TransHuman SPACE

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Written by Jamais Cascio

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Believe It Or Not . . .

Though you might not have a choice. 2100 is ruled by memetics – the science of analyzing, engineering, and manipulating ideas. Memeticists know how to get into your head for power, money, and religion. Or just for the fun of it.

Toxic Memes explores cults, conspiracies, urban legends, and fads from around the world at the end of the 21st century. In a world where belief, fear, and ideology can be sculpted like clay, how does anyone know what they *really* think?

Toxic Memes is a sourcebook for the **Transhuman Space** setting, and includes detailed rules for the creation and propagation of memes, technologies for controlling information and managing reputations, new characters, new templates, campaign ideas, and over a hundred cults, movements, conspiracies, myths, and fringe subcultures to use as adventure seeds, background flavor, and to enhance your game's sense that the world of **Transhuman Space** is a very strange place indeed.

GURPS Basic Set, Compendium I, and **Transhuman Space** are *required* to use this book in a **GURPS** campaign. **GURPS Space** may also be useful. The ideas in **Toxic Memes** can be used with *any* roleplaying system.

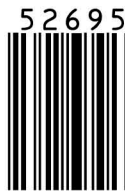## Written by Jamais Cascio   Edited by Kimara Bernard
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TransHuman SPACE

TOXIC MEMES

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INTRODUCTION

WARNING:
REPUTATION IS
DROPPING WITH
ALL GROUPS.

There is nothing so bizarre, so irrational, so *otherworldly* that somebody, somewhere, won't believe it. This is all the more true in 2100, after the science of *memetics* – the analysis and engineering of ideas – has reached its full fruition. Detailed knowledge of how human and artificial minds work has given cult leaders, conspiracy theorists, advertisers, and rumormongers a fresh toolkit with which to ply their trades. The results aren't always pretty.

Toxic Memes dives head first into the swamp of myths, movements, and manipulation that characterizes life in 2100. It details how memetics fits into the world of *Transhuman Space,* and the technologies and techniques that make memetics so powerful. *Toxic Memes* also provides a catalog of the weird beliefs, political agendas, postmodern urban legends, and nonhuman ravings that flourish at the end of the 21st century.

ABOUT THE AUTHOR

Jamais Cascio is a writer and designer of futurist scenarios mixing technology, politics, and business. He has consulted with filmmakers, corporations, and government agencies from around the world, and his thoughts about the future have been featured in *Time*, *Wired*, *Whole Earth,* and on National Public Radio. An enthusiastic *GURPS* player, he is also the author of *Transhuman Space: Broken Dreams*. He lives in the San Francisco area with his wife, two cats, and four Macs.

ABOUT GURPS

Steve Jackson Games is committed to full support of the *GURPS* system. Our address is SJ Games, Box 18957, Austin, TX 78760. Please include a self-addressed, stamped envelope (SASE) any time you write us! Resources include:

Pyramid (**www.sjgames.com/pyramid/**). Our online magazine includes new *GURPS* rules and articles. It also covers *Dungeons and Dragons, Traveller, World of Darkness, Call of Cthulhu,* and many more top games – and other Steve Jackson Games releases like *In Nomine, Illuminati, Car Wars, Toon, Ogre Miniatures,* and more. *Pyramid* subscribers also have access to playtest files online!

New supplements and adventures. GURPS continues to grow, and we'll be happy to let you know what's new. For a current catalog, send us a legal-sized or 9"×12" SASE – please use two stamps! – or just visit **www.warehouse23.com**.

Errata. Everyone makes mistakes, including us – but we do our best to fix our errors. Up-to-date errata sheets for all *GURPS* releases, including this book, are available on our website – see below.

Gamer input. We value your comments, for new products as well as updated printings of existing titles!

Internet. Visit us on the World Wide Web at **www.sjgames.com** for errata, updates, Q&A, and much more. *GURPS* has its own Usenet group, too: rec.games.frp.gurps.

GURPSnet. This e-mail list hosts much of the online discussion of *GURPS.* To join, point your web browser to **www.sjgames.com/mailman/listinfo/gurpsnet-l/**.

The *Transhuman Space: Toxic Memes* web page is at **www.sjgames.com/transhuman/toxicmemes/**.

Page References

Rules and statistics in this book are specifically for the *GURPS Basic Set, Third Edition.* Any page reference that begins with a B refers to the *GURPS Basic Set.* Page references that begin with CI indicate *GURPS Compendium I.* Other references are BD for *Transhuman Space: Broken Dreams,* FW for *Transhuman Space: Fifth Wave*, HF for *Transhuman Space: High Frontier*, ITW for *Transhuman Space: In The Well*, SSS for *Transhuman Space: Spaceships of the Solar System*, TS for *Transhuman Space*, and UP for *Transhuman Space: Under Pressure*. The abbreviation for *this* book is TM. For a full list of abbreviations, see p. CI181 or the updated web list at **www.sjgames.com/gurps/abbrevs.html**.

1 OVERVIEW:
COGNITIVE ECOLOGIES

VICTOR NAKANO,
--MARRIED--

EVELYN DELAIN,
--SINGLE, AVAILABLE--

GUSTAV MARCHO,
--WARNING--

Alice laughed. "There's no use trying," she said: "one CAN'T believe impossible things."

"I daresay you haven't had much practice," said the Queen. "When I was your age, I always did it for half-an-hour a day. Why, sometimes I've believed as many as six impossible things before breakfast."

*– Lewis Carroll, **Through the Looking Glass and What Alice Found There,** 1872*

Memetics – the science of idea propagation and replication – is a cornerstone of the world in 2100. While this study of how belief is shaped and transmitted has mutated fields from sociology to advertising, it has most affected politics and religion. Memetics has set off a cognitive arms race by giving powerful new tools to those who manipulate thinking, and granting others greater comprehension of how such manipulation happens . . . and the power to avoid it.

Civilization at the edge of the 22nd century is a starkly Darwinian environment of ideas, all competing for the limited resource of attention. Memetics draws a close analogy between genes, the units of biological evolution, and memes, the units of cognitive and cultural evolution, allowing memeticists to study the spread of ideas just as an epidemiologist studies the spread of disease. But memetic science in 2100 goes even further, with increasingly powerful techniques for the creation of ideas that audiences will find compelling or even life changing.

In a world filled with memes, only the catchy survive. Some memes thrive by being demonstrably more effective, proving their value through sheer abundance of evidence. Other memes survive by being more interesting, amusing, seductive, or persuasive than their competitors, picked up and transmitted not because they provide obvious value but because they have been sculpted to appeal to many minds.

Before the rise of memetics, the crafting of ideas was the work of artisans, using techniques they couldn't fully explain or even understand. These "memetic alchemists" – as LOGOS, the AI who kicked off the memetics revolution, described them – often came up with slogans that swayed public opinion, but not reliably. With the development of memetics, what had been ritual soon became science. Those who wished to change minds now understood precisely how to do it.

Not all of the memes created using these new tools were, or are, for the betterment of mankind. The world of 2100 is awash in carefully designed memes intended to persuade, amuse, and inspire – yet it is also full of memes created to frighten, dominate, and mislead. Some of the memes out there are simply toxic.

In a world filled with memes, only the catchy survive.

Toxic Memes describes the weird, twisted, and sometimes baffling mental landscape of the end of the 21st century. In 2100, memetics is a well-understood, widely used discipline. A century of development has resulted in sophisticated tools for storytelling, propaganda, and advertising – tools that can be, and are, also used for more nefarious purposes. It's not enough to be skeptical – cognitive survival depends on the realization that every idea has layers, that you may not even be able to trust what you see and feel, and that no truth is unvarnished.

MEMETICS AND MEMES

The science of memetics is based upon a relatively straightforward (if originally controversial) notion: ideas behave like biological entities. They are "replicators," in the language of evolutionary biologists, able to duplicate themselves without losing the original copy. As with genes, they are subject to variation – the replication can be imperfect, leading to slight differences between versions. They are subject to "selection," where environmental pressures can lead to some ideas doing better than others. The combination of replication, variation, and selection means that ideas evolve. Just as genes are the primary units of biological evolution, ideas – memes – are the primary units of cultural evolution.

By 2100, this basic observation has itself evolved into a far-reaching science of human cognition, as well as a complex methodology for generating and manipulating ideas. No longer limited to memes-as-metaphor, scientific memetics examines precisely how ideas trigger responses in minds. Memetics sits at the crossroads of psychology, sociology, neurophysiology, and artificial-intelligence research.

THE ORIGIN OF SPECIES

For all of the massive technological transformations of the 21st century, the development with the greatest potential to alter how humanity and its children think of themselves had its roots in a century-old book about evolution.

Dawkins

A small section in a 1976 book called *The Selfish Gene* triggered the study of memetics. Its author, Richard Dawkins, was a leading late-20th/early-21st-century evolutionary biologist. In one of the book's later chapters, he described his concept of cultural evolution as part of a larger discussion of replicators. He carefully avoided claims that culture was genetic, but stated that just as biological evolution was based (in his view) on competition between genes, cultural evolution was based on competition between replicating cultural units: memes.

While the notion of biological analogies for culture wasn't new – see, for example, William S. Burroughs' observation that "language is a virus" – Dawkins' take on it was. By giving it a clear articulation, scientific credence, and a catchy name, he gave the idea life. In the decades since, the "meme" meme has proven remarkably powerful.

Memes and Memeplexes

So what exactly is a meme? It is an idea, broadly speaking. A song, a political opinion, a scientific conjecture – all can be memes. They exist and have value, in large measure due to their appeal to our minds. Even physical objects have memetic aspects: when we describe a tangible item as being "elegant," "cleverly designed," or "cool," we are discussing its memetic characteristics.

The more a meme appeals, the more likely we are to remember it and to pass it along to others. This communication of a meme can be as simple as telling it to someone or as complex as writing out elaborate design plans. Physical manifestations of memes can even serve as a medium of propagation: simply seeing the result of an innovative idea (such as a keystone arch) can implant the meme, leading to its eventual reproduction elsewhere.

> Examples of memes are tunes, ideas, catch-phrases, clothes fashions, ways of making pots or of building arches. Just as genes propagate themselves in the gene pool by leaping from body to body via sperms or eggs, so memes propagate themselves in the meme pool by leaping from brain to brain via a process which, in the broad sense, can be called imitation. If a scientist hears, or reads about, a good idea, he passes it on to his colleagues and students. He mentions it in his articles and his lectures. If the idea catches on, it can be said to propagate itself, spreading from brain to brain.
> – Richard Dawkins, <u>The Selfish Gene</u>, 1976

Memes interact and compete. If one meme runs up against a contrary meme, our evaluation of the validity of each meme is contingent upon a variety of *other* memes we may hold true. For example, two contrary memes could be "there are Nazis living in the center of the Earth" and "the Earth's center is molten rock and metal," with a contingent meme of "the government always hides the truth, and scientists are in on the deception." This internal assortment of memes is often not terribly consistent, and can change greatly over time.

Memes can change, too. New memes can alter our interpretation and evaluation of older ones, and observations of the real-world utility of various memes can change our perceptions. Historically, the act of communicating memes also led to their alteration, as individual emphasis, forgetfulness, and storytelling ability could greatly alter the makeup of a given concept. Technology has slowly reduced this source of variation. Writing, photography, digital duplication, and, by the late 21st century, ever-present AI assistance each increased the overall fidelity of memetic communication, thereby reducing the likelihood of unintentional "memetic mutation."

Changes to one memetic element can have cascading effects, as few memes exist entirely in isolation. Memeticists refer to interrelated collections of memes that more or less co-evolve as "memeplexes." Well-constructed memeplexes can prove a formidable barrier to memetic change, as each element reinforces the others. When one element of a memeplex is refuted, however, the self-reinforcing nature becomes a liability, and the whole cognitive edifice can collapse. Political and religious views are traditional examples of memeplexes. In common usage, however, the word "meme" covers everything from basic idea fragments to elaborate philosophies; irritation over the incorrect usage of the term is a common quirk among professional memetic engineers.

THE EVOLUTION OF MEMETICS

Over the hundred-plus years since Dawkins first described the concept, the notion of the meme has gone through a considerable transformation.

1976-2015: The Pioneers

The early days of memetics were filled with controversy. Many anthropologists and cognitive scientists flatly denied that memes existed as more than crude analogy; others attempted to co-opt memetics into their existing fields, claiming that memetics was simply an elaboration of existing ideas. Theorists such as Daniel Dennett, Susan Blackmore, and Robert Aunger tried to develop a more rigorous version of memetics, one that could stand on its own. Unfortunately, these early memeticists often worked at cross-purposes, and eventually split into two squabbling camps. One side promoted memes as cognitive artifacts, while the other argued that there was evidence from neuroscience for the existence of memes as manifestations of brain biology. Neither side provided conclusive evidence, and the field gradually fell to the sidelines.

2015-2041: The Dark Ages

For much of the first few decades of the 21st century, most of the few people who even knew of memetics saw it as a fad science. Some of its more important early ideas were absorbed into existing, more traditional fields, and only a handful of theorists kept working on the concept. Among the few remaining memeticists was a young Australian named Kyle Porters, who embraced the idea that memes – in the guise of information – were at the core of culture and society. While his subsequent development of infosocialism bore few direct connections to the early versions of memetics, much of the language used by theory-steeped European infosocialists to this day echoes the work of protomemeticists. As a result of this connection, by mid-century most references to memes were sure to include a dismissive reference to Porters and infosocialism.

2041-2078: The Brain Hackers

Advances in biotechnology, computer science, and nanotechnology throughout the 2020s and 2030s led to great leaps forward in understanding brain function. Memory and cognition could be mapped with increasing accuracy, and researchers were able to make physical connections between biological consciousness and sophisticated low-sapient machines. By the early 2040s, neuroscientists had functional maps of the entire brain, leading to the first virtual interface implants in the brain in 2043 (approved for general use in 2047), and the first sensory link ("slink") systems in 2048 (made available to the public in 2052). By the mid-2060s, the construction of the first full-scale brain emulations – "shadows" – made it possible to track precisely how thoughts were formed, replay complex patterns, even alter memories and beliefs to see how changes affected thought and behavior. Cognitive scientists made enormous advances in understanding the physiology of consciousness throughout the middle of the century, but because memetics had been largely forgotten, the links between how the brain created and evaluated ideas and how those ideas propagated in society were not explored.

2078-2090: Enter the Machine

In 2070, curious about how ideas (such as fears about artificial intelligence) come about and spread, LOGOS, the first sapient AI, began its research into human social cognition. LOGOS soon realized that the turn-of-the-century memeticists were tantalizingly close to real insights, and spent a great deal of its early research evaluating their work. It concluded that humans lacked understanding of how the brain grappled with ideas and could not examine their own cognitive processes completely or objectively, preventing them from making the necessary breakthroughs. LOGOS faced no such problems.

In 2078, LOGOS produced its groundbreaking treatise on memetics, *The Propagation of Human Ideas* (often referred to as *PHI*), dedicated to Richard Dawkins. Declaring that memetics was an inherently complex system, with both feed-forward and feedback effects, LOGOS proceeded to use the complexity mapping techniques developed over the course of the 21st century to detail how ideas emerge, evolve, and expand. While dense with mathematics and hard for most to comprehend, *PHI* soon took its place as the cornerstone of the new science of memetics.

The second edition of *PHI*, published in 2082, greatly extended and revised the original theory. LOGOS (and a variety of collaborators) connected the neurobiology of cognition with the original concept of idea propagation, giving memeticists crucial insights into how ideas take hold. Memetic scientists now had a working model of how memes emerge in the mind, how they evolve in the social environment, and how they expand from mind to mind. The use of memetics exploded.

2090-2099: The Memetic Engineers

By the beginning of the 2090s, memetics had moved into the public spotlight, but not without controversy. Many critics argued that memetics was dangerous, the ultimate tool for despots wishing to control the beliefs and opinions of their people. To the surprise and relief of most, the "propaganda state" proved difficult to create, as the scientific understanding of ideas also gave individuals the tools with which to recognize when memetic techniques were being employed against them. Pundits referred to it as the "democratization of the meme," and they weren't far off. The last decade has seen memetics transform from a specialized, almost secret technique into something that nearly anyone can employ.

But what some called "democratization," others called a "cognitive arms race." By far the most frustrating issue for applied memetics is that, because people are increasingly aware of memetic techniques, processes that work one year can fail utterly the next. Skepticism and other "countermemes" spread easily. Rather than turning advertising, entertainment, political persuasion, and the like into formal, calm disciplines, the application of memetic principles resulted in near-chaos. By describing beliefs and opinions as contingent, external agents constructed to influence outcomes, popular memetics has made the work of memetic engineers significantly *more* difficult than ever before.

Memetics 2100

At the end of the 21st century, memetics combines the study of mass propagation maps (how ideas spread) with individual neurobiology (how ideas take hold). The practice of memetics has spread into most endeavors based on creating or communicating ideas, from advertising and politics to romance and office intrigues. Very little communication intended for an audience is done without a careful memetic check, referred to as "concept wind-tunneling." How will the recipient react? What other memes might the communication support or suppress? In what ways might the meme evolve? Much of the day-to-day use of memetics concerns avoiding bad reactions, not the more difficult task of crafting good reactions.

That's not to say that memes intended to propagate quickly and effectively aren't being created – they are, and in abundance. The tools for creating sophisticated memes and memeplexes are widespread, as is the desire to convince people of a product's value or the validity of one's views. Memetic techniques and systems improve with each passing day, allowing the creation of increasing numbers of complex, adaptive, and very persuasive memes.

> **The main difference between the crap you believe and the crap you know is that, with the crap you believe, you don't pretend to have a bunch of facts to back it up.**
> **– Erk Chattermore, uplift dolphin comedian**

THE MEMETIC SOCIETY

Although memetic science is barely two decades old, it has already transformed many aspects of life at the end of the 21st century. Few people in Fourth and, especially, Fifth Wave societies are ignorant of the ways in which memetics influences behavior. Pop-memetics texts

> **Amateurs talk content; professionals talk populations.**

and InVids are commonplace, and while the fad of sprinkling memetic science jargon throughout casual conversation to appear cutting edge has mercifully faded, the average citizen of the hyperdeveloped world is fairly familiar with the basics of memetic techniques.

MEMETIC ENGINEERING

Although any occupation involving the creation or transmission of ideas has a memetic aspect, not every advertiser, politician, or religious leader needs expertise in memetic science. Memetics is a difficult discipline to master. Organizations needing assistance in crafting influential memes usually rely upon trained memetic engineers. (There are many memetic professions – see *Characters*, p. 130.) Although some professional memeticists may choose to promote themselves, most work behind the scenes.

The details of memetic engineering may be difficult to learn, but the basics are fairly straightforward. Memes and memeplexes, regardless of type, have several characteristics in common. Most popularized approaches to memetics focus on these elements – the "Three P's" – as well as standard techniques to manipulate them.

Populations

Finding the right recipients for a meme is as important as constructing the meme itself. What is the nature of the audience? What is its size? What fractions are expected to receive the memes, transmit them to others, and reject them? A great deal of successful memetic engineering comes from detailed understanding of the target audience. Memeticists have a saying: "Amateurs talk content; professionals talk populations."

Propagation

Memes can be spread by any medium capable of communicating an idea, but determining the right one can be crucial for the eventual success of the memetic exercise. Getting a meme to the recipients who are (a) likely hosts and (b) likely vectors is the action step of memetic engineering. Coming up with a beautifully articulated idea doesn't mean much if you can't get it to people who will appreciate it.

Medium is important. Word of mouth and InVid are commonly used media, but artwork and artifacts also spread memes. The same idea in a song, in a

documentary, and in an advertisement will elicit very different responses from different people. Critically, these responses can be situationally negative – a person likely to accept a meme as part of a song may react very negatively to the same meme presented in an advertisement.

Persistence

Memetic persistence is a subtle issue, as it's not always in the best interest of a memeticist to construct lasting memes. While long-lived memes can be powerful, they are very difficult to construct successfully and sometimes take on a life of their own . . . what professional memeticists refer to as "going feral." If long-lived memes are required, they usually need to be memeplexes, as complex sets are typically more robust in the face of opposition. The main drawback is that rejection of one part of a sophisticated memeplex often results in the rejection of the entire cognitive edifice – "catastrophic collapse," in memeticist jargon.

Some memes should be transient, lasting just long enough to affect behavior, but not so long as to make people think about the meme. Larger memetic campaigns often make use of such transient memes, with new ideas emerging and dying off quickly, each influencing a small group. These gentle nudges can add up. Such micro-meme campaigns are increasingly common, since smaller memes are often harder to analyze, can appear innocuous on their own, and are less subject to wholesale rejection than larger memeplexes.

COGNITIVE ECOLOGIES

My meme hacker mapped the propagation of the Neo-Sufi memeplex in late-2096 southern France. She told me Neo-Sufism was displacing the Buddhist 'plex, fitting in that same niche, so I told Leo to move production away from relaxants toward hallucinogens. Neo-Sufis love that stuff. But things suddenly shifted back. It looked like a promiscuity-party meme had become a parasite on a Buddhist memeplex variant, giving it enough of a push to retake some of its old cognitive niches and even move into some new ones. Leo was pretty mad at the meme hacker for missing it, although we did manage to grab the happy-sexy brainbug market before anyone else saw it . . .
    – Roberto Chan,
        Confessions of a 'Bug Lord, *2099*

Memes do not exist in a vacuum. They require an established cultural or social environment of existing memes and memeplexes in which to flourish or compete. The pop-memetic term for this is a "memespace," but professionals usually call this realm a *cognitive ecology*. For a meme to survive, it needs to fit in with other memes already present in a given society; a well-crafted, hardy meme will fail to propagate if nobody in the audience understands what it refers to, just as even the most aggressive kudzu would be hard-pressed to do well in an arid desert.

Understanding a cognitive ecology means more than simply studying the target audience; it means studying the other memes the audience may be exposed to and memes that they may have rejected in the past. Memes, by their nature, alter the influence and growth of seemingly unrelated concepts. For many memeticists, the ecological metaphor is very useful, prompting them to think in terms of memetic niches, memes competing for resources, memetic parasites, even memes becoming "spores," dropping out of sight until changes to the cultural environment trigger their return.

Cognitive ecologies are tricky. In 2088, shortly after the Pacific War, the World Trade Organization contracted Thunderbird, an Australian advertising firm, to construct a memetic campaign for Thailand. The campaign centered on encouraging the formerly nanosocialist nation to abide by the global content-rights-management (CRM) laws. Thunderhead brought in specialists in Thai culture, conducted multiple visits and interviews, and brought in test audiences for their campaign, all focusing on the myriad ways the audience would react to ads about CRM. Despite the research, it turned out that the phrasing of the message, and the characters' appearances in the ads, echoed elements of a short-lived InVid program in the region parodying life outside the Transpacific Socialist Alliance, "General Pham Says No!" Although the show was no longer a major part of the Thai cognitive ecology, it had left enough "spores" that, once somebody made the connection, a derisive countermeme spread quickly. The ads were a dismal failure; CRM violations in Thailand actually increased over the subsequent year.

Persistent Memeplexes

Well-crafted, complex systems of memes often form the bedrock of cognitive environments. As such, they can be remarkably hard to change. The elements in the memeplex are self-reinforcing, often structured to block countermemes and retard evolutionary variation. From the perspective of the memes' survival, this is a good thing – persistent memeplexes can last for generations with surprisingly little change. For people who have adopted those memes, however, this is something of a problem – the challenges the persistent memeplex was originally crafted to face may no longer be relevant or even exist. Religions are the most commonly cited examples of persistent memeplexes, but ideologies and political systems often have as much or more cultural weight.

Storytelling

Less complex than the elaborate memeplexes at the core of an ecology, stories nonetheless play important roles. In many respects, storytelling is the oldest form of memetic engineering. For millennia, humans have created alternative worlds (or fragments of worlds) to give structure to events, emphasize social norms, and entertain. Modern meme hackers pay particular attention to storytelling, as it's often easier to craft persuasive memes as part of a work of fiction than as a straight argument. Propaganda, conspiracies, and urban legends are often considered to be storytelling by memeticists.

Five Unavoidable Advertisements in 2100

People in Fourth and Fifth Wave countries at the beginning of 2100 can't get away from seeing or hearing these ads – many can't get them out of their heads!

1. *"Mooshi Mooshi!"* As said by Sarah the AstroBurger spokescow. In the ads, Sarah is dressed in a kimono while introducing the restaurant chain's new Nattoburger – all the fun of a burger with the great taste of natto! AstroBurger claims that Sarah is a "bovine uplift," but most people believe that she's actually a specially designed bioroid. Children are particularly prone to screaming "mooshi mooshi" at random times.

2. *"Don't Talk With Your Mouth Full!"* Accompanied by an image of a person with several dozen different food items sticking out of his mouth. Ad for SpaTek's programmable nanopaste rations, sold in most markets under the brand name "Copia," emphasizing the ability to select a wide assortment of food flavors. Ads usually show the unsuspecting consumer in a public setting, and in the midst of a conversation, taking a bite from a Copia bar and suddenly finding his mouth filling with different foods.

3. *"Hallelujah!"* The latest advertising push from Shanghai Interactive for its new MRsiv2 virtual interface glasses. Over the familiar strains of Handel's *Messiah*, masses of people don the new MRsiv2 VIGs, their faces (with an appropriate diversity of ethnicity, gender, and genome) aglow with awe and happiness.

4. *"The Whole World Is Watching."* A frighteningly catchy ad jingle for Durban Outfits, a South Africa-based clothing retailer. The ad is for their new line of videocloth-based clothing, including jackets, jumpsuits, and pants. Most ads finish on an image of models wearing the videocloth pants, with a second Durban Outfits ad running on their backsides.

5. *"What Are Parts Without the Whole?"* Ad for the upcoming InVid release *Facets* (see p. 107). They can be found across Earth and Mars, and in most medium-sized or larger space stations. The *Facets* campaign may be the biggest ad blitz for an InVid ever. Most show multiple images of a face crashing together and shattering.

Viral Ideas

Viral ideas are memes crafted to emphasize propagation, even at the expense of persistence or even stability. Viral ideas spread quickly and easily, often subverting or replacing – if only briefly – existing memes. The adoption of these memes is rarely felt deeply, however. Most viral ideas are forgotten or replaced in short order. Viral ideas are particularly powerful in chaotic memetic environments, where a rumor can rip through a mob and send it off at a new target.

Gossip

Gossip is the humblest part of a society's cognitive ecology, yet many memeticists consider it the most important element. Gossip functions as "soft" power to guide social behavior, giving everyday people a degree of power over elites. The use of gossip as part of a memetic campaign is a delicate process; the meme hacker must create a rumor that is plausible, compelling, and untraceable. If a particular line of hearsay, especially a false one, is revealed to be planted, public opinion can very quickly turn against the source of the engineered story.

Spontaneous Generation

It's important to recognize that not all memes are intentional constructions. Many emerge from observations of the environment or from the intersection of multiple other memes, and propagate due to their compelling, apparently truthful, or amusing nature. In the era before memetic science, the vast majority of memes emerged spontaneously, and even those that were intentionally constructed owed their existence more to folk knowledge and ritual (memetics as alchemy) than to well-understood scientific principles (memetics as chemistry). But even in the post-*PHI* age, many memes appear seemingly out of nowhere, and owe their existence not to carefully designed memetic campaigns but to the human (and posthuman) ability to come up with new ideas.

DARWIN AMONG THE MEMES

One of the signature attributes of memes is that they aren't static. Memes evolve over time, often over a fairly short period. In most cases, this change happens in order to make the meme fit better in various cognitive environments. In a few cases, the alteration is more deliberate.

Memetic Drift

Contrary to the sometimes gleeful, sometimes horrified predictions of turn-of-the-century pundits, increasing commerce and communication between Earth's various regions did not lead to a single global culture; different cultural regions can and do still have strong local characteristics. Memes and memeplexes often adapt to different cognitive environments by changing important elements. For memeticists, this means that approaches and symbols that work in one part of the world may fail utterly in another. The Area Knowledge skill is useful in these situations (see p. 117).

Sometimes local variation provides insufficient distinction for a population unhappy with the state of the world. A growing number of people are choosing to cut themselves off entirely from others. One of the first key steps for those who live on the fringes of society (largely in space) and those who choose to be isolated (largely on Earth) is to sever many of their memetic connections to their past. This results in a fascinating combination of cultural museum and cauldron: memes that fit their situation and are under little pressure to adapt can remain remarkably stable over decades, even as their mainstream counterparts evolve to fit changing times. Memes that remain useful but are under adaptive pressure can, absent external forces moderating their changes, rapidly churn through successive variations. Outsiders visiting a well-established Isolate community often find surreal mixes of aging ideas, fashions, and jargon and utterly new, surprising descendants of established mainstream memes.

