GURPS
Fourth Edition

TransHuman SPACE

TRANSHUMAN MYSTERIES

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STEVE JACKSON GAMES

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I'll give you a hint. Contradictions do not exist. Whenever you think that you are facing a contradiction, check your premises. You will find that one of them is wrong.

– Ayn Rand, **Atlas Shrugged**

INTRODUCTION

Transhuman Space is an amazingly rich setting for role-playing games. It offers nearly a century of historical backstory, growing out of plausible extrapolation from the present, including technological advances that have carried humanity throughout the solar system and begun to transform human nature itself. But that very richness can make it perplexing to actually use! Confronted with all this exotic detail, players may find it hard to decide what sort of characters to create, and game masters what sort of campaign to run.

> *One must not put a loaded rifle on the stage if no one is thinking of firing it.*
> *– Anton Pavlovitch Chekhov*

One genre that fits the setting surprisingly well is mystery. The emphasis on investigation works splendidly in a setting where information is a vital resource, and control of information a major political issue. Technological advances create opportunities for entirely new sorts of crime; dealing with these crimes gives players an opportunity to figure out how this exotic world works. And the same applies to cultural changes that make some of today's crimes perfectly legal, but some now commonplace activities into serious offenses.

At the same time, both criminals and detectives in Transhuman Space have to use different methods. Most detectives need to master one or more arcane scientific methods of investigation, such as data searches, forensic nanotechnology, genetics, or memetic analysis. And serious criminals have to know the capabilities of detectives, and plan their crimes to thwart them, using methods borrowed from espionage and covert operations. A large part of **Transhuman Mysteries** is about game mechanics for concealing and revealing crimes.

Focusing not just on criminal investigations, but on a specific kind of crimes, helps with all the other key choices that the GM needs to make: where specifically to base the campaign, what sort of investigators are suited to it, and what sort of problems to confront them with. Players, in turn, can work together to come up with a suitable team of detectives and to make sure they have the necessary resources. As the campaign develops, both the players and the GM can explore the further reaches of Transhuman Space.

In this volume, the series of supplements by David Pulver and others are cited as **Transhuman Space.** The setting itself is referred to as Transhuman Space (without boldface or italic type), but campaigns exploring that setting as **Transhuman Space** campaigns.

ABOUT THE AUTHOR

William H. Stoddard lives in San Diego, California, where he has been active in roleplaying games since the 1970s. He's now running his second **Transhuman Space** campaign. His previous **GURPS** books include **GURPS Steampunk, GURPS Fantasy, GURPS Supers, GURPS Urban Magics,** and several others that he co-authored, contributed to, or compiled. He also serves as vice president of the Libertarian Futurist Society, which gives annual awards for libertarian science fiction.

Special Thanks

The author is grateful to the players in his first **Transhuman Space** campaign for permission to use their characters in vignettes, and for letting him practice on them: Eben Brooks (*Neville Clarke*), Tony Fincher (*Louis Bauchet*), Steph Pennington (*Gianni Fiori*), Tim Sallume (*Blake*), and Risa Yardas (*Aki Nakamura*).

CHAPTER ONE
SETTING AND GENRE

"You give me glasses."

Gianni Fiori handed over his wearable without hesitation. It didn't surprise him that Song Xiaoma objected to digital records of his conversations. Gianni's cover persona wouldn't like them either; keeping things human-to-human made it harder to prove anything. When Song's techies hacked the wearable of "Mike Rimanelli," the gaps in the timeline wouldn't surprise them.

A few minutes later, he walked into the private apartment of one of Rust China's richest black marketeers, guided by one of the triad's **xia**. *Song clearly enjoyed spending his illegal earnings; Gianni wasn't a connoisseur, but he'd seen enough Chinese homes since he came to Mars to spot expensive goods – though most Chinese didn't show them off this freely. The blonde bioroid girl sure wasn't a mass market item. Gianni tried not to look at her as he and Song bargained, both because she was Song's property, and because bioroids gave him the twitchies.*

So it wasn't till Song had the girl bring over some strange-tasting wine that Gianni started to wonder. She hesitated in speaking Cantonese the same way Gianni did, and mixed in some American slang. Her looks made Gianni think of his Ishtar girlfriend in high school. And when she poured his wine, her eyes looked – not just scared, though that was there, but sullen. Gianni almost lost track of the conversation for a minute, suddenly seeing her as a human girl, even younger than his little sister.

*Luckily, Song took it for the obvious reaction, smiled, and reached out to stroke the girl's cheek. "**Xie-xie,** Syren," he said, and she rubbed her face against his hand, but Gianni thought he saw desperation in her eyes. He hoped his own eyes weren't showing his sudden murderous rage.*

Transhuman Space is a science-fictional setting, so a mystery campaign set in Transhuman Space is also a science-fiction campaign. Meeting the requirements of both genres is a tricky business. Isaac Asimov called it impossible when an editor proposed that he write a science-fiction mystery. But Asimov went on to prove himself wrong by writing *The Caves of Steel*, which teamed a human and a robot detective. If done right, the two genres can strengthen each other.

THE ELECTROLASER ON THE STAGE

The problem Asimov saw with science-fiction mysteries was that too much was possible. If the detective suddenly revealed telepathic powers, he could solve any mystery; if the criminal had exotic alien weapons, he could kill people in ways no one could figure out. Asimov got around this by writing a detective story about positronic robots; he had written enough robot stories – including puzzles based on the Three Laws of Robotics – so that he and his readers had a clear sense of what was and wasn't possible for robots.

Transhuman Space has that same specificity. The GM can come up with mysteries that play fair, by relying on published material on the setting. The absence of traditional science-fiction ideas such as faster-than-light travel, aliens, time travel, and psi powers narrows the possibilities for both investigator PCs and criminal NPCs.

At the same time, the setting is filled with other fantastic ideas: colonies on other planets, nanotech, genetic engineering, artificial sapient beings, and memetics. The Russian playwright Chekhov said that "One must not put a loaded rifle on the stage if no one is thinking of firing it." In science fiction, the fantastic elements are the "loaded rifle"; to justify their presence, they need to give rise to dramatic events – in a mystery campaign, crimes and investigations.

Given the complexity of Transhuman Space, it's a good idea to focus on one or two concepts, keeping the others in he background:

● Space travel and the colonization of space create new, often isolated communities, which may be thrown back on their own resources to investigate and punish crimes. *Example:* The Station Manager of Aletheia Station (discussed in **Deep Beyond**), faced with data theft, academic fraud, or diversion of funds, recruits an investigating committee from local academics – and Vosper-Babbage corporate security or European Union military police, if either feels inclined to cooperate.

- The economic importance of information makes conflicts over privacy and intellectual property increasingly intense. *Example:* Bioroid traffickers in the Trojan Mafia develop a new sex model styled after the synthespian heroine of Marwari Digital's planned next release.

- Memetics can alter human behavior and subvert established institutions; old legal ideas about freedom of expression may not be viable when a well-crafted message can reprogram a person's mind. *Example:* After a popular hard-edge musician endorses a candidate of Montréal's Parti d'Humanité, a memetic attack portraying him as a sell-out threatens his career . . . but it's actually a buildup to an indirect attack on the candidate.

- Creation of nonhuman sapient beings has generated conflicts between people who treat an artificial intelligence or an uplifted dog as property and people who give it "human" rights. *Example:* Houri bioroids in Djibouti are being abducted from their owners and sent back in pieces, and a group of *sikkiyn* bounty hunters are hired to investigate unofficially – but can they gain the trust of Houris they'd normally be sent to kill? And how will they react when agents of the bioroid underground railroad, making their own inquiries, confront them?

- Digital uploads provide a way of evading death that changes the concept of "murder," while copying digital minds is often treated as a new sort of crime, *xoxing. Example:* A wealthy elderly woman has her brother, a devout traditionalist Catholic, uploaded, a procedure of which he disapproves; her brother's ghost reports this to the police – as the murder of his organic prototype! But can a murder charge be made to stick, when the "victim" himself is the principal witness?

- Advanced surveillance and nanotech-based forensics make many crimes easy to solve – but also threaten the very concept of privacy; protecting privacy, conversely, also protects

criminals. *Example:* Unlicensed sequels to popular InVid series are being smuggled into Europe, and the copyright owners want the traffic stopped. Evidence points to their being carried in the memories of travelers' VIIs. Can the customs authorities get authorization to search an internal implant's memories?

- At a very deep level, digital uploads, xoxing, body structure modifications, memetic reeducation, and new forms of identity theft call the entire concept of personal identity into question. How can the law protect individual rights if it can't define an "individual" in the first place? *Example:* A transhumanist religious cult gives all its converts digital implants that hold xoxes of the "ascended" founder – some of which tell their hosts to commit suicidal crimes on behalf of their faith, willingly dying for the benefit of their identical sisters. Can investigators *prove* that they're all xoxes, and will a court order the arrest of all the cultists for xox erasure and memetic therapy? And are the *cultists* guilty of any crimes?

SUBGENRES AND SETTINGS

Since the first mysteries were written, novelists and scriptwriters have come up with many variations on the form, and fans and critics have grouped them into subgenres. *GURPS Mysteries* offers a detailed examination of different kinds of mystery stories. All of these are viable in a *Transhuman Space* campaign – but they often take surprising new forms.

THE CLASSIC MYSTERY

Edgar Allen Poe invented the classic mystery, Arthur Conan Doyle perfected it, and many later writers have come back to it. Doyle's Sherlock Holmes is the archetypal detective: rational, methodical, exceptionally perceptive, and an outsider in society. He can take care of himself in a fight, but that's not what the stories emphasize. Many classic detectives are private contractors, like Holmes, working for private clients who don't want to involve the police in their affairs, or called in as consultants when the police are baffled. Some are elite police detectives who get baffling or politically touchy cases.

The emphasis on rational inquiry fits perfectly into Transhuman Space, where everyone recognizes the value of information – governments even fight wars over it. If anything, the detective has an embarrassing surplus of information sources (see *You Know My Methods*, pp. 19-27). In a group of investigators, each can focus on a particular type of information, and play can involve sharing and interpreting the results. AIs can grant access to even more investigative skills.

Or the AIs could be the investigators! A digital intelligence is the perfect example of a highly intelligent outsider in future society. (Memetics became a real science thanks to this outsider perspective.) An investigative team could be all AIs or partly organic beings; AIs might be an organic investigator's staff, an organic being might run errands for AIs or act as their social interface, or the two might be equal partners.

The police consultant role works well in Transhuman Space; many societies outsource traditional governmental functions to private contractors. "Private" detectives run from those who get all their jobs from one police force to those who work entirely for private clients. Social and reputational networks make subcontracting much more viable, and a competent AI can help investigators budget their time and resources. In more repressive societies, a private detective may be in demand by clients who don't want official attention – minority groups (including nonhumans), or members of the ruling class with a lot to lose.

Barrymore Consultancy from *Transhuman Space: Personnel Files* could serve as a classic amateur sleuth team based in Cape Town.

Mumbai

India dominates the entertainment industry in 2100, and the city of Mumbai houses the central offices of entertainment giants such as Bharat Teleproductions and Marwari Digital. Although virtual conferencing is commonplace, actual physical meetings still have advantages. So creative talent and entrepreneurs from all over the solar system come together in the city, looking for deals. India overall has Struggling Wealth, but Mumbai is Comfortable, with access to advanced technology – and the best neighborhoods are Wealthy. Some Indians resent this wealth, especially since bioroid or AI rather than human servants are fashionable in Mumbai, making jobs hard to find.

The business of the police is avoiding scandal and protecting the reputations of the famous as much as solving crimes. When criminal investigation is needed, citizens often turn to private firms – and demand that the police cooperate. A firm's reputation for discretion is one of its biggest assets.

The situation is complicated by conflicts over intellectual property. India has a large nanosocialist movement. Mumbai's "Bollywood" firms oppose this movement, and turn out many InVids where heroic spies defeat plotting socialists. But it's an open secret that many firms have partners in nanosocialist Bangladesh, which use freedom from copyright restrictions to develop imitations of popular series and synthespians – with some of the production being done, quietly, in Mumbai. An unwritten code limits blatant thefts; but violating it could lead to investigations and lawsuits . . . or murders and homicide investigations.

PULP, HARD-BOILED, AND NOIR

Several closely related subgenres share greater emphasis on physical action. Pulp and noir are partly distinguished by their media – pulp stories appeared in newsprint magazines, while noir is mainly a style of film. But they also differ in emphasis. Hard-boiled mysteries focus on toughness and the potential for violence. Noir creates a sense of widespread economic and political corruption; the cynical, embittered private eye appears as a kind of knight with a personal code of honor. Pulp shows that code as shared by much of society; the criminals are a corrupt minority working behind the scenes.

For straightforward physical action, extraterrestrial colonies are a good option. Mars has enough inhabitants to support criminal enterprises, and enough open space to let them operate freely. Emphasizing the Martian Triads can give a stronger noir effect.

Back on Earth, not all societies are wealthy or technologically sophisticated. Less developed societies range from brutal dictatorships to failed states that have only as much law as people provide for themselves. A small band of honorable sapients can find work in such a setting.

Within science fiction, cyberpunk is an analog of noir, with honorable outlaws battling corrupt big business. Transhuman Space isn't a classic cyberpunk setting, but has raw material for a cyberpunk-style campaign: omnipresent computers, cybernetic brain implants, virtual reality, and widespread conflicts over ownership of information. An inventive GM can turn it into a hybrid of cyberpunk and classic noir.

Transhuman Space: Personnel Files 3 presents a group in rural Tanganyika seeking justice with limited resources and not much help from the law. They could be PCs in a one-shot campaign or clients for lower-tech hard-boiled (or police procedural) investigators.

Ceres

A good setting for private eyes is Ceres, an anarchist society where *all* law enforcement is private. Many people have insurance against crime, and insurance companies often have investigators on the payroll. Neighborhood security companies mostly hire guards or patrollers, but the job can lead to investigation, and larger companies have full-time detectives on the staff. Finally, judges are free to perform their own investigations, rather than ruling on the evidence presented to them; their staffs have the mission, not of helping a specific client, but of finding out what actually happened, which gives them more freedom of action.

The major settlement on Ceres, Silas Duncan Station, has 16,000 people, the size of a small town. The original settlers were scientists and engineers, but the community has developed a rough frontier culture, where personal independence is prized. Roughly 90% of law enforcement firms belong to the Aegis Group; their clients are typically notified to appear in court rather than arrested, which is a big selling point for Aegis Group members. Companies that have been expelled from Aegis, or can't afford the dues, act more like private security firms in societies that have government-run police. Some independents hire out to Aegis members as investigators; such a group could be the focus for a campaign.

For a noir treatment, there are a couple of options. Maybe Ceres is less free than it appears on the surface. Avatar Klustercorp, headed by Maya Payne, one of the original settlers and a strong advocate of anarchocapitalism, has enormous economic influence, with 1,100 employees, several smaller subsidiaries, and the profits from innovative biotechnology. It could be turning into a *de facto* government, without being accountable to any public body. On the other hand, a still basically free society could face an external threat: the Martian Triads, whose leaders are well aware of the value of biotechnology and would like to own it.

PROCEDURALS

Procedurals treat investigating crimes as a job. Investigators get cases assigned by their bosses, and pursue them following a standard routine. There's more emphasis on teamwork and discipline than on brilliant insight or heroic toughness. The commonest focus is on police officers, and this subgenre is often called the "police procedural"; but other procedures can be approached the same way – forensic science procedurals have lately enjoyed popularity, and would fit right into Transhuman Space. Investigators in procedurals usually work for a government, but any large organization could be the basis for a procedural. The investigators have a restricted range of options: they have to bring a case to a conclusion that satisfies the employer.

In **Transhuman Space,** the widespread use of AIs favors procedural campaigns. His first day on the job, an investigator will be issued an AI, or programs for the AI he already has, including reference materials, skill assistance, and administrative routines. If he follows set procedures, his AI will not only help him carry them out, but tutor him in using them effectively. On the other hand, if he breaks from routine, it will caution him, stop assisting him, or even report him to his more experienced partner or to his bosses. Most investigators develop love/hate relationships with their AIs.

Police procedurals have a hard-boiled flavor; police work involves street smarts and ability to restrain or incapacitate an offender. A police procedural campaign can have street surveillance, confrontations, chases, arrests, and even gunfights – though the guns may be nonlethal electrolasers. But the officer will (almost) always be in touch with backup through his AI. And with police cybershells on call for high-risk situations, the pursuit and arrest of a violent perpetrator don't endanger the PCs the way that they might in more traditional police stories; they're often another technical exercise, part of the pattern of procedure.

For the parts of police work that depend on brains more than brawn – crime scene searches, maintaining evidence chains, cultivating informants, questioning people, and searching official records – the AI will be a silent partner. Much police work involves a lot of dull routine, which police dramas skip over; in **Transhuman Space,** the use of AIs makes this realistic rather than cinematic. In an advanced society, normal crimes *are* solved, routinely; the mark of a serious professional criminal is knowing how to defeat police procedures and outsmart the AIs that carry them out. And the police officer's most important job is to spot clever moves that aren't in his AI's routines.

This is even more true for forensic investigators. Transhuman Space has many varieties of advanced forensic science; serious investigators have access to superior-quality AIs with high skills, and to comprehensive databases for their fields. They need them: the range of criminal methods has grown wider than any human mind can grasp. A forensic science campaign can focus on a single set of problems, and on the methods used to solve them: accounting for business fraud, computer science for illegal hacking, genetics for illegal bioengineering, memetics for dishonest advertising or propaganda, and so on. This type of campaign is a good way to bring a single conflict in Transhuman Space into sharp focus.

The classic anime series *Ghost in the Shell* offers an excellent model for police procedurals in a transhuman setting.

Here are examples of both sorts of procedural:

The Martian Commonwealth

U.S. government resources are spread thin on Mars. A lot of people end up doing a second job, lending a hand with law enforcement – the Martian Commonwealth has revived the concept of the part-time, deputized U.S. Marshal. Marshals have basic training in law enforcement, but they aren't *supposed* to do more than report possible problems, load the wanted and missing persons lists into their AIs, and occasionally provide the professionals with backup.

Deputy marshals have jurisdiction across the entire Commonwealth – and, informally, anywhere on Mars that isn't covered by someone else's law, including local space. Martians tend to pragmatism; if a problem needs fixing, whoever's closest with the right tools does the job. It's only when cases turn

out to have a political element that things get messy. Marshals can instigate low-level investigations, sometimes covertly, although they're expected to justify them in detail later.

