a meteor, but its final descent and landing was as gentle as a creature 75 tons lighter. A massive dragon stood beside him. Salt water rolled down its scales and tufts of seaweed hung from its open maw. The dread Axhollek.

"Seer," it said in a respectful rumble.

"Axhollek," replied the seer without taking his glance from the sea. "Does it still stride across the ocean floor? Does it still come for us?"

"It does, seer. Your dwarven wind-up toys told you as much, I'm sure. But you didn't leave the Spire just to ask me that, did you? You've come to see it."

The seer stood in silence.

"It's a remarkable being, seer. I've seen it *eat...*" The dragon trailed off, shaken by whatever mental image it had conjured. The seer nodded very slowly. The dragon, finishing its thought, said "I will never again underestimate mortal ingenuity-"

"We want a new arrangement," the seer snapped

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back at the beast. "We want you, and the others, to destroy it before it reaches the continent of man."

The dragon let out a soft but methodical "No."

The seer turned to face the Axhollek and spoke agitatedly. "Name your price, lizard. Do you want to reign over man? Do you want to be gods, again? We'll make it so. Jewel encrusted roosts, herds of sacrificial thralls throwing themselves into your maw. A new golden age for-

The seer stopped his pitch when he observed the dragon's belly shaking in a muted chuckle.

"Godhood is boring, seer. We've done that already. Even if you had something we wanted, there aren't enough of us to stop it. Mortals - *most* mortals - are like rodents to us, but even we dragons are like insects to *it*. You'll see. It is going to crest soon."

The seer felt his spare hand tremble slightly, so he used it to clutch his scepter. He turned again towards the sea, planting the scepter's tip firmly on the stone floor below him. He spoke again in a calm tone, "If your girth does us no good, we'll still need those wizened skulls of yours. If we can discover its true name..."

"Yes, maybe we could storm it to death, or slow it down. But our ocean-floor-striding golem doesn't seem to want to talk, seer. It only listens."

"It doesn't listen, dragon. It devours, by design. The Analytic Engines must be force fed intelligence, and we can't help but feed them the wrong reports composed of the wrong events and the wrong names. Our methods are crude, like birds masticating food for their chicks. We needed to build an engine with its own appetite. Its own hunger. Its-

"You must have known things were going to end poorly, seer. Why else would you have sent an expedition to construct it in the icy wastes at the world's end?"

-- MORE --

"Yes, the Engines foresaw disaster, but also great discovery. We took every precaution to isolate whatever negative outcomes manifested. We had no idea that it would... walk, and... grow... and-

The horizon stretched. Waves once crashing against the island retracted back into the ocean and towards a white maelstrom miles away. The seer strained his eyes and cupped his hand over his brow, trying in vain to see what was happening. The dragon started, struck by an idea.

"It just dawned on me why it comes for the mainland, seer. Entertain me for a moment. What share of all echoes on the Shardscape are encrypted?

The seer huffed in annoyance but answered the question. "Our theoretical models say half."

The dragon nodded and continued. "And if you read every clear-text echo on the Shardscape, you would then have the keyphrases to decrypt how many of those remaining?"

"Again, our models say half of that half," said the seer, who was moving closer to the edge of the precipice to get a better look at the maelstrom. "Of course if you perform this exercise recursively, you use the messages you just decrypted as keyphrases for the next round of decryption, and so forth. You are left with only a tenth of the entire Shardscape properly encrypted."

"And of those?"

"Some are encrypted with unbreakable keyphrases, but most are encrypted with true names. And the sun will burn out before we find a way to crack those."

"Unless everyone dies," Axhollek said coolly.

The horizon stretched until it cracked. A mountain of foamy, white water belched from the ocean as if a volca-

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