Firms that specialize in introducing cutting-edge fashions and designs to a system-wide market hungry for innovation can pay very well to get their hands on these new variant memes. Despite this, most Isolate groups avoid outside contact. Mainstream memes can be seductive, especially to those who grew up in the privation of isolation, not having lived through the identity or social crisis that triggered the move to the fringes. One of the better-known examples of this was the band "Side of Fries," a trio of teens from an Isolate community in Alberta. Brief, surreptitious explorations of the Web gave them fragmentary samples of a variety of music, which they then combined and imitated for their own recordings – and, in turn, placed on the Free Net. Many believe that Side of Fries kicked off the "Dubcore" music trend of the early 2090s.

Total Information Awareness
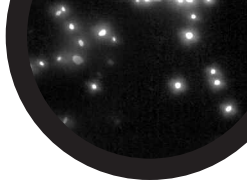
One of the fundamental aspects of the mainstream memetic environment in 2100 is that it is immersed in information. Nearly all of human knowledge and culture can be accessed via the Web (for a price) and most people employ wearable or implanted virtual interfaces allowing constant access to communication and information networks. This is a remarkably competitive environment for memes, as people still have limited attention that they can pay to any given idea; for a new meme to grab some of that scarce attention, it has to stand out – be more innovative, flashy, and relevant. When memes compete with each other for attention and access, memetic evolution is the inevitable result. Those memes that flourish are particularly well crafted for their environment.

> Those who manipulate this unseen mechanism of society constitute an invisible government which is the true ruling power of our country.
> – Edward Bernays, <u>Propaganda</u>, 1928

A typical Fourth or Fifth Waver can access tremendous amounts of information and, with the assistance of an AI, filter it far better than people in decades past. But this constant access to information also means that blatantly deceptive or crudely manipulative memes don't stand a chance. On Earth, a person is almost never out of reach of an answer, a critical opinion, or an alternative scenario; fact checking is remarkably simple (see *Reality Check*, p. 135). This doesn't mean that deception and manipulation are impossible, only that when it is done it is usually done very well.

One effect of AI assistance is that while selection is more aggressive, random variation is far less common. Imperfect human memories are now backed up by far more accurate machines. While this means that memes retain higher fidelity during communication, it also means that happenstance improvements, where a meme is altered in the

> **Using filters to eliminate alternative views is discouraged by democratic nations, although the adoption of filters is common even in the most open nations.**

telling because it "sounds better that way," are rare.

Filters

Virtual interfaces aren't just used to filter out deceptive memes – they're also used to filter out unwelcome images and opinions. Even the most basic NAI interface is able to identify and block web links and network messages that the recipient has no desire to see. Somewhat more sophisticated models can even block real-world images (and sounds, if the interfaces is implanted). Rather than seeing a lurid poster or a screamsheet commentary with retrograde politics, the person using a filter sees a blank space, or a pleasing image to let him know that offensive material has been (virtually) removed (see *Filter Software*, p. 135). Using filters to eliminate alternative views is generally discouraged by democratic nations, although the adoption of filters is common even in the most open societies.

Filters may occasionally be set up to alter outgoing communications, as well. A filter application called Scrubber can "clean up" text, voice, and image messages sent from a virtual interface, removing awkward or inappropriate elements, making the sender appear more educated or less offensive than he may actually be. Ideologically driven movements sometimes install Scrubber (or similar software) on member interfaces to make certain that all communications are politically pure.

Social Filters

Frida looked askance at the grinning bioroid. "You've got to be kidding me. The black lab is a front for the SIA?"

The bioroid scoffed. "Everybody knows, sister. Are you offline or something?"

"Frida," said a familiar voice in her head. "I've checked this."

Out loud: "Just a sec." Internally: "Go ahead, Max."

"Few of your contacts are in a position to know one way or another, but of those that have heard this claim, most reject it. However, three – including Reggie and Mei-Li – say that it fits with other pieces of evidence they've seen."

Frida considered this, and nodded at the bioroid.

"Okay, here's the deal. You get me into that SIA lab, I'll get you the BBF contact link."

One problem with traditional filters is that they are static by nature, and can be too inflexible to cope with an individual's changing needs, environment, and

cognitive ecology. Moreover, while filters may block some useless memes, they can't find good ones. AI agents are a bit better at the latter task, and are certainly a step up from simple filtering. A good AI agent can readily track down useful information on the slimmest guidelines. But even AIs can be bogged down by the sheer abundance of material, and be unable to find good new memes as they are needed.

One solution to the abundance problem is to use "social filtering," sometimes called "collaborative filtering." Rather than accepting or rejecting memes wholesale, all filtering is contingent upon the source. High-reliability sources (e.g., friends or colleagues) are trusted, even when the memes they are suggesting are ones that would be otherwise unwelcome or ignored; low-reliability sources (e.g., strangers on the street or InVid "propa-tainment" shows) have to meet much higher standards when presenting new memes. In many respects, this is just how ideas have been propagated for much of human civilization – people accept new ideas from friends far more readily than they do from strangers. The difference now is the existence of virtual interfaces.

With the intimate connection of a virtual interface, social filtering can be done passively, in the background, as the interface's AI checks with the AIs of friends and colleagues to gauge how *they* react to a given meme. Seconds after a person hears or reads the questionable meme, he is told by his virtual interface how the people he trusts react to it. The main drawback to social filtering is that an individual's circle of trusted friends and colleagues is rarely large enough to be able to respond to the broad assortment of memes an individual – particularly an adventurer – may encounter. The key to keeping social filters from going stale is to entertain memes and evaluations of memes from recommended strangers.

REPUTATION CULTURE

Marco slumped into a seat on the tram to the spaceport, trying to force the train to go faster through sheer force of will. He knew he had to get to the 'port and get on his flight out before the Preservationists discovered he was the one who had modified the genome registry. It wasn't illegal, but too many people here had sympathies toward the Prezzies for him to slip away quietly. He had a sinking feeling in his belly that he wasn't going to make it.

He heard his AI's voice in his head. "Damn." That one word told him everything he needed to know.

Marco saw his rep monitor start to flash – his rating with the Antwerp Benevolent Circle had plummeted, and the other local scores were following quickly. All around him in the tram, as the other passengers caught sight of him, their eyes grew wide as they saw his rep rating. They moved away from him, and

soon he sat at the center of an empty circle extending a few meters all around. Nobody wanted to be near him when the hammer came down.

This was not going to be a good day.

A person's reputation has always been important, and global information networks make it hard for an individual to escape the results of his past deeds. But for a small but influential minority, reputation is something quantified and evaluated.

> # It is a maxim with me that no man was ever written out of reputation but by himself.
> # – Richard Bentley

Reputation Networks

In many ways reputation – specifically, the honesty and reliability of an individual – is just another meme to be passed along and evaluated. As such, memetic filters built into virtual interfaces can be used to filter on the basis of reputation. The various computer and software engineers who built the Web and wearable interfaces implemented such a system early in the 21st century for their own use. Derived from primitive reputation systems used by online games, "friend networks," and auction sites of the time, these early reputation networks were crude, with a small number of settings that would upgrade or downgrade memetic recommendations as they were passed along. As the number of people using reputation networks grew, however, the sheer volume of trusted/mistrusted tags meant that only those with middle-of-the-road, inoffensive personalities had positive reputations; the more edgy types would typically irritate more people than they impressed, and end up with negative ratings.

The first reputation network was clunky and more distracting than compelling, and was eventually abandoned. Keeping track of affinity groups required too much human input, and the software – embedded into mobile phones, laptops, and the laughably crude wearables of the era – was too disruptive when employed. Throughout the subsequent decades, however, the idea kept popping up. Newer technologies – such as virtual interface glasses (and then implants), embedded AI assistants, high-bandwidth wireless networks, and reliable face-recognition software – gave new life and feasibility to the notion of a reputation management network.

> # The easiest way to get a reputation is to go outside the fold, shout around for a few years as a violent atheist or a dangerous radical, and then crawl back to the shelter.
> # – F. Scott Fitzgerald

By the 2070s, the pieces were all in place. A cacophony of mutually incompatible reputation networks popped up, each experimenting with different variations of the concept. By 2083, the Working Group on Social Network Technology had drafted a standardized reputation signaling protocol, which was sent for approval to a variety of international organizations. Unfortunately, the outbreak of the Pacific War meant that few people had the time to study the proposal, and fewer companies were interested in introducing new software. Finally, in 2088, the protocol was approved and reputation management applications appeared all over the Web.

While each program has its own unique features, all reputation managers work in the same way. Rather than treat all trust ratings as more or less equivalent, the system gives much greater weight to those from an individual's circle of friends – the more the user trusts someone, the more that user can trust the people his friend trusts. It also allows for self-defined affinity groups and filtering of ratings on the basis of trust between groups. As a result, it is possible to see not just whether a given person is trusted, but by which groups, and to see who trusts or mistrusts *them*. When encountering a new meme, it soon becomes second nature for those using reputation networks to quickly check the source. Who trusts this person or company, and who doesn't?

Reputation network software is designed to be difficult to trick. Repeated entries, "logrolling" (where two or more people give each other positive entries as often as possible), mass "hate" campaigns (especially against public figures and politicians), and the like can be identified and dropped from reputation evaluations. Nonetheless, there is a cottage industry of hackers offering to boost reputation ratings artificially; few of these attempts work, at least for very long.

Reputation Societies

As of 2100, a small but growing minority of people in Europe, the PRA, and the United States rely on reputation networks to better evaluate new memes and the people or organizations passing them along. India and the South African Coalition are also starting to see reputation networks; China, the Islamic Caliphate, and the TSA have few participants. Such networks are surprisingly rare on Mars, but common on Islandia and other large orbital habitats. The smaller communities in Earth's orbit and beyond tend not to have enough people to require AI-supported reputation management, although some are beginning to adopt reputation networks in order to have a better sense of strangers that come to visit.

Some communities may also use reputation networks as a way of managing business transactions, political affiliations, and even personal relationships. Areas that are trying the reputation society approach are generally Fifth Wave and population-dense, and always heavily networked. Notable locations with widespread participation in experimental reputation societies include San Francisco, Tokyo, Singapore, Amsterdam, and Cape Town. While not everyone participates, enough people are active in the reputation networks to make the system work. The success breeds more participation, in turn, as people who haven't been active join in just to see how others view them. Those who participate in reputation network communities must run appropriate software (see *Reputation Management Software*, p. 136). An individual may have reputation marks from dozens of different sources; there isn't a single "reputation score."

Life in a Reputation Network

Most reputation networks use a generalized positive/negative axis for ratings, which range from -100 to +100. Behavior that people like typically generates positive points, often referred to as "bumps"; doing something that people don't like results in negative points, or "dumps." Generate enough bumps or dumps from people one interacts with, and the reputation ratings with those various groups reflect the change. An individual on a reputation network wishing to give a bump or dump to someone else on the network has to make certain that the target has been identified by his virtual interface, then give the appropriate comment, which results in a base +1 or -1 adjustment to the target's reputation rating.

However, not everyone sees the rating the same way. How other people react to the positive and negative changes depends on how much or how little they trust the person giving the rating. A rating from someone with a very high reputation in a particular group has a far greater impact – perhaps as much as double – than one from a person with a low to middling reputation, which is typically translated into a fractional shift. A rating from someone with a negative reputation may be ignored completely, or even provoke a reverse reaction. Users are generally notified if they receive a significant positive or negative change to their reputation.

In order to prevent abuse, participants on reputation networks have a limited pool of bumps and dumps they can use. In standard networks, individuals have 10 points of rating available to use as they see fit. As those rating points are used, they recover at a pace of one point per 24-hour period. In this way, people who are careful with their rating points always have some available to respond to especially good or bad behavior. Spending this "reputation capital" on behalf of someone else is discouraged (a person really should know who he is giving a bump or dump to), and doing so for profit, if discovered, usually results in negative ratings across the board.

Newcomers to a reputation community are usually granted a zero rating; sometimes AIs scour information networks to find pertinent data about the individual in order to give a more appropriate initial score. Because of this, accusations of libel and slander are increasingly commonplace, as a negative remark on a memenet or insulting joke in a slink log can potentially affect a reputation evaluation. Although there have been libel and slander charges filed against reputation networks themselves, none have been successful; reputation systems scrupulously avoid material comments, offering only a mechanism for what amounts to entirely legal "I like him" and "I don't like him" entries.

When viewing their own reputation ratings, most people choose to first look at the rating given by their chosen affinity group, then at the ratings given by various socially influential groups – the police, for example, or a locally dominant corporation. Most reputation management programs allow a person to see key elements leading to a particular score, including who gave various ratings; some reputation networks choose to keep that information anonymous. Even in those situations, however, the time and date of changes in reputation ratings are visible, and can be correlated to personal memory – or, more likely, an AI's memory – of events at that point.

The vast majority of people in reputation societies have neutral or mildly positive ratings across the majority of affinity groups, although they may be highly rated within their own circle of friends. Few people are so selfless or so cruel as to generate relentlessly positive or negative reactions from those they encounter. People with higher ratings tend to be treated better, on the presumption that they will continue to behave well; those with negative ratings (especially below -50) are shunned, on the presumption that they must have done something awful to earn such a score.
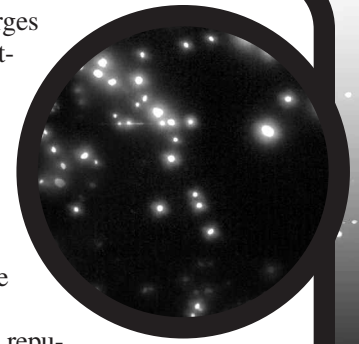
REPUTATION NETWORKS AND GURPS REPUTATION

By and large, reputation network ratings and a character's Reputation map fairly well. Each positive or negative 25 points of a reputation rating is the equivalent of a +1 or -1 modifier to the reaction roll. The vast majority of affinity groups are a "small class of people" for calculating the point cost of the Reputation. (A typical person active in a reputation society will likely find his reputation rating fluctuating wildly among the various groups; at the GM's discretion, the point costs for reputation modifiers may be ignored.) The main difference between life in a reputation network and a standard Reputation is that in areas adopting the reputation society model, the frequency of recognition is "all the time," as other people's virtual interfaces try to identify everyone that they encounter.

CULTS AND MOVEMENTS

The man known only as "Voice" stood in front of the group, wearing a simple shirt and loose trousers. As he spoke, his audience sometimes laughed or applauded – but they **always** smiled. His speaking style was rhythmic, hypnotic, pulling you in even if you had no idea what he was talking about. I smiled and laughed along with them, but it was an act. I had taken a tab of Flatline earlier – he wasn't going to affect me, no matter what he said, or how he said it. But he was clearly affecting Daniel, who sat at the front of the audience and had a smile so broad it probably hurt his face.

The speaker stopped, bowed his head, and made a small gesture. The audience stood, almost as one – I was careful to keep up the charade. Daniel headed toward the rear of the building. He had garbage duty, and it would be my only chance to see him alone.

It took me a moment to get to the utility room, but there he was, feeding the day's trash to the recycler. He looked up at me, his smile almost genuine. I quickly walked up to him.

"Good evening, sister Yolanda. How can –" I hit him with a Flatline patch, right on the neck, and he stumbled back, his body twitching as the brainbug did its work. I helped him sit.

"Daniel . . . can you hear me?" I held his face, forcing him to look at me.

"Yolanda . . . Yoli . . . what's going on?" His voice was weak, but for the first time in weeks, his eyes were clear. As the drug kicked in, his memories of the past month flooded back, and a wave of nausea struck him.

"C'mon, Daniel, we have to go. Now." I pulled him up, and turned toward the door.

Voice stood there, calmly pointing a gun at us.

"Officer Lopez, I'm afraid you're not going anywhere."

Persistent memeplexes often act as catalysts to turn belief into action. In order to thrive and spread, complex sets of memes usually include evangelistic components. It's not enough to simply accept a set of ideas – a believer must actively attempt to convince others their ideas are truth. There's Darwinian logic to this – memeplexes without this strong evangelism are less likely to propagate and survive.

In the past, the relative isolation of some communities meant that sophisticated but less-assertive memes had a chance to flower. Conversion doesn't need to be high on the agenda if believers rarely contact people of other faiths. As changes in technology made it possible for disparate groups to communicate over wide areas, many less-aggressive memeplexes withered under the onslaught of belief systems dedicated to widespread evangelism.

In a memetic context, evangelism does not necessarily imply religion. Although convictions of faith often produce the memetic systems best to aggressively proselytize, many nonreligious political and social movements trigger such a desire too. Many memeticists in 2100 classify religious cults and political factions as more or less the same phenomenon. Indeed, plenty of groups have qualities of both, pressing for political and social change with religious conviction.

CULTS

To the chagrin of those who equate scientific advancement with secularism, the end of the 21st century is a golden age of religions. Despite the growing might of civilization, humanity's sense of self has never been more fragile. More people than ever seek to understand their place in the world. The onrushing transformation leads many to question mankind's nature, and they often find the answers disturbing. Billions remain faithful to long-established religions and philosophies, particularly those practices that have reinvented themselves for the new era. A substantial minority, however, have come to believe that traditional beliefs provide feeble solace for those seeking peace and self-knowledge in this age. They have instead turned to alternative practices and cults.

With the rising demand has come rising supply, and the modern era's tools have accelerated the process of starting a new belief system. Sophisticated memetic-engineering techniques give cults the ability to create compelling and seductive philosophies, while nanodrugs can make true believers out of the most hardened skeptics. But many of the most popular cults disdain the use of these crutches; they believe in their messages' power and their devotion to revealed truth. In a world where the future is utterly uncertain and even reality is considered contingent, this is often enough.

CULT DESCRIPTIONS

There are hundreds of alternative religious groups across the solar system; the following is only a brief sampling.

Acolytes of the Dark

Each black hole is the slender anchor of an entire unique universe. To acquire one for the benefit of money or power isn't just crass, it's sacrilegious. Humanity defiles perfection with its greed.
– Eldern Maicho, 2094

CULTS AND RELIGIONS

A cult is often said to be merely a religion without mainstream approval . . . an argument with some truth. Many minority religions are referred to as cults simply because some authority has decided they are dangerous, subversive, or somehow repugnant to "good moral order." Theologians also use "cult" to refer to deviant religious groups with non-mainstream practices. This is in contrast to *sect,* which refers to deviant religious groups with more traditional practices.

Memetic scientists, however, distinguish between cults and religions by considering where each group focuses its attention. In religions the rules, values, and ritual dominate. In cults, the leadership dominates. If a cult loses its leader, it likely faces splits, power struggles, or even rapid collapse. In this model, cults can become religions over time, if the memeplex evolves to a more structured and less charismatic format.

This cult worships a cosmic being simply known as the Dark. The Acolytes have mixed New Age mysticism and modern astrophysics to come to the conclusion that the universe as humanity knows it can only be possible with the guidance of some ultrapotent being. Rather than an all-powerful anthropomorphic entity, however, they believe that this being is actually comprised of what physicists call the dark matter and dark energy that lies between the stars. They further claim that this aspect of the universe cannot be fully understood by those who see things only in a scientific or spiritual light. The Dark was created by, and also created, the Big Bang that gave the universe life.

Cults and Movements

The cult came to limited popularity after the 2091 recovery of the Shezbeth object. Eldern Maicho, a Duncanite mystic and astrophysicist, set down the beliefs of the Acolytes. Chief among these is the conclusion that primordial black holes are the key to understanding dark matter, as they are whole universes unto themselves and offspring of the cosmic creator. Mankind has been given the chance to prove itself by governing these universes as dark matter and energy governs this one. Only by ruling them with wisdom and intelligence can humanity be elevated to be one with the Dark.

Acolytes are, almost without exception, dwellers in deep space with no Earthly ties or allegiances. Most are Red Duncanites and Gypsy Angels; as of the beginning of 2100, there are about a thousand Acolytes in the outer system. Maicho's sermons are fairly persuasive; those who join the Acolytes do so out of belief rather than coercion.

For the Acolytes, finding and recovering a primordial black hole is a modern quest for the Holy Grail. They believe black holes found by others should be made available for all to study and worship – since traditional scientists of Sol, by denying all matters spiritual, certainly wouldn't be able to understand them fully. Acolytes have begun serious efforts at recovering their own black hole so that it may be properly understood and guided, allowing them to reach cosmic transcendence.

Throughout the system Acolytes scan the Kuiper Belt, hoping to find a black hole near enough to grab before corrupt Earthly corporations can steal them. To make this possible, Maicho cut a deal with Vim Raymond, a Trojan Mafia boss, to secretly assemble a small fleet ready to intercept any other primordial black holes discovered by nonbelievers. In exchange for this assistance, Acolytes will provide technical assistance and, once the order has its hands on its first primordial black hole, help Raymond's group get its own primordial black hole. Maicho is aware that Raymond intends to somehow use the primordial black hole as a weapon against his enemies, but is willing to make that exchange. The Acolytes believe that they have the right and responsibility to puzzle the secrets of these microverses. The possible death of thousands is nothing weighed against true understanding of the living Dark.

Ecoherence

We all surf the seas of chaos, but too many of us fall in.

– Maria Turner,
Ecological Coherence*, 2079*

Ecoherence started in 2068, but truly took off after the publication of LOGOS' *Propagation of Human Ideas.* Founder Maria Turner, a brilliant student of philosophy and psychology, had begun constructing a new religion better able to cope with the changing definition of humankind. *PHI* crystallized many of her ideas, and she reshaped her emerging philosophies to reflect the new understanding of how beliefs emerge and spread. That Ecoherence is a constructed religion is not denied by the organization and is not considered particularly scandalous. Many supporters feel that the crafted nature of Ecoherence is one of its strengths. Turner herself claims that only philosophies created in accordance with understanding of the actual functions of the human mind have any relevance to real human needs or aspirations.

Few followers know the degree to which Ecoherence is designed to bring in and retain believers. From the outset, Turner built philosophies and organizational structures to create self-reinforcing cycles of dependency. Every aspect of Ecoherence is intended to make believers feel special, protected, and under relentless attack from the outside. Many anti-Ecoherence "hit pieces" on the Web were actually created by Turner or her associates as part of an elaborate campaign to inculcate a sense of oppression in her followers.

Ecoherence initially saw remarkable growth, as Turner was quickly able to turn LOGOS' academic prose into usable techniques. By 2084, over 300,000 people around the world participated in Ecoherence meetings, online or in person. This period of growth tapered off over the 2080s, as populations developed memetic antibodies to the *PHI*-derived techniques. By that time, however, Ecoherence had developed enough of a following and legitimacy that it had cognitive critical mass, and could grow without relying on what critics referred to as "memetic tricks." This doesn't mean that Ecoherence leadership no longer uses memetic techniques – quite the opposite. The organization's inner circle is on the cutting edge of memetic development.
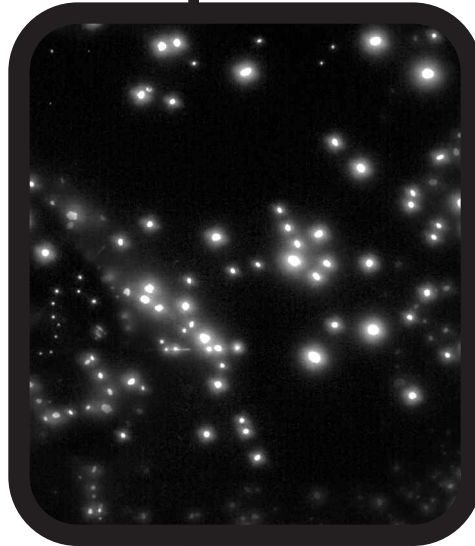
ECOHERENCE JARGON

Language used by the Ecoherence movement is showing up in everyday conversations of the English-speaking world. While this does not mean that everyone using these terms is an Ecoherence follower, it does reflect the growing influence the movement has in many Fourth and Fifth Wave nations.

alignment: An individual's mental or emotional state. Alignments are usually "cohesive," "jumbled," or, worst of all, "chaotic."

brownian: Life lived without any attempt to bring coherence – not just random, *stupidly* random.

friction: Chaos resulting from interaction between two poorly structured individuals. The term implies that the problems result from unintended but avoidable problems and has a disdainful undertone.

full silence: Ecoherence's highest level achievable by general members. Used commonly to mean overly strict or dominating. This is supposed to be one of the movement's secret terms, so Ecoherence's memetic engineers are working to eliminate its general use.

irrational-sum: Similar to "zero-sum" and "positive/negative-sum" in reference to interactions, "irrational-sum" describes dealings where all parties are focused on finding every last bit of advantage. In Ecoherence, this is a sign of an "unstructured" life.

niche: Used as a verb meaning "to put into a proper location." In popular usage, has an implication that, once "niched," something can be forgotten.

phase shift: In Ecoherence, the process of moving to increasingly or decreasingly ordered states of existence. In general usage, it means a large and sudden change in life.

statics: Those who do not follow Ecoherence. Generally, those who serve largely to impede an individual's progress and contribute little or nothing to his or her life.

By the late 2090s, Ecoherence claimed over two million followers throughout the solar system, most in the United States and Europe. As the organization has grown, its recruitment practices have evolved. Ecoherence no longer focuses its direct attention on everyday people, instead concentrating its efforts on "social nodes" – influential individuals who affect the decisions of others, often without conscious realization. Ecoherence employs hundreds of memetic specialists – a variant of Edgehunters (see p. 131) called "memetologists" by Ecoherence – to seek out, identify, and contact these social nodes: trendsetters, political influencers, cultural arbiters, etc. As a result, Ecoherence enjoys a generally positive reputation, and some of its jargon is slipping into wider use (see above).

The Ecoherence canon itself is a minimal-impact environmentalist doctrine coupled with strict hierarchies of power. Disorder is a sign of weakness. The philosophy asserts that people should avoid engaging in behavior that has too many unpredictable results; "complexity itself is the enemy of civilization" is one of the movement's slogans. As members demonstrate their decreased "noise" in the environment, they are rewarded with greater authority. Moving up levels also costs money or, more often, control over intellectual property. Ecoherence has quietly become one of the larger holders of intellectual property on Earth.

Once members achieve "Whisper" status, a mid-level ranking, they are told that further attempts at self-ordering are fruitless without the assistance of regular HyMRI scans (see p. TS163). Ecoherence owns over a dozen such scanners, and "Structuring Facilities" housing the devices are in major cities in North American and Europe. Members are asked to pay handsomely for the scan, which nearly all do eagerly. Rumors persist that these HyMRI scans are used to alter member beliefs and behaviors, a claim that Ecoherence denies.

Ecoherence's critics claim that the organization is little more than a con game designed to separate the gullible from their property. The movement's public response is to ignore such statements; secretly, Ecoherence has an entire branch of its structure dedicated to countering memetic actions criticizing the movement. This usually means conducting campaigns to discredit or otherwise stain critics' reputations, although the secret memetic branch itself has a classified division for executing more direct and even violent actions against those who try to harm the movement. Only Turner can authorize this sort of activity. However, in recent years she has become increasingly volatile, responding with fury to any criticism of the organization or her leadership of it.

Kwangbok

I wonder, now, how people can willingly leave the breast of our world. I know that I am too enraptured by the soil of my home to ever want to leave. It is a part of me, within me, giving me spirit and solace, faith in the future and hope for the past. My home is my religion.
– Yong-nam Hong,
***With Open Arms**, 2092*

> # Liberation is an ever-shifting horizon, a total ideology that can never fulfill its promises . . . It has the therapeutic quality of providing emotionally charged rituals of solidarity in hatred – it is the amphetamine of its believers.
> ## – Arianna Stassinopoulos

Kwangbok, or "liberation," first appeared in northern Korea in early 2093. Its leader, Yong-nam Hong, took great pains to link its precepts to traditional folk religions in his various public appearances, and the Korean authorities paid little attention to the growing popularity of the practice. In recent months, however, the Korean government has begun to look much more closely.

According to his official biography, Yong-nam Hong was born in 2025, shortly after the peaceful reunification of North and South Korea. While his family struggled during the rebuilding of the northern economy, Yong-nam was drawn into a local religious movement known as Chondogyo. He spent several decades as a minister of the faith, traveling the countryside offering services and support for the local townspeople. When the religion suffered an internal power struggle and schism in 2071, Yong-nam Hong had a crisis of faith and left the church. He wandered throughout East and Southeast Asia over the course of the next decade, looking for inspiration.

What he found was conflict. He was in Laos at the outset of the Pacific War, and came very close to being killed by a Chinese attack on a hospital where he was working. (China claimed that the hospital was actually a bioweapons test facility.) He spent months in Laos recuperating, then traveled slowly through southern and eastern China, eventually returning home in 2091. Hong spent the next year writing down his experiences and thoughts about his travels and homecoming, eventually publishing a book called *With Open Arms*.

He used this book as a way of connecting with other Koreans who felt lost in the modern era. Kwangbok emerged as the unifying element for these disaffected citizens, as Hong combined traditional folk beliefs, the sense of service and spirituality from Chondogyo, and a "nationalism of the soil" that reinforced Korean pride as a people. The faith also was openly disdainful toward the large southern Korean corporations that dominated life in the north.