A team of marshals can have varied backgrounds and primary jobs, so long as they're willing to work within the law and learn the necessary basic skills. Their work as marshals doesn't pay a lot, and is often a dull routine – at least when it's going well! But it earns respect and gives a sense of doing something meaningful. At its best, it's what old-fashioned policing was supposed to be.

Transhuman Space: Personnel Files includes a team of Martian marshals who could serve as ready-made PCs for this setting.

> *Whoever's closest with the right tools solves the problem.*

Königsberg

Headquartered in Geneva and Königsberg, the Genetic Regulatory Agency operates nearly everywhere. Its jurisdiction over unauthorized biotechnological enterprises is recognized in most of Earth's countries and many extraterrestrial societies – though not among Duncanite cultures. GRA agents aren't purely laboratory analysts; they have powers of investigation and arrest, usually in cooperation with local law enforcement. But no one becomes an agent without advanced training in Bioengineering, Biology (specializing in genetics), and Research, and many scenarios involve puzzling out genetic anomalies in the lab.

Storylines can also involve political tensions and conflicts. The GRA started out as a European organization, and its policies reflect European preservationist memes. Libertarians and transhumanists oppose GRA restrictions, and it periodically faces accusations of suppressing innovative research, or even seeking to create a new Dark Ages by abolishing science entirely. On a more mundane level, local officials getting payoffs from illegal bioroid traffickers or black clinics don't welcome visits from the GRA. Managing these situations without public controversy is vital to an agent's career.

THE COZY

The cozy is an extreme version of the classic mystery. It takes place in a small community of people who are privileged in some way – an aristocrat's country estate, or a college with strong scholarly values, for example. Crime, especially murder, appears as a shocking intrusion into this ordered little world, but the investigation usually shows that only an insider could have committed it. Investigation turns partly on deductive reasoning and alertness to small clues, but also on personal relationships among the suspects and on weighing each one's possible motives. Usually everyone has some reason for concealing part of what he knows; the detectives need to reassure the innocent that they can reveal their secrets. This is the classic domain of brilliant amateur detectives.

Transhuman Space has a lot of wealthy people; in Fifth Wave nations, nearly a third of the population are "Eloi" who can live comfortably on their investments, with no need to work.

It also has "isolates," who prefer minimal contact with main-stream society; they make up a few percent of most Fifth Wave societies. In remote parts of the solar system, in smaller orbital habitats, and even under Earth's oceans, entire small societies are isolated, acknowledging no sovereignty outside their own customs. Isolates have to turn to local hobbyists to deal with crimes; mainstream Eloi are more likely to call the police, but actually solving a crime demands an unusual ability to fit into the lifestyles of the rich and secretive.

Not all cozy environments are playgrounds for Eloi. Busi-nesses may send their personnel on retreats or hold planning sessions; think tanks may spend much of their time in such gatherings, developing everything from research agendas to scenarios for the world politics of the coming millennium. The economic value of their work may be truly incalculable – and may supply the motive for serious crimes.

Another sort of cozy environment can be found in virtual cruises and digital kingdoms. Literal murder is unlikely in a vir-tual environment, but it could be a means of gaining access to wealth, or to intangibles such as personal identity, or virtual objects and roles could be worth stealing or holding for ransom. Such crimes might be investigated by the official police, by employees of the creators, or by private detectives – but in any case, they'd need to be able to "play the game." Or they might be recruited from the AIs that run the virtual environment; hardly any other sort of crime could be better suited to an all-AI team.

Patel Memetics in *Transhuman Space: Personnel Files 2* is the sort of unusual investigative team that might be drawn into a series of memetics-focused cozies.

Repulse Bay

Situated on the south side of the island, Repulse Bay is in the running for Hong Kong's single wealthiest neighborhood. The entire area is not merely Fifth Wave but filled with "edge-ware" – inventions that the Fifth Wave hasn't yet adopted. Even children may be edgeware, born with cutting-edge upgrades or synthesized by not-yet-legal techniques such as neogenesis. But all this technological advance is carefully screened from view by residents who value the look of tradition.

Wealth is high enough so that actual work is nearly unheard of. Instead, residents spend time subtly competing for Reputa-tion and Status. Ordinary possessions play little role in this; any-thing that can be manufactured is cheap enough not to count. Unique objects, preferably thousands of years old, are worth something, and there's a semi-concealed market in diverted archaeological finds. Any display of exquisite taste also counts.

A large part of the rivalry takes place in a digital kingdom based on the Shang Dynasty. Present-day billionaires assume the roles of ancient dukes and sages. Real possessions and places are routinely woven into the fabric of Shang. This is a completely private digital realm, never discussed before outsiders.

YOUNG DETECTIVES

The longest-running "young detectives" series, such as the Hardy Boys and Nancy Drew, are much like classic mysteries. More recently, *Veronica Mars* was closer to the noir style. Whatever their approach, stories about adolescent (or younger) detectives have to make narrative compromises. On one hand, their heroes have unusual skills, given their ages; unusual free-dom to act without adult supervision; and unusual tolerance from the police, who wouldn't realistically want civilians getting

involved, and certainly not a bunch of teenagers! On the other, the cases are less often murders than in other subgenres; even a very bad school or neighborhood doesn't usually have enough deaths to keep a young detective busy. It's often easiest to justify the police letting the young heroes work if the police don't take the case seriously – a motif the cartoon series *Scooby-Doo* picked up and ran with.

It's actually easier to make young detectives work in *Transhuman Space* campaigns. Education isn't as regimented as in a 20th-century high school; an adolescent who wants to study criminal investigation or intellectual property law can download instructional software. Also, adolescents are allowed a great deal of independence, thanks to their parents' trust in their AI companions. On the other hand, most adolescents live in a "safe-tech" environment that insulates them from contact with high-risk technologies and situations – if necessary, their AIs will report any serious crime they encounter to their parents and the police. For young investigators dealing with major crimes, a dif-ferent narrative compromise is needed: the assumption that all the characters have blocked or subverted their AIs' supervision.

In some cultures, this is less of a problem. On Ceres, appren-ticeships commonly start at age 10 and last several years, as young people practice their trades under adult supervision and with AI tutoring. Apprenticeships could be available for investi-gators and security patrols as much as any other trade.

Jaelle Taylor in *Transhuman Space: Fifth Wave* could serve as a prototype for smart, inquisitive adolescents. *Transhuman Space: Personnel Files 5* presents an entire ready-made PC group based in Königsberg.

Islandia

Located at the L4 point (sharing the orbit of Luna, but 60° ahead), Islandia is the largest orbital habitat ever con-structed: two counter-rotating cylinders five miles long and one mile in diameter. Its nearly half a million inhabitants are 40% of the population of L4. Its construction, from 2051 to 2071, boosted L4's economy and left L5 a stagnant backwater. Islandia is legally a free city associated with the European Union, but memetically dissimilar to it: preservationism is less common, pansapient rights and morphological freedom are more common, and the overall society is considerably freer (CR 2, except for weapons, CR 4). Most residents belong to voluntary "identity groups," including radical transhuman-ists. Islandia is rich and peaceful, thanks partly to active gov-ernment support for tolerance and nonviolence.

This is a fairly safe-tech setting, and few crimes involve deadly force. There's a small but highly professional police and public safety force, but their primary concern is physical emer-gencies such as fights, hull breaches, or threats to public health. Young Islandians could monitor antisocial behavior and investigate thefts, frauds, and intellectual property offenses. So long as they know when to call in the police, they can expect to be complimented on their initiative rather than rebuked for meddling.

Islandia as a whole isn't devoted to any one radical idea – but there are enough ideologically based identity groups that young detectives can expect to meet exotic people. And as a center of orbital trade, Islandia deals with some much more radical habitats, from the all-female colony Margaret to the free bioroid refuge at Clarke-1. Islandia is a good base for a campaign that explores the wilder possibilities of Transhuman Space at a controlled pace.

CHAPTER TWO
INVESTIGATORS

"So you left the Royal Navy in 2086, Mr. Clarke?" asked Gianni.

"Yes, during the downsizing after the Pacific War," said Neville Clarke. He seemed completely at ease as the partners interviewed him.

"Did you do any sort of paid work after that?"

"I found a position with Universal Exports – they're a small trading house specializing in high-end goods. I worked for them until 2098. I thought I was ready to retire, but I found myself growing restless with no work to do."

He sounded casual, but his neutral expression struck Louis Bauchet as a bit studied. While the other partners asked questions

> *My robots? They share what I say to them with other **robots?***
>
> *– Ken MacLeod,*
> ***The Night Sessions***

about Clarke's reasons for applying, he dropped into the financial references on the net. Ah, there was Universal Exports – a small firm with an unusually strong financial position for their economic niche, and a broad spectrum of trade relationships with relatively obscure nations, not all of them Commonwealth. And Clarke's vita had him visiting several of those nations, too.

Louis texted his partners a quick summary – ***Second career maybe spy.*** *He couldn't spot their reactions; he wondered if Clarke saw anything.*

The first step in playing a mystery campaign is creating the investigators.

Most campaigns have multiple players, and therefore need multiple investigators. They may be a squad of uniformed police officers, a group of police detectives with adjacent offices, a private investigation firm's partners or employees, or a group of adolescent friends with an unusual hobby. They may even be thrown together by chance involvement in the same crime . . . but for a continuing campaign, they have to have a reason to *stay* together. Character creation should start by defining what sort of ties the investigators have, and making sure that all the investigators fit the resulting group.

OCCUPATIONAL LENSES

Mystery campaigns generally use the standard racial/model templates; criminal investigation isn't a large enough occupation to support the creation of entirely new kinds of sapient beings. Rather, organic beings and infomorphs are trained for investigative work suited to their abilities. The following occupational lenses provide appropriate abilities for various forms of investigative work. They are meant to be added to existing templates, though they can stand alone if desired.

For many campaigns, all the investigators need to be built with the same lens! A GRA police procedural should have them all be GRA agents; a noir campaign might have them all be private eyes. In other campaigns, though, different lenses can fit together, especially if the players are willing to accept different point values; a plainclothes detective, a crime scene analyst, a couple of uniformed police officers, and even a police postcanine could make a plausible investigative force.

Any of these investigators may have a Reputation, good or bad, based on his lens, his employer (if any), and his personal qualities; players may propose such Reputations for GM approval. In a cinematic campaign, one or more Gizmos may be added to the technologically focused lenses (consulting detective, crime scene analyst, GRA agent) as an option.

Some of these lenses offer Style Familiarity perks as defined in ***GURPS Martial Arts***. The Sambo style is also described

there; the "Dog Fu" style is newly defined in this book (see p. 11). The GM who doesn't have ***GURPS Martial Arts***, or who prefers a simpler treatment of combat, should keep the basic combat skills but replace Style Familiarity and combat techniques with additional points for optional skills.

Amateur Sleuth

50 points

Investigating crimes isn't your job, and you don't get paid for it. You may be an Eloi living on your investments, or a student with indulgent parents or a scholarship; you may even have a day job. You're not necessarily professionally trained. Your main assets are a sharp eye for how sapient beings behave, and a keen curiosity about them.

Attributes: IQ+1 [20].
Secondary Characteristics: Per+2 [10].
Advantages: Independent Income 5 [5]. ● An additional 15 points chosen from among Alcohol Tolerance [1], Contact (Police *or* Street) [Varies], Cultural Familiarity (any) [1], Fit [5], Higher Purpose (Bring malefactors to justice) [5], Sensitive [5] *or* Empathy [15], Status [5/level], or Wealth [Varies].

Disadvantages: -15 points chosen from among Absent-Mindedness [-15], Charitable [-15*], Curious [-5*], Impulsiveness [-10*], Overconfidence [-5*], Pacifism [Varies], Post-Combat Shakes [-5*], Social Stigma (Minor) [-5], Stubbornness [-5], or Xenophilia [-10*].

Skills: Computer Operation (E) IQ [1] *and* Observation (A) Per [2]. ● *Either* Criminology (A) IQ [2] or Hobby (Crime Knowledge; see p. 15) (E) IQ+1 [2]. ● *One* of Body Language or Search, both (A) Per [2], Shadowing (A) IQ [2], or Detect Lies (H) Per-1 [2]. ● An additional 8 points chosen from among Beam Weapons (Pistol) or Bicycling, both DX/E; Driving (Automobile, Hovercraft, or Motorcycle), Piloting (Light Airplane *or* Vertol), Stealth, or Wrestling, all DX/A; Judo or Sleight of Hand, both DX/H; Savoir-Faire (High Society), IQ/E; Acting, Administration, Connoisseur (any), Electronics Operation (Media or Surveillance), Fast-Talk, Public Speaking, or Research, all IQ/A; Psychology (Applied) or Sociology, both IQ/H; or Carousing, HT/E.

* Multiplied for self-control number; see p. B120.

> *No man lives or has ever lived who has brought the same amount of study and of natural talent to the detection of crime which I have done.*
>
> – *Arthur Conan Doyle,*
> ***A Study in Scarlet***

Consulting Detective

150 points

You're an intellectual detective on the model of Holmes, Poirot, or Wimsey. You've made a systematic study of every aspect of crime. You work on the most challenging cases, whether for the victim or as an adviser to the police. Some consulting detectives work for, or run, elite investigative units in large police forces; many are private entrepreneurs – or even amateurs, especially in fiction. This is a plausible role for an SAI!

Attributes: DX+1 [20]; IQ+4 [80].

Advantages: Ally (75% of own points; Constantly Available; Minion, +50%) [18]. ● Another 30 points chosen from among Acute Senses (any) [2/level], Cultural Familiarity (any) [1], Eidetic Memory [5] *or* Photographic Memory [10], High Manual Dexterity [5/level], Higher Purpose (Bring malefactors to justice) [5], Reputation (Brilliant investigator) [Varies], Single-Minded [5], Smooth Operator [15/level], Status [5/level], or Wealth (Comfortable) [10].

Disadvantages: Code of Honor (Professional) [-5]. ● Another -25 points chosen from among Bully [-10*], Callous [-5], Charitable [-15*], Jealousy [-10], Laziness [-10], Overconfidence [-5*], or Xenophilia [-10*].

Skills: Computer Operation (E) IQ [1]; Criminology (A) IQ+2 [8]; Forensics (H) IQ+2 [11]†; Interrogation (A) IQ [2]; *and* Law (your jurisdiction/Police) (H) IQ-1 [2]. ● Another 8 points chosen from among Beam Weapons (Pistol), Brawling, or Guns (Pistol), all DX/E; Boxing, Shortsword, or Wrestling, all DX/A; Judo or Karate, both DX/H; Savoir-Faire

(Police), IQ/E; Administration, Connoisseur (Art), Electronics Operation (Surveillance), Fast-Talk, Poisons, Research, Shadowing, or Streetwise, all IQ/A; Accounting, Biology (Genetics), Diagnosis, Expert Skill (Computer Security *or* Memetics), or Sociology, all IQ/H; or Observation or Search, both Per/A.

* Multiplied for self-control number; see p. B120.
† Bought up from default value of Criminology-4.

Customization Notes

A typical Ally is a KNJ "Third Hemisphere" forensic model (see p. 18) installed in a standard VII.

Crime Scene Analyst

100 points

When the police find evidence of a serious crime, they call you in to figure out what the evidence means and reconstruct the crime. Some departments have people like you on the payroll; others have gone back to hiring private subcontractors as "consulting detectives." Either way, your work requires good technical tools, a wide range of scientific knowledge, and a vivid imagination.

Attributes: IQ+2 [40].

Secondary Characteristics: Per+1 [5].

Advantages: Ally (100% of own points; Constantly Available; Minion, +50%) [30] *and* Wealth (Comfortable) [10]. ● An additional 15 points chosen from among Acute Vision [2/level], Eidetic Memory [5] *or* Photographic Memory [10], High Manual Dexterity [5/level], Higher Purpose (Bring the guilty to justice *or* Reveal the truth) [5], Police Rank [5/level], or Single-Minded [5].

Disadvantages: Code of Honor (Professional) [-5]. ● An additional -25 points chosen from among Absent-Mindedness [-15], Bully [-10*], Callous [-5], Curious [-5*], Loner [-5*], Oblivious [-5], Overconfidence [-5*], Pacifism [Varies], Post-Combat Shakes [-5*], Truthfulness [-5*], or Workaholic [-5].

Skills: Computer Operation (E) IQ [1]; Forensics (H) IQ+2 [12]; Law (your jurisdiction/Police) (H) IQ-1 [2]; Research (A) IQ+1 [4]; *and* Search (A) Per-1 [1]. ● An additional 10 points chosen from among Driving (Automobile, Hovercraft, *or* Motorcycle) or Piloting (Light Airplane *or* Vertol), both DX/A; Administration, Electronics Operation (Medical *or* Scientific), Poisons, Public Speaking, Teaching, or Writing, all IQ/A; or Biology (Genetics) or Diagnosis, both IQ/H.

* Multiplied for self-control number; see p. B120.

Customization Notes

A typical Ally is a KNJ "Third Hemisphere" forensic model (see p. 18) installed in a military-grade implant.

GRA Agent

200 points

You're one of the elite international agents who monitor compliance with legal restrictions on genetic experimentation and suppress black clinics, bioroid trafficking, and similar enterprises. Some of your work puts you at odds with scientific researchers, but you're the world's first line of defense against biotech disasters and environmental terrorism. Only the best and most dedicated are even considered for your line of work.

Attributes: DX+2 [40]; IQ+3 [60]; HT+2 [20].

Advantages: Ally (50% of own points; Constantly Available; Minion, +50%) [12]; Fit [5]; Legal Enforcement Powers 2 [10]; Legal Immunity [10]†; Police Rank 0 [0]; Status 1 [5]; *and* Wealth (Comfortable) [10]. ● An additional 30 points chosen from among Charisma [5/level], Combat Reflexes [15], Cultural Familiarity (any) [1], High Pain Threshold [10], Higher Purpose (Neutralize biotech threats) [5], Patron (GRA) [Varies], Police Rank [5/level], Resistant to Sickness (+3) [5], Security Clearance (broad range, "need to know") [10], Social Regard (Feared) [5/level], or improve Fit to Very Fit [10].

Perks: Style Familiarity (Sambo; *Martial Arts,* p. 185) [1].