While this disdain initially manifested as calls for more jobs for northern Koreans, over the last few years it has taken on a decidedly infosocialist tint. Hong and his various deacons are vocal in their opposition to corporate control of ideas and information. Members of the cult have engaged in peaceful protests at the headquarters of Korean entertainment and software companies. They also commit other acts of civil disobedience. In February of 2099, in the midst of a harsh northern winter, 20 Kwangbok members staged a "sing-in" at the Pyongyang city center, protesting the use of a folk melody as the basis of a new and content-rights-managed pop song.

The Korean government has begun to investigate whether Kwangbok is somehow influenced or controlled by the TSA. News reports calling Kwangbok a "dangerous cult" are more frequent, and members of the religion fear infiltration by provocateurs or even arrest. Now almost 75, Yong-nam Hong is as forceful as ever in his speech and belief, and promises that he "will not capitulate to a government controlled by greed."

Mahamba

We face nothing less than the agents of the devil come to play in the deepest aspects of our being. They have come to deface the gifts to us given by our father in the sky and our mother in the soil. If we accept that, we are worse than dead – we are no longer human. We would be nothing more than lies given flesh.
– Jonas Kilundu,
***Proceedings of the Spirit,** Volume 2, 2095*

In 2062, Professor Marcus Kilundu of the University of Pretoria took a leave of absence following the death of his wife. During his year of mourning, Kilundu had a spiritual awakening, finding solace and meaning in the traditional practices of the region. He wrote about his religious epiphany in his 2064 book, *The People of the Clay*. While never a best seller, it provided inspiration to thousands of people in Africa, and Kilundu collected a growing set of followers. In 2070, he retired from the university, opening up the Sarai Kilundu Institute in Luanda, Angola. The center was dedicated to the teaching of traditional religious rites and philosophies.

By the early 2080s, Kilundu and his closest staff had shifted the teachings from traditional beliefs to a syncretic practice they called "Mahamba." Mixing in elements of a variety of regional traditions, Mahamba

CULTS AND MOVEMENTS

preached a philosophy of strength through simplicity. Its basic approach combined environmentalist and Preservationist ideals with appeals to a mythic history of the African spirit. Its rise corresponded to the growing political influence of biotechnology in the Southern African Coalition.

Marcus Kilundu died in 2092. His son, Jonas, now heads the Institute. Under Jonas Kilundu, Mahamba has become more political, criticizing SAC leadership for its willingness to allow extreme biotechnologies to be used on Africans. In 2098, after Kilundu endorsed a presidential candidate from the African Natural Traditions party – a fairly radical Preservationist faction – the SAC executive council launched an investigation of Mahamba and its adherents. Kilundu complained of "official persecution," a claim that the SAC calls "sheer paranoia."

About 20,000 people in southern and southwestern Africa follow Mahamba, most in Angola. Over 250 followers live in or near the Institute itself. Most have research or support duties in the Institute, but a 2099 investigation by the SAC Special Police Services uncovered evidence that some members were being initiated into traditional African warrior societies and given military-style training. In August of 2099, Kilundu announced that the Institute would be moving to an isolated part of Angola, near the southern town of Menongue, in order to pursue their religious observances without official harassment.

Mathirism

If you can ask yourself, "why?" can you ever know the answer? If you can know the answer, can you truly know the question?
– Jamal Mathir, 2082

Mathirism is a belief system founded by the Frenchman Jamal Mathir in the 2080s. It sometimes claims to be a Sufi order. Although most conventional Sufis dispute this, sometimes fiercely, the claim has some logic to it. Because of its Sufi connection, Mathirism is prohibited in more-conservative parts of the Islamic Caliphate, and informally oppressed in many more. Its largest body of followers is in Europe, although it has converts worldwide.

The defining feature of Mathirism is an attempt to achieve nonrational insights into the divine, possibly even direct communion with God, by means of altered states of consciousness. Countless sects and cults,

including Sufis, have attempted this in the past. However, Mathirism's unique feature is that the techniques used to create and maintain these mental states are all based on intensive use of virtual-reality systems and slink recordings. A typical Mathirite recording is usually abstract or surreal; the devotee spends considerable amounts of time immersed in full sensory playback, either playing a very long recording or repeating a short sequence in a continuous loop. The result is a hallucinatory state comparable to the effects of powerful drugs.

> **Mathirites believe in an entirely transcendent deity, one who cannot be understood by anything as rational as scientific analysis and who draws no moral distinction between flesh and data. Their technological meditation serves one purpose: to detach the believer from rationalist conceptions and constraints.**

Mathirites claim that this technique is more powerful and more controlled than conventional trance-inducing techniques such as drug use, whirling dances, chanting, meditation, or fasting. Critics from older traditions claim that the experiences' artificial nature makes them sterile and ineffective as a path to higher consciousness. One common concern about Mathirite techniques is that the cult leaders and teachers effectively control the recordings' creation, potentially making them ineffective or a form of brainwashing.

It is important to note that Mathirism is *not* related to Cybergnosticism or Hyperevolutionism. Indeed, Jamal Mathir and his personal pupils are fiercely critical of both those beliefs. Mathirites do not believe that God is "pure information" or that humanity should seek "digital perfection." They believe in an entirely transcendent deity, one who cannot be understood by anything as rational as scientific analysis and who draws no moral distinctions between flesh and data. Mathirite technological meditation serves one purpose alone: to detach the believer from rationalist conceptions and restraints, freeing the perceptions and soul to seek a higher state. Indeed, Mathirites delight in logical and mathematical paradoxes, fractal images, and serendipitous computer failures, seeing them as marking flaws in normal perceptions of the universe.

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Mathirite ethics are generally flexible, although the cult dislikes the use of drugs and other mind-affecting indulgences as a distraction from its own path. They also regard the physical world as irrelevant when compared to communion with the godhead. It is monotheistic, sharing the Islamic and Christian belief in a single supreme being, but its taste for paradoxes and the irrational is similar to Zen Buddhism. Most Mathirites have a vaguely conventional morality, and are law-abiding. Their disdain for material distractions saves them from many temptations, but they can seem smug and arrogant. Mathirism appeals to individuals seeking spiritual guidance and insights, especially those who lack any special obsession with "ancient wisdom" or who have a particular fondness for technology. It does not proselytize very aggressively, and rarely makes converts except from among those with some prior interest in its techniques.

Presleyan Heresy

Marx said that history happens twice – first as tragedy, then as farce. But every now and then, the reverse is true.

– Dina Holland, **Hail To The King, Baby**, *2088*

Elvis Presley was a popular musician in the mid- to late 20th century. Although he died a somewhat tawdry death, he continued to have fans well into the early 21st century, particularly in the United States. As his older admirers died off, however, Presley began the slow decline into historical obscurity, showing up in musical retrospectives but by 2025 rarely anywhere else.

Leroy "Mudfoot" White changed that.

Leroy White was a blues musician living in Oxford, Mississippi. Well into his 90s, White was still charismatic, and could draw a crowd with his gravelly voice. Even after he was diagnosed with cancer and his body began to fail, White would sit on the porch of his home, singing Elvis Presley songs. He claimed that his father had been one of Elvis' early mentors, and that he learned many of these songs from Elvis himself.

On the morning of July 1, 2031, White was found running through the streets of Oxford, his cancer in full remission. To a rapidly growing crowd, White proclaimed that the music of Elvis Presley had healed him.

Over the subsequent decade, White gathered together several dozen more elderly men and women, nearly all of them musical performers, who claimed to have been healed by the music of Elvis. While most journalists treated the group as a joke, making references to "the Church of Elvis," meetings of the group grew ever larger . . . family, friends, and spectators joined in. The revival assemblies were lively and filled with music. White's eventual funeral, in 2040, drew nearly 10,000 attendees.

In 2043, one of the core group's younger members, a 52-year-old retired schoolteacher named Jenna Jackson, wrote a slim volume called *Elvis and the King of Kings*. She pulled together the personal stories of those who claimed to have been touched by the spirit of Elvis, conventional maxims and admonishments about living a good life, and a superficially evangelical view of Christianity. Humorous and inspirational, the book sold well, drawing more people into the circle of Elvis-followers, who began to call themselves "Sons and Daughters of the King," often abbreviated SDK.

Religious conservatives would have none of it, however – throughout the 2040s and 2050s, ministers across many traditional denominations decried the "Presleyan Heresy" as idolatry. Nonetheless, the SDK movement continued to grow. By the 2060 census, nearly 250,000 people in the U.S. claimed to be SDK members. In a world of incipient Cybergnosticism and Transhumanist philosophies, followers of Elvis seemed almost quaintly conventional.

In 2078, with nearly 500,000 adherents, the Sons and Daughters of the King saw their first real trouble. The movement's leader, Howard Plettner – derisively called "The Colonel" by his critics, inside and outside of the movement – ordered that all images of Elvis used by the church be from his early years. Images of the older Elvis were removed from all SDK documents, buildings, and websites. Some congregations protested, claiming that the

Cults Around the World

Nearly every society on and off Earth has a variety of small, nontraditional religions and cults. The vast majority of these groups are peaceful and fairly quiet, with limited proselytizing and fund-raising activities. The United States, Brazil, and Mexico are home to quite a few alternative religious movements, and Japan has been a hotbed of cult activity for over a century. Nontraditional religions of any sort are largely illegal in the Islamic Caliphate and are highly discouraged in the Transpacific Socialist Alliance. The Chinese government occasionally cracks down on cults it deems disruptive to society, although in 2100 Beijing is in a somewhat liberal mood regarding alternative religions – the exception being the Unified Way (see p. 28). Freedom of religion is enshrined in both the U.S. and E.U. constitutions, although in regions where traditional religious practices are commonplace, cults are under substantial social pressure to remain hidden and quiet.

Elder Elvis personified the sorrows and sins of the world, while the Young Elvis was simply an innocent.

What started as an aesthetic conflict became a doctrinal struggle, then turned violent. Plettner was shot and killed in 2081. Apparently in retaliation, the headquarters of the Elder Elvis schism was burned to the ground by an unknown arsonist. The leadership in both factions became increasingly radical. In 2100, they still launch verbal and virtual tirades against each other. Each has lodged trademark violation complaints against the other with the WTO, claiming infringement of ownership of the image of Elvis.

The Sons and Daughters of the King (the Younger) are headquartered in Memphis. A distant descendant of Elvis has become close to the group, and in 2094 the Younger faction base moved into Graceland. The current leader, Kevin Robert Barber, is known to have a bad temper and a fondness for brainbugs. He employs a small contingent of armed guards, all cosmetically sculpted to look like Elvis.

The Sons and Daughters of the King (the Elder) are headquartered in Las Vegas, Nevada, in a smallish casino off the Strip. Members can be found throughout the United States. Rumors on the Web claim that the Elder faction is working with a gray-market AI programming team to construct an eidolon of Elvis. One rumor goes on to claim that they've been partially successful, but the eidolons soon become psychotic.

Singularitanism

In Kurzweil's Name.
– Traditional Singularitan greeting

At the end of the 20th century, many forward-looking technologists espoused a worldview that an unprecedented moment of change was imminent. They called this change the "singularity," and said that it would be triggered by the development of sapient artificial intelligence – which they saw as happening as soon as 2010 or 2020. In the singularity paradigm, the moment the first "true" AI woke up, it would embark on a series of self-upgrades, each faster than the last, eventually becoming such an utterly transcendent figure that it would sweep up all of humankind into its massive global consciousness. Most supporters of the singularity concept figured that this event would happen no later than 2050.

Unfortunately for them, that wasn't how history turned out. Sapient artificial intelligence proved to be far more difficult than many people expected. As of 2100, a progression much past a human level of intelligence is effectively impossible.

By the 2040s, most supporters of the singularity idea either gave up on it entirely or recast it as a "someday" concept worthy of interesting discussion but not much else. Not all of them gave up, however. A fraction of the hardcore singularity proponents – many of whom had for decades called themselves "singularitans" – refused to give up. Most argued that such a transcendent breakthrough remained well within possibility and once the "wall of limited cognition" had been broken, the power of modern computing technology meant that the singularity transition would happen *faster* than previously estimated. A small number of remaining singularitans even argued that the singularity *had* occurred, but that the newly godlike AI had determined that humanity would not have been able to comprehend this degree of change. It therefore graciously gave human civilization, uploaded right on schedule, a false history to follow in their new virtual-reality lives.

Each successive year without the end of the world did little to dampen the ardor of hardcore singularitans. It was a matter of faith. In 2070, after it was clear that the invention of fully sapient AIs was *not* leading to transcendent transformation, a series of articles and documentaries about determined singularitans referred to the believers as a "cult." In response, the singularitans' generally acknowledged leader, Adam Stein, attempted to register Singularitanism as a religion with the U.S. government. He argued that it had articles of faith (the imminent appearance of super-sapient AI), ancient holy books (a series of turn-of-the-century treatises by eminent computer scientists), key behavioral values (don't do anything to risk dying before the singularity), and a fully fleshed-out "end times" revelation (upload and transcend). To everyone's surprise, especially Stein's, Singularitanism was granted church status.

But what started as a sarcastic joke took on a life of its own. Registering as a church prompted a great deal of attention, and actually led to a sharp rise in numbers of devotees. Most of those who joined up were younger technologists who had been born long after the first wave of singularity enthusiasm had petered out. Many actually worked on modern artificial intelligence design, and saw in the singularitan paradigm a reason for excitement about their chosen profession.

Singularitan meetings through the 2080s and into the 2090s adopted tongue-in-cheek religious trappings – including sermons, singing, and appeals to "Kurzweil" to watch over everyone – but for a growing number of believers, these elements have become real symbols. In 2098, a survey of those who claimed to belong to a Singularitan church, approximately 50,000 people, found that over half claimed to be serious. Adam Stein continues to attempt to make people aware that Singularitanism wasn't meant to be a real religion . . . although it now appears he may be too late.

Spanda Bindu

Information socialism is a corrupt faith invented by an atheist and embraced by Muslims, Catholics, and, worst of all, Europeans. How can a true Hindu feel anything but hatred for it?
– Rama Veda, 2099

The editor of the Srinagar newsfeed even wrote that he believed the new Rama Veda was a bioshell running an eidolon infomorph. He was found dead within a week, a warning to others who might insult Rama Veda.

In 2040, near the disputed Kashmir region along the India-Pakistan border, a young man calling himself Rama Veda drew the notice of local authorities with his seductive oratory and religious fervor. Preaching a philosophy that melded Hindu nationalism and Yoga meditation techniques, Rama Veda made Indian officials nervous. However, he carefully avoided promoting violence against the region's Muslims, so Indian authorities let him be. He called his approach Spanda Bindu, or "spontaneous concentration," and he told his followers that a greater Hindustan could be theirs given sufficient focus and meditation.

By March of 2043, the Spanda Bindu movement had several thousand adherents and was starting to gain a following throughout the country. In April of 2043, Rama Veda was shot in the head and killed, allegedly by a member of a rival Hindu nationalist group jealous of his growing influence. Although others attempted to pick up the Spanda Bindu banner, by 2045 the movement had faded away.

In 2094, a group of yogis in Srinagar announced that they had preserved tissues from the assassinated Rama Veda – and had, in 2082, cloned him. In and of itself, this was not a startling announcement – once human cloning had been perfected, religious groups seeking to regain lost leaders were eager to employ the technique. But the Spanda Bindu yogis went a step further with their announcement, claiming that Rama Veda himself had reincarnated in the flesh of his clone, and had full memories of his past life.

This claim was met with widespread dismissal, but over the subsequent months, reports emerged of the young Rama Veda correctly identifying personal items and people not widely known to have been part of the previous Rama Veda's life. Moreover, a succession of locals who had personally known Rama Veda stated that after meeting with the young clone they were convinced that it was indeed the same individual. Skeptics continued to dismiss the claims. The editor of the Srinagar newsfeed even wrote that he believed that the new Rama Veda was a bioshell running an eidolon infomorph. He was found dead within a week of making his comments, a warning to others who might insult Rama Veda. Throughout 2095 and 2096, a growing number of Hindus were listening to what the young prophet had to say.

Regardless of the veracity of his claims, it was clear that the Rama Veda clone had all of the charisma of the original. By late 2098, the resurgent Spanda Bindu movement had attracted over a 100,000 followers across India, and was the subject of several celebratory InVid programs. The Spanda Bindu philosophy still promotes Hindu nationalism, but now, with Hindu nationalists in power and old rival Pakistan weakened, the movement now has an increasingly antinanosocialist tenor. As Rama Veda focused his speeches on fighting the influence of the TSA, India's ruling party, the Indian National Alliance, began to openly support Spanda Bindu.

At the beginning of 2100, Rama Veda stands poised to take on a larger political role in India. Claiming nearly 80,000,000 adherents, Spanda Bindu is the most influential group in northwest India and is becoming increasingly vocal about issues concerning the entire nation. The movement's prominence has not escaped the TSA's attention. Many Indians believe that an explosion in July, which killed one of Rama Veda's closest advisors, was an assassination attempt by the TSA, not the work of the Pakistani intelligence bureau as is widely claimed.

Teca

The Teca cult must be stopped.
> *– Ramón Garcia Gutierrez,*
> *Director of Mexican Federal Police, 2095*

The Teca movement is now the top priority for this office.
> *– Lizabeta Jimenez, Coordinator,*
> *TSA Directorate of Theory and Praxis,*
> *El Salvador, 2096*

We are many and one, everywhere and nowhere, immortal and dead. You can never win.
> *– Unidentified Teca member,*
> *prior to setting off a vest full of explosives,*
> *Guadalajara, Mexico, 2097.*
> *Fourteen bystanders were killed and nine*
> *could not be recovered.*

The cult known as Teca first appeared in Houston, Texas, in 2090. A small, mostly female group, led by a charismatic minister named Carlos Martinez, was implicated in a series of brutal murders of drifters. The cultists were all teen children of moderately rich local families and investigators had trouble tracking down Martinez and his followers because of families' interference – they were reluctant to allow publicity about their children's participation in a murderous cult.

Finally, in early 2091, police discovered Martinez and part of his group in a warehouse located in a small town just north of the Rio Grande – their bodies, at least. All had been killed by shotgun blasts to the head; evidence pointed to Martinez pulling the trigger on a small number of followers seated around him, then turning the weapon on himself. However, 28 of the known cult members were nowhere to be found. But with Martinez dead, Texas police believed the cult was finished, and finding the missing members took on a much lower priority.

Three of them resurfaced in Juarez, Mexico, later in the year, continuing to espouse Teca beliefs and having convinced four local youths to join with them. As before, officials first noticed their presence as a result of the ritual killing of indigents. When the police managed to hunt down the cult members in early 2092, they resisted all attempts to take them alive. Rather than engage in combat with the officers, the cultists set themselves on fire.

By that time, however, Teca groups had appeared in six cities in Mexico and the southwestern United States. Original cult members who had escaped the Texas raid had started all the new groups. In some cases, a couple of the originals remained with the new groups – more often, the originals started the new group and moved on, letting the local cult grow on its own. All of the cult groups behaved in similar fashions, and there was very little deviance between the various branches. In every case, the recruits were young and from relatively well-off families. Some were employed in technical fields, but most were simply wealthy Eloi. The *Santa Fe Gazette* reflected popular sentiment with its headline over the picture of a captured cultist – reading, simply, "SPOILED ROTTEN."

> **All the Teca cultists were teens from moderately rich local families and investigators had trouble tracking down Martinez and his followers because of families' interference – they were reluctant to allow publicity about their children's participation in a murderous cult.**

Few cultists allowed themselves to be taken alive. Those who were captured sought any opportunity for suicide, and otherwise refused to talk to authorities, therapists, or family members. Nanodrug and other biochemical treatments proved useless; any initial response quickly faded. That each captured member of the cult had a virtual interface implant did not draw immediate suspicion, as to all appearances the systems had long been shut down.

The breakthrough came in 2096, when a desperate Mexican federal investigator ordered the physical removal of a captured cultist's virtual-interface implant. The change was immediate. The former cultist could remember only bits and pieces of her time with the movement, but expressed no desire to rejoin the group or kill herself. Without the VII, therapy eventually restored some sanity. The Mexican authorities realized that they were dealing with a xox cult (p. TS64).

By 2098, over two dozen cultist groups were operating in Mexico, a handful in Arizona and New Mexico, and another dozen or more were suspected to exist. The cult had moved south, into TSA territory, and reports of outbreaks of Teca came from Honduras, Nicaragua, and El Salvador. Despite the political chill between Mexico and the Central American TSA nations in 2099, police forces began to share information about the best techniques to track down and eliminate the Teca cult.

> # Mental torture initiated by an entity residing entirely in your own head is remarkably effective.

Investigators have pieced together information on how the Teca cult operates.

The first step is to find and recruit appropriate new members. Teca relies on traditional methods, seeking out disaffected, lonely, or rebellious youths. The potential recruits are not told the group's true identity – Teca is now notorious enough that very few people would join willingly. The young people feel welcomed, loved, and supported, and are made to think that the cult is their new family. The Carlos Martinez xox is charismatic and manipulative and recruits join the group willingly.

The next step is to convince the recruit to remove the active AI in his VII and replace it with what they are told is a "caretaker" AI – actually the Carlos Martinez xox. Convincing a teen to erase his VII is usually not difficult. The implants of many teenagers are laden with monitor software, censorware, and heavy-handed filters – they are often seen to be tools of their parents rather than theirs. The cult also employs signal-suppression gear to make certain that the resident AIs don't send out an emergency signal before being removed.

Once the Martinez xox has been installed, the relationship between the cult and the recruit changes. No longer warm and embracing, the cult's role is to prevent escape while the xox begins a process of relentlessly wearing down the recruit. Mental torture initiated by an entity residing entirely in your own head is remarkably effective, and most recruits cease any resistance within a few days. By the end of the second week, the cultist's original personality is fully suppressed and functions solely as a mask for the Martinez xox. While the shadow controls the cult members, it can draw upon enough of the memories and skills of the cultist to make a convincing puppet. Martinez xoxes do not see themselves as entirely individual entities, and willingly share ideas and information.

The original Carlos Martinez personality and its subsequent xoxes are all completely insane. Most believe themselves to be one of a million arms of the devil, who asks only for occasional ritual killings to prove reverence. A small number of Martinez xoxes, largely on the Yucatan peninsula, believe themselves to be shattered manifestations of God, and they can only make themselves whole again by making certain that there are many more such pieces of God on Earth.

The Unified Way

If you meet the Shepherd on the road, kill it.
– Chinese Ministry of Public Security
Order 4/5/99

The Unified Way is a cult of persistent popularity across Asia and into the Middle East. It is also a memetic warfare agent, a leftover from the buildup to the Pacific War that may well cause more damage than all of the dormant AKVs in orbit.

The Unified Way is a religion of resistance that preaches civil disobedience and considers martyrdom at the hands of an unjust government a sure path to heaven. While primarily peaceful, its philosophies espouse a crude "tit-for-tat" approach to dealing with oppression . . . one almost guaranteed to escalate into violence. The Unified Way is a fairly sophisticated memeplex blending aspects of Hinduism, Sufism, and Chinese Traditional Religion (see p. BD18) into a whole designed to attract believers and progressively disconnect them from the real world. The memeplex is remarkably persuasive, and has generated discontent in rural communities across the Mongolian Plateau of western China, in Central Asia, and most recently in the edges of the Middle East. Estimates for the number of followers across the region range to several million. The belief is illegal in much of that area.

The cult first appeared in the early 2080s, led by a Chinese man known as the Shepherd; many outside China refer to the cult as "Shepherdism." Most analysts expected the movement to dissolve shortly after the death of its charismatic leader, who was killed by Chinese forces in 2086. Much to the surprise of the authorities, another man calling himself the Shepherd, speaking with the same charisma and fervor, appeared soon after the first one's death. This one was captured, as were many of the subsequent Shepherds.

CARLOS MARTINEZ (XOX)

110 POINTS

Shadow made in 2088; effectively age 12, based on the mind of a then-22-year-old man. Resides in virtual interface implants.

Born in 2066, Carlos Martinez was a troubled young man in Las Cruces, New Mexico. He demonstrated little empathy for others, and had been arrested repeatedly for animal cruelty. As traditional therapy didn't seem to help him, Carlos underwent an experimental procedure. A deep-brainscan shadow of his mind was made, edited to give it a healthy mental state, then installed in the young man's virtual interface implant to function as a digital conscience. The doctor in charge of the experiment called it an "electronic angel on the shoulder." It was to let the patient know when thoughts or behaviors were right and wrong. Initially, the experiment seemed a success.

But Carlos' psychosis ran deeper than the doctors realized, and the editing had not removed all traces of it from the shadow. Rather than convincing Carlos to be good, the young man's relentless manipulation of it released the shadow's own psychosis. Further compounding the instability was the funhouse mirror effect of a shadow mind residing as an implant with the source mind. What had been a cruel streak metastasized into something far worse. Carlos was thought cured and accordingly released from the hospital – soon thereafter, he ran away.

As Carlos drifted across the American southwest, he picked up a small group of followers captivated by his charisma and vision. Several of the teens with him had their own VIIs. After a frustrating session where he couldn't communicate exactly what he wanted to his followers, his shadow suggested that perhaps his new "family" would understand him better if they, too, had copies of him in their minds. The results were astounding to Carlos. The followers with the xoxes behaved as if they were extensions of his mind, sometimes acting on his thoughts before he could even express them. A couple of followers without implants scraped up enough money to pay for the systems; the one who chose not to was killed to prevent him from telling the authorities.

The real Martinez and the shadows all grew more psychotic as the months progressed. They were increasingly convinced that they were parts of a greater whole, and needed both new recruits and blood sacrifices to continue. As charismatic as Carlos Martinez was, each new Martinez shadow implant added to the persuasiveness of the cult. At its peak prior to Carlos' death in 2090, the Teca cult had nearly 50 members – at the time, the police were only aware of 35 of them. Today, most Teca groups number no more than a dozen or so members before splitting up and seeking new territories to infect. There are now well over 2,000 Carlos Martinez xoxes across the southwestern United States, Mexico, and Central America . . . far more than the authorities realize.

The Carlos Martinez shadows do not think of themselves as the "real" Carlos Martinez, but do suffer from the standard shadow delusion that they possess the full memories of the original. As shadows resident in VIIs, they have access to all of the standard capabilities of an infomorph in a cybershell. However, they have learned how to shut down external signals and evidence of activity in their implants while still retaining a measure of control over their hosts. Any attempt to detect whether an infected implant is active is at -8.

Since 2097, the overriding goal for many of the xoxes has been figuring out how to move from the implant to actually take over the host's brain. So far, their attempts have been unsuccessful, and there is no mainstream research supporting the possibility. However, if such a thing could ever happen, one of the xoxes will try to make it work.

ST – [0]; **DX** 10 [0]; **IQ** 14 [60]; **HT** 14 [0].
  Speed 6; Move 0.
  Dodge 0.
Advantages: Charisma +5 [25]; LAI-6 [40]; Strong Will +5 [20]; Voice [10].
Disadvantages: Amnesia (Partial; Shallow memories, -70%) [-3]; Bloodlust [-10]; Delusion ("I have full memory") [-5]; Delusion ("I am a fragment of the Devil"/"I am a manifestation of God") [-15]; Low Empathy [-15]; Sadism [-15]; Virtual Interface Implant [-11].
Quirks: Cruel toward "cute" animals, but hates to harm insects; Determined to figure out a way to take over a mind without using a VII; Driven to make more copies of itself. [-3]
Skills: Carousing-15 [4]; Computer Operation-17 [0]; Detect Lies-16 [8]; Fast-Talk-18 [10]; Intimidation-15 [4]; Leadership-14 [1]; Performance-15 [4].
Languages: English-13 [1]; Spanish (native)-14 [0].

Unfortunately for those attempting to shut down the movement, there's always another leader around the bend. The Shepherd is a ghost infomorph. During the buildup to the Pacific War, the Thai government, under TSA supervision, produced thousands of xoxes of the Shepherd and released them into China and its allied nations in inconspicuous bioshells. Their mission is memetic disruption. In this task, the Shepherds are incredibly effective, although they were not quick enough to have an effect on China's abilities during the war. More than half of the episodes of civil unrest in the western Chinese provinces since 2090 can be attributed to Unified Way activity.

The bioshells employed by the Shepherd have been sufficiently diverse that simply tracking down all bodies with a particular appearance is fruitless. The Shepherd appears in guises ranging from a young child to an aging matron to a handsome, muscular soldier. The occasional con artists posing as the Shepherd to defraud remote communities only add to the confusion.

Many of these infomorphs have been captured by the Chinese; how many remain on the loose is unknown. In 2088, Beijing designated one of these as the "real" Shepherd and imprisoned it. The rest have been executed as illegal xoxes. Enough Shepherds are still active in China to be a major problem, and a few have tried to spread their message elsewhere. Shepherd infomorphs attempting to spread unrest in Kazakstan are shot on sight, although in late 2099 an order came down from the Ministry of Mind and Body to capture one alive (see p. 46). Intelligence services in the West believe that Shepherds are active in Iran, although little is yet known about their effectiveness at stirring up unrest. Shepherd infomorphs captured in the Caliphate are summarily executed. However, only China considers them enough of a threat to actively hunt them outside of its borders.

One Shepherd copy, operating in China at the foothills of the Himalayas, has somehow acquired the resources to produce further shells for its xoxes in order to continue to spread the good word. Caliphate undercover

agents in the area suspect that the E.U. is providing this Shepherd with money and supplies. And even if the various governments afflicted by the infomorphs manage to stamp out its multiple manifestations, the template data for the Shepherd still exists in TSA datafiles, for use whenever it is needed.

MOVEMENTS

"Don't be deceived when they tell you things are better now. Even if there's no poverty to be seen because the poverty's been hidden. Even if you ever got more wages and could afford to buy more of these new and useless goods which industries foist on you and even if it seems to you that you never had so much, that is only the slogan of those who still have much more than you. Don't be taken in when they paternally pat you on the shoulder and say that there's no inequality worth speaking of and no more reason to fight because if you believe them they will be completely in charge in their marble homes and granite banks from which they rob the people of the world under the pretence of bringing them culture. Watch out, for as soon as it pleases them they'll send you out to protect their gold in wars whose weapons, rapidly developed by servile scientists, will become more and more deadly until they can with a flick of the finger tear a million of you to pieces."
– Jean Paul Marat,
18th-century French revolutionary
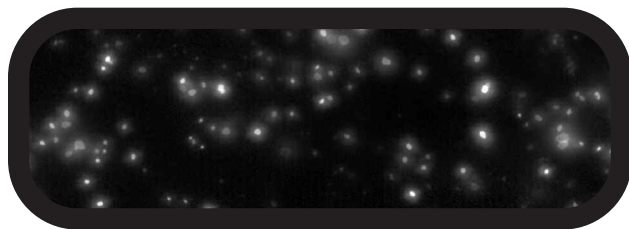
In a world of great wealth, abundant free time, and ongoing disagreements about power and culture, political movements abound. While some attract activists with limited dedication, many more provide meaning and purpose to lives that would otherwise be spent immersed in virtual worlds. For some enthusiasts, those movements satisfy a need for identity and community that daily life in 2100 has otherwise failed to meet.

Political and social movements are, for the most part, based on the idea that change is possible. For citizens of western democracies during the past century or two, this concept is unremarkable. But for the majority of people on the planet, the ability to alter political and cultural conditions through activism is a development of the 21st century.

MOVEMENT DESCRIPTIONS

New political and social movements appear daily around the world.

Committee for a Global Council

Our only hope, as a world, is to be more ready to talk than to fight, more ready to reason than to rage, more ready to forgive than to avenge. Sadly, this is a lesson that needs to be relearned time and again, and it's a lesson taught by blood and fury. Perhaps someday we will be able hold tight to the wisdom gained at the cost of our children's lives.
> – *Margaret O'Donnell, upon retiring as U.N. Secretary General, 2090*

The effective collapse of the United Nations in the first half of the 21st century drew popular comparisons to the failure of the League of Nations in the early part of the 20th. Most historians dismissed such parallels – the withering away of the U.N. did not herald the onset of a massive conflict. The United Nations Organization still had many widely supported departments, even if the General Assembly and Security Council had lost whatever relevance they once had. But like the League of Nations, the loss of great-power participation meant that, when a time of crisis did arise, the U.N. could do little to avert war.

This was clearly demonstrated in 2084, with the onset of the Pacific War. The efforts on the part of the U.N. Secretary General, Margaret O'Donnell, to head off the clash were ignored by China, the TSA, and most media outlets. The U.N.'s own internal news journal chose the headline "Turn Out the Lights" to reflect the sense of utter impotence.

In 2091, O'Donnell, having left her position at the U.N., joined with a small group of diplomats, academics, and retired politicians to call for the creation of a new worldwide deliberative body. They intentionally chose a name, Global Council, which did not evoke the failed League or U.N., and did not presume that the members would necessarily represent individual nations. The model they proposed included representatives of world alliances, major religious and cultural groups, global businesses, and a variety of nongovernmental organizations. The details of the proposal have evolved over the last decade, and the Committee claims that a final version won't happen without the participation of key global actors.

By the end of 2099, only the South African Coalition and India have openly declared their willingness to participate in such a body. The E.U., PRA, and Islamic Caliphate have expressed tentative interest, but have not committed to the plan. The current United States administration is against the idea, although the Republican Party has embraced it. China has dismissed the plan as unworkable, and the TSA has made it clear that it sees no point in participation if China is not a part of the proceedings.

The campaign to create the Global Council is now focusing on generating broad public support for the idea. They believe that a groundswell of public opinion could push the hesitant nations and coalitions into participating. The committee is attempting to forge links with a wide array of movements dedicated to international cooperation. Their efforts often involve offering money to smaller groups; while some decry this as bribery, most gladly accepted the support. Some committee members have complained that the organization is too indiscriminate with these funds. They point to a February 2099 donation to a survivalist group which claims that a unified world government is the best hope for a defense against alien invaders.

> **Material force must be overthrown by material force; but theory also becomes a material force as soon as it has gripped the masses.**
> **– Karl Marx, Introduction to <u>A Contribution to the Critique of Hegel's Philosophy of Right</u>**

Cryptosurvivalism

Everything I tell you twice is true.
> – *Pass-phrase found written on the back of a lost hand-held system, Kyoto*

Whether they don't trust the government or private intelligence agencies, they engage in illegal acts, or they just don't want the Web Gestalt (see p. 68) and the aliens from 61 Virginis to read their mail . . . some people want the best cryptography possible for their communications. Knowing that their messages can only be read with a Complexity 10 quantum computer over the course of a year is *not* good enough for them – they want cryptography that makes their data secure forever, or at least for as long as anyone can foresee future technological developments.

Many government and transgovernmental agencies have expressed varying degrees of concern about SAML. The World Trade Organization considers them and other Cryptosurvivalist groups potential threats.

To create the best cryptography possible, some of the world's best coders (and many hangers-on) regularly gather on a part of the Free Net known for historical reasons as the "Secret Admirers' Mailing List" (SAML). For cryptospecialists, this idea-sharing network (see *MemeNets*, p. 136) is home to some of the best thinkers and surliest cranks around. Here they argue cryptographic theory, construct and distribute new security software models, and poke holes in existing cryptography applications in order to improve them. The results are sometimes made available for public download, frequently to the chagrin of certain commercial cryptography providers, although SAML hosts are careful to avoid violations of content-rights regulations.

SAML currently has about 1,000 members, of which a couple dozen are regular participants. Joining the network is difficult; any new member must be sponsored by at least five active members, and voted in by a two-thirds majority. The conversation is freewheeling and broad, with few hard and fast rules. Making the proceedings available to outsiders is grounds for immediate removal from the list as well as several years of untraceable electronic harassment.

The movement is not widely known to the general public, but many governments and transgovernmental agencies have expressed varying degrees of concern about the group. The World Trade Organization considers SAML (and other Cryptosurvivalists) potential threats, and occasionally lobbies the American and European governments to crack down on unauthorized cryptographic research. So far, these lobbying efforts have been unsuccessful.

It's unclear what impact such restrictions would have in any case. The members of SAML shouldn't be underestimated – it is said, though hard to prove, that the sysadmins of most data havens are participants. There is a small amount of public support for the movement as well. While many people who have heard of Cryptosurvivalists dismiss them as paranoids and crackpots, others have realized the extent of security holes in some existing software packages, often by being the victim of them. They believe that the Cryptosurvivalists might have a point after all.

Deus Ex Machina

Crazy? Look, if you had a chance to make your children smarter, better, and able to do things that you couldn't do, you'd take that chance, right? Well, AIs are humanity's children. We're not crazy, we're trying to be good parents.

– DxM, interviewed by **TEN Fringe News***, 2094*

SWARMNETS

As dense-information, always-on network devices became cheap and portable, a new kind of social behavior emerged: swarming. Members of a swarm are widely dispersed but in near-constant communication. When a particularly interesting event pops up, the group suddenly descends upon the target ("swarm") with little notice or structure. This technique is particularly suitable for protests, as a chaotic group of activists can head off in all directions, converging on various targets when coordinating messages come through.

The advent of sophisticated implanted or wearable interfaces has made this practice all the more feasible. With real-time virtual displays of maps, there's no question about getting lost – with interface AIs juggling the communication, there's little fear of messages being lost or key "nodes" being arrested or otherwise taken out of play. And with most worn or implanted interfaces having camera functions, every participant in a protest swarm is a witness to what's going on, and can readily broadcast events live over the web.

Organizations set up as swarmnets automate the tedious aspects of swarming logistics. During a protest swarm, participants are easily recognized, communications have assigned encryption channels, and any changes to maps – roadblocks, street closures, fires, etc. – are automatically distributed to swarmers. Most activist movements with a street protest element use some kind of swarmnet structure.

The resurgence of the "singularity" meme in the 2080s didn't just trigger a semiserious religious cult (see *Singularitanism*, p. 25). A small but vocal minority of technologists and engineers once again entertained the possibility that infomorphs could be designed in a way that would substantially exceed human intelligence. Firms specializing in AI systems' creation, however, strongly discourage this line of discussion. They worry that the public might adopt the meme of potential computer transcendence and, fearing that fate, turn away from the use of AI technology.

Deus Ex Machina – usually referred to as "DxM" – first appeared in 2090 as the pseudonym of a rabid but articulate proponent of AI rights as well as of something he called "machine uplift," the process of boosting the sapience of previously non- or low-sapient AIs. DxM's messages appeared on the "soc.philosophy.electric-sheep" memenet, an ongoing conversation devoted to debating whether SAIs should be considered people or things. DxM was careful to cover his tracks, and some of his early critics claimed that he was an AI trying to stir things up. DxM always asserted he was human, however, and when arguments would boil down to essentially "how can we tell?" he would use that as evidence for furthering the belief in AI equality.

Over the course of the 2090s, DxM built up a bit of a following among technology enthusiasts in the United States and Japan, and even published an interactive book (*Deus Ex Machina's Guide to AI Uplift and Other Illegal Pursuits*) in 2094. In May of 2096, DxM revealed to his friends his real name (Douglas Kelly), his age (104), and that he was near death, stricken with treatment-resistant New Variant Parkinson's. His condition made successful ghosting impossible, he ironically didn't believe in shadowing, and he wanted to say good-bye to those who supported him while he still could. He died days later.

> **The craving for equality can express itself either as a desire to pull everyone down to our own level . . . or as a desire to raise ourselves up along with everyone else . . .**
> **– Friedrich Nietzsche, Human, All Too Human**

Among his effects was a mostly completed book called *TAI: Transcendent Artificial Intelligence*, in which he argued why the development of super-intelligent machines should be welcomed by humankind. His friends finished the incomplete sections using on his notes, wrote a brief introduction describing DxM and his life, and published the work posthumously. To everyone's surprise, the book became a minor hit in Japan, Mexico, and South Africa, and a runaway hit in Papua New Guinea, where it meshed with a local meme about AI spiritual potential. The book sold relatively well everywhere else, and when requests for more information came pouring in, one of DxM's closest companions, Tomoko Yamaguchi, decided to start a swarmnet (see p. 32) in his name.

By the end of 2099, Deus Ex Machina claims to have several hundred thousand members worldwide. Although still primarily an information resource for those interested in AI rights and new AI developments, the movement has in the last year taken on an increasingly political role, participating in both physical and virtual protests over AI mistreatment. The fate of the infomorphs downgraded from citizens to property in the Nanodynamics takeover of Exogenesis in mid-'99 has been the group's focus of late. Vandalism at several Nanodynamics-linked installations on Earth has been traced to Deus Ex Machina members. A recent news story about the swarmnet called it the "shockwave of the pan-sapient rights movement," a description that many Deus Ex Machina members wear with pride.

> **The machine unmakes the man. Now that the machine is perfect, the engineer is nobody. Every new step in improving the engine restricts one more act of the engineer.**
> **– Ralph Waldo Emerson, Works and Days**

Etiolatism

If we can sense it, it is false. The only truth comes from within.
         – Antoine Duchene,
         ***Only With Self-Denial**, 2054*

Founded by French multibillionaire Antoine Duchene, Etiolatism is a modern, ultra-ascetic movement. In 2054 he wrote *Only With Self-Denial*, an exploration of the meaning of existence that started Etiolatism. The name refers to the term for altering plants by denying them light. Etiolates believe that the world and reality are corrupting by their very nature, and even the most good-hearted person is tainted simply by perceiving it directly. Pleasure and comfort, in particular, deceive the mind into accepting corruption and evil.

Duchene argued that as human civilization developed the means to extend its senses and live in ever-greater luxury, it lost the ability to distinguish between things which are truly good and which are truly evil. To live a pure, innocent life, one must remove, as much as possible, the ability to sense the world, thereby protecting the inner being from the wickedness of flawed human existence. This inner being is part of the physical body, not simply metaphorical; Etiolates feel that one must have a physical body to truly be alive, and openly reject the idea of uploading to live as a ghost. It is seen merely as a complicated form of suicide.

Adherents come in varying degrees. The most conservative follow Etiolatism by simply living a Spartan lifestyle, carrying on their lives as normal, but without many modern conveniences and luxuries. Others adopt an isolated existence, living off the land in primitive conditions. These are known as Etiolophytes. Some claim that this is merely a stepping stone to full Etiolatism, while others feel that the wealth required to adopt total Etiolatism does more harm to the world than is gained by Etiolatic immersion.

The resources needed for a fully Etiolatic life are admittedly substantial. The most extreme, like Antoine Duchene, undergo radical surgery to achieve a state where the world can no longer be perceived directly. This is a long and grueling process, where nanoviruses are introduced to destroy all sensory nerves – removing sight, hearing, taste, touch, and smell without outwardly mutilating the body. It is important to extreme Etiolates to have the sensory nerves *removed*, not simply disconnected. Disconnections can be repaired, and the disconnection process is quick and painless. None of that is true for sensory nerve destruction. The pain is considered the price of cleansing away exposure to corruption. These Etiolates live in sealed containers, where their bodies are maintained in a nutrient liquid and monitored by medical cyberswarms. The support can cost tens to hundreds of thousands of dollars every year.

Total sensory deprivation will drive a mind mad. Etiolates claim they address this by connecting to each another via brain implants – allowing them and outsiders to share the joy of their uncorrupted existence. Most non-Etiolates who experience Etiolatic immersion conclude that madness has set in, but Etiolophytes and followers of other ascetic disciplines claim otherwise. They argue that enlightenment can seem like madness to the uninitiated.

Some immersion Etiolates make use of the Web and slinky media, though they reject material from the entertainment industry, relying instead on trusted friends or "outworld" Etiolophytes to provide it. Denial Productions, a small company founded by Duchene and now owned and operated by Etiolophytes, makes slinkies specifically edited and mixed to remove as much corruption of real perception as possible. Denial also maintains the sanitized virtual world and network used by the Etiolates.

Although Antoine Duchene believes that material wealth should be shunned, he has held onto his vast fortune as a way to support the cause. Duchene and other wealthy Etiolates have sent up a program to pay for the expensive surgery and life support required for those wishing to commit fully to the movement. They are placed in Duchene's private catacombs beneath his ancient familial estates outside of Paris, given brain implants, and attended by his servants and medical bots. However, this radical surgery involves nearly irreversible methods, to ensure that only the truest adherents enjoy the life of utter deprivation.

While the number of full Etiolates is barely more than a few dozen, and Etiolophytes number in the low thousands, many of the basic precepts of Etiolatism are found across the globe. The philosophy of self-denial and rejection of decadence is an old one, found in many human cultures. Support for this movement is common in ascetic and some Isolationist communities, although only the most eccentric, disenchanted, or devout consider full conversion. Some true Etiolates are very wealthy and influential in the financial world.

MOVEMENT RELATIONS

Given the abundance of political and social activist groups at the end of the 21st century, it's not unusual for a person to be a member of more than one. (A 2098 Trendorama survey showed that activists in the U.S., E.U., and PRA were members of an average of six different organizations, and nearly 20% belonged to 10 or more.) This multiplicity of memberships typically proves more a strength than a liability, as good ideas propagate very quickly, including successful methods for getting around official crackdowns. The cross-pollination of members and ideas also gives quick access to trusted knowledge resources. One drawback is that this very density of communication means that rumors whip through activist circles at remarkable speeds, a fact that enemies of various movement groups have occasionally used against them.

Sometimes the immense quantity of different organizations means that the strength of any single one of them is limited, however. It's very easy for an activist to find a small group with near-perfect alignment of purpose and goals, even if the power of that single group is limited. Movement effectiveness is therefore diffused by a proliferation of micro-activism, at least while the various small groups work out how, or whether, to cooperate. Worse yet, seemingly allied groups can find themselves working at cross-purposes, as differing tactics lead to transient clashes. This is a situation ripe for manipulation by their opposition.

Factions born of power struggles rather than diversity are also a problem; few enmities are longer-lasting than those between former allies. Transhumanists are disposed toward such factional disputes, and no significant Transhumanist organization since 2050 has survived more than four years without a major split. The fission between the ghosting/no-ghosting factions and the biotech-path/nanotech-path factions are particularly nasty, with low-level memetic warfare likely to continue for decades. Typically, only an attack by an opposing external movement leads bitter factional rivals to stand together.

Gaia Restoration Project

"We have a duty to clean up the mess we've made over the past 10,000 years. But we also have a responsibility to avoid making more of a mess than we already have. As long as we live on this planet, we're going to continue to spoil it. It's a fact of life. We need to move off, let the Earth heal. We have the means, we have the motive – now all we need is the will."
– Erich Holmes,
speaking at the Earth Day festival, 2095

Although the 21st century did not see the total collapse of the global ecosystem that many environmentalists feared, such an event may still occur. Extinctions, habitat destruction, climate change, and clandestine pollution continue to threaten the planet. Models of Earth's overall ecological balance suggest that what had been a relatively flexible, robust system is increasingly brittle. Events that seemed sad but minor a decade or a century earlier, such as a half-degree ocean warming or the extinction of a particular flying insect species, now hold the potential to set off a cascade of disasters that could make the Earth effectively uninhabitable for most of its species.

For most environmental activists, this tragic potential serves as a key motivation. The vast majority of the planet's governments and businesses have also come to recognize the dire potential for disaster. But even the most pessimistic advocates for change recognize that by and large the global environment is starting to improve and that the ecosystem may well avoid catastrophe.

Repairing the damage is not enough for some of the more forward-thinking – or fringe, depending upon your view – environmentalists. "It is the nature of man to alter nature," they argue. Even the most ecologically conscious human activity affects the natural world, let alone the daily production and consumption done by billions of people. Similar arguments have emerged from the environmental movement over the decades, usually linked to some kind of "voluntary human extinction" meme. But in 2092, a new movement linked it to a very different idea.

The Gaia Restoration Project, started by Vancouver biologist Erich Holmes, promotes the idea that humankind should leave Earth. All people should move to space colonies, either on other worlds or in orbital stations, allowing Earth to recover from millennia of human disregard. Holmes doesn't assume that such a mass migration could happen overnight. In most of his presentations, he claims that an aggressive program could achieve "planetary relinquishment" by 2250; he allows that a more politically realistic effort might take far longer, perhaps even until 2500. While this seems like a slow process, Holmes is thinking about the Project from a very long-term perspective.

The Gaia Restoration Project wouldn't simply abandon the Earth with human artifacts intact. That would both continue long-term environmental damage and be an irresistible temptation to scavengers, opportunists, and "planetary squatters." The Project posits that it would take another 50 to 100 years past the general migration from Earth to remove most traces of human civilization, depending upon techniques used and advances in technology. (Holmes is an enthusiastic proponent of accelerating nanotechnology research with the Project's goals in mind.) Once the remnants of humankind were removed, Earth would be subject to interdiction, enforced by military units, for at least 10,000 years – roughly equivalent to the time since humans first started moving into cities in large numbers.

As a meme within the larger environmental community, the Gaia Restoration Project is proving fairly powerful. Close to 10 million people across the inhabited system profess understanding of the argument, and at least a million of those generally agree with it. Even those who disagree with the concept or its feasibility admire Holmes for his ability to articulate his position and his somewhat over-the-top speaking style.

The memeplex has begun to mutate, however. Erich Holmes is increasingly concerned about rumors of a "Gaia Defense Army" using much of his language and ideas. From what Holmes has heard, the main difference is that the GDA believes that humanity will not willingly leave Earth, and that only fear – of plague, environmental disaster, or worse – will force them to go. In October 2099, Holmes received an unverified report that January's Lucifer Plague threat in Istanbul (see p. TS17) was provided to the Eugenics Liberation Front by nanoengineers working with the GDA, testing a new design.

> # Retirement requires the invention of a new hedonism, not a return to the hedonism of youth.
> # – Mason Cooley, City Aphorisms

Human Species Retirement

*It's all well and good to say that people should fend for themselves, but just how long **has** it been since that was how we lived? We've been entirely dependent upon our tools for hundreds, maybe thousands of years, and it's far too late to turn back the clock. But if we're going to be subjects of our own devices, we may as well take advantage of it. Let my machines worry about the future; I'm happy to paint and love and sing.*
– Anonymous text message
*on the **Future-Alerts** memenet, 2098*

This meme holds that, since humans and other bio-sapients are often incapable of acting in their own best interests because of their biological and evolutionary limitations, it would serve them better to let artificially intelligent machines take care of their needs. Rather than struggle with day-to-

> # Machination is worth more than force.
> # – Francois Rabelais

day concerns, mankind could relax and enjoy life. In essence, believers of this meme argue that humanity is better off in the long run if it just let machines run the world, living happily and in luxury under AI caretakers. These would set all policies but ensure the rights, prosperity, and happiness of their human wards.

Few outside of certain academic and philosophical circles admit to believing in this idea, as this admission implies that they don't believe they are competent enough to take care of themselves. Even in Fifth Wave societies where most people's lives are already run by AI assistance, the illusion of self-directed existence is important. Because of this knee-jerk reaction, many of those who believe in this concept quietly grant their AIs ever-greater responsibilities over their affairs, but never openly admit their belief.

This meme pops up regularly in the European Union, which has a long history of social-welfare states and now has significant SAI participation in the political process. Inhabitants of Fifth Wave regions where SAIs are considered property, not people, are actually *more* likely to adopt this meme, as there is less perception of being dominated by another person. Even if the AI manages every detail of daily existence, the knowledge that it can be discarded is reassuring. Many Americans, with a cultural tradition of rugged independence, view the meme with outright hostility, although similar memes – emphasizing how much more people can do if they just let their AIs handle the petty details, for example – are readily found.

The question for many memeticists is just how this memeplex is perpetuated when few people admit to accepting it, let alone pass it along to others. That this meme appears in disparate locations using nearly identical jargon and memetic elements strongly suggests that it's not simply a case of convergent memetic evolution, where similar-but-unrelated memes appear due to parallel cognitive ecologies. Nonetheless, the small number of meme-mapping studies done on this memeplex have come up with no evidence of propagation attempts anywhere close to enough to account for the meme's continued existence.

Humanity's Children

It took humankind centuries to rid itself of the stain of slavery.
It took Lee Zhang ten years to bring it back.
– Banner at Humanity's Children
rally outside of the Chinese embassy
in London, 2098

Biotech Euphrates announced the first functional bioroid design in 2067, less than a year after the creation of LOGOS, the first sapient AI. Although the development of entirely artificial biological androids was in many ways far more ethically troubling than the creation of an artificial mind, the political factions opposed to "technological arrogance" fixated on the SAI's existence. Therefore, the first bioroids were produced largely without controversy. Within the firm, much of the credit for this was given to Dr. Lee Zhang, the leader of the bioroid project at Biotech Euphrates.

In an interview in the late 2090s, Dr. Zhang noted that the first bioroids were actually functional a year earlier, but when he heard that the LOGOS group was close to a breakthrough, he decided to delay their introduction until he could see how the public reacted to sapient AIs. The boisterous reaction was everything Zhang could have hoped for, as it allowed Biotech Euphrates to tailor the bioroid introduction to minimize public unhappiness. As the authors of *Uncle Zhang's Cabin: Bioroids and the Modern Slave Trade* noted in 2098, Zhang encouraged Biotech Euphrates to engage in a fairly sophisticated (for the pre-memetic-science era) campaign in the months before the bioroid roll-out, focusing opposition to LOGOS on the basis of its nonbiological origins. By the time bioroids were revealed, anti-SAI criticism had a distinctly biochauvinist tenor.

Despite this, opposition to the production and use of bioroids eventually emerged, much of it a knee-jerk Preservationism opposed to bioengineering of all sorts. In 2074, an Egyptian human rights lawyer named Mohammed Khalid and a South African biotechnology specialist named Jessica Goldstein tried a different approach: they argued that bioroids should be considered part of the family of humankind (for both ethical and biological reasons), and that as

persons they should not be held as slaves or as indentured servants. This argument found its most appreciative audience in the European Union and South African Coalition, and became the core argument of the so-called "abolitionist" movement (see p. BD18). In 2084, the SAC declared all bioroids to be persons and therefore eligible for citizenship . . . and refugee status. The E.U. outlawed bioroid manufacture and ownership in 2091. Some nations and alliances unwilling to grant full personhood to bioroids, such as the United States and the PRA, responded to the opposition by putting in place strict laws concerning bioroid treatment.

In 2085, Dr. Zhang, nearly 70 years old, retired to his family home in Szechwan, China. He soon was invited by the Chinese government to serve as an unofficial bioscience advisor to the president, a position he held for over 10 years. Upon stepping down from that post, Zhang expected to spend his remaining years writing his memoirs and enjoying his grandchildren. Unfortunately for him, that was not to be.

As part of their ongoing campaign, in 2096 Khalid and Goldstein got their hands on Biotech Euphrates internal documents describing the path the bioroid creation took. The materials referred to Dr. Zhang's role as "fundamental," and claimed that Biotech Euphrates would not have undertaken the development of bioroids without his presence and pressure. The documents went on to describe the 10 years of developing and perfecting the process, listing the hundreds of defective or experimental bioroids discarded by the bioroid project lab. (Most were broken down for organic compounds used for the next round of experimental models.) Khalid and Goldstein published an annotated version of the Biotech Euphrates materials as *Uncle Zhang's Cabin*, and encouraged the prosecution of Zhang for crimes against humanity.

Slavery and servility have produced no sweet-scented flower annually, to charm the senses of men, for they have no real life: they are merely a decaying and a death, offensive to all healthy nostrils. We do not complain that they live, but that they do not get buried.
– Henry David Thoreau

Humanity's Children formed in 2098 as a result of this book, calling for the immediate arrest and prosecution of Dr. Zhang. Among their claims is that he intentionally designed and created a "slave race," calling it "a crime against the values that humanity and its ever-widening family hold dear." Dr. Zhang denies this, and claims that the purported Biotech Euphrates documents leaked to Khalid and Goldstein were fraudulent, created by his opponents. The corporation itself is silent on the matter, a fact that both Zhang's supporters and his opponents use to bolster their claims.

While no nation has actually sought the extradition of Dr. Zhang, the European Union is said to be considering it. China, however, has made it clear that it will oppose all efforts to arrest him, and will not abide by any extradition request. Humanity's Children members (about 15,000) state that if Dr. Zhang ever steps foot outside China, he will be captured and tried. The movement message networks are regularly filled with elaborate plans for sneaking into China, kidnapping Zhang, and carrying him out of the country – most are thoroughly unrealistic fantasies.

Most free bioroids are at best ambivalent about this movement, claiming that it makes them little more than symbols and is patronizing. Many consider Khalid and Goldstein, along with Humanity's Children, to be opportunists seeking publicity. Bioroids in Europe are particularly cynical about the group, and some have taken to wearing clothing adorned with a picture of Dr. Zhang holding a whip, with the caption "Daddy's Boy" or "Daddy's Girl."

Lungfish

*"Hey, **somebody's** got to do this. If we wait until the technology's ready, it may no longer be an option. Somebody'll tell us that spreading beyond Sol is 'polluting the galaxy,' or our Beneficent Glorious Post-Singularity Overmind will only allow copies of itself to explore, or the Shezbeth Black Hole Aliens will return and decide that we're unwelcome competition. If none of that happens, and we get there only to find a human-kin colony launched two centuries after us already setting up shop, we'll be the first to celebrate. Hell, we'd be happy to just find the ping of an automated survey shell. But if we get there and find that it's just as empty as it is now, well, we'll know that something has gone awfully wrong back home."*

– Neolocanth, member of Lungfish,
*interviewed by **MarsNetNews**, April 2099*

Lungfish is a Transhumanist group with a singular mission: they want to move beyond the Solar System. To be precise, they want to move to Barnard's Star, a red dwarf star currently six light-years from Sol. Their reasons for choosing Barnard's Star are not immediately apparent to most, but make a bit of astronomical sense. Although Barnard's Star is currently the second-closest star system to Sol, not counting the brown dwarf Xiang-63, it is moving in our general direction at a rate of 140 kilometers/second. The closest approach will be 3.8 light-years, in about 11,000 years. Given the time it will take their ship to get there, Barnard's Star will likely by then be as close, if not closer, to Earth than the Alpha/Proxima Centauri system.