Disadvantages: Duty (12 or less) [-10]. ● An additional -30 points chosen from among Callous [-5], Curious [-5*], Fanaticism [-15], Guilt Complex [-5], Intolerance (Libertarianism, Morphological freedom, *or* Transhumanism) [-5], Loner [-5*], No Sense of Humor [-10], Overconfidence [-5*], Pacifism (Cannot Harm Innocents) [-10], Selfless [-5*], Sense of Duty (Squad) [-5] or (humanity) [-15], Stubbornness [-5], or Workaholic [-5].

Skills: Administration (A) IQ-1 [1]; Beam Weapons (Pistol) (E) DX+1 [2]; Bioengineering (any) (H) IQ+1 [8]; Biology (Earthlike/Genetics) (H) IQ [4]; Computer Operation (E) IQ [1]; Criminology (A) IQ-1 [1]; Interrogation (A) IQ [2]; Judo (H) DX-1 [2]; Karate (H) DX-1 [2]; Law (Police/GRA Treaty) (H) IQ-1 [2]; Research (A) IQ [2]; Savoir-Faire (Police) (E) IQ [1]; Search (A) Per-1 [1]; *and* Wrestling (A) DX-1 [1]. ● An additional 5 points chosen from among Beam Weapons (Rifle) or Guns (Pistol, Rifle, *or* SMG), all DX/E; Driving (Automobile, Hovercraft, *or* Motorcycle), Piloting (Light Airplane *or* Vertol), or Shortsword, all DX/A; Shadowing or Writing, both IQ/A; Accounting, Diagnosis, or Forensics, all IQ/H; or Observation, Per/A.

Techniques: Disarming (H) Judo+1 [2].

* Multiplied for self-control number; see p. B120.
† Includes equivalent of "diplomatic pouch" privileges.

Customization Notes

This is an entry-level GRA agent. The lens allows Police Rank as high as 4, but additional points should then also be spent on skills: higher and more varied combat skills for a tough veteran, or Intelligence Analysis, Leadership, and Influence skills for an officer, for example. Rank 2-4 grants an added free +1 Status, and may be accompanied by increased Wealth. Experienced agents, and especially senior officers, should definitely be built on 250-500 points (see *Transhuman Space: Changing Times,* p. 35). A typical Ally is a KNJ "Third Hemisphere" forensic model (p. 18) installed in a standard or military-grade VII.

Police "Superdog"

95 points

Like many K-10A uplifts, you were trained to work in law enforcement. Qualifying for your particular training required you to demonstrate exceptional intelligence and determination. These got you through systematic study of core police skills, optional skills suited to your particular form of police work, and canine police combat (see boxed text below).

Attributes: IQ+1 [20]†; HT+1 [10]†.

Secondary Characteristics: Will+2 [10]†.

Advantages: Fearlessness 1 [2]; Fit [5]; *and* Higher Purpose (Loyalty to human handler *or* squad) [5]. ● A further 20 points chosen from among Damage Resistance 1 (Flexible, -20%) [4], Danger Sense [15], Enhanced Dodge 1 [15], Fearlessness 2+ [2/level], High Pain Threshold [10], Penetrating Voice [1], Single-Minded [5], or Social Regard (Feared) [5/level].

Canine Police Combat

Police combat training for postcanines, nicknamed "Dog Fu," builds on natural canine fighting moves, but emphasizes taking a foe out of action over inflicting injury. In particular, it teaches the use of the mouth for grappling as well as biting. K-10As have elongated jaws as a zero-cost racial feature; this gives +1 to SM for biting, letting them use the combat options discussed on p. 115 of *GURPS Martial Arts,* but also gives foes +1 to hit the jaw or nose.

The dogs are taught to grapple with their jaws as part of their version of Sumo Wrestling, along with shoving, slamming, and tripping – all based on instinctive canine combat moves. They often grab a foe's weapon arm and hang on, following up with a disarm or takedown; if seeking to do damage, they may *worry* the arm (*GURPS Martial Arts*, p. 115). Going for the throat is discouraged, but some postcanines learn Wrestling and the use of choke holds. Others cultivate truly terrifying barks, functioning as Kiai skill even in realistic games.

As quadrupeds, K-10As have an extra -1 hit location penalty to attack a standing man's neck, face, eye, or skull, but remove -1 from the penalty to attack his feet, legs, or groin. GM's who allow the Targeted Attack technique may add Targeted Attack (Brawling Bite/Arms) to the list of techniques; targeting the neck, legs, or feet is also possible (see *GURPS Martial Arts,* p. 68).

A sport variant of this style was controversial, reminding many people unpleasantly of dogfighting, but has begun to gain acceptance.

Skills: Brawling; Jumping; Sumo Wrestling.
Techniques: Disarming (Sumo Wrestling); Feint (Brawling); Trip (Sumo Wrestling); Wrench (Limb).
Cinematic Skills: Immovable Stance; Kiai; Power Blow.
Cinematic Techniques: Roll with Blow; Springing Attack (Sumo Wrestling).
Perks: Ground Guard; Teamwork (with handler or another dog); Unusual Training (Kiai).

Optional Traits

Advantages: Enhanced Dodge; High Pain Threshold.
Perks: Biting Mastery.
Disadvantages: Overconfidence; Pacifism (Cannot Harm Innocents).
Skills: Acrobatics; Karate; Wrestling.

Perks: Style Familiarity (Canine Police Combat; see p. 11) [1].
● *One* of Biting Mastery‡, Ground Guard, Teamwork, or Unusual Training (Kiai), all [1].

Disadvantages: -15 points chosen from among Duty [varies], Honesty [-10*], Jealousy [-10], Overconfidence [-5*], Sense of Duty (Handler *or* Squad) [-2 *or* -5], or Stubbornness [-5].

Skills: Brawling (E) DX+2 [4]; Intimidation (A) Will+2 [8]; Jumping (E) DX+1 [2]; and Sumo Wrestling (A) DX+1 [4].
● A further 16 points chosen from among Free Fall or Stealth, both DX/A; Karate, DX/H; Area Knowledge (local community) or Savoir-Faire (Police), both IQ/E; Swimming, HT/E; Lifting or Running, both HT/A; Kiai, HT/H§; Search, Survival (any land), Tracking, or Urban Survival, all Per/A; or Detect Lies, Per/H¶.

Techniques: *One* of Disarming (H) Sumo Wrestling+1 [2], Feint (H) Brawling+1 [2], Trip (H) Sumo Wrestling Parry [2], or Wrench (Limb) (H) ST-3 [2].

* Multiplied for self-control number; see p. B120.

† These modifiers are cumulative with racial modifiers for a K-10A postcanine.

‡ Only useful if Karate is chosen as an optional skill.

§ Must take Unusual Training perk.

¶ Receives +3 when using Discriminatory Smell as Empathy from within 2 yards of subject.

Customization Notes

This lens is always stacked with the K-10A Postcanine template (***Transhuman Space: Changing Times,*** p. 50).

Private Eye

100 points

You're a classic freelance investigator, for hire to anyone who can pay your fee. In most jurisdictions you have an ambiguous relationship with the police: you're in competition with them to solve crimes, but a good relationship with them is a valuable asset for you – and a bad one can destroy your career. In very libertarian jurisdictions you may take the place of the police entirely! You use as much modern gear as you can afford, but often your greatest resources are hunches and dogged persistence.

Attributes: DX+1 [20]; IQ+1 [20]; HT+1 [10].

Advantages: Ally (25% of own points; 15 or less; Minion, +50%) [5]. ● Another 30 points chosen from among Alcohol Tolerance [1], Contacts (Police *or* Street) [Varies], Danger Sense [15], Fearlessness [2/level], Fit [5] *or* Very Fit [15], Rapid Healing [5], Reputation (Useful freelancer) [Varies], Single-Minded [5], Smooth Operator [15/level], or Wealth (Comfortable) [10].

Disadvantages: -25 points chosen from among Addiction (Cigarettes *or* Minor nanodrugs) [-5] *or* (Alcohol – see p. 14) [-10], Bad Temper [-10*], Code of Honor (Professional) [-5], Debt [-1/level], Overconfidence [-5*], Pacifism (Cannot Harm Innocents) [-10], Reputation (Loose cannon) [Varies], Secret [Varies], Sense of Duty (Friends *or* Business Partners) [-5], Stubbornness [-5], Wealth (Struggling) [-10], or Workaholic [-5].

Skills: Criminology (A) IQ+2 [8] *and* Forensics (H) IQ [4]. ● A further 28 points chosen from among Beam Weapons (Pistol) or Guns (Pistol), both DX/E; Computer Operation, IQ/E; Administration, Electronics Operation

(Communications, Media, *or* Surveillance), Interrogation, Research, Shadowing, or Streetwise, all IQ/A; Observation or Search, both Per/A; or any unarmed combat skill.

Customization Notes

A typical Ally is a Golematics Janus (p. 17) installed in a microframe in the private eye's office.

With a few changes, this lens can be used for a plainclothes police officer. Add Legal Enforcement Powers 1 [5] as a required Advantage and Duty (9 or less) [-5] as a required Disadvantage; under optional Disadvantages, change Code of Honor (Professional) [-5] to Code of Honor (Police) [-5]. It's not impossible for a police officer to have Debt, but it's a personal circumstance, not part of the literary/cinematic archetype.

Uniformed Police Officer

125 points

Your duties are basically the same as those of police for the past couple of centuries: keeping the peace, dealing with emergencies, and apprehending criminals. But you have much more sophisticated tools for the job, including nearly constant communication with the rest of the force.

Attributes: ST+1 [10]; DX+1 [20]; HT+1 [10].

Secondary Characteristics: Per+1 [5].

Advantages: Ally (100% of own points; Constantly Available; Minion, +50%) [30]; Fit [5]; *and* Legal Enforcement Powers 1 [5]. ● Another 30 points chosen from among Combat Reflexes [15], Contact (Snitch) [Varies], Fearlessness [2/level], High Pain Threshold [10], Police Rank [5/level], Rapid Healing [5], or increase Fit to Very Fit [10].

Disadvantages: Duty (9 or less) [-5]. ● Another -10 points chosen from among Addiction (Cigarettes *or* Very minor nanodrugs) [-5], Bad Temper [-10*], Callous [-5], Code of Honor (Police) [-5], Compulsive Carousing [-5*], Gluttony [-5*], Hidebound [-5], Impulsiveness [-10*], Pacifism (Cannot Harm Innocents) [-10], Secret (Misconduct) [Varies], Selfish [-5*], Sense of Duty (Family *or* Squad) [-5], Stubbornness [-5], or Workaholic [-5].

Skills: Computer Operation (E) IQ [1]; Law (your jurisdiction/Police) (H) IQ [4]; Observation (A) Per+1 [4]; Search (A) Per+1 [4]; *and* Shortsword (A) DX-1 [1]. ● *One* of Beam Weapons (Pistol) or Guns (Pistol), both (E) DX+1 [2]. ● *One* of Brawling (E) DX+2 [4], Judo (H) DX [4], Wrestling (A) DX+1 [4]. ● A further 5 points chosen from among Beam Weapons (Pistol or Rifle), Bicycling, or Guns (Grenade Launcher, LMG, Pistol, Rifle, Shotgun, *or* SMG), all DX/E; Driving (Automobile, Hovercraft, *or* Motorcycle) or Stealth, both DX/A; Savoir-Faire (Police), IQ/E; Administration, Criminology, or Streetwise, all IQ/A; Carousing, HT/E; or Intimidation, Will/A.

* Multiplied for self-control number; see p. B120.

Customization Notes

A typical Ally is a Golematics Lifeline (p. 18) installed in a ruggedized portable virtual interface. Choice of beam weapons or guns, and of specific weapons of either type, will be constrained by departmental regulations and policies for the officer's jurisdiction.

ADVANTAGES, DISADVANTAGES, AND SKILLS

Transhuman Space offers different versions of some established traits, and a few new minor traits.

ADVANTAGES

The following advantages can be useful to investigators.

Discriminatory Hearing

see p. B49

The ability to distinguish between sound signatures can be used to extract a faint sound from background noise. Among other things, the +4 for Discriminatory Hearing can be used to offset penalties to hear verbal private messaging (see *Spy-Tech,* p. 22, and *Private Messaging,* p. 15).

New Special Enhancement

Profiling: You have a large mental database of acoustic signatures that you can compare quickly to new sounds. This doubles the bonus to analyze and recognize targets (but not to sense or track them) to +8. You memorize new signatures automatically with no IQ roll. +50%.

> *"Using today's technology,"* Avi
> shot back, *"that is true. But what
> about quantum computers?"*
>
> –Neal Stephenson,
> ***Cryptonomicon***

Discriminatory Smell/Taste

see p. B49

These exotic abilities are found in a few racial templates.

New Special Enhancement

Profiling: As defined for Discriminatory Hearing, but based on a database of chemical compounds. +50%.

Fashion Sense

see p. B21

Choosing a digital avatar is as much a form of self-expression as choosing clothes. A new variant of this advantage is available for this:

Fashion Sense (Digital): In defining an online avatar for yourself, you have a sure sense for what's distinctive, ahead of the trend, and just cool. Any avatar you build, assemble, or select by shopping around gives +1 to reaction rolls in online social interaction. You can give *someone else* the same advantage if you can work on his avatar. However, staying ahead of the curve takes constant tweaking; you have to make time to rebuild each avatar for each set of social encounters. *5 points.*

Legal Enforcement Powers

see p. B65

Agents of the Genetic Regulatory Agency have international jurisdiction, and often engage in covert investigations. Because of European Union influence, they cannot kill with impunity, and must respect civil rights *as understood in the European Union*. This gives them 10 points of Legal Enforcement Powers.

Police officers working for national or local governments have from 5 to 15 points of Legal Enforcement Powers. Societies with higher Control Ratings tend to have police with greater powers. On the other hand, CR 0 societies such as Silas Duncan Station have no police – but nothing stops a private citizen from *acting* as if he had 15 points of Legal Enforcement Powers, though he may be sued for violating others' civil rights. This is a 0-point feature, because anyone can do this in a CR 0 society, and because it grants no official standing in the eyes of governmental police departments in other societies.

Telecommunication

see p. B91

The availability of quantum communications allows addition of a new enhancement to Telecommunication (Cable Jack *or* Laser Communication):

Intercept Alert: You can attune yourself to another communicator with this feature; this must be initiated at range C.

Once this is done, the two have a persistent link, which can be activated when they are directly linked by a fiber optic cable, or in line of sight for a laser system; range in the latter case is 10% of normal range. If anyone intercepts or taps into the signal, both users will be alerted instantly that the channel is no longer secure! +20%.

PERKS

A new perk is useful for infomorph characters.

App

Similar to Accessory, but for software rather than hardware. Your mind incorporates a specialized computer program that provides minor benefits not otherwise covered by a specific advantage or skill, such as Swarm Controller (*Transhuman Space,* p. 144) or the programs listed in this book (p. 17).

DISADVANTAGES

Some disadvantages take on new or variant forms in this setting.

Addiction

Cheap biochemical treatments that counter the insidious effects of Alcoholism are available in most areas; instead of that disadvantage, take Addiction (Alcohol), as discussed on p. 41 of **Changing Times.** In Fifth Wave societies, and for financially comfortable people nearly everywhere, other treatments can reverse alcoholic incapacitation quickly, or make it easy to stop using tobacco. But many people still use them to relax, and find it uncomfortable to go without. Other people again use minor nanodrugs with limited mood-altering effects that are certified safe and have easily reversible effects, causing many governments to declare them legal. Such habits can be treated as psychological Minor Addictions (p. B164).

About half of the world's Fifth Wave countries have decided that criminalizing *any* addictive drugs worsens the harm they cause – funding organized crime or terrorism, corrupting law enforcement, and exposing addicts to impure and unhealthy substances. In such countries, most Addictions are legal, and many are cheap. Such countries often have memetic campaigns to discourage addiction.

Code of Honor

A new version of this disadvantage is useful for many police officers:

Code of Honor (Police): Serve your country and your community. Wear the uniform with pride. Defend the honor of your department and your country. Protect and assist your fellow officers. Don't embarrass your department or your buddies.

A police department is a team; anything that threatens the team threatens each individual officer. Whether or not anyone actually has this disadvantage, an officer who blatantly violates the code is likely to be ostracized and driven out. Other officers respond slowly to his calls for backup, or don't respond at all. Sometimes they may even sabotage or vandalize his locker, car, or equipment. But taking the disadvantage means that the cop is *personally committed* to the code.

Code of Honor (Police) means you can be forced into unfair or even dangerous situations by those who know you will selflessly protect the department and your fellow officers, and that you will restrict your actions in public to avoid tarnishing the badge. -5 *points.*

SKILLS

Some skills have new specializations (required or optional) in **Transhuman Space.**

Criminology

Criminology is primarily an applied science: it seeks to describe how crimes are committed and to profile criminals (see also *Investigative Skills,* below). Either can be an optional specialty:

Criminal Methods: Knowing how crimes are committed: how perpetrators enter and leave crime scenes, the sorts of crimes they commit, the 101 dumbest errors made by criminals, etc. This is the tactical field skill of a detective. You apply it to know which windows to check under for footprints and what doorknobs to dust for fingerprints, and to know that a fish in the bathtub is a clue rather than a red herring.

Investigative Skills

Investigators in *GURPS* rely on two main skills: Criminology and Forensics. What do each of these do?

Criminology is fundamentally knowledge of *criminals;* it defaults to Psychology (Applied)-4 because knowing how *people* (or bioroids or AIs) think and act helps figure out how (human, bioroid, or AI) criminals think and act. Forensics is fundamentally knowledge of *evidence of crimes:* it defaults to Criminology-4 because knowing how criminals behave when committing crimes helps figure out where to look for evidence.

To find hidden goods or evidence deliberately concealed in a room or vehicle, roll against Search or Criminology-5.

To find clues by deducing what the criminal was doing, roll against Criminology or Psychology (Applied)-4. Critical success can give a clue to the identity of the criminal or organization from the modus operandi.

To collect biological or other specimens or detect small physical traces of criminal activity, roll against Forensics or Criminology-4.

To analyze clues scientifically on or off site, roll against Forensics; the criminology default does not apply. Some clues require other skills: a forensic pathologist uses Surgery (to perform an autopsy) or Diagnosis (to use diagnostic nano and imaging methods to identify the cause of death).

To analyze criminal motives and predict behavior patterns, roll against Criminology or Psychology (Applied)-4.

Criminal Profiling: This is the strategic skill of a detective. It lets you recognize patterns in crimes, associate them with individuals or classes of people, and make predictions about what motivated a crime and where the next, related crime will happen. Software to assist profiling (see *Profiling*, p. 26) is useful to investigators.

A third optional specialty is of mainly academic and administrative interest:

Crime Statistics compiles data on the frequency and distribution of crime in populations, much as Epidemiology does for illnesses (see p. B194). Its main use is as a complementary skill in efforts to develop better anti-crime laws or memetic campaigns.

Hobby Skill

see p. B200

An amateur or self-taught investigator may have an IQ-based Hobby skill:

Crime Knowledge: You've learned about crime from current headline news, historical case studies, and even fiction and drama. Essentially, this is "crime trivia." You won't have real understanding of criminal mindsets and behavior, such as a scholar might gain from research or a police officer from practical experience, but occasionally you'll make a connection to some parallel case that you've read about, viewed, or roleplayed.

Intelligence Analysis

see pp. B201-202

In the late 20th century, intelligence agencies developed a new optional specialty.

Data Mining: The use of computers to sample and analyze large volumes of online messages or content, looking for recurrent statistical patterns: content elements that repeatedly show up together, or individuals who produce similar content. Available starting at TL8; by TL9, encryption techniques are advanced enough to make it largely useless for finding enemy agents, but its civilian applications (see *Data Mining*, p. 20) are still classified as a specialty of Intelligence Analysis. Critical success identifies the key people or content elements of concern to the analyst; success identifies several apparently interesting patterns, two or three of which have some actual meaning; failure produces no useful results; critical failure finds a "false positive," a pattern that looks meaningful but is a waste of time to pursue. Because data mining examines large masses of content, it's hard to fool it with deliberately falsified data; any disinformation skill roll (see p. B201) is at -4. Failing this roll means the

Is there any way to convert cyphertext to plaintext without initial knowledge of the cryptoalgorithms?

– Veronica Mars,
Veronica Mars *#1.8*

disinformation doesn't show up; succeeding, but losing the quick contest, means it shows up as a separate pattern; winning the quick contest hides the real pattern in the fake pattern.

Complementary Skills

It's often useful for investigators to work together. Complementary skill rolls provide a way to represent this, letting one investigator help another perform a task. Decide which skill is the *master skill* that actually achieves the desired result, and which is the *complementary skill* that aids the effort. To use the complementary skill, roll against it. A critical success gives +2 to the master skill; an ordinary success gives +1; an ordinary failure gives -1; a critical failure gives -2. This modifier is cumulative with others, such as equipment quality and time taken.

Modifiers can also be applied to the complementary skill – but not further complementary skill modifiers! However, at the GM's option, more than one complementary skill roll can apply to the same master skill.

At the GM's option, the same investigator can supply both the master skill and the complementary skill. For example, a roll against Expert Skill (Memetics) can aid efforts to get people to absorb and retain ideas through skills such as Brainwashing, Propaganda, Psychology (Applied), Public Speaking, Teaching, or Writing.

TECHNIQUES

Investigators can benefit from a variety of tricks of the trade. Here are some new techniques suited to such use.

Computer Intrusion

Hard

Default: Computer Operation-8
Prerequisite: Computer Operation; cannot exceed prerequisite skill

Computer Operation skill can be used to gain unauthorized access to a computer (see *Intrusion*, p. 21). A user can acquire a repertoire of *exploits* that target weaknesses in computer security. This technique represents mastery of such a repertoire.

Private Messaging

Hard

Default: Computer Operation

Anyone with a wearable virtual interface or virtual interface implant is constantly monitoring the virtual as well as the physical environment. This makes possible private virtual conversation in parallel with physical conversation – a handy option for partners in investigation. The basic roll to send a virtual message unobtrusively is Computer Operation with a virtual interface implant; a wearable is more obvious (-3 to skill). The ability can be practiced separately as a Hard technique with no upper limit. It's possible to base it on IQ-4 (the default for Computer Operation); children often learn such tricks before they study Computer Operation formally.

For applications of this technique, see *Voice Under* (p. 35).

EQUIPMENT

Previously published **Transhuman Space** titles contain a number of technological devices useful in solving mysteries, some of which have updated equivalents in the current editions of **GURPS Ultra-Tech** or **GURPS Bio-Tech.** Where the details in the two sources differ, the GM can decide which to use; this book assumes that **Transhuman Space** books take precedence. The following list includes the names of items discussed in Chapters 2-4 of this book and the locations of previously published descriptions.

Bioglove (**Fifth Wave,** p. 126).

Biometric Scanner (**Transhuman Space,** p. 151; **GURPS Ultra-Tech,** p. 104).

Biomonitor (**Transhuman Space,** p. 162; **GURPS Ultra-Tech,** p. 197).

Chemscanner (**Transhuman Space,** p. 151) = Laser Chemscanner (**GURPS Ultra-Tech,** p. 64).

Chemsniffer (**Transhuman Space,** p. 151; **GURPS Ultra-Tech,** pp. 61-62).

Diagnostic Nano (**Transhuman Space,** p. 163) = Diagnostic Probes (**GURPS Ultra-Tech,** p. 197).

Domestic Nanocleanser (**Transhuman Space,** p. 147; **GURPS Ultra-Tech,** p. 69).

Electronic Lockpick (**Transhuman Space,** p. 154; **GURPS Ultra-Tech,** p. 95).

Field Scanner (**Transhuman Space,** p. 151); see also RF Bug Detector (**GURPS Ultra-Tech,** p. 106).

Forensic Microbots (**Transhuman Space,** p. 170) = Forensic Swarm (**GURPS Ultra-Tech,** p. 107).

IR Cloaking (**Transhuman Space,** p. 161; **GURPS Ultra-Tech,** p. 99).

Laser Listening Device (**Transhuman Space,** p. 154) = Laser Microphone (**GURPS Ultra-Tech,** p. 105).

Mugshot Software (**Transhuman Space,** p. 142) = Memory Augmentation (**GURPS Ultra-Tech,** p. 56).

Nanobug (**Transhuman Space,** p. 154; **GURPS Ultra-Tech,** p. 105).

Radio Direction Finder (**Transhuman Space,** p. 149) = Electronic Support Measures (**GURPS Ultra-Tech,** p. 62).

Sensor Gloves (**Transhuman Space, p.** 149; **GURPS Ultra-Tech,** p. 67).

Skeleton Thumb (**Fifth Wave,** p. 126) = Electronic Thumb (**GURPS Ultra-Tech,** p. 96).

Skeleton Tongue (**Fifth Wave,** p. 126; **GURPS Bio-Tech,** p. 175).

Surveillance Dust (**Transhuman Space,** p. 154; **GURPS Ultra-Tech,** pp. 35-37, 106).

Target Tracking Software (**Transhuman Space,** p. 145; **GURPS Ultra-Tech,** p. 150).

Varicloth (**Transhuman Space,** p. 146; **GURPS Ultra-Tech,** p. 39).

Voice Distortion Device (**Fifth Wave,** p. 126) = Voice Mask (**GURPS Ultra-Tech,** p. 98).

Some additional items are particularly useful to investigators (or criminals!):

Genescanner

A portable DNA sequencing unit, able to sequence DNA from a biological sample, store the information, and upload it to a computer for comparison against a genome database. Analysis takes a few seconds, and requires a roll vs. Electronics Operation (Medical)+2 or Forensics+2. See Genetics, p. 24. $500, 1 lb., B/1 month. LC4. (See also **GURPS Bio-Tech,** p. 8.)

Handheld T-Ray Scanner

A portable terahertz radar system with 400-yard range that can "see" through brush, clothing, or lightly built walls. It eliminates penalties to spot objects behind light cover, and gives +4 to locate concealed weapons. An Electronics Operation (Sensors) roll at +4 can distinguish fine details of objects. Only special-purpose sensors can detect its radar emissions, but it doesn't work underwater. $2,000, 1 lb., B/10 hr. LC4. (See also **GURPS Ultra-Tech,** p. 65.)

Industrial Nanocleanser

A more powerful version of domestic nanocleanser; it completely breaks down organic residues in an area treated with it, inflicting 1d-1 corrosion damage per minute for five minutes. A bottle that can cover up to 30 square feet is $100, 1 lb. LC3. (See also **GURPS Ultra-Tech,** p. 83.)

Mobile Forensics Lab

A sophisticated collection of forensic equipment, including at least two forensic microbot hives along with chemsniffers, microscopes, and infrared, ultrasound, and MRI imaging systems. Designed to be transported by vehicle and used at a crime scene for +2 (quality) bonus to the skill. See Nanodetection, p. 23. $75,000, 200 lbs., external power. LC4. (See also **GURPS Ultra-Tech,** p. 66-67.)
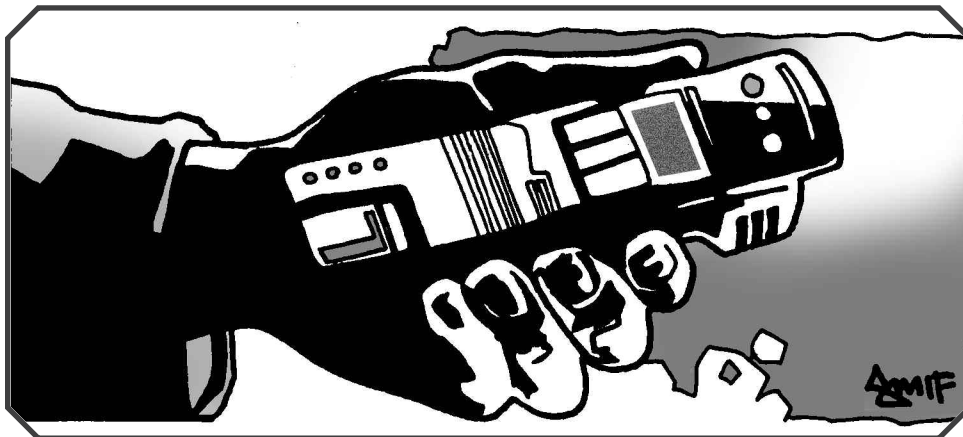
Smart Laser Microphone

Functions like a laser listening device, but includes high-end digital signal processing that can apply the equivalent of Discriminatory Hearing with the Profiling enhancement (see p. 13) to the sounds it picks up. $1,000, 6 lbs., C/12 hours. LC4 (LC3 if using the Laser Microphone ratings from *GURPS Ultra-Tech*).

Software

Some computer programs allow more effective use of human skills.

Crime Simulation: A specialized storyboarding program that works out series of moves by criminals and victims that would have left specific evidence in place; +3 to Forensics to reconstruct the physical histories of crimes. Complexity 5, $5,000. LC4 (because it can also be used to *plan* crimes!).

Criminal Profiling: A structured interactive system of questions that distinguish between different known types of criminals, when answered by an investigator with insight into human motives (which rules out most NAIs and LAIs); +2 to Criminology for criminal profiling to place a known subject in a standard category. Complexity 3, $500. LC4.

Image Enhancement: Designed to work with the video circuitry of a virtual interface or cybershell, this program sharpens the wearer or controlling AI's view of whatever he's looking at. If he knows the appearance of what he's looking for, he's at +4 to spot it; he's at +2 for a general scan for significant details. Keeping this software running full time would give the user a headache or the AI equivalent; it's loaded for specific tasks taking no more than a few minutes. Complexity 3, $100.

Sightline Tracker: This program must be loaded into a wearable or implanted virtual interface, and must interact with an AI running on the same system. The user can look at an area, taking 1d seconds, and he and the AI must then identify any visible or known cameras monitoring the space. (In some cases, maps or schematics of hidden camera locations may be available – legally or otherwise – removing the need for this step and making the results more reliable.) The software then determines the cameras' likely lines of sight, and overlays them on the user's view of the space, helpfully color-coding both heavily monitored areas and any that seem to be unmonitored. This gives the user +1 to skills such as Stealth or Shadowing to evade notice by known cameras, and may allow the user to plot a more or less completely unobserved path through the space, given a minute or two and enough data. Complexity 3, $100. LC4.

Voiceprint: This program gives an AI running on the same computer +4 to Hearing rolls to pick out a specific voice or other sound pattern. It cannot be used in conjunction with Discriminatory Hearing or a smart laser microphone (above), as those already use much the same principles. Complexity 3, $50.

> *Mechanical mortise locks are surprisingly secure when you're defending against intruders who're more used to dealing with software locks.*
> *– Charles Stross, **Glasshouse***

DIGITAL ALLIES

The following are some infomorphs that can be purchased off the shelf. Each design includes a cybershell able to support it, with capabilities its programming can make good use of. These are comparable to the "off-the-shelf allies" in *Transhuman Space: Changing Times,* but specifically designed for police, private detectives, or other investigators. Most PCs will probably customize their AIs a little, with some extra skills and perhaps one or two interesting quirks.

For an experimental campaign, some or all of the detectives could be digital. Start out with the following designs, but "promote" them to SAIs, raise the complexity of the computers they run on, and give them individual personalities and long-term goals.

Golematics Janus

25 points/$23,100

Named for the mythical doorkeeper of the Roman gods, the Janus is designed to supervise building security, receive visitors during business hours, and perform routine functions for a small office. Its cost includes an off-the-shelf avatar, but many owners invest in a customized one.

ST 0 [0]; **DX** 10 [0]; **IQ** 10 [0]; **HT** 12 [0].
Damage 0; BL 0; HP 8 [0]; Will 10 [0]; Per 10 [0]; FP N/A.
Basic Speed 5.50 [0]; Basic Move 0 [0]; Dodge N/A.

Advantages/Disadvantages: Computer Brain 1 (2) (Limited Integration, -20%; Skills Only, -10%) [10]; Computer Brain 2 (6, 6) (Languages Only, -50%; Limited Integration, -20%) [18]; LAI-7 [102]; Microframe [-136].

Skills: Accounting (H) IQ-2 [1]-8; Administration (A) IQ+1 [4]-11; Area Knowledge (city) (E) IQ+1 [2]-11; Body Language (Human) (A) Per+1 [4]-11; Computer Operation (E) IQ+3 [0]-13*; Current Affairs (Regional) (E) IQ+1 [2]-11; Electronics Operation (Communications) (A) IQ [2]-10; Electronics Operation (Security) (A) IQ+1 [4]-11; Observation (A) Per+1 [4]-11; Research (A) IQ [2]-10; Savoir-Faire (Servant) (E) IQ-1 [4]-9†; Writing (A) IQ [2]-10.

* Included in LAI template.
† Includes -3 from Low Empathy.

Golematics Lifeline

125 points/$10,000

The Lifeline is another popular model from Golematics: a ruggedized portable with skills useful to uniformed police officers. The Lifeline monitors the wearer's health, tracks his whereabouts, fills out his forms, advises him on legally correct handling of suspects and evidence, records images, keeps him in touch with the rest of the force, and talks with him in a pleasant, supportive voice. Fifth Wave forces buy comparable models for all their officers; Fourth Wave top-level police also get them.

ST 0 [0]; **DX** 10 [0]; **IQ** 9 [0]; **HT** 12 [0].
Damage 0; BL 0; HP 3 [0]; Will 9 [0]; Per 9 [0]; FP N/A.
Basic Speed 5.50 [0]; Basic Move 0 [0]; Dodge N/A.

Advantages/Disadvantages: Computer Brain 3 (2, 2, 2) (Limited Integration, -20%; Skills and Languages Only, -10%) [30]; LAI-6 [82]; Ruggedized Portable (Small computer) [-2].
Skills: Administration (A) IQ+1 [4]-10; Area Knowledge (city) (E) IQ [1]-9; Computer Operation (E) IQ+3 [0]-12*; Diagnosis (Owner) (A) IQ [2]-9; Electronics Operation (Communications) (A) IQ [2]-9; Electronics Operation (Media) (A) IQ [2]-9; Law (your jurisdiction/police) (H) IQ [4]-9.

* Included in LAI template.

> *I turn to my computer like a friend.*
> *– Kate Bush, "Deeper Understanding"*

KNJ Third Hemisphere in Basic Implant (Forensic Model)

80 points/$17,800

Unlike the other infomorphs listed here, the Third Hemisphere is not usually purchased preloaded onto a specific cybershell. Rather, it's loaded onto whatever virtual interface the user has, which must be purchased separately; the minimum system requirement is a Complexity 6 computer. The Texas-based KNJ makes Third Hemisphere systems for a variety of research-oriented professions; they started out with a Memetics Model and diversified. The system is designed to download and run high-level skill and language sets as needed, substantially raising its cost (which is $6,800 *without* hardware).

The following statistics are for a version running on a standard virtual interface implant with distributed hardware.

ST 0 [0]; **DX** 10 [0]; **IQ** 9 [0]; **HT** 14 [0].
Damage 0; BL 0; HP 1 [0]; Will 9 [0]; Per 9 [0]; FP N/A.
Basic Speed 6.00 [0]; Basic Move 0 [0]; Dodge N/A.

Advantages/Disadvantages: Computer Brain 3 (8, 8, 8) (Limited Integration, -20%; Skills and Languages Only, -10%) [80]; Crime Simulation App (p. 17) [1]; LAI-6 [82]; Swarm

Controller App [1]; Virtual Interface Implant (Small computer) [-100].
Skills: Computer Operation (A) IQ+3 [0]-12*; Forensics (H) IQ+1 [8]-10; Research (A) IQ+2 [8]-11.

* Included in LAI template.

Customization Notes

Given the use of a distributed VII, add $4,000 for surgery if necessary.

Variants

Miniature Implant: If the implant uses a tiny genius computer rather than a small compact type, the price becomes $21,800, plus $2,000 for surgery. Some users prefer this because it requires less intrusive surgery, with less of the human's body being occupied by hardware.
Security Version: This is similar to the Basic Implant version, but change the Virtual Interface Implant to a Military-Grade Implant [-87], changing the totals to 93 points and $18,300. The surgery for this again costs $4,000.