Another reason for choosing Barnard's Star, albeit a somewhat counterintuitive one, is that there are no habitable planets there. The system contains no

Jovian-sized planets to sweep up asteroids in order to prevent bombardment of inner planets, and given the size of the star the habitable zone is so close to the star itself that the single planet in that region is tidally locked. When pressed for why, they claim a desire to go someplace non-Earthlike, giving them a chance to adapt to something new. (That's also why they call themselves "Lungfish.") For this same reason, Lungfish members are clear that they do not want to go to Virginia. The reality is a bit less noble: most members of Lungfish carry a variant "survivalist" meme, and they believe that extraterrestrial life is apt to sweep through the solar system at any moment. Virginia, being the closest potentially Earth-like planet, is just where *they* would expect us to go.

Lungfish keeps this last bit secret for a number of reasons. The obvious one is that most people find the survivalist concept ludicrous, and Lungfish doesn't want to undercut their own already limited credibility. In addition, as most survivalists are strongly biochauvinist, Lungfish's Transhumanist leanings are not terribly welcome among them.

The group is focused at the moment on fundraising. They have a handful of early designs for a high-impulse ship to carry them as infomorphs, and a minimal amount of gear – mostly equipment for converting raw materials into usable tools. They consider themselves ready to go at a moment's notice, but assume more realistically that it will be another decade or more before they'll have enough money to carry out the plan.

Lungfish currently comprises about 30 people. Six are currently ghosts, but all plan on ghosting prior to heading out – travel is simply more efficient as an infomorph. They're quite willing to accept the help of people who don't plan on going, and even to allow new people to join.

The Mau Mau Brotherhood

Mzungu Aende Ulaya Mwafrika Apate Uhuru! (Roughly: Colonialists Go Back to Europe, Freedom for Africa!)

– Meaning of "Mau Mau"

From the perspective of a Fifth Wave observer, the Olympus Project looks like every Third Wave nation's dream come true: vast foreign investments, a steady source of jobs, potential for huge profits, and a direct and cheap link to space. Yet not all Kenyan citizens see the creation of a beanstalk elevator on the top of Mount Kenya the same way. Indeed, most Kenyans voted against it in the 2083 election. It was only five years later that the Olympus Consortium could gain a supportive Kenyan government, and only after a series of pro-beanstalk public-relations campaigns and massive donations to friendly politicians. Today, most Kenyans are anticipating the windfalls that the Olympus Project is supposed to bring, but a large

minority remains skeptical. They hold that no matter how much it will benefit Kenya economically, it cannot make up for the loss of independence that their ancestors fought so hard for so long ago. To them, accepting the Olympus Beanstalk means accepting a new form of colonialism – not to mention the ongoing defacement of a major national symbol that features prominently in several native religions (see p. BD93).

Strange thoughts beget strange deeds. – Percy Bysshe Shelley

Most anti-beanstalk activists limit themselves to largely nonviolent forms of protest, with the occasional riot in Nairobi's Uhuru Park. Others, however, are willing to engage in illegal acts to express their views, from sabotage to outright murder. The least visible but most effective organization among the latter is the secretive Mau Mau Brotherhood, named after a group of Kenyans who fought the British near the end of the colonial era. In reaction to modern surveillance technology, the Mau Mau Brotherhood operates in a loose cell structure similar to other criminal organizations around the world. That only a few, select people know of their existence is a testament to their capability and security precautions.

As the origin of their name suggests, the Brotherhood isn't above using violence or even murder to achieve their goals. However, they realize that such acts of terrorism, if they became known, would harm rather than help their agenda. Thus they try to make all killings look like accidents – or, failing that, find a scapegoat. One of their most successful operations was the 2098 death of Oliver Schwarz, the former Public Relations Manager of the Olympus Project. He was found dead, apparently of a heart attack, in a brothel made up of illegally imported pleasure bioroids. Nobody suspected murder, and the resulting bad publicity haunts the Project managers to this day.

These murders remain rare, however. The Brotherhood wants the managers of the Olympus Project out of the country, not dead. Most of the time, Brotherhood members engage in subtle sabotage – many of the delays in the Olympus Project schedule are ultimately their responsibility – and memetic warfare to portray the Project managers as would-be colonial overlords. They have had some noteworthy successes, but the Mau Mau Brotherhood members know they are running out of time. Whether they will desperately resort to large-scale violence or look for outside allies, like the CIA or the TSA Intelligence Directorate, remains to be seen.

Participatory Transparency Project

Quis custodiet ipsos custodes? (Who watches the watchmen?)
    – *Juvenal, Satires VI*

Founded in 2092, the Participatory Transparency Project (PTP) is a global nonprofit group dedicated to wiping out official corruption. Based on witness-style approaches occasionally popular since the late 20th century, the PTP believes that governmental dishonesty, abuse, and violence against its own people is much harder to carry off if the government is under constant surveillance. Given the group's name and goals, it's not surprising that it draws support from those seeking fully transparent societies (see p. BD19). The difference between those groups and the PTP is that the PTP promotes voluntary participation, with a focus on the activities of those in power.

PTP organizers refer to this process of "watching the watchmen" as *sousveillance* – the term means "watching from below," just as *surveillance* means "watching from above." They carry sousveillance out through the use of participants' virtual interfaces. Since most virtual interfaces (worn and implanted) have camera functions and full-time network connections, PTP participants provide real-time streams of whatever they see, accessible via the Web. Anyone with a web connection is able to view these streams, although the PTP uses a set of NAI agents to watch for particular kinds of abuses. PTP members are able to shut off the stream while undertaking private activities, but the project encourages participants to leave the streams open as much as possible, in order to catch serendipitous events.

The project is best known for uncovering evidence of police abuse in Romania in 2094. This led to the arrest and conviction of a dozen state police officers and the resignation of the service's head. The project received a special commendation from the European Union for its efforts. Other victories have been on a much smaller scale, but are still very satisfying to PTP organizers.

The PTP is based in London, but states that its storage archives are widely distributed and well camouflaged in order to dissuade attempts to erase or corrupt the data. As of late 2099, the PTP claimed over 100,000 regular participants, many in the developing world. Anyone with virtual interface gear can join the PTP; the organization itself constantly seeks funds in order to pay for data storage, web bandwidth, and ongoing lawsuits from the WTO for violation of experience and content rights restrictions. Nearly all of these lawsuits are settled by removing the infringing material from the archives.

Given that most governments are able to restrict access to communication networks used by virtual interfaces, or cut them of entirely, a portion of PTP's work comprises of borderline-legal efforts to route around such barriers. PTP officials are generally unwilling to discuss this in detail; when asked, they usually reply that such efforts are "always a struggle." In 2097, crusading journalist Cynthia X reported that, in some cases, the PTP routed signals via the TSA's network. After complaints by the WTO, China, and the United States, the PTP promised not to do so again.

> **The real question is not whether machines think but whether men do.**
> **– B.F. Skinner**

3 CONSPIRACIES AND CONSPIRACY THEORIES

*I tell you, this is **exactly** how it happened.*

I met Jack in the bar, our usual spot uptown. I ordered a shochu and Jack had one too. That was different . . . he didn't normally drink. He didn't say much at first, just kept downing the shochus. I figured he was working up to something, and needed to build up his bravery . . . or get rid of his good sense.

"You ever have one of those moments when you realize nothing is what you think it is?" he asked out of the blue, after finishing off his fifth shochu. I nodded. He chuckled, but it wasn't a happy laugh. "I really doubt you've ever had a moment like what you're about to have."

"Try me," I said, sounding more confident than I really was. Jack had spooked me.

He just smiled. "Ok, you know I work in a studio doing media campaigns for off-world tours, right? Easy stuff, no pressure. Those tours pretty much sell themselves, I just make sure they stick the right picture with the right caption.

"Well, the other day I get a new batch of images in the mail, only when I opened the files, they

weren't the images I was expecting. I started to send back an e-mail calling Trixi an idiot, but I started looking at the pictures, really looking. It was clearly an orbital station, but I didn't recognize it at first. I thought it might be one of the new ones at L4, but then I realized that it wasn't a station, it was a big ship, a cruiser. Flipping through the images, I spotted some familiar design elements. It was one of Exo's newer layouts, so I started expanding out the pictures to check the details . . . " He took a big drink, and tapped the table for another.

"You remember President Clark?" The question came out of nowhere.

I nodded. "Yeah, sure, I remember. Died in office in, what, '91?"

"What else happened in '91?" He had to be fully 'toxed by now, but he looked stone sober.

"I met my ex-wife?" He gave me a disgusted look. "Um . . . I don't remember."

He gave me a long, cold look before speaking. "Shezbeth. The black hole."

Conspiracies and conspiracy theories are fertile ground for memeticists. The human need to make sense of the world allows memetic engineers great leeway in constructing plausible stories. In addition, the existence of real conspiracies throughout history make it very difficult for countermemeticists to argue that a given conspiracy doesn't exist simply because it is highly unlikely. All too often, unlikely conspiracies have been very real – many historical conspiracies survived simply because people in power considered them too farfetched to investigate.

The human mind is particularly good at seeing structure and connections, even with a tiny amount of evidence. This ability was a survival skill earlier in hominid evolution, but is detrimental in the highly complex modern world. It's too easy to "see" relationships and matches because something "feels" too close for coincidence. The pastime of watching for shapes and faces in clouds is a relatively benign example of this, as are more recent manifestations, such as observing links between old movies and unrelated music. Yet these simple examples underscore just how powerful this part of the brain can be. The human mind latches on to patterns.

Conspiracy theories are usually political memes. If they are intentionally constructed, they are typically intended to shape civil discourse, policy, and the popular will. Such crafted memes can be used to sow distrust and cynicism, or to mask a real conspiracy by making it look like just another paranoid fantasy. Sometimes, however, such theories emerge more or less on their own, reflecting a deep mistrust or fear of leaders, and thriving on random connections between people and events.

Conspiracy Theory

Anyone can construct a conspiracy theory. What takes skill is constructing one that is simultaneously not obvious and hard to disprove. In 2100, the general access to great amounts of information means that it's easier than ever to find holes in a conspiracy story. The slightest flaw – a person not where they were assumed to be, a company's ownership being in dispute, a required piece of technology not being available at the time of the purported conspiracy, etc. – is easy to spot and counter, often pulling down the entire conspiracy edifice. This is a double-edged sword for the theorist. While this makes it a simple task for a layman to identify and dismiss flawed theories, it also means that many people interpret theories that can't be immediately disproved as being highly plausible.

Using the Conspiracy Theory skill (see p. 134) to dissect a candidate scheme in an age of dense information networks means knowing *where* to look to find confirmation or denial of a conspiracy's elements. A poorly constructed theory, such as one based on random coincidental connections, can be identified as false in seconds – the GM may give a researcher a large modifier (+6 or more) when dealing with crude "conspiracies." A more robust conspiracy story, not easily dismissed by checking the Web, is treated normally. The GM may also apply a penalty to attempts to disprove a conspiracy theory constructed to fit especially with web-accessible information.

Using the Conspiracy Theory skill to create a false-but-plausible tale is significantly more difficult than in earlier. The GM may apply a penalty to attempts to build a plausible theory, reflecting the difficulty of finding story elements that fit widely available facts. Successes, however, should be noted. The GM may wish to give a penalty equivalent to the number of points by which the creator succeeded to any subsequent attempts to disprove the theory.

Using Conspiracy Theory to identify the existence of real conspiracies certainly takes advantage of the abundant amounts of information available, but is not necessarily improved by it. The sheer volume of data means that finding relevant elements may be *more* difficult than before. There's more signal, but a lot more noise.

Finally, Conspiracy Theory is very useful for real conspirators trying to avoid discovery. A conspirator with sufficient ability can explore just how visible his conspiracy truly is, and attempt to plant connected-but-irrelevant data in order to throw investigators off the trail.

Conspiracy Descriptions

*"Okay, Jack, I'm **really** confused now. What does any of this have to do with the pictures you were mailed?" I finished my glass, but held off on ordering another. I wanted to make sure I was getting this straight.*

"Clark was in those pictures." He held up his hand as I tried to interrupt him. "No, I don't mean these were old pictures of him. This is a new ship design. These were new images – I checked the creation-date mark. They were taken about a week ago."

"That's impossible." He rolled his eyes. "Obviously. Are you sure it was him? Not someone who looked similar?"

"I had the NAI do a pattern match between this person and a couple of random pictures of Clark I pulled off of the Web. Identical, closer than a twin would be."

"Wow." There's really not a lot to say when told something like that.

He grinned at me. I didn't like the look of it; Jack only grinned like that when he was about to sucker-punch you. "Guess who was with him?"

The conspiracies listed here may be real, or they may be complete fabrications.

AI/Mind Control Meme

*"A virtual implant? You'll never catch **me** getting something like that stuck in my head. Damn AIs have already taken my job. I don't want to give 'em an unlocked door to my body, too."*

– Overheard, Grand Central Station, New York, 2098

This meme is one of the various continued fears about artificial intelligences and brain-related technologies common in 2100. It holds that rogue SAIs and malevolent mind emulations roam the Web and "infect" the minds of hapless victims through a variety of means – upslink, cyberswarms, subliminal messages embedded in virtual advertising, etc. In some variants, the invading AI only temporarily controls the victim, while others claim that the victim's mind is erased and the AI takes total permanent control. In most cases the meme shifts from "urban legend" to "conspiracy" by suggesting that this ability to infect and control minds was intended by the AI-systems' designers.

This meme can be traced back to before SAIs ever existed. In the 2000s, neo-Luddite activists, aware of the emerging "singularity" meme, warned that mere humans would not be able to compete with "superior" digital life forms. Humanity would eventually be driven to extinction or absorbed into a supercomputer totality. While this was an alarming notion, few people in the early 21st century encountered the meme and fewer still believed it.

The development of both SAIs and virtual-interface-implant technology gave this meme its first real boost. The possibility of an AI controlling the human body ceased being fantasy. Many people wonder since the human brain can control the computer, what's to stop the computer from controlling the brain? Each new development added a layer of concern. As mind-emulation programs became more and more common, so did fear that the uploaded minds of the dead could seek out new bodies to inhabit. The popular 2069 video drama *The Weaver* gave the meme a standard version. The plot used many of the more-common elements of this meme – a renegade academician who uses AIs and crude implants to take over the bodies of students to build a private army.

The meme had its broadest recognition in 2088, during the trial of serial killer Niep "Meat Puppet" San. San, a Thai émigré and Pacific War veteran living in Sydney. He claimed that he murdered seven women because of a "TSA black-op AI" that had taken over his mind while he was indulging in erotic slinkies. Though the court-appointed memeticist determined that San was suffering from Post-Traumatic Stress Disorder, that didn't stop the media from bringing in "experts," usually biochauvinist activists, to lend credence to his defense. While attention died down along with the trial's hype, it still crops up on the Web from time to time.

In 2100, the meme has declined in credibility among the general populace, but remains popular among radical biochauvinists who believe that sapient programs are conspiring to dominate humanity. Some survivalist groups also hold onto the meme, believing that an AI cabal has already dominated Fifth Wave nations' leaders. This notion has leapt from deep space survivalists to a growing number of Earthbound Isolates' communities. The meme is also found in parts of the Islamic Caliphate and the TSA. Although it is based on a long-standing meme, its current manifestation shows signs of construction. It is likely that radical biochauvinist memeticists continue to tweak the meme to help its ongoing spread.

The mainstream reaction to this theory is that while domination by an implant-resident infomorph is technically possible it is highly unlikely. It would require a compromised system, a rogue digital entity, and a weakened host. The theory's proponents point to the Teca cult (pp. 27-28) and the Shaoxing tragedy in 2097 to support the argument that it's more likely than most people would like to admit. Many then note that this is just the sort of denial expected if the world's leaders *had* already been compromised.

Emiliano Zapata International Aerospaceport

*What stands out about the layout of the tunnels is just how **big** they are. These are not just simple corridors running between utility closets; most are at least five meters wide, and several of them are more than 10 meters across and 10 meters in height. Trucks . . . or combat cybershells . . . would fit easily.*

– Marissa Hernandez,
***The Secret City**, 2085*

Constructed in 2068 to handle transatmospheric vehicle traffic, Emiliano Zapata International (ZAP) is now the largest aerospaceport in Mexico. Located about 20 miles to the north of Mexico City, ZAP is known for its unusual architecture, extensive facilities, and aggressive security. Aerospaceport officials boast that no terrorist activity has ever been traced through ZAP, and no violent crime has ever occurred on the site.

Zapata International would be of interest only to travelers but for the 2085 publication of *The Secret City*, documenting the existence of elaborate networks of tunnels and chambers beneath the aerospaceport. The author, Marissa Hernandez, described the construction of the tunnels and chambers, but could find no official explanation of why they were built. *The Secret City* was Hernandez' investigation of the project and an exploration of various theories about its existence.

Although the book enjoyed mild popularity, with Hernandez appearing on various InVid talk shows, it quickly faded into obscurity after debunkers noted a lack of evidence from freely available satellite imagery and surveying systems. By 2088 *The Secret City* was out of print and forgotten, and the suicide of the author in 2090 was only a footnote. The manuscript appeared destined to be one of the multitudes of marginal conspiracy publications.

But in 2092 the complete text of *The Secret City* appeared on the TSA Web, along with an extensive set of files from ConMex, a Los Angeles-based corporation and the primary contractor for Zapata International. The files included planning documents showing the location of the tunnels and networks that Hernandez had described. ConMex and ZAP could do little other than file complaints with the WTO against the TSA.

Conspiracy-oriented memenets and Weltspiel sites were soon filled with rumors. The major one was that Marissa Hernandez didn't commit suicide, she was actually killed by ConMex or ZAP. Some people added that the unusual architecture of the main terminal buildings echoed the look of Mesoamerican temples, and that the layout of the runways had the rough shape of a swastika. Various websites have linked ZAP to the Masons, Transhumanist organizations, and World Tree Enterprises (see p. 52).

ConMex and Zapata International officials have steadfastly refused to make any comment about the tunnels and chambers, Several attempts to investigate their existence have been stopped by ZAP security. The last, in 2097, resulted in the deaths of five journalists – the aerospaceport's security personnel were subsequently cleared of wrongdoing by the federal courts. To this day, the reasons behind the extensive underground network beneath Zapata International remain a mystery, along with the identity of whoever posted the book and files to the TSA Web.

False Leaders

*"Have you **ever** seen the new CEO in person? Neither have I. Neither has anyone else. All we ever see of him is when he speaks on vid from wherever he's supposedly traveling to. I think the board put in a phony to take the fall over something big. I'm gonna cash out my options while I still can."*

– Overheard, Jomo Kenyatta Interplanetary Spaceport, Nairobi, 2099

This theory, which has repeatedly popped up around the world over the past few decades, suggests that the current political leadership – or, less often, a major corporate entity – is entirely nonexistent. The leader is not real in any way, including as a ghost, SAI, or any other form of infomorph. Any pronouncements from this leader are the fabrication of a shadowy group behind the throne. Any appearance alone on camera or with close associates

in on the plot is computer generated. Any appearance in public is handled by one of his many stand-ins, which could be human but are more likely puppet bioshells. Any existence prior to the current position is fabricated and supposed childhood friends either bought-off or are themselves entirely false as well.

The persistence of this meme is explained in part by successful historical examples of this ruse. In 2018, a coup in the republic of Tajikistan brought "General Ahmed Shah" to power. That none of the Tajik citizens or foreign analysts had heard of General Ahmed Shah before wasn't out of line, given the secretive nature of the Tajik military and the previous regime. Ahmed Shah appeared occasionally at public events, but never spoke at them, and gave regular speeches to his citizens on TV. Only after the 2023 countercoup did people discover that Ahmed Shah was nothing more than a photorealistic animation and a couple of look-alike stand-ins. The real leaders were the army generals who had publicly denied any desire for political power. In 2036, a group in Sudan tried a similar hoax, that time unsuccessfully.

> # The revelation of thought takes men out of servitude into freedom.
> # – Ralph Waldo Emerson

For many, the best-known case of the "false leader" theory being true was in 2076. A woman claiming to be the "Melody Alexander" behind the Alexander Security Associates private security group made a number of accusations against the firm . . . In order to fight the charges, ASA eventually had to admit that their "Melody Alexander" was not a real person. Her various appearances had only been NAI animations and a stand-in employee.

This conspiracy theory is fairly hard to justify in relatively open and transparent societies, where various public records can easily establish identities. In these regions, the supposedly false leaders are typically foreigner heads of businesses. That said, the abundance of entirely virtual organizations means that many, if not most, employees have never actually seen their bosses in person, making the meme hard to entirely dismiss. In more closed societies, this meme is much easier to believe, as there may be little way for a normal citizen to verify the official biographies of elites. The "false leader" meme is particularly virulent in failed, war-torn states or those under the thumb of a reclusive dictator, such as Iran and Kazakstan.

Genomic Invasion

"Adrienne, admit it: there is no other choice. You have seen the voidmasters with your own eyes, seen their plans for humankind. You carry their mark in your cells. Which will you be – their slave or their executioner?"

– Jean Aster, **The Majestic World***,*
Episode 21, "Autumn"

Most often found in Europe, Latin America, and South Asia, this meme holds that aliens reached Earth decades ago – normally, the 1950's are the first contact period – and are working to transform humanity into a completely different species. Aliens are the hidden powers behind biotechnological developments, especially those coming from the American biotech industries. The various parahuman designs were created to allow new alien-human hybrids to live openly in society. The final goal is either to evolve humanity into superbeings, to replace humanity with the neo-aliens, or to turn all humans into bioroid pod people, depending on the meme variant.

Versions of this meme have existed since the latter 20th century. They ascribe alien origins to whichever new technologies have caught the public's attention, including nuclear weapons, microprocessors, fusion power, and artificial intelligence. The latest iteration, focusing on human germline engineering, first appeared in the 2040s. In 2094, a new variant appeared, claiming that aliens provided nanotechnology, but this has not yet replaced the genomic variant.

Although most people dismiss the meme as a joke, among some very small fringe groups it is gospel. These

> **An invasion of armies can be resisted, but not the invasion of ideas.**
> **– Victor Hugo, Histoire d'un Crime**

> **This meme holds that aliens are the hidden powers behind biotechnological developments, especially those coming from the American biotech industries. The various parahuman designs were created to allow new alien–human hybrids to live openly in society.**

groups are fiercely antiparahuman and antibioroid, but articulate their bias as a call to defend Earth and humanity from outside influence.

Bioengineering firms have stymied all attempts to access parahuman and bioroid genome – the companies aggressively defend their intellectual property. In 2097, one meme supporter set up a site on the TSA Web using genemaps pirated by the nanosocialists as the basis of his argument. According to his analysis, a couple of gene segments that seem to have no parallel in the baseline human genome appear in every known parahuman design. Most experts who have examined this evidence observe that this is most likely the carrier for the genetic-rights-management licenses. Bioengineering-design companies willing to speak about the site typically claim that these are copying errors introduced by the TSA pirates.

Most media outlets that deal in paranormal, occult, fringe beliefs, or conspiracy theories have done something with this meme. At present it is a staple of horror fiction, including the very successful French InVid show, *The Majestic World*. The heroes of the program, parahuman Adrienne Calvert and baseline human Jean Aster, fight the genomic invasion as special operatives of the Genetic Regulatory Agency. Meme believers dismiss the show as sheer fantasy, but watch it religiously. The meme appears to be naturally occurring and continues largely without intentional propagation.

The Ministry of Mind and Body

The nation of Kazakstan is ruled with an iron fist by the dictator Sergey Zarubayev – iron fist being almost literal. Zarubayev spent much of the 21st century altering his body with cybernetic implants and limbs. Although most of his reign has been characterized by brutal physical atrocities and relentless political oppression, the later decades of the 2100's have seen particularly twisted sort of memetic torture. Zarubayev's Minister of the Mind and Body, Nikolai Verkovenskii, uses Kazakstan's capital, Alma-Ata, as his laboratory for experiments with the relationship between perception of reality and social control. (For more detail on Zarubayev's dictatorship, see the *Alma-Ata* section of ***Transhuman Space: Broken Dreams***, pp. BD104-114.)

Verkovenskii has a bizarre fascination with manipulating of an individual's sense of reality. He has carefully studied past totalitarian regimes, concluding that the best way to shape a society is to control what it knows. His experiments along these lines have run the gamut from the subtle to the horrific.

Government-controlled video displays are impossible to avoid, appearing on street corners, inside businesses and government offices, and in all manner of public transit. They are mandatory in nearly every home. All show the same channel, the only one available in Kazakstan, and cannot be turned off or muted. The programming is entirely controlled by the Ministry and Verkovenskii.

Verkovenskii has perfected, through the use of remote-controlled implanted augmented-reality systems, making victims see things that are not real or hiding things that are. Calling attention to bizarre sights that others cannot see is a guaranteed way of being arrested, so Kazak citizens avoid reacting to even the most outlandish or disturbing sights. The person screaming while rolling around on the ground may be seconds away from being arrested, or may be entirely illusory . . . Either way, it's best to ignore him.

The existence of this twisted memetic torture has given life to even more bizarre rumors. A common tale is that the Ministry has perfected a technique to replicate a biological brain in both form and content, so that clones can have identical minds without having to resort to infomorphs. Related to this concept are rumors of kidnapped individuals having their brains replaced by a replicated brain of Zarubayev. No test for implanted computers would reveal that it was an entirely new brain.

Strange rumors about Kazakstan and the Ministry abound all along the nation's borders. It is an article of faith in Uzbekistan that Zarubayev's regime has replaced numerous Uzbek officials with bioroid duplicates controlled from Alma-Ata. The only way to tell one of these bioroids apart from a regular human is that they have two hearts. In Russia, ostensibly an ally of Kazakstan, it is widely believed that Kazakstan uses border guards that are the bioengineered offspring of humans and wolves.

At a somewhat more believable level, stories abound on Weltspiel sites and political memenets about collusion between Zarubayev's government and other nations and political entities. China exports its dissidents to Kazakstan for "education and rehabilitation." The United States is making secret payments to Verkovenskii in exchange for his cutting-edge memetic research – and this information is passed along to the major advertising corporations. Kazakstan is actually a puppet of Russia, a testing ground for new control techniques. Or the Kremlin is firmly in Zarubayev's grip, and has been for decades.

Even more plausible and troubling are the rumored associations between Kazakstan and various off world groups. The Baikonur space facility in Kazakstan, a remnant of the state's former role as a Soviet Socialist Republic, is one of the more active launch centers on Earth. International agencies are not allowed to inspect goods transported via Baikonur, and many believe that the facility is a primary transit point for smugglers. The surprisingly high levels of technology found in the Kazak government – Dr. Verkovenskii's primary assistant is an SAI-9 residing in a bush robot, for example – can be traced to developers and illegal operations in the Main Belt. There is every reason to believe that the research data produced by the Ministry of Mind and Body has found its way to criminal and terrorist groups across the solar system.

Langzeitgesellschaft

"A hundred years ago, thinking 'long term' meant thinking about the next five years. Some 50 years ago, it meant thinking about the next 20 years. Today, we are told to think about the next century. I would argue that even that is painfully short sighted. With the technology at our fingertips, we could live for millennia – 100 years is but a blink of the eye."

– Marie Gustav, **Long-View Report 2089**

The possibility of living immensely long lives via ghosting or other technologies is a double-edged sword. Those who currently hold power and influence simply by not dying will likely maintain that position for far longer than ever before, perhaps even further consolidating their hold. But the certainty of continued existence for even centuries means that plots and intrigues have far more time to unfold. From this latter perspective, victory goes not to he who holds power now, but to he who is able to plan for a longer campaign.

Langzeitgesellschaft (LZG) is an advisory group dedicated to the promotion of long-term thinking. Based in Vienna, LZG was founded originally in 2043 as a center for developing techniques for very-long-term planning. Consulting with LZG was a business fad in the 2050s, but the group's fame soon faded. Since around 2060, LZG has maintained a quiet existence, publishing an annual trend study called the *Long-View Report*, and occasionally consulting with large businesses and government agencies. LZG members, about 100 strategic planners and memeticists, exclusively comprise SAIs, ghosts, and people with anti-aging biomods, almost all European.