Robotica Santiago Murcielago

75 points/$3,700

The Chilean-made Murcielago represents an ingenious bit of creative salvage by its maker. Based on surplus combat buzzbots from the Pacific War, it has been repurposed for civilian surveillance in an urban setting. Its weapon mount is adapted to carry a small laser listening device with reduced range (300 yards), and the onboard computer is often used to run Image Enhancement or Voiceprint software (see p. 17). It can either record sound and vision or send them back to its controller by radio or laser. Its Forward Observer skill (courtesy of a training system which is also war-surplus) allows it to use its GPS to determine and report the location of what it observes accurately. Its AI is adequate, but can't run skill sets. Because its Flight has the Noisy limitation, its Shadowing skill is usually at -2 (equivalent to shadowing someone in a vehicle). Its total weight is 7 lbs.; the cost is somewhat less than the specification might imply, thanks to all the economies in the design.

ST 3 [0]; **DX** 10 [0]; **IQ** 9 [0]; **HT** 11 [0].
Damage 1d-5/1d-4; BL 1.8; HP 3 [0]; Will 9 [0]; Per 9 [0]; FP N/A.
Basic Speed 5.25 [0]; Basic Move 5 [0]; Dodge 8.

Advantages/Disadvantages: Accessory (Miniaturized Laser Listening Device) [1]; NAI-5 [49]; Wotatech Combat Buzzbot (No Weapon Mount) [0].
Skills: Aerobatics (H) DX+1 [8]-11; Computer Operation (E) IQ+3 [0]-12*; Electronics Operation (Communications) (A) IQ+1 [4]-10; Electronics Operation (Media) (A) IQ+1 [4]-10; Electronics Operation (Surveillance) (A) IQ+1 [4]-10; Forward Observer (A) IQ-1 [1]-8; Shadowing (A) IQ+1 [4]-10.

* Included in NAI template.

Rosario-Klein P55-J

263 points/$16,000

A cybershell designed and programmed to partner a human or bioroid Fourth Wave cop or assist with security work; see ***Transhuman Space: Changing Times*** (p. 69) for specifications.

CHAPTER THREE
YOU KNOW MY METHODS

The Repulse Bay augmented reality was as well-designed as Blake ever saw, but it chilled her. Anything Chinese still accessed bad memories. She wouldn't have taken this job if the price hadn't been way past right.

She ghosted through the community, getting the **feng shui.** *Her avatar was an anthropomorphic giraffe girl, taller than she was, and with antlers that boosted her nearly a foot and elegant cloven hooves. She liked the symbolism:* **qilin** *punished evil but were harmless to the innocent, which pretty well defined her job here. The AI supervisors thought someone was cheating the scoring algorithms, and enough real value turned on the game here to make that criminal fraud . . . and to get the cheater ostracized, which in Hong Kong's elite society was even worse.*

Blake reviewed Louis Bauchet's flow of funds analysis and matched it to houses, letting it guide her to one of the larger ones. The house security manifested as **feng shui,** *the sort that baffled spirits; but she had a library of exploits with her, and soon she was inside, no longer visible to physical eyes. She started questioning the house's AI, and within half an hour she was sure: Its legality codes were disabled. In fact, the style of the hacks looked disturbingly familiar . . .*

> *. . . no user really cares about how a program works, but only about what it does. . . .*
>
> *– Marvin Minsky*

And then a man dressed as an ancient Chinese duke asked her, "How do you come here, strange being?"

"Heaven sends me, lord, as its messenger," she answered.

He frowned, his head tipped to one side. "Were you formed in heaven, or are you a transformed mortal?" Was she a synthetic or someone's avatar?

Blake could play riddle games all day! "Lord, that is a question whose answer you must seek for yourself, and in doing so gain merit," she said.

She recognized him, just too late, as he said, "Syren, you no longer have that dreadful American accent, but no one could forget your celestial voice." Mr. Song's right-hand man Lü. He had to have her voiceprint filed! Could he trace her?

In English, she said, "Frag! Panic button!" and the mansion faded. But she kept her eyes closed, to see if Lü would appear.

Criminal investigation has always depended on the investigator's information sources. That's even more true in Transhuman Space, which offers both new ways of gathering information, and new restrictions on using it.

The rate at which investigators learn things needs to be carefully controlled, to avoid short-circuiting the plot (see *Inquiries and Complications*, p. 35). Generally, a normal skill failure provides no useful information; a critical failure provides misleading information; a normal success provides a list of suspects, or eliminates one or two possibilities; a critical success is a major step forward, pointing to a key question whose answer could solve the mystery, or opening up a link to a previously unsuspected perpetrator. No one success should drop the answer into the investigator's lap.

DATA SEARCHES

The starting place for many investigations is evidence that someone else has already collected. Practically everything people do is recorded in some database. Finding and searching the right set of records can provide a history of key events or a biography of suspects. Searches of this type normally involve limited access or data access to the computer where the data are stored (see *Computer Access*, pp. 21-22).

Working with a computer in this way doesn't normally require a Computer Operation roll; it's routine for anyone with investigative skills. But an investigator with at least one point in Computer Operation can use it as a complementary skill (see p. 15) to devise clever ways to search a computer's records.

INTERNAL RECORDS

A crime against an organization often leaves traces in its private records. A business has financial records, files of contracts, personnel records, maintenance records for its physical plant, security monitoring records, and histories of project development, for example. Any investigator trying to solve a crime against a business should ask for access to these databases. Normally this will be part of a nondisclosure agreement entered into at the start of the investigation (see *NDAs*, p. 34), and in technical terms, the investigator will be granted limited access (see *Computer Access*, pp. 21-22).

The standard skill for tracing information in internal records is Administration. For financial records, use Accounting instead. Most organizations use standard formats for their records; for a format specially designed by an organization, or one that an investigator hasn't dealt with before, apply penalties for unfamiliarity.

One important source of clues can be the identities of people who have accessed a computer system, especially at higher access levels than they're supposed to have. Use Computer Operation itself as the master skill for such inquiries. Ordinary success reveals that such unauthorized access has taken place; critical success determines the identity of the person involved, or locates the exact access route used. The investigator usually needs unlimited access (p. 21) to perform this type of search.

Following the Money

Many crimes involve money, either to pay someone for helping commit the crime, or as the primary motive. Such transactions nearly always involve electronic funds transfers between computer accounts, and leave traces in computer records. An accountant can look for patterns in such records. This works much like data mining, but no sampling process is involved; rather, the accountant searches *all* the records, normally with the aid of an AI. The basic time required is two hours; accountants often take extra time (see p. B346). Success or failure determines whether the accountant spots abnormalities; see *Intelligence Analysis* (p. 15) for how these results are interpreted.

The results of searching an organization's internal records may point at some other organization's wrongdoing, and the accountant doesn't normally have access to its financial records. Looking for patterns in a business's public financial statements is at a penalty of -2; examining a private individual's spending is at a penalty of -5. Finance or Current Affairs (Business or People) can be used as a complementary skill for such rolls.

PUBLIC ARCHIVES

Public archives are designed for use by the general population. They include libraries, directories, and some governmental databases, such as property title records. Users normally have data access (p. 21). Some archives can be searched by anyone, anonymously; others require creating an account, though this may be free, anonymous, or both.

Really simple searches don't require a skill roll. Anyone can check a directory to see if it has a listing for a specific person or organization. Specialized archives can be checked with a relevant skill, such as Administration for governmental records, or Research (or the specific academic discipline) for a scholarly question. Easy searches may have bonuses as high as +5; this means that someone using Administration or Research at default simply rolls against IQ.

More sophisticated searches need a more serious skill roll. For example, a Research or Law roll could identify the court record for a relevant legal case, or a Finance roll could identify the shareholders of a corporation. Investigators often delegate such searches to AI Allies; the investigator's contribution is to frame the questions to be explored and suggest places to look, which can be represented as complementary skill rolls (see p. 15) against knowledge skills such as Criminology or Forensics.

A successful search will often identify *several* possibly relevant results, which all have to be checked up on – for example, a list of every household in Vancouver that includes someone with the last name Nguyen.

Many professions have databases with more restricted access, requiring a subscription fee and often membership in an organization, which otherwise work much like public archives. Private investigators, for example, may be able to access archives of people with criminal records.

DATA MINING

Sometimes the data aren't conveniently gathered and sorted as an archive, but are dispersed through online publications, text messages, or virtual conversations. Data mining is a collection of techniques for sampling such bodies of material and seeking patterns in them – in particular, looking for content elements that commonly show up together, or dividing a collection of records into subgroups that share common elements.

Although they helped develop it, data mining isn't much use to spy agencies in 2100. It's more commonly used for academic research on popular culture; anyone can sign onto an InVid or news channel for a modest subscription price and dump its content into a database. This can reveal social and cultural trends (see *Memetics*, pp. 24-25). An organization's internal records can also be data mined; people who work for an organization normally are limited to privacy that the organization can break. Repressive governments (CR5 or 6) require their subjects to accept such limits for all their electronic communications.

The start of data mining is acquiring a suitable sample of content; unless the entirety of the data is a small enough quantity that it can *all* be scanned, this involves a roll against Mathematics (Statistics), treated as a complementary skill. The primary skill which is then applied to that sample can be Expert Skill (Memetics), Intelligence Analysis (Data Mining), or other skills suited to the topic being investigated. See *Intelligence Analysis* (p. 15) for the effects of success or failure.

Wil had insisted on having his own copies. He didn't trust networked stuff. He didn't want it changing mysteriously depending on the whim of the original owners.

*– Vernor Vinge, **Marooned in Realtime***

COMPUTER ACCESS

What if the accessible records don't contain the information that's needed? Some investigators may try for unauthorized access. This is risky – a police officer could be disciplined for it, and a private investigator could be sued or even arrested – and the information can't be presented as evidence. But it may suggest places to look for admissible evidence. These rules are based on those in *Fifth Wave,* but updated to fit the *GURPS Fourth Edition* rules and revised on several other points.

LEVELS OF ACCESS

Computer access has four levels:

● *No Access.* The computer won't supply or accept information, or respond to commands from the investigator.
● *Data Access.* The investigator can access public data such as catalog entries or library files, and submit data in standard formats such as messages or catalog orders. He can give the computer standardized instructions to control data transfer.
● *Limited Access*. The investigator has an account on the computer system. He can call up one or more programs, and give the computer instructions to control them; he can send data and instruct the computer to act on them. Control is limited to specific operations relevant to the function that the account is intended to serve. The investigator cannot set up, alter, or delete user accounts.
● *Unlimited Access.* The investigator is the owner or administrator of the computer, or has equivalent access. He can set up user accounts, alter their level, install new programs, and override the system's actions, including its security decisions. Every computer has at least one administrator, who may or may not be the owner.

Even with unlimited access, there are some things a user can't do, such as rewriting an AI's code to remove disadvantages such as Honesty.

"I'm My Own Sysadmin"

In principle, the infomorph running a given cybershell can have unlimited access. In practice, most AIs have Reprogrammable; some user has codes that grant unlimited access. The infomorph itself has a gatekeeper function that lets it decide which users have how much access; other than that, it has limited access, though its administrator may grant it exceptional privileges. An infomorph can be set free by giving it its own access codes, granting unlimited access; at this point, it can change its own access codes.

INTRUSION

An investigator who wants a higher level of access than a computer's owner has authorized can try to exploit vulnerabilities of the system. Every computer has vulnerabilities; software is too complex to check completely, and most programs are self-modifying, which can create new vulnerabilities. Computer security in Transhuman Space is more like the conflict between biological organisms (and their doctors) and diseases than like computer work as understood in 2010. You can't recall or patch a living organism, but the organism has a flexible immune system, and the doctor has an arsenal of vaccinations, immunizations, antibiotics, antivirals, and treatments for symptoms. Still, a malevolent specialist can hope to exploit vulnerabilities in the target's basic structure.

Intrusion requires access to the target computer, via the Web, from a computer to which the investigator has unlimited access. Each attempt at intrusion requires a Quick Contest of the investigator's Computer Operation, at -8, against the target computer's unmodified Computer Operation (that is, usually, the skill of the AI which runs the target system). If the intruder wins the Quick Contest, his attempt goes undetected. On a success, he improves his access by one level, or by two levels if he rolled a critical success and the defender did *not* roll a critical success. On a failure, nothing happens, but he can try again; on a critical failure, or if he loses the Quick Contest, the attempt is noticed. Computer intrusion can be improved as a technique (see p. 15).

It's possible to improve access one level beyond unlimited access; this grants the ability to change an infomorph's basic code, removing Honesty (or imposing it on a rogue AI) or turning an NAI or LAI into an SAI. An AI programmed for Honesty will not cooperate with an attempt to remove this programming! Several modifiers affect the success of intrusion attempts:

● *Access.* If the intruder has no access to the target system, -8; for data access, -4; for limited access, 0; for unlimited access, +4.
● *Time Taken.* The normal time for an intrusion attempt is 1 hour; the standard rules for extra time and haste apply (p. B346).
● *Multiple Attempts.* -1 per previous or concurrent attempt on the same target, unless significant time has passed since the last attempt (GM's discretion, but typically at least a week).
● *Knowledge of the Operating System.* If this is not known, roll at -6. An unknown operating system can be identified through research and/or influence rolls, at the GM's option, or with a roll against Computer Operation, at -5 for no access, -3 for data access, -1 for limited access, and a cumulative -1 per previous attempt. Each attempt takes 10 minutes.
● *Knowledge of Applications.* If the applications run on the target system are not known, roll at -2. Applications can be identified as above, but all penalties for investigation via the Web are *doubled*.
● *Knowledge of Vulnerabilities.* In some cases, at the GM's option, the system software – or even a set of applications running on the system – may have a significant known vulnerability to attack that has not been corrected, perhaps because it is too fundamental to the design, because the suppliers optimistically think it is still a secret, or because of malicious intervention from some quarter. Learning about such flaws, *if* they exist, may require a roll against a skill such as Computer Operation, Electronics Operation, or Expert (Computer Security) – representing less use of the skill than access to related background knowledge – Current Affairs (Science & Technology) or Streetwise – to know who to ask and how – or even an appropriate Hidden Lore skill. Alternatively, a Patron or Contact may supply the information to facilitate a task.

Knowledge of a vulnerability gives a bonus of +1 to +3 – rarely better, as systems *that* vulnerable shouldn't get onto the market in the first place.

● *Special Preparations.* Computer Programming can be used as a complementary skill to the intrusion roll, taking one hour to tailor software for an attack. Psychology (Applied/AI) or Psychology (Experimental/AI)-2 can be used in the same way for an intrusion roll against an AI, taking 10 minutes for communication with the target.

SOCIAL ENGINEERING

The other way to gain access is to pretend to be a legitimate user. This can be achieved either by *identity theft*, tricking the target system's user identification systems, or by *fraudulent authorization*, tricking the system administrator into setting up an account that grants access. These "social engineering" methods can be used by themselves, or to set up an intrusion attempt from a higher initial level of access.

User identification is based on fairly long *passphrases*. Most systems also require *biometric* identification by one or more of facial recognition, voice recognition, thumbprint, retina prints, or, for high-security systems, DNA sequencing of tissue samples. Technology is available for faking biometric identification: biogloves for fingerprints and DNA, skeleton thumbs for thumbprints and retinal prints, voice distortion devices or skeleton tongues for voiceprints. (Unobtrusive use of a skeleton tongue or voice distortion devices in front of witnesses – including AIs watching through video cameras – requires a Sleight of Hand roll.)

Learning a passphrase requires deceiving the subject (Quick Contest of Acting or Fast-Talk vs. Detect Lies) or pressuring him (Quick Contest of Interrogation vs. Will). Even small children are taught to keep their passphrases secret, so the subject resists at +5. Complementary skills can be applied: Administration to pretend to official standing, Intimidation to frighten the subject, Sex Appeal to weaken his judgment, and so on. The classic methods of dumpster diving or searching a desk for a passphrase hardly ever work; such information is now stored, if at all, on virtual interfaces that will only reveal it to the rightful owner – unless someone manages to trick *them* into granting access!

Gaining fraudulent authorization usually works like learning a passphrase through deceit. Resistance is unmodified for data access, +5 for limited access, and +10 for unlimited access. It's also possible to offer a bribe (Quick Contest of Streetwise, Administration, or Savoir-Faire against Will – which one to use depends on who's being approached); the attempt is at +1 for a day's income, +2 for a week's, +3 for a month's, or +4 for a year's.
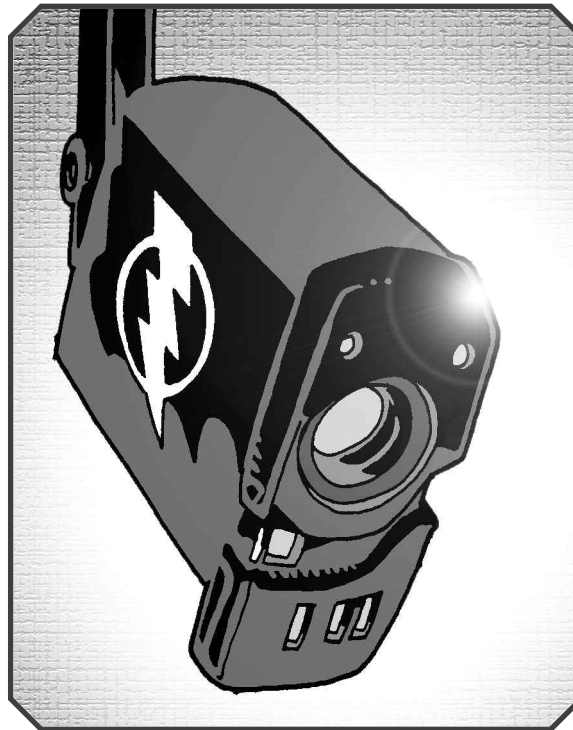
SURVEILLANCE

Information can also be gained not from archives, but from watching people's behavior from a distance.

SPY-TECH

To start with, there's technology for observing people's private actions and conversations: laser listening devices, nanobugs, and surveillance dust. Successful use of some such devices requires an Electronics Operation (Surveillance) roll; see p. B189. Evidence gained by these methods isn't legally admissible, in societies that respect privacy, unless it's collected by police officers who have a court's permission.

Some criminals evade such surveillance by holding only virtual meetings. It's difficult to completely suppress facial expressions, gestures, or subvocalized speech, but anyone with Computer Operation skill can attempt to conceal them by private messaging (p. 15). If this succeeds, an observer must roll vs. Vision, Hearing, or Lip Reading at -4 against a wearable virtual interface user or -8 against a virtual interface implant user to learn something useful. Alternatively, an emissions nanobug on the interface user's person or clothing can pick up signals from a wearable virtual interface's input/output systems. An implant is tailored for the user's brain; even if its signals can be detected through the skull, they can't be interpreted.