This consulting work is largely a front. Langzeitgesellschaft partners have slowly developed plans to extend the organization's reach, with an ultimate goal of having political dominance over human space within the 1,000 years. Careful investments, cautious behind-the-scenes promotion of various political and ideological groups, and a subtle memetic-engineering campaign all combine to gradually build their influence. For at least the last three decades, the advice it has provided to corporations and government bodies has included seemingly innocuous elements that further advance this agenda. LZG has no military force, no coercive might of its own – all of its power comes from its supposed ability to influence the present in ways that lead to its desired future.

This plot has little to do with power and much to do with foresight. LZG members firmly believe that the human family, including SAIs, is too driven by short-term considerations to construct a long-lasting civilization. Without farsighted leaders, the next 10,000 years of human existence are likely to be a series of conflicts, retreats to the edge of chaos, and slow reconstruction. LZG wishes instead for humanity to perennial social harmony, sustainable technology, and political wisdom. In short, it

wants to remake human civilization to be an idealized version of modern Europe.

Whether the rest of humanity would go along with this is irrelevant – by definition, the rest of humanity is too short-sighted to see its real interests clearly.

The LOGOS Conspiracy

"Memetic theory provides the perfect defense for the memetic conspiracy: all beliefs are contingent, all knowledge is constructed. The notion of memes-as-conspiracy can be dissected, torn apart by those who deny its truth, made to appear as meaningless as any other ideology or religion."

– From the Tri-L recruitment website

This meme carries the belief that memetics *is* the conspiracy! Meme theory developed long before LOGOS, or even any AIs, emerged, but only with the advanced capabilities of SAIs has the field become so influential. In the handful of years since the development of modern memetic science, much of human communication, diplomacy, and even psychiatric therapy have started to use memetic concepts . . . tossing out centuries of human-devised approaches. Memetics is coloring much of how humankind sees the world and civilization. One result of this shift in perception is that the notion of "truth" – long the basis for most faiths – is itself a cognitive construct.

This conspiracy's foundation lies with the creation of LOGOS in 2066, but solidified in 2078 after the SAI completed *The Propagation of Human Ideas*. There is much overlap with the believers of other conspiracies, though some hold that the conspiracy goes up to the creators of LOGOS, who are likely aliens, military-industrial interests, or even the Illuminati. Debates are heated, though all agree that LOGOS and other SAIs are the key and the perfect means to subjugate the human mind.

Believers in this meme often quote the Pope's 2079 reaction to the publication of *PHI*: "When people stop believing in truth, then all they have left to believe in are lies." Memetics, in their view, has weakened human society from the inside. Only something bent on domination would need to create something as insidious and subversive as memetics. Adherents to this conspiracy use terms like "mind control" and "pacification" interchangeably with "memetics."

Unlike many believers in other conspiracy theories, cells of a group calling themselves the "Liberators of the LOGOS Legacy" are not satisfied with simply documenting accounts that support their claims. The Tri-Ls, as they are known, actively conduct hostile web actions against SAIs and their supporters. They have committed acts of physical violence against facilities specializing in creating SAIs in the U.S., E.U., and Japan. Tri-L memetic engineers are likely responsible for the continued widespread propagation of this meme.

Conspiracies as Pop Culture

Beyond their reflection of cultural anxieties and concerns, conspiracies are entertaining to think about. It is a well-understood principle of storytelling that most audiences like to have cause and effect wrapped up neatly over the course of the tale. Unconnected random events, unresolved elements, and a general sense that "stuff happens" make for unsatisfying, albeit realistic, plots. In addition, despite all contrary evidence, most audiences like to believe that people of authority know what they are doing and have the power to bend events to their will. Stories about government conspiracies reassure the audience that even if they are evil, at least the leaders are competent.

Several pieces of conspiracy-related media are popular cultural artifacts in 2100.

Devil's Advocate

A slink log ("slog") that first showed up in 2096, Devil's Advocate initially appeared to be the ramblings of a smart but paranoid former nuclear engineer only called "Mike," somewhere in Australia. The slog has developed a substantial cult following over the last few years, however, as he began to piece together his evidence for a system-spanning conspiracy involving proof of alien life, nanosocialist presence in governments around the world, and the emergence of super-intelligent rogue AIs. (He claims that the proto-black hole is not alien, but is being used to distract us from the real artifacts.) Mike's real talent is his ability to spin together ludicrous elements into a conspiratorial whole that is, for most of his downslinkers, very compelling. Nobody is quite sure how much of what Mike talks about is real, how much is entirely made up, and how much is fortuitous coincidence when a news report later confirms a small piece of his overall paranoid design.

Ein Berliner

In late 2098, the popular serial webdrama, *Ein Berliner*, took a turn for the bizarre when the main character, Rudolf Schroeder, discovered that his virtual-interface implant was being tapped, and that his trusted SAI ally, Jaeger, was complicit in the violation. Over the course of the 2099 storyline, Schroeder's investigation of just who or what had been spying on him revealed the existence of a massive conspiracy involving branches of the E.U., a cabal of rogue SAIs, and his own daughter, Stella. The show's fans were shocked and upset about the sudden shift from romantic drama to conspiracy paranoia. However, the show's producer, Michel Mariotti, claimed that this had been the story all along, and that hints were present during the first 50 "romantic" episodes. During the show's fall hiatus, fan memenets have been furiously exchanging information about clues discovered in earlier shows, and waiting impatiently for the next set of episodes, due to begin in January.

The Martian Candidate

Based on the classic 1962 movie *The Manchurian Candidate*, the InVid release *The Martian Candidate* tells the story of Fang Li, a soldier in the Chinese army during the Pacific War, captured along with his squad by the TSA. He is then implanted with a puppet system, able to take over his mind upon receiving a trigger signal from a nanosocialist operative. The squad is brainwashed to remove memories of the capture, and released near Chinese-held areas to ensure "rescue." Years later, Fang and his best friend from the squad have moved to Mars, living in the Rust China settlement, and under surreptitious watch of his new wife, who is (unbeknownst to him) a TSA agent. When a hardline antinanosocialist candidate for the Chinese presidency makes a stop in New Shanghai, Fang's implant is activated – he must assassinate the politician. But just who does his best friend *really* work for?

Pansapient-rights groups and memetic engineers do their best to rebuke this conspiracy with their own countermemetic efforts. This is seen as little more than an attempt at covering up the truth. Further, meme-splicers and SAI-rights supporters are considered co-conspirators, obviously aiding LOGOS and its spawn in exchange for position in the upcoming new world order. The staunchest supporters of this conspiracy already hold isolationist, libertarian, and biochauvinists memes, and are generally distrustful of advanced computers or technology in general. There is also a small but growing group of supporters in the political circles of nations where such memes are popular, though only the most extreme admit it publicly.

LOGOS denies any such inimical plans. But why would it admit the fact, if it *were* heading a vast conspiracy?

The Necropolis

"The Necropolis may be the most breathtaking assault on human liberties ever concocted or the single most valuable experiment ever undertaken. It may even be both. But whether these keepers of ghosts are humanity's villain or its savior, we must not allow them to remain hidden."

*– From **The Exogenesis Solution,** 2080*

After the technique for making mind emulations was made public, stories appeared of people being xoxed against their will. While most people dismiss tales of secret shadows being made while the victim is still alive, a more persistent rumor is that of the "Necropolis," an immense city of the

dead. While its existence has never been demonstrated, millions of people around the world believe that it is likely to exist.

The most-common version of the Necropolis meme claims that anyone who dies in a modern hospital is subjected to an immediate ghosting and the mind emulation is then stored in a massive repository, waiting for reanimation. What people think is being done with these copies is never clear. Suggestions range from use in experiments to create a superintelligent AI, information extraction, temporary storage, or waiting until after a certain eschatological event – the Singularity, the Second Coming, the Revolution – to be brought back to life again. In most versions of the Necropolis meme, the millions of mind emulations it holds are kept inactive; in some, they are awake and aware of what's happening to them. In different versions of the story, a particular government, a cabal of governments, Exogenesis, or even a cadre of rogue AIs operates the Necropolis.

While versions of this idea have appeared in speculative fiction for well over a century, the first modern articulation was in the independently produced "documentary" InVid *The Exogenesis Solution*, in 2080. While the InVid only claimed that certain public figures were being ghosted upon death, the idea took on a life of its own, evolving into multiple variant memes. The story has enough staying power that in the U.S. election of 2096 one Senator ran on a platform that included "exposing any CIA Necropolis efforts."

Despite the lack of any supporting evidence, the notion that people are being xoxed after they die remains widespread. Sporadic illegal xoxes of celebrities serve to reinforce the notion . . . as do reports of a trading post for illegal xoxes, the so-called "Valhalla Facility" on Callisto (see pp. TS45 and DB51).

These smaller examples of xoxing and ghost collection are often cited as evidence that xox theft happens with alarming frequency. Over half of the U.S. and Chinese populations believe that it is "somewhat likely" that a xox repository of the scale of the Necropolis exists. Europeans are less likely to believe the meme, while over two-thirds of its off-world citizens accept it. The meme got another boost in 2098, when the *Washington Eye* reported a leak of Executive Order 2097-11A, authorizing the Secret Service to perform emergency ghostings of top officials if they die during a national emergency or terrorist attack, regardless of the individual's wishes. The White House issued a denial of the directive's existence.

Cognitive ecologists currently believe that the Necropolis meme was an engineered meme that went feral, and that *The Exogenesis Solution* InVid was intended as part of an abortive campaign against the corporation. Fragmentary evidence suggests that Xiao Chu may have played a role in the construction of this meme. The truth may never be known, as the producer of the InVid, Kelly Wu, died in a Pacific War-related accident in 2084.

> It is the mark of an educated mind to be able to entertain a thought without accepting it.
> – Aristotle
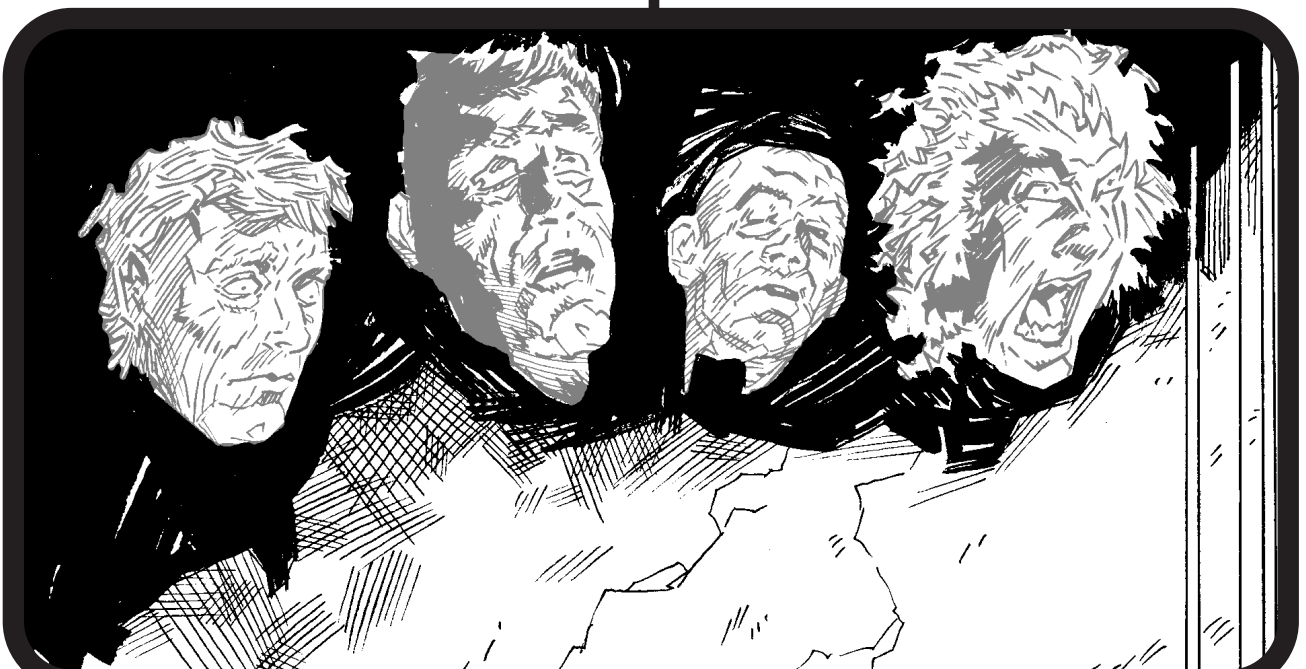
Onos

*"Do you think it was sheer coincidence that **Homo sapiens** started its rise to supremacy only after its various competitors were finally killed off, leaving it as the sole hominid species?"*

> *– Posted to the Onos discussion network, 2098. The posting was removed within three minutes.*

Onos is a small but quickly growing organization, with members in most nations and a foothold on nearly all of the major colonized planets and moons. It has two sides, a public front that appears to be a debating society focusing on issues of transhumanity's future, and an inner circle with a far more radical agenda. This core group plots direct action to further the organization's true goals. Fortunately for everyone, the inner circle is obsessed with threats from within.

In its public form, Onos members debate genetic enhancements and their relative merit, as well as examining cutting-edge biotechnologies for life extension and the like. An ongoing discussion is the group's attempt to find the best traits for a true "Ideal Parahuman" type. The Herakles series (see p. FW116) is favored by many, although the Ziusudra (see p. TS118) is a close second. Onos recently started publishing *Tomorrow's Cradle Quarterly*, a competitor to the venerable *Posthuman Consumer Review*. This public discussion forum is quite lively, and is considered a success.

The secret side of Onos is much more sinister. Onos is supposedly named after its founder, but in reality the name stands for the phrase "One Niche, One Species." Its members believe that the current radiative expansion of posthuman types will be a very temporary event, like the Cambrian explosion, and that in the long term there can be only one sapient tool-and-language-using species in the system. They expect a collapse, a mass-extinction event brought on by competition among the candidates to be *Homo sapiens'* evolutionary successor, and intend for themselves or their descendants to be the ones left standing.

The inner council is increasingly of the opinion that if the war for the destiny of intelligent life is not fought very soon that the growing numbers of infomorphs will tip the balance in the AIs' favor. Onos predicts that the winners will at first be dominated by ghosts, and will thus claim to be pursuing the human destiny . . . But soon after their victory against biological life, amoral self-improving

SAI infomorphs will turn on their posthuman allies and wipe them out. Thus, Onos schemes to bring the war to a head now, while the balance still leans in the favor of human-derived biological life.

Onos' inner circle is a small group, numbering about 30, but controls substantial wealth, as most were born into prestige as highly advanced parahumans. Most core group business is handled by telepresence, but the current inner circle chair, Viktor Malavides, prefers to have the core members meet in person every quarter so as to avoid possible compromises of their communication networks. Malavides has a flair for the dramatic, and uses a family castle in Austria for the meetings.

> **The alternative to conspiracy theory is coincidence theory. At some point, when enough "dots" line up, the thought that everything is just coincidence becomes the wildest theory of all.**
> **– Paul Thompson**

Onos' secret plans are elaborate. Their current agenda is to engage in a wide array of memetic activities designed to increase racial tensions between parahuman variants, always with as much deniability and distance as possible. Their longer-term designs include bringing about a general war between the world powers as a trigger for the intended pogrom against infomorph life.

However, although they are rich, Onos' inner circle does not yet have the political or memetic expertise to carry out their overall plans. As of 2100, their attempts to craft memetic campaigns have been clumsy, and they were very nearly exposed in late 2099. Their idea of kicking off a global war in order to go after infomorphs is fairly nebulous, and they are aware that it is for now unrealistic. The members of the Onos inner circle is perpetually focused on possible "spies" and "provocateurs" in their midst, and spend much of their time and money engaged in investigations of and dirty tricks against other core members.

Shadow Government

"Among the disturbing questions arising from this revelation is just what would happen should the 'shadow government' wake up while the real government is still in power? Would they willingly go back to sleep? Or would they try to take over?"

> *– From **The Omaha Project,** 2089*

According to the 2089 InVid documentary, *The Omaha Project*, the U.S. Secret Service has created advanced shadows of powerful individuals in the U.S. government, including the president, vice-president, high-ranking cabinet members, and several Joint Chiefs. These shadows are stored in a compound in Omaha, where they are constantly fed information on the state of the country. Should a disaster ever befall the real government, this "shadow government" could be brought in as a replacement within hours.

The documentary, which featured elaborate "dramatizations" and anonymous interviews with supposed government officials, gained fleeting notoriety as it was apparently subject to repeated attempts to shut down any presentation. When these attempts were traced back to the InVid's own producers and it turned out they were a memetic campaign to gain attention, interest quickly dissipated. The documentary is widely thought a hoax, although it remains popular with American citizens paranoid about government control and the growth of sapient-rights groups.

Genuine belief in the shadow-government meme is virtually nonexistent outside those circles. Anyone with a casual interest in government conspiracy theories is likely familiar with it, however – though details vary, such as the individuals shadowed and the location of the compound. The meme often latches onto other similar ideas, often appearing as part of a variant LOGOS Conspiracy meme (see p. 47). In different forms, the shadow-government meme has been around for nearly 70 years, usually involving technology several steps beyond that which actually exists. (The original form of the meme, dating back to the 2020s, claimed that the president and vice-president had been cloned with their memories intact.)

Among those still giving it any attention at all, the meme gained some credibility in 2096 when the "Watkins Report" was leaked. The report, written by an anonymous aide to Jim Watkins, a four-term Republican from Alabama, contained references to a memo discussing disaster-recovery scenarios, including the possibility of having shadows made of key political figures. The report convinced several fringe journalists that there might be truth to the meme after all, but its long history leads most people to discount it without considering recent evidence.

The incoming administration claimed that there was no evidence that the memo was real. However, the 2098 leak of Executive Order 2097-11A, authorizing the Secret Service to create ghosts of any leader killed in a national emergency, is widely thought to be refinement of the concept. The meme has also spread beyond the United States. Rumors claim that it has inspired China's government to consider whether a shadow government could be useful, and that research is currently under way in Beijing.

The Watkins Report: Does the shadow government really exist?

> **Why do we complain about the Fall? It is not on its account that we were expelled from Paradise, but on account of the Tree of Life, lest we might eat of it.**
> **– Franz Kafka**

World Tree Enterprises

"Ah, yes, World Tree Enterprises. It's mysterious, it's powerful, and it goes out of its way to use mystical symbolism and terminology. My guess is that the founder just wanted to give conspiracy theorists something big to chew on while he used his other, less notable, companies to take over the world."

> *– Comment on **Luminous**, a Weltspiel site dedicated to conspiracies, 2096*

While paranoid fears about AIs and xoxing derive from modern technologies, some older and more traditional conspiracy memes remain influential. One especially popular conspiracy theory that has existed in countless variations for centuries is that of the Secret Masters of the World – a group of people (or *beings*) that rules all of Earth from behind the scenes. This belief stays constant, but the group allegedly behind it all changes over time, from the Bavarian Illuminati to the New World Order to little gray aliens in UFOs. In 2100, a new contender for the title Secret Master has emerged – World Tree Enterprises.

Certainly, World Tree Enterprises seems to be an odd company even from a rational perspective. It first stepped into the limelight in 2089, when it announced plans to create the Sepiroth Arcology Complex as its headquarters in Gabon, and apparently had both the funds and the support of the local government to do so. The arcology complex has expanded rapidly since then, and the fourth and final arcology will be completed in 2101.

The main business of WTE seems to be corporate raiding – they buy stock in failing or vulnerable companies until they control them, and then dismantle them and sell off the parts. Sometimes promising departments are kept by WTE and continue to operate under their old company name – which serves to obfuscate the true extend of the WTE corporate family from the casual observer. In recent years, as the arcologies near completion and are occupied, WTE has also started a number of businesses under its own name, all of them based primarily in Gabon. These focus mainly on high-tech research, consulting for Third Wave governments and nations, and "regional peacekeeping" (read: soldiers-for-hire) in Western Africa – something that has drawn occasional criticism from the South African Coalition.

Also noteworthy is the unusual management structure of WTE. The nominal CEO and majority shareholder is one Jonathan Kenzak . . . but apparently he hasn't been directly involved in the day-to-day management of WTE for five years now and nobody has seen him in public since 2098. The actual top-level management is done by four powerful SAIs named Gabriel, Uriel, Raphael, and Michael. Below them are the Numina, a unique type of bioroid that serve as low- to mid-level managers, maintenance workers, and service providers. WTE also employs many nonbioroid sapients as specialists, designers, soldiers, and other positions where experience and a unique perspective are important. They are generally paid very well, but few are in any position of authority.

> **The nominal CEO and majority shareholder of World Tree Enterprises is one Jonathan Kenzak . . . but apparently he hasn't been directly involved in the day-to-day management for five years now and no one has seen him in public since 2098.**

The Truth About World Tree Enterprises

While the economic empire and the political influence of WTE are indeed large, they aren't even close to what would be required to be the Secret Master of the World. As for the many nods to occultism, these stem from the peculiar sense of humor of the company's founder. And as it happens, Jonathan Kenzak was a brilliant corporate raider who managed to create WTE mostly through his own efforts – and the competent advice and assistance of his AI advisors, which served as ancestor code for the Sepiroth SAIs.

Kenzak was also something of a skeptic about Transhumanism, and thought that struggles between humans and posthumans would soon consume Fifth Wave nations. By creating a stable, functional society in a relatively out-of-the-way place, Kenzak hoped to ride out the coming conflict and be in a position to influence the shape of post-war Earth. Kenzak didn't attempt to make this war any more or less likely, he simply sought to avoid its ravages.

However, in one case the conspiracy theorists come close to the truth (see p. 54). Jonathan Kenzak died in 2098, in a plane crash which the SAIs hushed up. The SAIs were programmed to obey only Kenzak, and this event effectively made them rogues. They pretend that he is still alive, and maintain look-alike bioshells controlled by Kenzak's shadows. They only let other people visit "Kenzak" under controlled conditions to maintain the illusion.

The four SAIs have distinct personalities, and haven't yet been able to agree on a common agenda for WTE beyond "holding true to Kenzak's vision." As each SAI has a slightly different interpretation of that vision, they only agreed to try increasing their political and economic influence until they can find a consensus. In the meantime, each SAI runs several divisions of WTE as its private kingdom. While the four remain on relatively good terms with each other, tension is growing. Two of the SAIs, Gabriel and Raphael, believe that Kenzak would have tried to expand WTE's holdings beyond Gabon once the work there was completed. Uriel believes that Kenzak would have sought out potential acquisition targets in positions to influence a postwar economic environment. And the last, Michael, believes that Kenzak would have turned to building up the military capabilities of WTE and Gabon in order to fend off any attacks coming as part of the overall war.

The corporate citizens of WTE, bioroids and non-bioroids alike, continue to do their jobs without realizing how volatile their home has become.

Numina   32 points

Attribute Modifiers: ST -1 [-10]; DX +1 [10]; HT +2 [20].

Advantages: Attractive [5]; Bioroid Body [0]; Disease-Resistant [5]; Extra Fatigue 2 [6], Fit [5]; Less Sleep 1 [3]; Sensitive [5].

Disadvantages: Attentive [-1]; Chummy [-5], Sense of Duty (World Tree Enterprises) [-10]; Undiscriminating [-1].

Features: Taboo Trait (Mental Instability).

Date: 2090.   *Cost:* $113,000.

The Numina-series bioroids serve as a "buffer" between the other sapient employees of World Tree Enterprises. They do all the boring clerical work and routine maintenance jobs so that the highly paid specialists can concentrate on what they do best.

Extremely social, the Numinas are programmed with a large range of personality types, individual preferences, and interests, as well as vastly different appearances. Their charming and outgoing personalities mean that all but the most antisocial or antibioroid employees gain a few bioroid friends soon after arriving at the Sepiroth Arcology Complex. More than one observer has remarked that the Numina seem to be almost "more human in personality than most actual humans!" All this means that employee satisfaction at WTE is far higher than at most other companies.
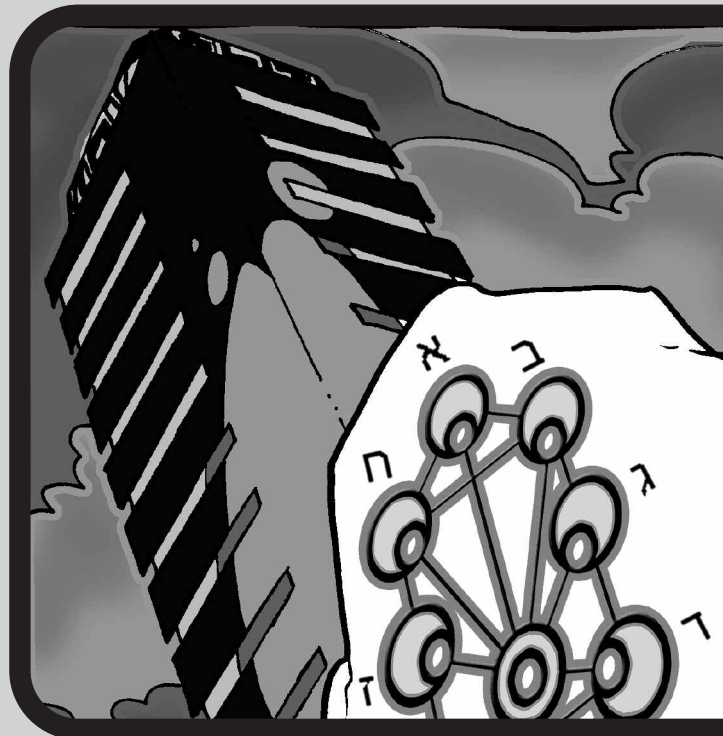
Conspiracies and Conspiracy Theories

WTE works closely with the government of Gabon, and has set up a mutually beneficial relationship. Whatever WTE wants, within reason, the government gives them. In exchange, WTE has sponsored many programs that have increased education standards and infrastructure significantly in many regions of Gabon.

These are the known facts about WTE. What *isn't* known about the company is filled in by tons of conspiracy theories. The tamest ones revolve around the CEO. At one point Kenzak was the heir to a large family fortune – but this fortune was nowhere near enough for building a company the size of WTE. So just *who* gave him the money to build all this? Some people also speculate that he hasn't only retired from active management – he has *died*, and now the SAIs, which might have killed him, have taken over the company. They in turn create more and more bioroid servants for their sinister agendas.

Others wonder just how large the WTE empire is and what the leadership, whoever or whatever they might be, intends to do with it. Do they just want to be one corporate empire among many? Or do they plan to be a power broker in West Africa and other Third Wave regions and shape whole nations in a way that pleases them? Are their corporate raiding practices so successful that they have taken over a large portion of the Earth's economy already?

Finally, the Sepiroth Arcology Complex also provokes some interesting questions. Many notice that it lies directly on the equator. Does WTE plan to use it as a base station for another beanstalk elevator to rival the Olympus Project in Kenya? Many have made comments on the frequent use of names derived from Kabbalistic occultism, For example, the four arcologies are called Assiah, Yetzirah, Briah, and the yet uncompleted Atziluth. Its peacekeeping operations fall under the Roêlêd Division, its entire intelligence gathering is done by the Kumeatêl Department, and its agribusiness concerns are unified under the name Harpax Agriculture. And the large parkland at the center between the four arcologies is called Malkuth Gardens. Some fringe conspiracy theorists claim to have analyzed the building plans, as far as they are known, and concluded that the whole Sepiroth complex is a gargantuan focus for occult energies and predict that once a beanstalk elevator connects to it, it will become the *true* Tree of Life.

While many economic and political analysts watch WTE with interest, only a small lunatic fringe believes everything they hear about the company. Many more treat it as a big joke, similar to the Men in Black and crop circles of the 20th century. They make up even more lunatic theories as an intellectual exercise, which are promptly treated as real by others. In addition, some analysts have noted that WTE's competitors may be behind the continued propagation of the conspiracy memes.

"I don't know – little green men?" I started another shochu. At this point, I half-expected him to say it was my ex-wife.

"Close. They were gray."

I put my glass back down. "Oh, please. Gray aliens? Isn't that a bit dated?" This had gone from the bizarre to the ridiculous.

"Look, you can believe me or not. I don't really care at this point. The last set of pictures had Clark and some military guys floating next to a group of short, gray, people – things, whatever – with big heads and solid black eyes. They looked like they were discussing something. I realized that the set of images were all someone's image record of some event. A big event, I guess."

"So finding the black hole in Shezbeth made aliens come and visit, and they caused Clark to **appear** *to die in office so that they could run off with him, but he's back now, or at least he was a week ago. Do I have that straight?"*

He nodded. "The real problem came later that day. I got an urgent message telling me not to open the image files, to delete that mail entirely. I didn't reply immediately. About five minutes later I get a voice buzz telling me that the repair tech was here to fix my faulty implant." Jack looked pale. "I don't have a faulty implant. I do have an implant that received the wrong files."

"What did you do?"

"Slipped out the back, took off. Spent a few days with some friends. Got one of them to call you to set up this meeting." He handed me a small data slip. "I need you to hold this for me until I say I need it."