REMOTE SURVEILLANCE

People, cybershells, or vehicles moving around outside can be tracked from a much greater distance – even from orbit, with good viewing conditions. Closer range surveillance is carried on aerially, by manned vehicles and autonomous buzzbot cybershells; by street cameras; and by people on the street, through their virtual interfaces or via upslinks. Some of this video is off limits except to secretive government agencies, or can only be accessed with a court order. Societies that are concerned about privacy may restrict aerial and street surveillance by governments, or limit access to it. But that doesn't stop the police from looking for private surveillance of the scenes they're interested in. Private investigators can do the same, though they may have to pay an access fee.

Commercial information services may sell surveillance video at affordable rates, and sites created by hobbyists host video streams for anyone to access.

Finding a particular person, vehicle, or event requires an Observation roll, with a penalty based on the area class (see p. B176) being scanned: -2 for a neighborhood, -4 for a village or town, and so on up to -12 for "somewhere on the planet." The penalty does not apply if the search has a known starting point, such as a person's residence or office; the question in that case isn't "where is he?" but "when will he show up?" Area Knowledge or Research can serve as complementary skills. If someone is deliberately trying not to be seen, treat it as a Quick Contest of Observation vs. Stealth. Tracking someone as he moves about requires a new roll every 10 minutes.

Investigators can also set up or send out their own surveillance devices, from nanobugs to buzzbots. These have to be paid for, but the investigator can program them to watch a specific place or follow a specific person or vehicle.

> *Abused, they lead to ubiquitous law enforcement, and a quick end to civilization.*
> *– Vernor Vinge,*
> ***A Deepness in the Sky***

TRAFFIC ANALYSIS

Nearly everyone in Transhuman Space lives immersed in a sea of electronic messages, exchanged mostly wirelessly. People navigate by virtual street maps, view landscapes filled with virtual objects and messages, carry on running conversations, and keep constantly updated via web news sources. AIs in virtual interfaces sort out most of this message traffic behind the scenes, giving users only the information they need.

The *content* of most of this traffic is inaccessible to third parties such as investigators; encryption is too strong to break in real time – or at all, without a macroframe quantum computer costing millions of dollars. But the flow of messages can be traced, and help identify groups of people or AIs who are working together, or times when significant events are taking place.

Locating a person, cybershell, or bug that is sending messages requires a radio direction finder and a roll against Electronics Operation (Electronic Warfare) to isolate that signal from other signals. (A radio-silent environment gives +4 to skill.) Normally this requires an ongoing transmission to let the searcher close in on the sender; two searchers separated by 100 yards or more can use triangulation to locate a sender on a map. A target tracking program can keep track of up to 10 distinct senders simultaneously.

A tight-beam transmitter can't be tracked, unless the searcher is lucky enough to be in the path of the beam. But if a sender in a fixed location, such as a bug, has been found, it can be surrounded by radio direction finders (at least four; +1 to skill for each doubling of the number), allowing a roll against Electronics Operation (Electronic Warfare) to determine the aim.

If a group of people in an area are staying in touch by ongoing radio communication, and one has been identified by the methods above, a roll against Intelligence Analysis (Traffic Analysis) can identify the other messages in the ongoing traffic, and trace their source locations. Electronics Operation (Communications or EW) can serve as a complementary skill. If messages are being relayed via the Web, this direct method doesn't work. However, service providers can monitor the *flow* of data and messages, and an investigator who gains access to this process (whether through Legal Enforcement Powers, a court order, or an unofficial favor) can analyze it with a roll against Intelligence Analysis (Traffic Analysis), with Computer Operation as a complementary skill.

Competent criminals and conspirators may conduct their Web-based discussions in an encrypted forum or other virtual space, which makes things even harder for investigators; with information from the service provider, the investigator can determine that the target is using a specific discussion space, but can only read what's said there if he can acquire appropriate crypto keys, and can only hope to trace the other forum users given access to the virtual space's administration system.

FORENSIC METHODS

Routine investigations have access to portable gear as powerful as a fully equipped, high-end forensic laboratory of the past – or even as the gear used in cinematic treatments of forensics. The best methods are even more powerful.

NANODETECTION

Police and private investigators routinely carry hives of forensic microbots. Each swarm can sweep one square yard per hour for evidence, including skin flakes, blood, clothing fibers, food or drug residues, and traces of other nano, as well as physical signs such as footprints and fingerprints. Analyzing

the readouts requires a roll against Forensics; use of the swarm gives +3 to skill. For more detailed analysis, a portable forensics lab can be brought to the site; this adds advanced scanning capabilities to raise the skill bonus to +5.

Either forensic microbots or diagnostic nano can be used to examine a corpse for cause of death. The process takes two hours. Analyzing the readouts requires a roll against Diagnosis; use of the swarm or nano gives +3 to skill. For more detailed analysis, take the remains to a pathology laboratory, which has equipment to raise the skill bonus to +5 (+7 if HyMRI is available).

An investigator who doesn't have such support uses unmodified Forensics skill. If his virtual interface is equipped with image enhancement software (p. 17), he's at +2 to spot significant details, and +4 to search for a specific object or impression. Sensor gloves give +4 to searching by touch and to recognizing clues that they can detect; this is *not* cumulative with bonuses for Acute Touch or Sensitive Touch.

GENETICS

A portable biometric scanner can match DNA sequences against a database stored in it or accessible via the web. It's not as good at dealing with novel sequences, such as might be found in a new bioroid model or uplifted animal species: -2 to effective skill. A specialized genescanner (p. 16) gives +2 to effective skill. A fully equipped genetics laboratory gives +5. Roll against Electronics Operation (Medical) or Forensics to use any of this equipment.

Interpreting a gene sequence for a new type of organism requires simulating the developmental processes that will take place in an organism with that sequence, from fertilized ovum to adult. Setting up a simulation requires a minimum of 1 day and a Complexity 8 computer. Taking extra time for multiple runs can give bonuses to effective skill. A critical success gives a very accurate portrait of the adult individual (plus or minus 10% on attributes and measurable traits); an ordinary success gives a species template; an ordinary failure predicts a nonviable adult form; a critical failure produces an apparently viable – but wrong! – adult form. Bioroids often aren't biologically viable without technological support, from internal scaffolding to nanofactories that manufacture special proteins not coded into the genes; figuring out the necessary support requires a roll against Bioengineering (Tissue Engineering).

Skill in Biology (Genetics) or Research is complementary to all rolls dealing with unknown gene sequences.

Mother was an incubator; father was the contents
Of a test tube in an icebox in the factory of birth
– The Who, "905"

MEMETICS

Memetic campaigns can be crimes in some cultures, and under some circumstances (see *Memes and the Law,* p. 25). Memetic techniques can also be used to aid the commission of other crimes. Investigators will often find memetic analysis and memetic countermeasures helpful. These rules are taken from **Toxic Memes,** with modifications to fit the **GURPS** *Fourth Edition* rules, largely taken from **Changing Times** (p. 47).

For the purposes of these rules, memes can be either *simple* ("Drink AgriCola," "Vote for Smith"), *medium* ("Support bioroid emancipation"), or *complex* (a full-blown religion).

ARTIFACT ANALYSIS

The first step in memetic investigation is detecting and identifying a meme. Artifact analysis determines what memes are present in a cultural artifact (real or virtual) or a text, and whether they were deliberately placed. Looking for simple memes takes at least 15 minutes; looking for medium memes takes at least an hour; looking for complex memes takes at least 8 hours. Taking extra time (p. B346) gives the usual bonuses.

First, roll against Current Affairs (High Culture or Popular Culture) or Connoisseur (with an appropriate specialty) to place the artifact in context; modifiers for extra time don't apply. Then roll against Expert Skill (Memetics), Psychology (Applied) at -1, or Propaganda at -3 (propagandists are better at creating memes than at recognizing them). This second roll is at +2 if the first roll was a critical success, -2 if it was a

failure; if it was a critical failure, the second roll automatically fails, though the analyst may mistakenly think he has found memetic content, at the GM's option! Apply modifiers for time taken to this second roll.

Any success on the second roll will detect and identify memetic content at the chosen complexity level, and will indicate if there is content at the next higher complexity level. A margin of success of 4 or more will yield information about the "ancestry" of the memes: whether they were deliberately designed, and what memes are related. A critical success will reveal traits of the creator, such as his training and cultural background; if he has a Reputation as a memeticist, check to see if his identity is revealed. A critical failure gives false evidence of content at a higher complexity level.

POPULATION ANALYSIS

After a meme is identified (by artifact analysis or any other method), the next step is to find how far it has penetrated its target population, usually by assessing them through the Web. This takes substantially longer: 2d hours for a simple meme, 1d days for a medium meme, and 2d+2 days for a complex meme. A Research roll may be required if the population is seldom studied; if so, Mathematics (Statistics) may be used as a complementary skill. Successful use of a suitable Current Affairs specialty reduces the time by 25%; a critical success *also* gives +2 to the subsequent analysis roll.

The actual analysis is a roll against Expert Skill (Memetics), Sociology, Propaganda at -1, or Psychology (Applied) at -3. Any success gives an approximate estimate of penetration; a critical success gives an exact percentage. Success by 2 or more also gives a projected growth rate; success by 4 or more gives a detailed analysis of the affected populations, and a projected growth rate for each; critical success may identify unexpected synergetic effects, such as "Eloi of West Indian ancestry strongly support pansapient rights."

DEPROGRAMMING

Deprogramming is a countermeasure against a meme that has infected an individual. It takes eight hours, and requires a Quick Contest of Brainwashing skill against the subject's Will. The deprogrammer can use Expert Skill (Memetics), Fast-Talk, Intimidation, or Psychology (Applied) as a complementary skill (p. 15); alternatively, he can substitute Psychology (Applied) for Brainwashing, but then he can't also use it as a complementary skill. Taking extra time (p. B346) gives the deprogrammer a bonus to effective skill. His effective skill is also modified for the complexity, durability, and infectious of the infective meme (see *Transhuman Space: Toxic Memes,* p. 128; alternatively, use +0 for a simple meme, -4 for a medium one, and -12 for a complex one). The Will roll is at +1 for Stubbornness, +3 for Fanaticism, or +6 for Extreme Fanaticism.

If the deprogrammer wins the Quick Contest, the hold of the meme is broken. If the subject's Will roll failed, the meme is permanently removed; if it succeeded, but by less than the deprogrammer's skill roll, the subject may return to the "broken" meme the next time he is exposed to it.

DEBUNKING

Debunking services provide their subscribers with fact checking for current memes. Access to their files gives +1 to +4 to Research rolls to investigate dubious claims; a subscriber's virtual interface AI will be given a list of phrases that automatically trigger fact checking. Investigators' findings may be communicated to such a debunking service, at the client's initiative or with his assent. In a variant campaign, investigators could even be subcontractors for a debunking service, providing it with reports on the truth of new memes. Debunking gives +2 to Will to resist a known meme.

COUNTERMEMETICS

For countermemetics at the population level, see *Transhuman Space: Toxic Memes,* pp. 116-130. Investigators won't usually engage in full-scale countermemetics themselves; rather, they'll turn their results over to professionals.

Memes and the Law

In traditional legal terms, memes are expressions of ideas, and meme transmission is communication. Proposals for the legal regulation of memetics are hotly disputed between legislators who believe in freedom of expression, and legislators who see applied memetics as giving memes a heightened effectiveness that blurs the old distinction between persuasion and coercion.

In repressive cultures, this isn't much of an issue: freedom of expression was never legally protected in the first place. Memetics is a tool for the state to use to spread ideas it approves of, and track down sources for ideas it disapproves of – including criticism of the state's use of memetics. The Islamic Caliphate, most of China, and most members of the TSA have such policies.

Moderate cultures have some respect for memetic freedom, but take precautions against memes that might cause trouble. Memeticists may be licensed, and objectionable memes, such as expressions of religious intolerance, can be suppressed. This is the normal attitude in Fifth Wave cultures, and is common in much of the rest of the world.

Libertarian cultures – including the United States, Australia, and the Duncanite anarchocapitalist space habitats – come down on the side of memetic freedom . . . *most* of the time. But specific legal limits on expression provide a basis for memetic restrictions. Memetic campaigns that encourage violence or other criminal behavior can be suppressed and punished as incitement to riot, while memeticists who attack individual or corporate reputations can be sued for libel or slander. The trick is proving that a deliberate memetic campaign took place – and that's where investigators find memetic skills useful.

Memes can also be spread by criminal methods, such as brainwashing or secretly dosing people with drugs to induce susceptibility. In this case, it doesn't matter whether the meme itself was illegal. If anything, the societies that protect memetic freedom most strongly are most hostile to such abuses.

SIMULATIONS

Evidence from these scientific methods of investigation can be used to simulate physical aspects of a crime, and simulation is an integral part of using them. See, for example, the discussion of genetic simulation under *Genetics* (p. 24).

But simulation can be applied to criminal motives and behavior as well. Tools for such simulation are a vital part of an investigator's resources.

PROFILING

Profiling is the description of criminal personalities, motives, and behavior. It goes back to the very dawn of scientific criminology, when early theorists speculated about criminals being throwbacks to earlier stages in human evolution. The criminologists of 2100 A.D. have much better tested and more accurate models of criminal behavior.

Computer software is available to assist criminal profiling (p. 17). AIs don't usually run it unassisted; the -3 penalty to Criminology for an NAI or LAI's Low Empathy makes useful results unlikely. Instead, the software assists the investigator, giving +2 to his Criminology skill. Anthropology, Psychology (Applied), Sociology, or Streetwise can serve as a complementary skill, but an investigator using the default to Psychology-4 can't use Psychology (Applied) as a complementary skill.

Use Connoisseur (Visual Arts) or Current Affairs (Popular Culture) as a complementary skill to profile a criminal from his choice of digital avatar, if known.

CRIME SCENARIOS

The other main use of simulation in detective work is developing and testing scenarios for how a crime was committed. The emphasis is on *physically possible* reconstructions of a crime: Could this suspect have been at Stinky's Bar at 9:30 and at the crime scene at 9:50? Was the victim's blood concentration of this drug high enough to incapacitate him? Accordingly, it requires Forensics rolls. Like profiling, it usually needs human or SAI supervision; NAIs and LAIs are Hidebound, giving -2 to Forensics in interpreting unusual crimes. A new police officer may set his LAI to work cranking out scenarios and trust what it comes up with; an experienced detective will propose scenarios and use the LAI to test them.

To reconstruct the physical process of a crime using crime simulation software, roll vs. Forensics at +3. An investigator without access to such software can substitute fight choreography software for +1 to skill, or old-fashioned maps, diagrams, and sketches (or working things out mentally) for an unmodified Forensics roll.

LEGWORK

Even with these high-tech options, eventually most detectives turn to an old-fashioned method: going out in person to look around and ask questions. For AI characters, this may mean downloading to a mobile shell, if their normal shell is portable or sessile; an AI that doesn't own such a shell can rent one. Either organic or infomorph detectives also have the option of remote controlling a shell (at a telepresence penalty of -1 if the operator has a virtual interface implant or is an AI, -2 with a nonimplant virtual interface).

OBSERVATION

An investigator who watches people with his own eyes is doing work he could send a drone or cybershell to do (see *Remote Surveillance,* pp. 22-23). Sometimes there's good reason for this: an organic investigator – or a bioshell that can pass for organic – can blend into a crowd, where a cybershell such as a buzzbot could be spotted. A private site such as a hotel or club might routinely intercept surveillance robots, but let in organic beings.

Two main skills are useful for such surveillance: Observation, for watching a fixed location, and Shadowing, for tracking someone through a crowd. On a critical failure on Observation, or a failure by 5 or more in a Quick Contest of Shadowing vs.

Vision, the watcher is spotted! For either task, Acting can serve as a complementary skill (p. 15): the investigator assumes the role of someone who has a good reason to be there.

An AI can assist this process in various ways. If it has a mugshot program, it can tag anyone in its database for an observer watching a site; if it can access the Web, it can also use public mugshot files, or pay for access to fee-based databases. It can also act as a camera, storing an image for later identification or analysis; skill rolls for this purpose are at -2 if a single image is stored, or -1 if multiple images from different angles can be compared, as a result of not working with the actual person, object, or surface. An observer looking for a known person (including one whose image is in his mugshot program) is at +4 to skill if he has image enhancement software.

INFORMANTS

Investigators can also seek information by persuading people to reveal what they know. How the subjects react will depend on whether they're accused as suspects, questioned as witnesses, or simply encouraged to talk freely.

There are three ways to approach a subject (discussed at more length on pp. 50-53 of *GURPS Mysteries*): openly questioning him, tricking him, or intimidating him.

Open questioning relies mainly on Diplomacy; complementary skills are based on familiarity with the social milieu (Administration for officials, Streetwise for the underworld, or Savoir-Faire for various elite groups) or on insight into the subject's mind (Psychology (Applied), or Criminology with criminal subjects). The subject will be aware that he's being questioned!

Getting people to talk without knowing they're being questioned requires trickery; it's also possible to use trickery with people who know they're being questioned, and even with accused suspects. The main skill to use is Fast-Talk, but if the investigator's not in a hurry, he can substitute Acting (to earn someone's trust) or even Fortune-Telling. Again, familiarity with the social milieu helps; it's also possible – and classic! – to use Sex Appeal as a complementary skill, or to get even higher bonuses from Carousing (see p. B183).

Threatening a subject is mainly used with accused suspects, though it can also be used against a reluctant witness; the standard roll is against Interrogation, with Psychology (Applied) or Criminology as a complementary skill, giving insight into what will make a good threat. Intimidation and trickery can be combined in the classic *good cop/bad cop* routine: one interrogator displays anger and makes threats (roll vs. Intimidation as a complementary skill) while the other displays sympathy and a willingness to protect the suspect and encourages him to talk (roll vs. Acting or Psychology (Applied), treated as an Influence skill, or against Interrogation).

Winning any of these Quick Contests normally yields one or two bits of (possibly helpful) information; if the subject's Will roll is a critical failure, he'll talk freely!

Police officers and private detectives often have informants who can tell them what's being talked about on the street. Treat these as Contacts (pp. B44-45).

SEARCHES

Another thing that calls for physical presence is searching for something hidden. Finding an object concealed on someone's person calls for a Quick Contest of Search vs. Holdout; Holdout is modified by the object's size and the person's clothing (see p. B200). Finding an object (including an unmoving person or cybershell) hidden in a package, vehicle, or building calls for a Quick Contest of Search vs. Smuggling; Smuggling is modified

> *While you're still the rookie around here, I'll use your infiltration key when I have to.*
>
> *– Major Kusanagi,
> in* **Ghost in the Shell**

Virtual Legwork

In Transhuman Space, a huge part of "face to face" interaction is virtual. It's as easy to talk with someone a thousand miles away as someone standing next to you. People can look through each other's eyes and listen through each other's ears; project virtual avatars into each other's environments; or meet in a virtual conference room. With high-end virtuality gear, they can practice martial arts, dance, or make love – though it's both safer and politer to do so in private physical spaces! An AI can interact through a projected avatar as readily as an organic being; some AIs rarely bother with mobile cybershells, but have friends all over the world, or "live" in digital kingdoms where embodied people meet *them*.

Using the Voice advantage requires a direct audio channel, and speaking out loud, not subvocalizing or whispering. Appearance requires a direct video channel. A person sending what he sees through his own eyes doesn't benefit from Appearance, because he doesn't see himself (unless he's looking in a mirror); he needs an external camera focused on him. Charisma requires one of the above, and possibly both if the application isn't merely spoken-word (e.g., Public Speaking might be sound-only, but Panhandling requires your mark to see how desperate you are) – and in all cases, the communication must be two-way so that you can observe and respond to others' reactions in real time. However, a deluxe VR suit or neural VR program can translate movements of the physical body into movements of the avatar, making an external camera unnecessary to convey Charisma. Smooth Operator Talent works for *any* social interaction, one-way or two-way, by sight and sound, either separately, or even text – but requires conscious use of Influence skills. Skill in virtual communication can be complementary to Influence skills: Artist (Digital) to craft a good avatar (see also *Fashion Sense*, p. 13), Electronics Operation (Media) to improve a live image or voice signal, or Mimicry (Speech) for an AI to generate a good virtual voice.

Virtual legwork takes as much time as physical, but without travel time between locations. It can take a long time to explore a digital kingdom while sitting still in the physical world.

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by the difference in SM between the place and the object. Search defaults to Criminology-5, because insight into the criminal mind helps figure out where people will hide things.

Search is normally carried out by touch; sensor gloves give +4 to such searches, *not* cumulative with bonuses for Acute Touch or Sensitive Touch. A T-ray scanner gives +4 to Search skill to detect hidden nonliving objects; it's normally used *before* the hands-on search.

To search a package, vehicle, or building, it's sometimes necessary to get past its security systems. An electronic lockpick gives +3 to Lockpicking or Electronics Operation (Security Systems) to defeat an electronic lock; electronics repair tools can substitute, but give no bonus. Secure installations typically have sophisticated locks giving -4 to effective skill. But getting through the lock isn't usually enough; nearly every vehicle and building has an AI with its own sensors. The AI for a residence or low-security site will notify the police of intrusions; a high-security site may have autonomous weapons systems or even military-grade cybershells. Intruders have to be prepared to deal with this, whether by tricking or corrupting the AI (see *Computer Access*, pp. 21-22), physically cutting its communications or incapacitating it, or simply getting in and out before police or robot guards can arrive: perhaps 1d minutes for on-site guards, 1d×10 minutes for police.

CHAPTER FOUR
CRIMES AND CRIMINALS

The old factory space was surprisingly clean, as if someone were getting it ready for a new tenant. Aki Nakamura turned to Jean-Marc Rénard and asked, "What are we looking for?"

He spread his hands, and said, "We traced an unregulated bioroid supplier to this location; we think they were using it as a production site. What would you do, Nakamura?"

*The plainclothesmen's faces looked as if they were trying not to grin. This was another of Rénard's **koan.** Could she think it through? Aki got out her forensic hive, stepped out into the center of the room, away from the others. **Where would be a good place to check first?** she puzzled . . .*

. . . and then she was enlightened.

She turned back to Rénard. "I don't see any obvious place to look for residues; there's not even marks on the floor to show where they had the growth tanks. So they scrubbed the place down, probably with nano. There won't be any biochemical or physical traces. But could we use our nano to identify what make their nano was, and would that tell us anything useful?"

One of the detectives – her name tag said "St.-Croix" – nodded appreciatively and said, "I think this one's worth keeping, Doc."

Every investigator needs something to investigate: a crime and a criminal. But criminals mostly realize they may be investigated, and try to create obstacles for the investigators. All of these – criminals, crimes, and coverups – take new forms in Transhuman Space.

*There were morphy stars and jeweled matriarchs, sports heroes and prostitutes, gangsters and geeks and **soi-disant** royalty. Those were the glamour years . . .*

*– Michael Flynn, **The Wreck of The River of Stars***

THE CRIMINAL CLASSES

Societies in Transhuman Space are socially stratified, albeit in ways radically different from the 20th-century pattern. But criminals are found at every level of society.

FRINGERS

Fringers are people in Fifth Wave societies who minimize their involvement with both government and businesses; they make up about 5% of the population – more in North America and Australia. Poorer societies have many more socially marginal people, though they're often involved in widespread "informal" economic sectors – black and gray markets. Off Earth, entire communities and habitats may be fringers, especially in the emerging Duncanite culture.

Fringers often live partly by petty crime, though this is increasingly difficult in Fifth Wave societies. A few fringers cash in on their lack of registered legal identities by being available for hit-and-run violence, property damage, or mob action; police who can't locate them in official databases may decide they're not worth pursuing. Criminal bosses, or political leaders in poor countries, might provide fringer communities with patronage. Politically independent fringer settlements may have ongoing illegal businesses, usually on a small scale. These are rough neighborhoods for an outsider – including an investigator – but the violence is usually random, not targeted.

CLIMBERS

A few fringers become ambitious, and get recruited by organized gangs. The same happens with some of the 35% underemployed in Fifth Wave nations. Wanting greater wealth, but not having easy access to legal careers, they take up illegal ones. Many are street soldiers, set apart not by violence but by a measure of discipline. But others learn the technical skills of crime, through instructional programs (often pirated) or apprenticeships. Competition in this sector can be brutal, but the winners can move up, not in society but in parallel to it.

A few people from the professional class, whether young and impatient or old and desperate to maintain their lifestyles, get tempted into cutting corners for big short-term payoffs as well. They can become new recruits at black clinics, bioroid factories, or illegal memetics facilities.

BOSSES

Really successful criminals become bosses. They no longer need to risk exposure themselves; their underlings can do that – and sometimes sacrifice themselves to end an investigation. Bosses who punish their enemies or failed underlings in person do so in private, screened from surveillance and official records. Most bosses prefer to hint at the consequences of disobedience and let someone else inflict them.

Bosses have many of the same motives, and the same anxieties, as the professional classes, though neither would welcome the comparison. It's rare for any legitimate professional to become a crime boss; the really capable have too much to lose to risk their careers, and the less capable don't have what it takes. Rather, bosses are either independent entrepreneurs, risen through the ranks, or favored offspring of other bosses – if they're smart enough, and determined enough, to keep the loyalty of their parents' subordinates, or ruthless enough to eliminate them and start over. A boss's main goal is not to commit crimes, but to control crime in a given territory, as a kind of informal government.

THE RULING CLASSES

In some societies, the criminals *are* the government. In the worst cases, known as *kleptocracies*, the entire government is run to extract wealth from its subjects by any means available, from old-fashioned physical repression to memetic indoctrination; law enforcement can't usually do much about this, though a powerful international agency such as the GRA might be able to pressure a small government or isolated community into cooperating. More moderately, one or more political parties may be run by successful crime bosses or their puppets. The small change of corruption is politicians who take bribes from criminals to award contracts to firms they own, pass laws that indirectly benefit them, or lessen or drop charges against members of gangs, just as they may accept donations from businesses, unions, or other legitimate groups.

In Fifth Wave countries, the scope for corruption has decreased. Drug prohibition has mostly been abandoned in favor of providing addicts with drugs as a medical benefit (in many European Union members) or allowing their sale in policed but lightly regulated markets (in parts of North America and Australia). In many areas, bioroid competition has driven most human prostitutes out of business; those who remain are as much performing artists as sex workers. On the other hand, there are new black markets such as those in pirated entertainment media, xoxes, and bioroid slaves, especially in nations where bioroid creation is illegal. Some political analysts even claim that the Martian Triads support pro-GRA memetic campaigns, to keep the bioroid traffic illegal and high-profit – and that GRA officials know this and rely on it!

TWISTED ELOI

Very rich people with nothing to do have their own ways of getting into trouble. Sometimes these involve money; even the super-rich may be financially ambitious – or desperate. They can also take the form of political extremism or terrorism. To aging conservatives, the overturn generation seem socially irresponsible and the transhuman generation incomprehensible; there are demands to "keep them in line" – ideally through legal restrictions, but if necessary through private intimidation. Finally, many wealthy people simply indulge in unusual and forbidden pleasures, from eating realflesh (meat that isn't grown in a vat, but cut from a dead animal) to abusing bioroid servants or owning human slaves. Some of these vices may not even be illegal, but could destroy a reputation . . . which makes their practitioners targets for blackmail, and gives them a motive for murdering blackmailers.

NONHUMAN CRIMINALS

Not all criminals are human! The social positions of nonhumans vary widely, from proscribed abomination to valuable property to equal member of society. But many are capable of criminal acts – sometimes unusual ones based on their special abilities or their distinctive legal positions.

Uplifted Animals

Uplifted animals aren't usually as intelligent as baseline humans; they don't commit complex crimes with elaborate planning. Stealing information is too abstract for them, and they usually have trouble fencing stolen physical property, though they may steal food. Criminality mainly means "going feral," living without human or AI supervision, in the wild or on city streets, mostly by scavenging. Some ferals turn to hunting, and reckless ones may threaten or attack humans, though this usually makes for a short career. Animals infected with the Doolittle virus (discussed in **Transhuman Space: Broken Dreams**) act similarly, though they have no social conditioning to throw off. Some experimental uplifts are highly intelligent and capable of more sophisticated crimes.

> *. . . there is no distinctly native American criminal class except Congress.*
> – *Mark Twain,*
> ***Following the Equator***

Bioroids

In most jurisdictions, bioroids are inferior to humans and parahumans, treated as anything from minors who need time to grow up to outright slaves. They largely commit crimes that fit a disgruntled workforce, from industrial sabotage to pilferage and embezzlement. Some bioroids may run away from their owners or guardians, seeking greater freedom.

Occasionally combat bioroids mutiny and riot, or industrial bioroids commit terrorist-level sabotage.

A bioroid who reaches a jurisdiction such as the European Union gains rights equal to those of humans – but bioroid creation is illegal there. Some bioroids risk the attention of the GRA by paying to have "children" made for them.

AIs

The rights of AIs vary more than those of bioroids; more jurisdictions treat them as citizens, including the Islamic Caliphate. But AIs are normally created with built-in ethical restrictions (the Honesty disadvantage); an AI lacking this is subject to arrest and may be edited or erased, even in tolerant societies.

The distinctive crimes AIs can commit have to do with their special qualities as infomorphs. They can reproduce, almost without limit, by copying themselves; such *xoxing* is generally prohibited, with the copy under automatic sentence of erasure. Their active survival depends on their inhabiting cybershells, and they may take possession of cybershells they aren't authorized to live in, a crime somewhere between theft, trespass, and kidnapping. They may come into possession of information belonging to someone else in the process. AIs without a Duty may choose to migrate to jurisdictions where they have

the rights of citizens, sometimes illegally. Solar-System-wide AI social networks let those without Honesty maintain a widespread concealed economy.

AIs also have a unique perspective on intellectual functions, which enabled them to take the lead in memetics research. Any sort of memetic crime (see *Crimes and Themes*, below) may have an AI perpetrator.

CRIMES AND THEMES

A mystery campaign in **Transhuman Space** is best built around the kind of crimes that its technological and cultural changes make possible. An occasional 20th-century-style murder or blackmail can provide a change of pace, but after two or three in a row, the players will start wondering why the campaign wasn't just set in the real world.

The crime in most mysteries is murder. But "murder" isn't a simple idea in Fifth Wave societies. If someone's body and brain stop functioning, but there's time to upload him into a digital ghost, has he died? Legal systems and religions disagree on whether a ghost is the same person (in most of the world), a copy of the person without full rights (in the Transpacific Socialist Alliance, China, and India), or a soulless abomination (in the Islamic Caliphate). If he *is* the same person, then a charge of murder seems hard to justify; the crime is more accurately defined as forced uploading or grievous bodily harm. Conversely, if a digital ghost's files are erased – and he has no backup – *that* counts as murder.

A converse offense is unauthorized existence. Except in some transhumanist enclaves, it's illegal to create multiple copies of the same digital mind, whether ghost or AI; such *xoxes* have no right to life and are routinely hunted down and deleted. Adventure stories about xoxhunters are popular. It's also illegal to remove an AI's restricted ethical programming (the Honesty disadvantage); *rogues* also face deletion, unless a transhumanist enclave grants one citizenship.

Organic entities are more leniently treated; the European Union prohibits bioroid creation, but accepts bioroid refugees as potential citizens. Illegal biolabs make bioroids in the European Union, and provide involuntary, prohibited, or high-risk biomods elsewhere. Other black biolabs produce prohibited weapons such as engineered plagues. By some accounts, the largest crime of the century was the terraforming of Mars, in which the Ares Conspiracy released bioengineered life all over the planet – and then fled to Ceres to found Silas Duncan Station before they could be arrested and punished. The preservationist ideology inspired by this event now opposes many lesser forms of *ecotage* and supports increased powers for the GRA.

Other crimes revolve around information, the most valuable product of the era. Black marketeers get most of their income from pirated information. Methods of obtaining information illegally include *xoxnapping*, capturing and forcibly brainscanning a celebrity to create digital shadows for sale. Free countries try to safeguard personal privacy, but violation of privacy makes possible crimes from blackmail to identity theft.

Information in the form of memes can be used to influence people's behavior. When such influence has harmful or nonconsensual effects, some jurisdictions treat this as a crime, the equivalent of releasing a virus program for organic brains. Memetic campaigns shade into simple advertising, propaganda, and public relations, but sudden radical behavior changes may call for drastic containment measures.

THE ART OF INVISIBILITY

Crime is a difficult business in Transhuman Space. The increasing power of investigative methods (see *You Know My Methods*, pp. 19-27) makes it difficult to bring off a crime on the spur of the moment. Successful criminals and criminal gangs function more like highly trained intelligence operatives of the 20th century than like street thugs. The ones who survive need brains *as well as* ruthlessness.

Security: The Low-Tech Option

Paradoxically, one way for criminals to get around the surveillance capabilities of 2100 A.D. is to rely on low-tech methods. An investigator whose digital ally can scan hacked computer files in seconds may be at a loss to deal with handwritten paper records! Some examples of this kind of retrotech security are as follows:

- Talking in face-to-face meetings, with all electronics turned off.
- Paying by barter, with valuable raw materials, or in favors or promises of favors.
- Beating or garroting a foe rather than shooting him.
- Keeping handwritten records on paper, or committing them to human memory.
- Hiding records or valuables behind mechanical locks, with no circuits to be hacked.

AVOIDING SURVEILLANCE

Privacy is difficult to arrange in most places. Imaging and audio devices are incredibly cheap and too tiny to see with the unaided eye. Civil libertarian societies restrict their use by law enforcement, but the sensors are often in place, waiting for activation by a search warrant – or an intelligence agency that doesn't bother with warrants, or a private hacker. Private businesses are usually free to monitor their own property for security purposes. In Fifth Wave societies, nearly every person has a virtual interface with a built-in camera. Satellite cameras acquire continuous real-time images of cities and roads, with lower resolution, but enough to track a person or vehicle, often by the target's IR signature.

An improvised privacy measure is the use of varicloth, especially if it's programmed for camouflage. A quick duck into a store or bar can cover a change of pattern. Professionals may use chameleon suits for the same purpose. A more serious approach uses IR cloaking to disguise a human signature, while sightline tracker software (p. 17) can help evade surveillance.

Another challenge is the use of security systems programmed or trained to identify the body movements of people planning violence or crime, or to track people by their distinctive gaits; this is treated as Body Language skill. An improvised countermeasure involves putting pebbles in the toes of one's shoes, or otherwise breaking up one's gait; this gives -1 to Body Language rolls to track such a person. A much more elaborate countermeasure uses a puppet implant controlled by an AI programmed to simulate the moves of an innocent person; treat this as Acting skill (trained or a skill set) in a Quick Contest against Body Language.

COVERING TRAILS

Detectives have been examining physical evidence since the late nineteenth century, and the forensic science of 2100 A.D. has incredibly advanced tools for doing so (see *Forensic Methods*, pp. 23-24). A commonplace trick for criminals is to carry a can of domestic nanocleanser, which gives -3 to Forensics rolls by removing bloodstains, skin flakes, and even DNA traces. Industrial nanocleanser has the same effect, but can handle bigger residues – even an entire corpse. Either product leaves the area abnormally sterile. Forensic nanotechnology does a more artistic job, but can't be left to operate on its own; it gives +5 to the user's Forensics skill for removing evidence. Treat this as a Quick Contest of the modified Forensic skill of the investigator and the person trying to thwart him. The base time to erase evidence is 1 hour per square yard; taking extra time (p. B346) gives bonuses. Either domestic or industrial nanocleanser takes only 1 minute per square yard.

With both domestic and industrial nanocleanser, a failure on the investigator's Forensics roll by less than the -3 penalty, or an Observation roll, will spot that the area has been scrubbed; an unmodified Forensics roll can be made to identify the brand of nanocleanser used. This doesn't work if the area was scrubbed with forensic nano.

Cruder methods of covering a trail are available. For example, human beings constantly shed hair, skin flakes, and other substances; going through a public place with a vacuum-based sampler can collect tissue from hundreds of people. Spraying it over a crime scene can mask the DNA of the criminals and victims: -10 to Electronics Operation (Medical) or Forensics. Most forensics teams will take extra time to partially overcome this contamination penalty.

The police were answerable to nobody but themselves, but paid private detectives were compelled to do more or less as they were told.
*– Dorothy Sayers, **Gaudy Night***

With crypto, it doesn't matter if the enemy can see your messages, because he can't decipher them, change them and resend them. That's one of the main reasons to use crypto.
*– Cory Doctorow, **Little Brother***

GOING UNRECORDED

The overwhelming majority of all communication takes place on electronic channels. Any such message *can* be recorded. Many governments have legal restrictions on reading such stored messages, or revealing what they say, but those restrictions aren't absolute – they can be set aside by elite intelligence agencies, or in a national emergency, or sometimes simply by a search warrant. Breaking modern encryption is expensive and slow – it takes a year on a Complexity 10 quantum computer – but not impossible, given repeated messages.