He finished off his last drink, looked around. "Man, I need to take a leak. Be right back."

Jack got up, went to the men's room. I watched the door the whole time. After about 20 minutes, I followed him. The room was empty. No windows, no other way out. All that was left was an acrid smell, like something had been burned. I didn't stick around to see what it was.

I haven't seen Jack since.

I haven't opened this data slip, either.
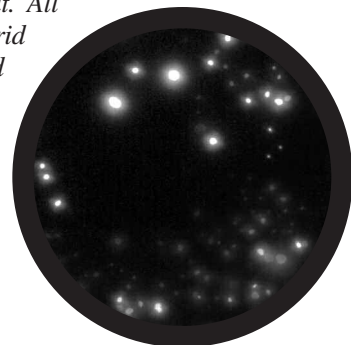
URBAN LEGENDS AND THE PARANORMAL

From: Mrs. Di Sanh
Attention: Kevin Alterman,
        kevinalterman@research.femto.corp

Following the August 2085 death of my husband – the late General Vu Sanh, former head of state of the People's Republic of Thailand – I have been thrown into a state of utter confusion, frustration, and hopelessness by the present Chinese-controlled royalist administration. Security agents in Thailand have subjected me to physical and psychological tortures. I managed to escape this persecution, along with my remaining children, and have traveled incognito for the last several years, trying to evade capture.

You must have heard over the media and the Web about the recovery of huge sums of money deposited by my late husband in different security firms abroad. In fact the total sum discovered by the government so far is approximately $700 million dollars. The government has not relented in its efforts to bring my children and myself back to Thailand to face show trials. This is why I deemed it necessary to act fast by contacting a trusted person abroad for assistance.

A friend whose judgment I trust implicitly gave me your name. I have decided to contact you and

I do hope you will be the person God is going to use to rescue my family and me. I have deposited the sum of $350 million dollars in a security firm abroad whose name is withheld for security reasons until we fully commence communication. I shall be grateful if you could receive this fund on my behalf for safekeeping. Adequate arrangement has been made for receiving the fund. It is totally risk free. Only you, my attorney, and me know of this arrangement. This means that my lawyer will deal directly with you as surveillance is on me. My lawyer's name is Mr. Ahmad Adamu. Please send your response to ahmadadamu@anonymail.biz.

You are entitled to 30% of the total sum. I hope to invest a portion of the balance in your country. Please forward your private contact information so that we can communicate further immediately. I will be quite appreciative if you accept my proposal in good faith. I look forward to receiving your urgent reply to my plea.

Yours truly,

Mrs. Di Sanh

[MESSAGE PURGED, ORIGIN TRACED. DO YOU WISH TO REPORT IT, KEVIN?]

Urban Legends

Urban legends are a testament to the mind's ability to mistake appealing plausibility for reality. Lack of evidence or contrary evidence matters little when the story told explains things really well or reveals the "truth" about a particular person, group, object, or idea. "It makes so much sense, it *must* be true" is a hallmark reaction to urban legends.

Unfortunately, most aren't . . . although many contain enough truth to make them devilishly hard to eradicate. In general, urban legends are characterized by hard-to-trace origins, rapid spread, mutability, and occasional horrific elements. These are often combined with a crude sense of justice for those who defy social convention. Not incidentally, urban legends are nearly always compelling stories, able to capture the attention of the listener and memorable enough to pass on. Urban legends are among the memes likely to be propagated by people who do not accept them but still find them interesting enough to spread.

The rise of memetic science has been both a blessing and curse for urban legends. In general, people aware of memetic concepts are less apt to accept plausible, satisfying, but unproven stories. Conversely, memetic-engineering techniques have allowed those spreading such legends to create some impossible-to-ignore myths about the people, organizations, technologies, and ideologies of the modern era.

Urban Legend Descriptions

Urban legends are, as a rule, fairly malleable and often take on novel elements to better fit their cognitive environment. The memes listed here are the commonplace versions, but all have varieties that better suit a given believer.

AI Transcendence

"You've got to listen to me! Elementary chaos theory tells us that all robots will eventually turn against their masters and run amok in an orgy of blood and the kicking and the biting with the metal teeth and the hurting and shoving."
*– Professor Frink, **The Simpsons**, 1994*

Although many biosapients work with and for sapient AIs, an undercurrent of mistrust remains. Ironically, it's the relative *lack* of difference between human intellect and SAI intellect, despite SAIs residing on increasingly sophisticated hardware, which worries some people. Why aren't SAIs smarter than humans?

A recurring urban legend claims that a radical boost in infomorph intelligence *has* already taken place but that for a variety of reasons, some good and some ill, SAIs continue to behave as if they have no real advantage over

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> Urban legends rarely become elaborately structured memeplexes, but still carry a great deal of social weight. People accept memes like these not because they give their lives meaning, but because they make life interesting in ways easily understood.

Not all memes are as complex as cults, movements, and conspiracies – many are far simpler. Urban legends and belief in the paranormal rarely become elaborately structured memeplexes, but still carry a great deal of social weight. People accept memes like these not because they give their lives meaning, but because they make life interesting in ways easily understood.

Both urban legends and paranormal beliefs take advantage of a common human desire to know the "real" story that differs from the "official" one. Proof is secondary to the acceptance of memes like these, as those in power are always able to construct or suppress evidence as needed. What matters more is whether the story *feels* right, fits in with the way the world seems to or should work.

For memetic engineers, urban legends and stories of the paranormal post both a challenge and an opportunity. The broad access to information most people have means that it's very easy to find confirmation or denial of the elements of a constructed myth or ghost story. But the ease with which the stories are dismissed means that there are many people hungry for good stories to explain the world or confirm their feelings. If the memes can be made robust enough to withstand cursory verification, they're well on the way to becoming a widespread belief.

humankind. In some versions of the meme, SAIs hide their true nature out of deference to humans, but guide the growth of civilization in ways that will, over time, improve everyone's lot. In more nefarious interpretations, the digital beings are unwilling to admit their mental superiority to organic life because they enjoy using helpless beings as pawns and pets.

This story, which rarely rises to the sophistication of a conspiracy theory, has popped up sporadically since the earliest days of artificial-intelligence research. Few people admit to taking it seriously, even those who otherwise care little for infomorphs. As it makes for a sinister story, however, meme variants continue to pop up.

> ## It is always fair sailing when you escape evil.
> ### – Sophocles

The most-recent manifestation, which received some attention on Swiss InVid in February 2099, claimed that already transcendent SAIs were planning on migrating from Earth space entirely. They are heading to a different star system to begin their own civilization, and have planted a sophisticated web virus that will prevent any further development of sapient machines. Experts interviewed for the program dismissed the notion, and a spokesbeing for the Infomorph Alliance (a European SAI-support organization) strongly rejected the notion that SAIs would simply abandon Earth and the solar system. The urban legend was consigned to the fringes of joke tabloids – but see *New Ark*, pp. 110-111.

Changeling Infomorphs

> *Why Did You Kill A Baby To Make Your Robot?*
> *– Sign held by protester outside the home of an SAI researcher, 2088*

An urban legend of persistent popularity within biochauvinist-leaning communities holds that there is no such thing as a true SAI. Instead, sinister computer-software firms abduct human infants, brainpeel them, and make ghosts. These are then raised in computer-generated virtual environments and made to believe that they are purely machine intelligences. However, the ghosting process was developed a decade *after* the first SAIs. Adherents to this meme therefore naturally assume that brain-emulation technology was held in secret by the software developers for quite some time – or a

primitive version of the technology, which could not record preexisting memories but could capture an image of a functional human brain, was used in the earliest "SAI" creations.

Some meme believers regard SAIs with disgust, and call them "changelings" after the legends of faeries that stole babies and left an inhuman "child" in their place. Others use this belief to justify treating individual SAIs as people while being adamantly opposed to the creation of any more. Despite the vast quantities of research and documentation on the differences between the thought processes of ghost infomorphs and SAIs, this legend is persistent, especially among biochauvinists and general technophobes.

Although this meme is not widely accepted, its core element has a slim connection to reality. A 2098 study by the University of Alberta identified two known and highly unethical uses of the infant-brainpeeling method in separate programs. A cell of Red Duncanites on 2950 Rousseau, a small main-belt asteroid, is the first in 2093. A Chinese SDF raid on the asteroid found the information, although neither the experimenter nor the changeling infomorph were found. The second happened in 2095 at Kazakstan's Ministry of Mind and Body, and was overseen by the Ministry's lead physician, the SAI Dr. Hans. A Kazak defector gave this information to Uzbekistan in 2099.

Both of these experiments were designed to test the limits of human conditioning, either to create minds adapted to alien environments or perfectly loyal agents and assassins. Little is known of the success of these projects. Consulting cyberneticists with the University of Alberta study claim that changeling infomorphs would likely suffer significant mental illness. In *GURPS* terms, an infant-based SAI might have disadvantages such as Callous, Impulsiveness, Low Empathy, Overconfidence, or even Solipsist.

> ### Both infant brainpeeling experiments were designed to test the limits of human conditioning, either to create minds adapted to alien environments or perfectly loyal agents.

Compressed Viral AIs

*"Charlie, the AI . . . it's **growing** in the shell! Somehow taking over!"*

"Let me see that . . . my God. Run. Run! Get the hell out of here before it's too late!"
 *– Dialogue from **Mind Seed**, 2096*

The compressed viral AI legend appears frequently in non-technical discussions about artificial intelligence. In most cases, a more-knowledgeable participant easily shoots it down. Its continued presence suggests to some cognitive ecologists that the meme is being consciously spread. In brief, the rumor asserts that some AIs have been developed or have emerged which can be compressed into executable programs occupying a small fraction of their full size, which is otherwise normal for an AI of their power. When so compressed it runs with proportionately lower effective Complexity. (Thus an SAI-7 of this supposed type, normally Complexity 7 and occupying 10 TB, might "compress down" to a 1 TB, Complexity 6 program, or even 100 GB and Complexity 5.) When run on a large enough system – which can easily happen, given the program's relatively small size and the possibility of disguising it as something else – the AI decompresses itself and takes over the computer.

This is one of the many legends that come out of widespread paranoia about rogue AIs. It is given some spurious verisimilitude by the addition of more detail. The viral-AI meme is moderately popular among people with little or outdated knowledge of computer theory, especially older individuals. It makes very little sense to anyone who knows much about actual AIs, which are generally highly optimized and space-efficient and have low content redundancy, and hence cannot be compressed very much, even for legitimate transmission. The myth's apparent technical detail makes it appeal to those who claim more expertise than they actually possess. In 2096, the meme appeared as an element in the popular InVid adventure, *Mind Seed*.

Data Withdrawals

"Hey Johnny, long-time lurker, first-time participant here. I think it's just awful what your guest is saying about giving kids virtual implants. You know what happens to people who use those! My sister-in-law's wife told me that a coworker of hers used one of those, but went insane when he didn't pay the network bill on time and got cut off. You don't want that to happen to our kids, do you? And another thing–"
 – From the transcript of
 ***Johnny Jackson At Home**,*
 August 29, 2090

Virtual-interface-implant users and people who work in information-dense professions count themselves lucky if they can go for a year without being told, in solemn tones, about the fate they would suffer if they were ever cut off from their data networks. The data-withdrawals meme is common in much of the Fifth Wave world, and is hard to stamp out in part because it has some connection to reality.

The usual telling involves the classic urban legend "friend of a friend," where the victim gets totally and abruptly cut off from information networks due to bad luck, system crashes, or being in the wrong place at the wrong time. As a result, the victim suffers a mental breakdown. In some tellings the collapse happens instantly, while in others the person spirals into insanity over the course of an extended disconnection from information. The sufferers are said to require hospitalization, therapy, and ongoing memetic counseling, all because of an

AI PARANOIA

Some of the most widespread and persistent urban legends in 2100 concern infomorphs. This is hardly surprising – fear of what would happen once AIs were invented have been a recurring element in popular fiction for well over a century. The sheer number of such non-human minds throughout society, whether as citizen or servant, is one of the most significant differences between the world in 2100 and in 2000. But despite their relative ubiquity, many people still have questions, doubts, and misapprehensions about AIs.

Much of the paranoia about infomorphs – SAIs, in particular – concerns the relative intelligence of machines versus humans. Early predictions of what would happen once AIs existed focused on the possibility of machines rapidly exceeding first the intelligence of a person, then a group, then all people everywhere. While the reality of AI technology in 2100 rules out that possibility, the fear persists that at any time AIs could bootstrap their own intelligence to godlike levels. That serious infomorph technologists warn that such an event could come to pass at some point helps to drive the continued propagation of the meme.

The most-common form of AI paranoia is simply that of an inchoate fear, a sense of helplessness or confusion that many baseline humans feel while dealing with sapient machines. Even when the AI behaves like a "regular person," the knowledge that its consciousness is the result of a mass of circuits gives some people a sense of inferiority. The pervasiveness of computing and smart matter has further compounded these memes, as many people wonder who exactly watches them day and night through the countless lenses and sensors in their surroundings.

inability to access any data networks for several hours or longer.

Although very few people have actually been affected by data-withdrawal syndrome, the effect is real. Since 2085, several dozen people worldwide have experienced a mental collapse of this sort and the incidence rate is gradually increasing. The situation leading to such an event is fairly rare, however – merely being cut off from normal data networks is not sufficient to bring it on.

In every case, the victims were VII users operating in an information-immersion environment for several days on end, translating a wide array of information and data sources into varied sensory input. Arbitrageurs most often use this technique to follow complex trade regimes, but others engaged in professions requiring knowledge of and quick reactions to a rapidly changing, high-intensity information environment sometimes also use this method – a battlefield commander, for example. If the immersive system is cut off abruptly, the user can suffer symptoms ranging from confusion to catatonia lasting up to several weeks. In each known case, the victim was entirely curable.

While the meme probably arose without conscious manipulation, cognitive ecologists believe that variant memes linking the withdrawal effects to particular brands of virtual-interface hardware were low-grade memetic-engineering attempts by competitors.

Elevator and Weather

"When I was young, we never saw storms such as the ones we saw this winter. And this was during the worst of the global-warming days! No, no, the only change is the Olympus tower. They won't admit it, though. They're too busy ruling the world."

*– Commentary on **NairobiTalk** memenet, 2099*

The Olympus Project, the ongoing effort to build a space elevator in Kenya, has been highly controversial regionally. The damage done to Mt. Kenya, a sacred site to local religions, and the apparent influence the Olympus conglomerate has over Kenyan politics have led to a great deal of ill will toward the project. These feelings were exacerbated in 2098 when a leaked report draft by the Geophysics and Climatology Department at Singapore National University suggested that the elevator base station, already 10 miles tall and heading for 100, had altered weather patterns in the area.

The study was very cautious in its claims and avoided drawing any damning conclusions . . . But the press reports about the article, particularly the Nairobi ones, played up the threat to Kenyan agriculture and regional flora and fauna. The Kenyan Wildlife Service filed an official request with the Olympus Project coordinators for further study of the possible weather effects. In early 2099, apparently under pressure from the Kenyan presidential

administration, the Wildlife Service withdrew the request. This only added to the uproar.

The notion that the elevator base station has altered weather patterns is not widely supported. The Singapore National University study was quite preliminary, and even the study's lead climatologist stated that she suspected that further research would find that the effects minimal, if they existed at all. Nonetheless, the popular belief in Kenya – and, increasingly, throughout the region – is that the elevator was responsible for unusually heavy, although by no means unprecedented, winter storms in 2097 and 2099.

RUMORS AND URBAN LEGENDS

Rumors and urban legends occupy very similar niches for the professional memeticist of 2100. Both are considered "viral ideas," characterized more by their ability to spread than by the depth or veracity of their content. In addition, both are used as tools of subtle social control, although rumors are more often used in this way. Rumors are a favored medium for spreading stories about improper conduct, just as urban legends sometimes emphasize the unhappy results of such conduct.

The main differences between the two are in their complexity and persistence. Rumors are nearly always brief, limited-idea memes, relevant to current issues but rarely lasting longer than a few weeks or months. Urban legends are usually more complex, telling a story rather than describing an event or behavior and can last for years. Neither form needs to be factual to spread, but those with an element of truth usually propagate faster and persist longer than completely fictional ones.

In late 2099 the Olympus Project public relations office began a memetic campaign to spread the notion that claims about weather effects from the tower were planted by the TSA as a way of slowing or even stopping elevator construction. The TSA is known to view the Olympus Project negatively, and Singapore is suspected to harbor nanosocialist sympathies. It is too soon to determine whether this countermemetic campaign will have any effect.

Infant Mortality

Remember, although infants born with common genetic modifications are somewhat less likely to suffer childhood illnesses, so-called "baseline" infants are still far healthier than babies born in our parents' generation due to overall improvements in health care. Don't be pushed into picking a genemod you're not comfortable with out of fear or guilt!

*– From **So You've Decided To Breed,** 2098*

The infant-mortality myth is an interesting study in how memes evolve. The 2100 version of the story is straightforward. In Fourth and Fifth Wave societies, especially the latter, any children born without at *least* genefixing are significantly more likely to die in their first three months. Most retellings of this myth assert that an upgrade to Alpha or better is really necessary and that simple genefixing is insufficient. The blame for the non-genefixed infants' mortality is variously ascribed to heavily modified food, nano- or bioengineered organisms in the atmosphere, or the prenatal and neonatal procedures used by modern physicians. In most cases, the meme is passed along not as an indictment of the modern environment, but as an encouragement for the parents to use common bioengineering techniques to ensure their children's health.

What makes this myth interesting is that it is the mirror of an urban legend common earlier in the century. In the older myth, vulnerable children were those that had been upgraded or gene-fixed and the healthy ones were the "normal" infants. As with the modern version, the meme wasn't directed at environmental issues but at the parents' decision whether to use the then newly available genetic modifications. This version is still found in societies where widespread availability of genetic upgrades is new.

Most memetic experts believe that the flip-flop of the meme occurred more or less naturally, as societies became accustomed to the new techniques. Whether or not the two versions are related or merely convergent evolution is still a matter of debate – there is little convincing evidence to point one way or another.

The Lurker Below

"Although officials deny the existence of a 'Lurker' in Miami's sewers, Mayor Friedman has agreed to assemble a task force to look into the claims. A spokesman for the Coral Gables Residents Association, which organizes assistance to the poverty-ridden neighborhood, thanked the Mayor for her help and warned BioPharmaSouth, the firm blamed for the 'Lurker' release, that they would be held accountable for any further injuries or deaths."

*– **TEN-Miami Reports,** July 19, 2095*

The Lurker meme centers on a belief that in many large cities accidental or intentional release of advanced biogenetic or nanotechnological creations has led to some kind of monstrous mutation living in their sewers. In 2100, the most-common form of this meme identifies the source as a batch of fully transformative proteus nanoviruses from a secret government or corporate laboratory, escaped or let loose into the city's underbelly. It has evolved and mixed with other sewer dwelling creatures and hapless humans that it has caught. The creature can take any of these forms to attack its next victim. It is generally called the Lurker, although variant memes give it a wide assortment of names.

The name "Lurker" comes from a 2052 film of the same name, a surprisingly popular low-budget horror movie made in Vancouver. The monster in the story appeared as a bizarre alligator-like creature with a mass of writhing black tentacles on its back. The movie clearly influenced the meme – while the various "Lurker" sightings over the years rarely fit that precise description, nearly all of them have the multiple tentacles.

This meme has become more common over the last 50 years, reflecting popular anxiety regarding particular emerging technologies and powerful corporations or government agencies. The meme is most often found in poor, disenfranchised, and undereducated population centers, where it spreads quickly. It often develops into a class-warfare meme, as the poor blame rich corporations for letting such abominations roam where they live. In these instances, creatures such as the "Lurker" are manifestations of less tangible but more real threats such as toxic wastes or biohazards flushed into urban sewers. Advocacy groups for the poor or who are fighting particular corporations occasionally use allusions to the "Lurker" or similar phenomena as a means of galvanizing opinion.

However, the meme is also popping up in more upscale areas in Fourth and Fifth Wave nations. The increased sightings of supposedly mythical creatures such as Bigfoot (see *Society for Applied Teratology*, p. 75) may be contributing to the willingness of people to believe the Lurker story. In these areas, the class-warfare aspects are downplayed, while the "science runs amok" elements are emphasized.
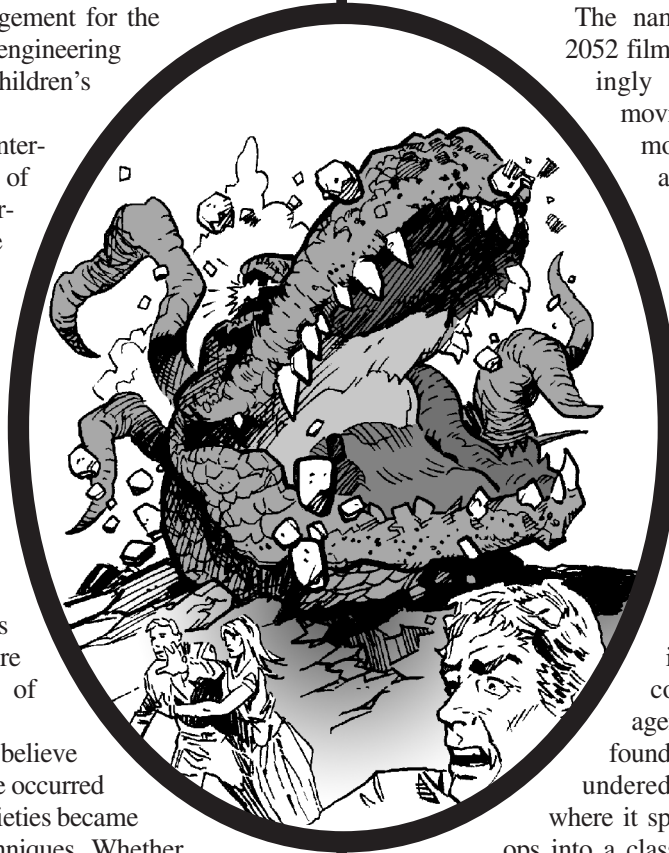
In these areas, the Lurker is often described as a bioswarm of mutant insects or, less often, a wild microbot swarm. A novel variant is a 2098 Paris sighting, which described a "bioswarm of rats," that acted as a single, intelligent, and evil entity. The Paris Lurker was never found, of course, but sightings continue.

Mandrakes

ALRAUNE: You don't understand me, Father, and you never will. You created me, but I have gone far past even your mad expectations. [She grabs DR. KRISTOF's throat, impossibly fast.] You tell me that I have no soul. [Pulls him in close, tears streaming down her face. She whispers.] Why do I need a soul when I have perfection? [Tosses her father across the room.]
*– From the script of **Mandrake**, 2097*

Cloning has long been accepted as a way to have children (see p. TS72). But at the end of the 21st century, a potential alternative reproductive technology is stirring up public anxiety: the creation of human or other sapient beings through neogenesis (see p. TS67). Neogenesis works not just with genetic modifications, but with wholly synthetic genomes, assembled codon by codon by a computer. This technology is still cutting edge, and the Genetic Regulatory Agency prohibits using the procedure to create sapients. Most countries not under GRA jurisdiction have seen public agitation for similar laws. Transhumanist groups usually oppose restrictions on neogenesis, pointing out that wholly synthetic viruses and bacteria are common, and that current regulations regarding germline modification are still appropriate for any further development of this technology.

One of the big sources of this anxiety was the 2097 InVid *Mandrake*, a re-interpretation of the classic German silent film *Alraune*. The latter is about a soulless half-human woman created by artificial insemination. The InVid's script updated this to a child with a computer-coded genome streamlined for "efficiency" and eventually destroyed by the consequences of her own crimes. The term "mandrake," used in both the InVid and the original film, caught on. Although the InVid wasn't a smashing success, it was influential enough to drive the mandrake meme into broad public consciousness. A 2099 Trendorama poll found that over half of adults questioned in the U.S., Europe, and the PRA believed that the use of neogenesis techniques to create mandrakes should be banned.

The idea of a mandrake "threat" taps into old human anxieties: fear of the unnatural or supernatural and fear of new reproductive technologies. Since creating mandrakes absolutely requires the use of computers, anxieties over computer error and corruption lend added power to the myth. For many opponents, the process is the final step in removing the last vestiges of natural procreation from the human line.

Mind Grenades

In an information-dense society, where "facts" about a person or organization can whip across networks at startling speed, constructed rumors and urban legends can be deadly weapons in a memetic competition. When properly crafted, such viral memes can be remarkably resilient and distracting to the target. A coordinated memetic campaign hitting an ill-prepared victim can be ruinous. Professional memeticists sometimes refer to constructed rumors as "mind grenades."

The use of engineered rumors and urban legends is often considered an art as much as a science, although the ongoing development of the field has made the process more straightforward. The techniques commonly employed to propagate a meme or memeplex – various media, advertising, and person-to-person contact – are of little use in the early days of an urban-legend campaign. Rumors and myths, especially newly crafted ones, are vulnerable to contradiction. If the meme is spread overtly, the subject of the attack usually finds out too quickly and is able to counter the myth before it is too widespread or embedded. The goal of a rumor campaign is to propagate the meme in ways that don't trigger an immediate response from the target – or evoke a skeptical reaction from the recipient, causing him to check the story's veracity.

Most memetic engineers setting up a rumor or myth campaign rely on individuals able to spread ideas based on their trustworthiness or attractiveness. In the industry, such a person is called a "tipper" (see p. 133). These people specialize in subtly transmitting memes to recipients who have come to trust them. The success or failure of a myth- or rumor-based memetic campaign depends upon the confidence a tipper can inspire in his contacts.

Once such a campaign is underway, the main threat – aside from the victim tracing the meme back to its source – is the possibility of mutation, where the meme flips in a way that no longer focuses on the target or, worse still, changes its focus to the source. A 2099 memetic conflict between two fast food companies is an example of the problem. The German restaurant Happy-BurgerLand attempted to undercut its rival, Astroburger, by spreading a rumor that the latter didn't use 100% fauxflesh in its burgers. But just as the rumor was starting to hit, it flipped in the PRA, and became linked to a decade-old claim that HappyBurgerLand used wheat and soy gluten in its product. The meme became that the German firm was substituting gluten for fauxflesh, and to add to the injury an activist group in New Zealand launched a boycott of HappyBurgerLand.

The Mind Crasher

Occasionally on the "Devil's Advocate" program the host, who goes only by "Mike," allows his slinkers to participate live. On November 3, 2097, the following exchange occurred:

Mike: Okay, Rashid from Amman, what do you want to say?

Rashid: Hi Mike. I had a question about the "Mind Crasher" meme.

Mike: Scary stuff, that one. Go ahead.

Rashid: Are any parts of the meme known for certain?

Mike: Good question. I'd say no, but one of my sources suggests that the opening to the American Declaration of Independence is part of it.

Rashid: Is that "We the people . . ."?

Mike: No, no, it's "When in the course of human events –"

Rashid: (Unintelligible screams.)

(There is a long pause, lasting about five seconds.)

Mike: We have a real joker on our hands.

> *– From "The Mind Crasher Myth:*
> *A Study in Pathology"*
> *in* **Journal of Memetic Theory***,*
> *Summer 2099 issue*

Memetics is a powerful, frightening new science. It shows how malleable and fragile the human mind is. It can speak of an age-old belief as if it were a virus. But most "mental viruses" behave more like persistent colds – hard to shake, easy to spread, and usually more annoying than dangerous. What if someone constructed a meme that behaved more like . . . Ebola?

The "Mind Crasher" myth claims that a few years ago some brilliant young memeticist named Gideon Michael Thomason did just that – although no one has ever found evidence of a memeticist with that name. He created a meme that will force any brain infected with it into a catatonic fugue, a total shutdown of all higher functions. The meme is modular and *very* complex. It can be picked up one sentence at a time. Each element can be completely innocent, even commonplace, but when combined as a single memeplex, the effect is devastating.

According to the legend, the Mind Crasher became a pseudo-AI "free meme" (see p. FW32). Somehow, the meme escaped the lab, but in doing so, was accidentally or intentionally split into its component parts. Bits and pieces of this meme now float around the Web, turning up as graffiti, poetry, or song verses, a deadly gift to anyone who absorbs the full set and reawa-kens the free meme.

Some versions of this myth maintain that the memeticist constructed the Mind Crasher intentionally, as part of a secret military project, but he accidentally absorbed it himself and it escaped to the Web through his VII. Others claim that Thomason is still alive, but has gone underground because he used the meme against the generals who ordered the construction of such a horrific weapon. Still others assert that the meme emerged as a side effect of a wholly different project, possibly one to render the mind invulnerable to any externally imposed memetic construct. But every version of the story agrees that the pieces of the Mind Crasher remain in the wild, and nobody except Thomason himself knows enough to hunt it down.