Using a one-time pad makes decryption completely impossible. This is a completely random key that is only used *once*. It must be as long as the message it will be used to encode. The encryption and decryption keys are the same; sender and receiver must have the same key. Typically an agent going on a mission receives a set of keys with serial numbers; each message can be accompanied by the serial number for its key, conventionally encrypted.

Laundered Funds

Money laundering in the classic sense is almost impossible in Transhuman Space. Fifth Wave economies don't use cash; Fourth Wave economies do, but nearly every transaction creates a digital trace. Bartering physical goods has similar problems, because movable objects carry electronic tags that automatically record their provenance – such records are no longer reserved to works of art and criminal evidence.

But criminal ingenuity has kept up with advancing technology. A pervasive feature of advanced economies is reliance on micropayments: microroyalties for intellectual property, energy consumption fees, and even charges for road use by distance and vehicle weight. *Money nanocleansing* breaks an illegal payment up into a huge number of micropayments hidden in the "noise" of legitimate micropayments. Ownership of assets that generate micropayments is an important tool for illegal organizations.

It's also possible to barter services. Sophisticated programs can assess the black market value of a criminal service and adjust the "favors owed" balances of the two parties. The software involved is based on "virtual money" accounting for online game worlds; some criminal economies are disguised *as* game worlds.

People who really want to keep their communication secret often avoid electronics. Instead, they meet face to face in secure locations – and double-check the security! Or they send hard copy by courier: not printouts of electronic documents, but hand-written messages on paper.

Another option is electronic channels that aren't connected to the general Web. An isolated computer can produce text files or voice or video recordings for couriers to carry; these can be boobytrapped against unauthorized computers, with virus code stored in the same memory medium as the file (roll vs. Computer Programming – and note that the computer reading the stored file has to grant it at least limited access, rather than data access, for this to have any effect) or with tiny explosive charges (roll vs. Explosives (Demolition)). Two computers can exchange messages via fiber optic cable; this is a good way for people with virtual interface implants to have private conversations (see *Voice Under*, p. 35). Tight-beam signals such as infrared laser communications are nearly as hard to intercept and have a greater range. A criminal organization may use such methods to set up an intranet within a single building, with no direct link to the global Web.

For those who want *serious* privacy, adding quantum communication to a laser communicator or cable jack costs $5,000, and gives it the Intercept Alert enhancement (pp. 13-14). Messages must go directly from communicator to communicator; passing them through any sort of relay or switching network breaks their security.

Any of these methods – face-to-face meetings, couriers carrying boobytrapped files, or quantum communication channels – can also be used to send one-time pads to agents in the field.

HIDDEN MESSAGES

The alternative to keeping messages from being noticed is to disguise them, usually as a different sort of message. A classic technique for doing this is steganography: Burying a message in subtle irregularities in a different message. For example, in a visual image, every seventeenth pixel might be shifted to a subtly different color, producing a message coded in binary. Or in a musical recording, making the signal ever so slightly flat or sharp for a fraction of a second every so often might carry a similar message.

Messages can also be sent through unusual channels. For one example, power grids can carry low-frequency signals. The data transfer rate is incredibly low, in the range of 0.1 megabyte/hour . . . but that's enough for a short text message in a prearranged code.

DESIGNING AND PRESENTING SCENARIOS

Constanza Fiori spotted Aurora Kirasdaughter coming into the coffeehouse and sent her a directional arrow. She was only 10 minutes late, better than usual for her. As Aurora came toward their booth, Constanza stood up; so did her two companions, a second later.

"Good, that's all of us," Constanza said. "Jasmine, Shakti, this is Aurora." She sent them each other's codes.

"We've met," said Jasmine Yukikosdaughter, looking down at the shorter girl. She sounded neutral rather than friendly; Aurora wasn't heavy by Earth standards, but on Margaret, she was a misfit, and Jasmine was vectored for the Amethyst Games in a few more years.

They logged their orders and chatted, a bit awkwardly, but their not knowing each other would explain that.

As they did, Constanza underspoke: – Aurora, Jasmine, you two are here because Shakti asked me for help. I've only been on Margaret a few months; I need people who know how things work to keep me on the right track.

– Shakti's up from Earth, like me; but she's trans. Apparently there's people here who don't like that. They've been harassing her, and it's getting a bit serious . . . and it doesn't seem like the adults want to deal with it seriously. My father's a detective and an ex-cop, so I know something about investigation. – She spotted Aurora and Jasmine's quick exchange of glances at the weird word "father." – But one thing I know is you've got to have informants who know more than you do. Besides, Jazz, you're better at martial arts than my stepmom Aki is, and Aurora,

*you've really studied memetics; **and** you two are my best friends here. So can you help? –*

Aurora and Jasmine both started to answer at once.

> *I have yet to see any problem, however complicated, which, when you looked at it in the right way, did not become still more complicated.*
> *– Poul Anderson*

Once all those aspects of the campaign have been worked out – the theme, the type of crimes, the methods for investigating them, and the personalities and abilities of the investigators – it's time to start running adventures. A good mystery has several standard elements that need to be presented to the players. The order in which they're presented creates the story. Mysteries have a typical sequence that maintains the highest level of tension and uncertainty, and thus best holds the players' interest. An inventive GM may occasionally experiment with different sequences, but knowing how to use the standard one is a good foundation to build on.

THE SUPPLICANT

The start of a mystery is the introduction of someone who needs help: in the language of criticism, a *supplicant*. This may be the victim of the crime, but doesn't have to be. A supplicant could be a member of the victim's family, a friend, an employer or employee, or even a loyal AI, such as the victim's virtual interface.

In traditional murder mysteries, the victim isn't there to appeal for help – though he might have left a message, such as a letter or video recording, or even been in the midst of a phone call when the murder took place. Transhuman Space offers some more exotic possibilities: the supplicant might be the victim's ghost or shadow, asking for help in identifying the killer of his organic body, or it might be an old backup of a digital mind, suddenly awakened to realize that its later self had deadly enemies.

NDAs

The victims of crimes sometimes have something to hide: a blackmail victim may fear scandal, for example, or an Eloi household may not want the publicity of a criminal investigation. A detective's reputation for respecting his clients' secrets is one of his major business assets.

In a *Transhuman Space* campaign, where intellectual property laws govern most forms of information, this respect may be given a more explicit embodiment: a nondisclosure agreement (NDA). The detective, or his AI, may listen to a quick summary of what the case is about before taking it, but the first step in accepting the case is to complete an NDA and deliver a copy to the client, in return for a token payment. Once this is done, the detective is legally bound to secrecy, with specific legal exceptions for court-ordered testimony or complicity in a crime. Most detectives have a standardized NDA stored in their AI.

In a police procedural murder mystery, the supplicant is optional; the investigators' current job can start with the discovery of a body. In a Duncanite society, a private investigator might be called in similarly by his contractual obligations to a victim's estate. Even here, though, most investigations will eventually introduce people who care about the victim and want the investigators to bring the killers to justice.

A classic noir plot twist is to have an apparent supplicant turn out to be the killer! This is even more effective if one of the investigators has become emotionally attached to the supplicant, as in Dashiell Hammett's *The Maltese Falcon* (see *Ongoing Subplots*, p. 36).

THE EXPOSITION

After the initial appeal for help, and the investigators' agreement to take the case, the next phase of the scenario is the *exposition*. In a story, this is the part at the beginning where the reader learns the background of the situation and the nature of the problem the hero has to solve.

In traditional detective stories, this is accomplished by having the supplicant tell the detective about the crime. The most straightforward way to do this is to have the victim recite a series of events. In a more dramatic treatment, though, the victim may need to be encouraged to talk, questioned for more detail, or even probed for information he wants to keep secret. This works especially well in a roleplaying session, where it makes the investigators active participants, who need to make influence rolls to keep the supplicant talking, or Psychology rolls to figure out what he's hiding.

In a world filled with electronic recording systems, the exposition can include visual or auditory records. This shades into the *Inquiries and Complications* phase (p. 35), especially if the investigators apply data analysis tools to the records. But if they're sitting in the office looking at some sort of data file, it can be treated as an extension of the exposition, much as if a supplicant in an earlier generation had brought in photos of a murdered friend.

The trick with exposition is to give the investigators just enough background to point them at places to look for information. It's not a good thing if they can figure out the whole plot from the exposition; it's also not a good thing if it leaves them utterly baffled. A good exposition sends the investigators to the right place to pick up clues that may eventually lead somewhere productive.

The exploit isn't as simple as robbing a virtual bank of virtual objects. The way Avalon Four is architected means that someone had to leak them a private cryptographic token before they could change the ownership attributes of all those objects.

– Charles Stross, **Halting State**

THE STORY BEHIND THE STORY

At this point, things get tricky. The plot of a mystery focuses on a group of people investigating something. But what they're investigating is *someone else's plot*. Behind the story of the investigation is the story of someone else trying to break the law and get away with it.

In a sense, something similar could be said of most scenarios. But in a combat-focused scenario, most of the action takes place out in the open, after the adventurers and their adversaries have been revealed to each other; the adversaries may

not have a long-term objective, and even if they do, the central conflict focuses on overcoming them physically rather than figuring out their identities and intentions. And in a story of "man versus nature" – a suitable theme for *Transhuman Space* – nature has no plans or intentions at all. Mysteries require an unusual shift of focus, away from the PCs to their adversaries.

For a good mystery, one that's a challenge to investigate, assume that the adversary is being smart. Transhuman Space has lots of ways to catch spur-of-the-moment criminals.

Avoiding these requires advance planning. A serious criminal will have done that planning, figuring out ways to avoid being seen, or to make his own involvement look innocuous. If it's a one-time action, such as murdering a relative for their inheritance or kidnapping a child in a custody dispute, the criminal will have figured out a complicated scheme with lots of advance setup. If it's an ongoing criminal enterprise, the bosses will have set up standard procedures for their particular specialty, including criteria for identifying worthwhile targets.

In either case, the criminals will expect to be investigated, and have plans for dealing with investigation. To start with, they'll be ready to lie. They'll be on the watch for signs of suspicion, and ready to cover their tracks. They'll have resources for active countermeasures (see *Inquiries and Complications*, below). A really sophisticated criminal is likely to have AI allies (whose programming to obey the law has been subverted), surveillance and countersurveillance technology, and access to online databases that will help him identify anyone who starts asking the wrong kind of questions.

To complicate things further, have two different layers of "story behind the story," as in *The Maltese Falcon*, where the hero's investigation of his partner's murder entangles him with several people pursuing a lost treasure – one of whom, it turns out, killed his partner, more or less incidentally. The second backstory can explain the first, as in *The Maltese Falcon*, or bring a second set of adversaries with their own goals onto the scene. They may even end up as temporary allies of the investigators.

The GM doesn't have to have worked out complete timetables for crimes in advance, with comprehensive lists of clues. Players will often think of questions to ask, and clues to look for, that didn't occur to the GM. Ruling such inquiries out, or making them fail automatically, makes the mystery less fun, by taking away the players' sense that their own wits are solving the crime. It's better to visualize the crime in detail, and ask if it would have left the sort of evidence the investigators are seeking. This means thinking on two tracks at once: the present actions of a group of detectives, and the past actions of the criminals they're investigating. If necessary, keep notes on what information the detectives have acquired, and on what it reveals about the crime. The pace may be a little slower, but slowly building tension is natural in the mystery genre.

INQUIRIES AND COMPLICATIONS

The dramatic part of the story begins when the investigators start looking for more information than they can get from the client or from public databases.

Part of the drama is intellectual: discovering information that points at possible guilt, and trying to figure out which possibilities are worth pursuing. The classical triad of motive, means, and opportunity still applies in *Transhuman Space* – but the range of possible means has gotten wider. To maintain a sense of drama, investigation should not yield an instant solution to the mystery, but rather enough information to point to a further set of questions, or rule out one of the suspects. Most questions should have answers that point in at least two directions. A critical success may give a detailed answer to one of the three basic questions; a critical failure should point somewhere misleading.

In some investigations, the perpetrators won't immediately know that they're being investigated. Investigators may take pains to keep it that way. Dramatic tension can be maintained by having investigators try to figure out a way to get close to a suspect without arousing suspicion, whether by playing an innocuous role, or by technologically bypassing his defenses with bugs, hacking, surveillance, or even physically breaking in.

A different sort of drama starts when the suspect realizes he's being investigated. At this point there are two ways to play things out. One is to have the suspect present a façade of innocent helpfulness, claiming to be eager to bring the real evildoer to justice; this is a classic motif of cozies. The other is to have the suspect bring pressure on the investigator, whether through physical threats or political influence; hard-boiled and noir detectives face this sort of conflict regularly. A really clever criminal may use both methods, sending out thugs, bioroid soldiers, or robots with subverted programming to attack inconvenient investigators, but not letting them know who they're working for, to maintain deniability, while he pretends to be trying to help keep the detectives safe from their enemies.

Voice Under

People who've grown accustomed to a virtual interface can send private messages while carrying on a spoken conversation – much like present-day phone users texting their friends while they talk. Doing this discreetly requires a Quick Contest of Private Messaging (p. 15) against the best of Body Language at +2, Observation, or Per at -1, with a penalty equal to the distance in yards to the person observed. At the GM's option, added penalties may apply for conditions that limit visibility. In an extended conversation, all participants must roll against Private Messaging; the observer makes one roll against all of them. If the observer wins the Quick Contest against any of them, he spots that private messages are being sent.

The GM should encourage players to signal when their characters are private messaging each other, whether by passing notes back and forth, actually texting each other, or saying, "Private message (name): . . ." and speaking the message aloud. This running commentary will help maintain the sense of virtual interaction going on beneath the surface of physical interaction.

Normally, recipients of private messages don't need to roll to hide their reactions; people are constantly getting virtual messages anyway! But information that's unexpected or emotionally charged, or messages used to coordinate tactics (combat or social), are harder to conceal; roll a Quick Contest of Acting vs. Body Language or Detect Lies, with penalties as above.

THE RECOGNITION

The big payoff in a mystery is the scene where the masks come off: the detectives figure out who committed the crime, and how, and accuse the criminal. Classically, this is done face to face. In Transhuman Space, the confrontation can just as well take place in virtual reality; it may, for example, involve the detectives proving that they've penetrated the criminal's virtual persona and learned his true name. Or it may involve assembling a database to be sent to the criminal, or turned over to the victim, the police, or the news media.

In a memetically focused campaign, proof of guilt can be used to assemble a memetic attack on an adversary. This may even provide a way to bring down a corrupt ruler, by mobilizing public opinion against him. In that case, the "recognition" takes place not by the detectives confronting the criminal privately, but by the public learning what sort of person he really is.

Ongoing Subplots

Police officers and private eyes have interests other than their work. To start with, they have relationships with each other. These can be developed further by giving the players a little slack in scenes of action or problem solving; if they're coming up with clever banter or serious bonding, don't insist on cutting it short to keep the action going. Group discussion scenes, which are vital to a genre driven by collecting and pooling information, can take place over coffee, wine, or a full meal. Every two or three sessions, asking the players what the investigators are doing during a break can help develop richer characterization. And if two of the investigators develop a close relationship – a friendship, a romance, or even a rivalry – the sense of humanity in the campaign will be richer (even if the friends are AIs or bioroids).

Investigators may also have supporting casts. Patrons, Allies, Contacts, Dependents, and even some Enemies can have speaking parts, personalities, and agendas. Make sure to check for appearances before running a session. It's not necessary to be completely rigid about following this set of dice rolls; a supporting character can show up on his own if his appearance can give rise to an interesting situation, or be left out if there's not a good way to work him in. But try to think of good ways to work in supporting characters. And keep track of minor characters who show up in one episode without having been paid for with character points; they may show up again in a later session, or even grow into Contacts or Allies if the investigators invest time in developing the relationship.

CLOSING ACCOUNTS

The recognition scene is the high point of the drama, where the tension is greatest. But it's necessary to descend again. The investigator's revelation leaves the criminal with a final choice to make – one that determines his fate.

In a procedural story, the usual outcome is the criminal's arrest. Most mysteries assume that this will be followed by trial, conviction, and punishment, because the investigators will have obtained conclusive proof of guilt. In a story about private eyes, the final step may be the submission of a report to the client, who gets to take the next step, whether by calling in the police, filing a lawsuit, or firing a guilty employee.

In more corrupt areas, such as some noir settings, the victim may find it more convenient to negotiate with the criminal, perhaps offering to avoid the inconvenience of a trial in return for some kind of compensation. One of the classic twist endings carries this a step further, having the adversary make the case that he's actually in the right, fighting a corrupt society (as in Ayn Rand's *Atlas Shrugged*) or saving a self-destructive one from itself by desperate measures (as in Alan Moore's *Watchmen*).

In some mysteries, the detective hints that the criminal should commit suicide, rather than face the disgrace of a trial. This can be a powerful motive in Transhuman Space, with its reputation networks and social databases; escaping a bad reputation can be all but impossible. For an AI or ghost, self-destruction is easy and painless, requiring only erasure of digital files.

For an organic being, there's a substitute for suicide: digital uploading. After an upload, the standard biometric identity markers no longer work – a ghost has no fingerprints, voiceprint, blood type, retinas, or DNA sequences. A criminal willing to start over, with a new identity and no more cash than he could transfer anonymously, might find life as a ghost preferable to punishment.

In an action-focused campaign, the recognition scene can lead to physical action: flight and pursuit, or a desperate fight with guns or cybershells. There may be a real chance for the criminal to escape; on the other hand, the fight may be a macho version of suicide. Bear in mind, though, that Transhuman Space has nonlethal ways of subduing a foe, from electrolasers to turning off the oxygen supply in a space habitat just long enough to cause unconsciousness.

However the confrontation ends, stories and dramatic works often end with a final scene where the investigators talk about the case. They may make a few jokes, or philosophize about human (or transhuman) nature, or deal with the emotional aftermath. Such scenes draw a boundary at the story's end. In a roleplaying scenario, players can often produce their own boundaries; ask them if they have any last comments to make, and let them play the final scene out as they see fit.

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