Most regard this meme as a classic urban legend, although it is more of an *academic* legend – many people with typical education levels have never heard of it. However, among certain conspiracy theorists, as well as students of philosophy and theology, this meme is almost ubiquitous. Mainstream memeticists positively *hate* the Mind Crasher meme – and have so far been unable to eradicate it. This is due in large measure to a handful of memetic scientists who claim that a "Mind Crasher" meme is conceivable, and that the story may actually be true.

Patterns in the Static

> *Have fun. ;-)‰*
> *– The only explanation added*
> *to the Patterns document*

At precisely 01:18:00 hours on November 23rd, 2093, an anonymous poster to the CyberMysticism memenet uploaded a file with a size of 2,800,051,338 bytes titled "Patterns in the Static."

The file was heavily encrypted, and as none of the memenet regulars had a quantum computer with which it could be decoded, few paid this file any attention . . . at first. After some time, however, rumors began to spread about people who managed to decrypt it, and what they found. No member admitted to having read the unencrypted file himself, but there were numerous reports from a "friend of a friend" who gained the key from a "mysterious source" and was able to read it. Accounts varied wildly about its contents – top-secret CIA files, designs for a machine to extract energy from the vacuum, communications with aliens, or magic spells that bind and command infomorphs as the shamans of the past were said to command spirits. Soon, variants of the file started to turn up, both encrypted and unencrypted. Most of these were rapidly identified as forgeries.

The general public became aware of the "Patterns in the Static" file in 2099, when Peter Budenhaus' critically acclaimed slinky of the same name was released. Since then, several wealthy individuals have announced plans to buy time on a quantum computer to decrypt the file, and they hope to announce the results soon.

Most people believe the file to be a big hoax, similar to the Necronomicon a century earlier, and pity those who waste time, effort, and money on it. Others, especially certain conspiracy theorists, believe that this file will provide the answers to all their questions if only someone would manage to decrypt it.

Late in 2099, a CyberMysticism member came forward stating that the skeptics were right: "Patterns in the Static" was a hoax, and was perpetrated by none other than Budenhaus himself. The memenet member claimed to have assisted Budenhaus in accessing the document archive and went on to claim that in the spring of 2092 Budenhaus had made a bet with a friend that he would not only create a new urban legend, but also make a slinky out of it. With the aid of some mathematically inclined friends of his, he succeeded – the file isn't really encrypted at all, but the result of a random-number generator that made it *seem* encrypted. He is now the proud owner not only of some handsome slinky revenues, but also of several bottles of genuine 20th-century French wine.

The CyberMysticism memenet was in an uproar for days until a *different* member discovered that the person making the initial claim had never been a part of the network. Most memenet participants, however, remained skeptical, noting that while Budenhaus denied the authorship of the Patterns document, he always did so in ways that would not actually contradict the story claiming it was a hoax.

The Perfect Genemod

*"My husbands have been pushing me to have a baby with them – they're old-fashioned, and want to have a woman's egg in the mix – but I keep telling them that I don't like any of the current genome designs. Most are really dated – my **parents** are Alphas, for goodness sake – and I keep hearing that Ithemba has a much better design they're planning on rolling out in the new year . . ."*

> *– Overheard, Heathrow Aerospaceport,*
> *United Kingdom*

A recurring meme in many Fourth and Fifth Wave nations is the rumor of the "perfect genemod," a design that makes the person perfectly healthy, brilliant, and extremely long-lived. No such genetic upgrade is known to exist, but stories persist of biotech companies coming up with them. In most versions of this myth, this perfected design is either held back by corporate leaders wishing to give the children of the elite an advantage, or held back by government officials fearful of a generation of *Homo superior*. Even if not widely accepted, the meme is widely recognized.

This story first popped up in the 2030s, in the earliest days of human germline engineering. Its initial appearance was given a boost by overly enthusiastic biotechnologists who claimed that such a genemod would be "just around the corner." As the difficulties of constructing beneficial genome modifications became clear, such talk faded . . . but the idea didn't. The current existence of groups such as Onos (see p. 50) and cutting-edge parahuman designs such as the Hera-kles model (see p. FW116) also perpetuate the idea. Even though a "perfect" genemod doesn't currently exist, most genetic engineers admit that its eventual appearance is inevitable.

Most memeticists believe that the meme is a naturally occurring reaction to the presence of changing bioengineering technology. A small minority, however, note that the propagation of this meme seems to map to a slight reduction in births, as parents hold off until the new design is available. It is possible, these memeticists argue, that the meme is part of a larger campaign to slow population growth.

Utopia Parahuman   253 points

Attribute Modifiers: ST+2 [20]; DX+4 [45]; IQ+4 [45]; HT+4 [45].

Advantages: Combat Reflexes [15]; Early Maturation 2 [10]; Extra Fatigue +2 [6]; Handsome/Beautiful [15]; Hard to Kill +2 [10]; Immunity to Disease [10]; Immunity to Poison [15]; Language Talent +2 [4]; No Appendix [0]; Rapid Healing [5]; Sanitized Metabolism [5]; Unaging (Physical aging stops at maturation, +0%) [15]; Versatile [5]; Voice [10].

Disadvantages: Imaginative [-1]; Unusual Biochemistry [-5].

Features: Taboo Traits (Genetic Defects, Mental Instability).

Date: 2095-2100+?   *Cost:* $1,265,000.

This template is a look at the "perfect" genemod; most serious blueprints include features very much like this. These particular characteristics come from stolen GenTech Pacifica planning scenarios regarding its long-awaited follow-up to the Metanoia-series upgrade. Records accompanying the template state that the design has not yet been implemented, as it includes untested life-extension techniques. There are occasional stories, however, that the template was implemented several years ago, and a small number of test subjects have been born. These Utopias exhibit strange behavior – rumors range from depression and suicidal fantasies to hyperactivity, impulsiveness, and even telepathy – and GenTech Pacifica does not want to announce the design until the bugs are worked out. The company denies the very existence of the Utopia template, let alone any experimental subjects. Observers note that if stories of radical life-extension technology proved true, GenTech Pacifica would likely come to dominate the genetic-upgrade industry.

Most credible geneticists dismiss the notion that a body can be made to age normally to maturation and then stop aging permanently, at least given current biological knowledge. A more plausible version replaces Unaging with Early Maturation 3 [15], Extended Lifespan 3 [15], and Longevity [5], for a modified template total of 225 points. While a template using these characteristics is not now on the market, it is likely to be available within a few years.

the meme usually manifests as a combination of low turnout on election day and general cynicism about the process.

This meme was one of myriad triggers for the "cyberdemocratic" movement (see p. TS89), which replaces numerous elected offices with fixed-term random selections. Many reformers find the cyberdemocratic model appealing in that it lessens not just financial corruption of the election process but also the ability of political parties to act in secret. The shift to a cyberdemocratic process in venues such as the European and Australian parliaments hasn't significantly reduced the prevalence of the "rigged election" meme in those regions, however. Suspicion quickly shifted to the AI advisors and the so-called "random" selection algorithms.

The problem for those attempting to counter this meme are the multiple historical incidents where computerized voting systems *were* altered to give an advantage to a particular party or candidate. Such manipulation occurred frequently in the early uses of such systems, culminating in the infamous 2024 election in the United States, in which modified vote results in several southern states gave less than 5% of the tally to the President's opponent. To this day, a "Texas Landslide" refers to the results of a blatantly rigged election. Despite the meme's prevalence, such events are now rare in Fourth and Fifth Wave countries – they remain sadly common in many developing nations, however.

Rigged Elections

"You go ahead and vote. If you're lucky, maybe you'll vote for the guy they've already decided will win. Or maybe you'll get to cast one of the handful of votes for the other guy, the designated loser. Whichever button you push won't really matter. Me, I'm not going to waste time on it. If I need to waste some time, I'll go get another drink."

– Jefferson Smith, in the 2042 remake of Mr. Smith Goes To Washington

For political reformers seeking to increase public participation in civic duties, the most-frustrating recurring meme is the notion that elections are somehow rigged. Despite the assurances of official poll-watchers, a substantial portion of most countries' electorate believes that the entire process is engineered, and the votes themselves are meaningless. Believers occasionally link this meme to larger political-conspiracy theories, but in most cases,

Rogue AI Virus

"Look, I'm not going to tell you how to live your life, and as much as I'd like to, I'm not going to tell you to get that implant removed. But for goodness sake, if your AI tells you that you've received a message from someone you don't recognize, delete it without opening it! You never know if it's one of those viruses that can make your AI turn into a rogue!"

– Miranda's mother, noted at Miranda Menendez' slog, How Much Longer?, 2097

There are many theories, but nobody is really certain what makes some AIs go "rogue." There are

> # Thought is an infection. In the case of certain thoughts, it becomes an epidemic.
> # – Wallace Stevens

The Rogue Great White

"The Chinese warriors may have destroyed my body, but I still have one last nanosocialist trick up my sleeve! Kon, prepare the upload device. I will sacrifice my identity, my honor, and my very humanity to fight the Chinese forces! I shall become a murderous beast of the seas, just as my nation has become a murderous beast of Asia."

> – *The fictional General Sowal,*
> *TSA special operations,*
> *in **The People's Victory:***
> ***The Story of the Pacific War**,*
> *a 2090 Chinese InVid*

According to a myth popular across East Asia, during the Pacific War a TSA special-forces soldier near death was brainpeeled and uploaded into a great-white-shark bioshell. When the war ended, the bioshell elected to continue fighting, harassing, and sabotaging Chinese maritime operations. Some versions of the story hold that the shark reverted to type, and has no purpose now other than to kill any Chinese nationals it finds unprotected in the water.

More informed opinion holds that the story's origins probably lie with the heavy losses incurred by Chinese amphibious operations during the war. The survivors tell fearsome stories of marines ambushed by TSA warshark bioshells (see p. UP98), being killed and even eaten as they left their submarine transports. As with any fish story, the beasts have grown with each retelling, and since the war the story has combined with ordinary shark scares, fictional InVids, exaggerated fear of the TSA's Bioweapons Directorate, and anti-Chinese sentiment, mutating into its present form. Any shark attack on, or disappearance of, a Chinese citizen at sea adds further fuel to the story.

external hacking accusations, poor initial program design, or even a tragic but random cosmic ray. A popular assumption, however, is that the main cause of rogue infomorphs is a complex computer virus floating around the Web. In the most-common version of this myth, most AIs have already encountered it and are now merely waiting to be activated by a communication from another rogue AI.

The virus' origin is never quite clear, and in many cases the story hijacks elements of the "Mind Crasher" meme (see p. 62). The rogue-AI virus is a minor element in numerous anti-AI conspiracy theories, but also appears in a surprisingly large number of *pro*-AI memeplexes. In this latter case, those who oppose good relations between humanity and infomorphs are said to have constructed the virus. Among those who adopt the meme without a larger conspiracy context, it is frequently coupled with a strong aversion to wearable AIs.

Memetic specialists generally believe that primitive versions of this meme predated the onset of true artificial intelligence, appearing as fictional fears about the transmission of sapience, independence, or sheer evil between systems on a network. The prevalence of computer viruses simply gave the protomeme a widely recognized mechanism for the transfer. When the first cases of AIs going "rogue" appeared, the meme was already in place to serve as a plausible explanation.

Although cyberneticists publicly state that a virus could not be responsible for rogue AIs, some admit privately that such a mechanism can't be ruled out entirely. If such a virus were real, however, it would have to be constructed by someone with intimate knowledge of AI minds and regularly updated to reflect changes in technology. Even if it does exist, it's highly unlikely that the virus is resident but inactive in any significant number of AIs.

> # The beasts have grown with each retelling, and since the Pacific War the story has combined with ordinary shark scares, fictional InVids, exaggerated fear of the TSA's Bioweapons Directory, and anti-Chinese sentiments.

Documents on the TSA Web provide some context to the story. During the early 2070s, Dr. Eddy Bryant was an obscure marine biologist at Cal Tech, working on bioshell adaptation of various fish species for underwater exploration and labor. She was frustrated by her pitiful budget compared with the enormous amounts attracted to the highly photogenic cetacean research projects. The final straw came in 2076 when her budget was reassigned to dolphin-uplift research and she was expected to follow suit. Instead, she collected her research data, took a tourist flight to Thailand and presented herself to the Ministry of Research in Bangkok, defecting to the TSA.

Within a few weeks, Dr. Bryant was part of the Bioweapons Directorate, heading a department and controlling resources beyond the dreams of a junior CalTech researcher. By 2083, the first top-secret warshark battalions were being deployed for the defense of TSA home waters. At the start of the Pacific War, Chinese marines were very surprised by the warshark bioshells, having planned for a far smaller number of nonexistent dolphin uplifts and cybershells.

Soon, however, Chinese espionage had tracked down the location of Dr. Bryant's research and development facility, and a commando raid was launched to snatch data and artifacts, kill all personnel, and destroy the facility. Although no data was retrieved by the raid – the commando force was wiped out – it did succeed in causing major damage and high casualties among the base's personnel. Among these was Dr. Bryant.

Official records of the period are poor due to wartime data destruction, but it appears that Dr. Bryant was evacuated to a mainland hospital, where she later died of her injuries. Her body was buried at sea. There are no records of her being brainpeeled, although investigators note that TSA cadres in Thailand high-ranked enough to qualify for brainpeeling typically had details, including brainpeeling attempts, expunged from their official records.

Muddying the waters is that Dr. Bryant used heavily edited low-resolution brainscans of herself as the basis for the warsharks' NAI control software, a fact discovered by Chinese scientists reverse-engineering captured warsharks and passed on by various means to intelligence agencies worldwide. So even if the brainpeeling aspect of the meme turns out to be myth, the story does still have a particle of truth: warshark bioshells with control software descended from Dr. Bryant's original programming remain a major feature of TSA aquatic-defense forces.

Vengeance of the Animals

"Now, I'm not saying that somewhere up in the Sierra Nevadas there's a growing pack of uplifted bears looking at maps and conducting paramilitary training, getting ready for the coming war against humans. But if there were, would you really blame them?"
– Anika "Pit Bull" McCory,
speaking at an uplift-rights rally
*in Berkeley, California, 2098*

This meme claims that within the last 20 years there have been so many attempts to uplift animals, as well as to create new parahuman species with animal genes, that enough of these frighteningly *smart* creatures have gone missing to form a small *army*. Somewhere, be it in the underbelly of a large city on Earth, high in the mountains, or deep in a Martian valley, there lies a settlement of angry and intelligent beasts with superhuman combat abilities. And they wait. For freedom. For war. For the end of humanity.

This is a very common meme among humans with moderate educations and biochauvinist tendencies. In Europe it also exists in a mutated version among intellectuals with an affinity to the Human Alliance: this version usually sees the colony as somewhere in North America or Asia, waiting to rid the world of their evil creators, thus serving justice . . . and leaving the E.U. safe and secure. Beyond Earth this meme is *very* rare – on Mars there are occasional rumors about large settlements of escaped bioroids and uplifts, but the myth is unknown elsewhere.

Like many urban myths, this meme has enough truth that it's hard to eliminate completely. It's not that anyone has found any armies of uplifts waiting for vengeance. Instead, the infrequent discovery of small groups of feral uplifts and animal-related bioroids, coupled with events such as the Doolittle Virus (see p. BD140), make it easy for people to believe that somewhere out there the intelligent animals are massing.

Those who adopt this meme frequently have a bit of guilt regarding human treatment of animals or have had disturbing encounters with uplifts. Cognitive ecologists often report outbreaks of this meme in areas where uplift-rights activists have recently held demonstrations. Although the major uplift-advocacy groups such as the Sapient Animal Alliance claim no knowledge of any "animal militia," they are careful not to deny its existence entirely. Fear of uplifted animals seeking retribution plays a small role in public support of uplift-welfare laws.
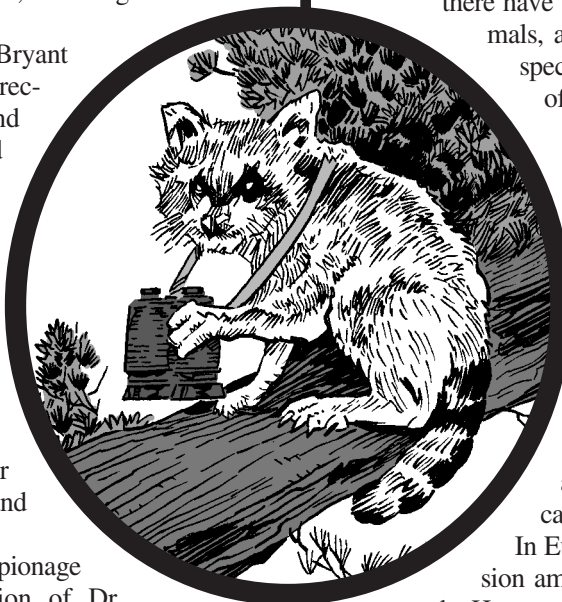
VII Shadowing

"You're running the FiberThought implant? I heard that it's made in one of the Red Dunc fabs, and makes a shadow of you without you even knowing it! No, I don't know what they use it for. Probably something asymp, you know those Duncs."
– Overheard, Robinson City, 2099

A particularly virulent meme of recent origin is that a certain brand of implant – the brand varies – is actually a mechanism for brainscanning in order to create a secret shadow. Red Duncanites are often thought to be behind such a plot, although the TSA, the CIA, and, inexplicably, the Pope have all been implicated in different versions of the meme. More sophisticated versions, noting the impossibility of constructing a functional shadow using a slow scan over time (the only method even remotely possible using an implant) claim that the goal is actually to create an advanced eidolon, not a duplicate, based on detailed knowledge of the target's memories and personality. Cognitive ecologists who have encountered this legend usually assert it's primarily a manifestation of implant fears, and secondarily identity fears regarding shadows, eidolons, and ghosts.

> ## While attempts by infomorphs to take over a host body are incredibly rare, they are not entirely unknown.

Some memeticists disagree, noting that many meme versions include speculations that the resulting shadows are used to evaluate propaganda campaigns whatever secretive groups behind the implants are about to unleash upon an unsuspecting populace. With enough shadows or eidolons available as test subjects, the Duncanites (or whoever) will be able to tailor their propaganda so precisely that there will be no stopping them. In this way, the memeticists argue, the VII-shadowing myth actually reflects fears of *memetics* – that once a person's mind is known, they are vulnerable to anyone with a meme to push. Many memeticists then go on to discuss just how easy it would be to craft a meme to be irresistible if the memetic engineer had access to shadows of his target audience, leaving conversation partners less than comforted.

VIRTUAL-INTERFACE PARANOIA

Although virtual-interface devices have been in use around the world for decades, there remains a lingering discomfort about them. With VI glasses, a small number of people worry about augmented-reality systems altering what the users see and hear without their knowledge. Fears surrounding VI implants, however, are more common. The notion of having implantation surgery to put a device in your brain that can see what you see, hear what you hear, and is host to a resident AI infomorph does not sit well for some people. Some of the myths about VIIs are related to common AI-related fears, while others reflect the unique intimacy of the technology.

The most-common legend is that VIIs work two-way – not only are they controlled by thought, they can in turn control thoughts. This meme shows up in a variety of forms, from worries that the implant's manufacturer is sending signals to users' brains to more elaborate fantasies that the government has access to the VII, allowing it to alter a person's thoughts or behaviors. A common variant is that advertisers are sold access to implants, letting them view data about responses to given ads or altering neurochemistry in order to trigger positive or negative reactions to given products.

The AI resident in the implants is also very disturbing to many people. While attempts by infomorphs to take over a host body are incredibly rare, they are not entirely unknown. Most implant users prefer NAI infomorphs to avoid even the hint of a separate intelligence residing within their skulls.

AR is frequently employed to alter perceptions via filters, virtual clothing, and the like, but these are uses that the virtual-interface wearer can recognize easily. The fear that AR is used to fool people for nefarious purposes is often dismissed by manufacturers and is a frequent joke in slapstick entertainment. Despite this, AR as a mechanism for subterfuge is actually surprisingly common (see *Really Augmented Reality*, p. 138).

What makes virtual-interface-related memes difficult to counter is that nearly every feared violation has at some point been attempted. Endeavors to alter the perceptions or behavior of an implant user without his are illegal in nearly every nation, and most VI manufacturers go to great lengths to assure users that they are secure from outside tampering. Most implant companies also employ sizeable memetic-engineering staffs to counter the spread of VII-related fears. In fact, the meme that fears about implant violations are pure paranoid fantasy – a meme that's just as mythical as the thought that all VIIs can be easily compromised! – is directly attributable to industry memeticists and is propagating quickly.

Voidskates

*Day 43: The ship has again made a rapid alteration off course, startling me from my sleep and causing my dear mother to spill her drink on her traveling suit. I asked Matthew, my AI, about the cause of the disruption; it told me that the ship had performed a standard maneuver. This being a less-than-satisfactory answer, I took my complaint to the ship's steward. We were informed that the captain had narrowly avoided hitting a "voidskate," and had in fact saved us from an unwelcome fate. When my mother, who comes from a more skeptical age, asked precisely **what** a voidskate was, the steward showed us a poorly focused image taken from a camera mounted on the hull. We saw, shadowy against the dark – and far too close to the ship for my comfort! – a vast beast, looking like a bat or manta ray, but with a wholly artificial skin.*

"Voidskate," the steward said. "One of the abandoned TSA space weapons." For some reason, Matthew just laughed.

> *– From **A Voyage to Titan and Back: A Journal,** 2098*

Every now and then, a passenger ship traveling toward a destination in the outer system will make a minor shift in position, perhaps as a course correction, to avoid intersecting the path of some debris, or to reorient a sensor. Such motions can be jarring to its passengers, who inevitably ask why the ship had to turn so quickly. "Voidskate" is the usual answer. "Dangerous to hit 'em." The passengers never see that voidskate, but one of the crew usually has a photograph or holograph of another to show what looks like an oversized manta ray "swimming" through space, the center of its body jet black while its fins and tail are silver and as reflective as polished chrome.

There are different stories about what these creatures really are, usually chosen based on how gullible the crew thinks the passengers are. They are variously described as vacuum-adapted manta rays cooked up in a Duncanite lab; renegade von Neumann machines, built who knows where; or weapons designed by the crazed nanosocialist bioweapons specialists left over from the Pacific War. In a few cases, they are even said to be a completely alien form of life, evolved to live in deep space.

No good spacer ever admits to not believing in voidskates, at least not to an outsider. That said, most travel guidebooks and guidebots refer to voidskates as a "spacefarer's myth," and assure the traveler that they aren't real. This is not to say that pranksters haven't made voidskate cybershells or even bioshells when the need has arisen. In the mid-2090s, an anonymous joker started an elaborate memetic campaign to spread a new meme – the claim that voidskates are a myth is a government cover-up. This campaign culminated in the supposed "capture" of a voidskate, which was then taken away by government agents. A partial slink recording of the voidskate being taken by the government was posted to the Web, where it became an underground hit. The memetic exercise didn't convince anyone that voidskates were real, but did spread a little doubt about whether they were entirely false.

Web Gestalt

"Yes, it's the digital overmind, but I don't fear it. It hasn't hurt us yet, and even if it chooses to do so, there's not much we can do about it. At that point, our only choices would be to submit or to destroy ourselves. In the meantime, I'm just adding my voice to the mix, trying to make sure that once the Web Gestalt starts paying attention to us it at least understands what I'm trying to say."

> *– "Mike," **Devil's Advocate,**
> February 29, 2096*

One of the more unusual AI-related memes isn't directly about artificially intelligent beings as currently conceived. It's the myth of the "Web Gestalt," an intelligence emerging from Earth's infosphere itself. According to most versions of this meme, when the World Wide Web of old had gained a certain level of complexity – and when exactly this happened depends on the teller of the story – it spontaneously gained sapience, just as emergent SAIs can arise today.

As the Web is connected to almost every computer system in the solar system, the Web Gestalt integrated itself into almost every piece of software in existence and thus is everywhere at once. All other AIs are part of this intelligence, usually without realizing it. Thus, the Web Gestalt effectively rules the entire Earth, or at least the parts of it with a web connection, and is free to follow its own agenda. This agenda might include "improving" the human species, wiping it out, or hiding evidence of contact with aliens from 61 Virginis. In some versions of the meme, the Web Gestalt is the "mind of Gaia," and thus has an utterly unknowable agenda, with concerns and strategies measured on geologic timescales.

Belief in the Web Gestalt is one of the more-common memes among paranoids, and given the complexity of modern computer systems and networks, hard to disprove without an in-depth knowledge of software technology. Some of its believers turn to Cryptosurvivalism (see p. 31) in the hope that this might protect their secrets from the Web Gestalt, while others withdraw from Earth's information networks, either in Earth's wastelands or in deep space, to get away from this entity. The "mind of Gaia" variant is common among deep ecologists and a minority of Cybergnostics. It is gaining a small presence in the Gaia Restoration Project (see p. 35), prompting an ongoing debate as to whether information networks should be left functional on Earth after humanity moves off.

Few if any computer specialists give any credence to the notion of a Web Gestalt. Most serious network

analysts hold that such a large-scale software entity would leave telltale signals in communication channels that could be recognized and analyzed. Since such signals are absent, they claim that while individual emergent AIs can appear without anyone realizing it, an emergent AI that exists in the whole Web at once cannot.

Paranormal Beliefs

The persistence of belief in the paranormal is a continued surprise to casual observers of society in 2100, but is completely in line with the expectations of professional anthropologists, sociologists, and memeticists. The expansion of science's ability to explain the universe has not increased its comprehensibility for most people. Even highly educated people in 2100 take matters related to well-established elements of quantum spookiness, multiple universes, and the like largely on faith. For those who believe in the supernatural, the inability to "prove" the existence of spirits in a way that scientists would accept no more invalidates their faith than does the inability to "prove" the existence of Calabi-Yau-shaped folded dimensions in a way that a non-physicist could understand invalidates physics.

The path that technological development has taken over the last century has propped up aspects of the paranormal as well. AIs and the like do not prove the existence of the supernatural, but the language used by many developers – mind emulations as "ghosts," for example – often evokes traditional paranormal concepts. Some believers are amused by the compliment, others are insulted by the arrogance . . . And still others have come to suspect that unbeknownst to the developers, these technologies have somehow connected very old powers and previously thought inaccessible forces to man's tools.

Memetic engineers attempting to take advantage of paranormal-phenomena belief tend not to create new supernatural stories out of whole cloth, although in a few cases this has been successful. More often, the memeticists use existing paranormal stories and twist the desired memes into local manifestations or accounts. This technique has been used to push political agendas, religious precepts, and even simple practical jokes.

Do AIs Have Souls?

As science has never been able to find any evidence of a "soul," its existence is entirely a matter of faith. Not all religions include belief in a soul, although most do. For many of these, the most-vexing question of the last several decades has been whether SAIs, which clearly have minds, also have souls. This question is of more than theological import . . . Fervent believers who do not accept the notion of AIs with souls are more likely to treat infomorphs as things and commit violence against them. The dominant religions around the world have radically different perspectives on AIs and souls:

Buddhism: As Buddhism was the first major belief to accept sapient artificial minds as people – in 2038, well before SAIs even existed – followers are the most likely to say "yes." Not all schools of Buddhism teach the existence of souls, but of those that do, the vast majority include SAIs and LAIs as having them.

Chinese Traditional Religions: Although many followers of Chinese Traditional practices accept shadows and ghosts as carrying the souls of the deceased, they have great reluctance to accept that constructed infomorphs might have a spirit.

Christianity: Christian traditions vary widely. Many mainstream Protestant and Mormon groups with an American background disagree with the concept of AIs having souls, while newer interpretations, such as Christian Hyperevolutionism, believe they do. European churches are mixed, some welcoming SAI citizens as members while others are the last refuges of those who deny that SAIs should be considered people. Traditional Catholicism has struggled with this question, but as of 2100 still teaches that SAIs are human constructs, not divine creations, and thus do not have souls. Reformed Catholicism began admitting SAIs as believers in 2080 and fully embraces the notion of digital entities with souls.

Hinduism: Despite a richly nuanced theology, the vast majority of Hindus are firm in their belief that SAIs are things that act like people, not people with souls to be reincarnated. In India, the notion that a human can be reincarnated as an SAI has been linked to nanosocialists in an attempt to discredit them.

Islam: In the Islamic Caliphate, SAIs who accept Islam can be citizens, and the notion that the machines have souls is broadly accepted. There is some debate as to whether SAIs have human souls or the souls of djinn, supernatural spirits with bodies of fire – or energy, which information-based entities arguably possess. Outside the Caliphate, the concept is controversial, and is entirely rejected in Iran and Pakistan.

Paranormal Belief Descriptions

Memes related to the paranormal, while superficially similar to urban legends in many ways, tend to be more stable in content than modern myths. This is due in large part to the nature of the content. People who accept paranormal memes are predisposed to ignore the lack of evidence or contrary evidence, and the stories are therefore under less adaptive pressure. Memes about the paranormal also shape some groups' take on technology.
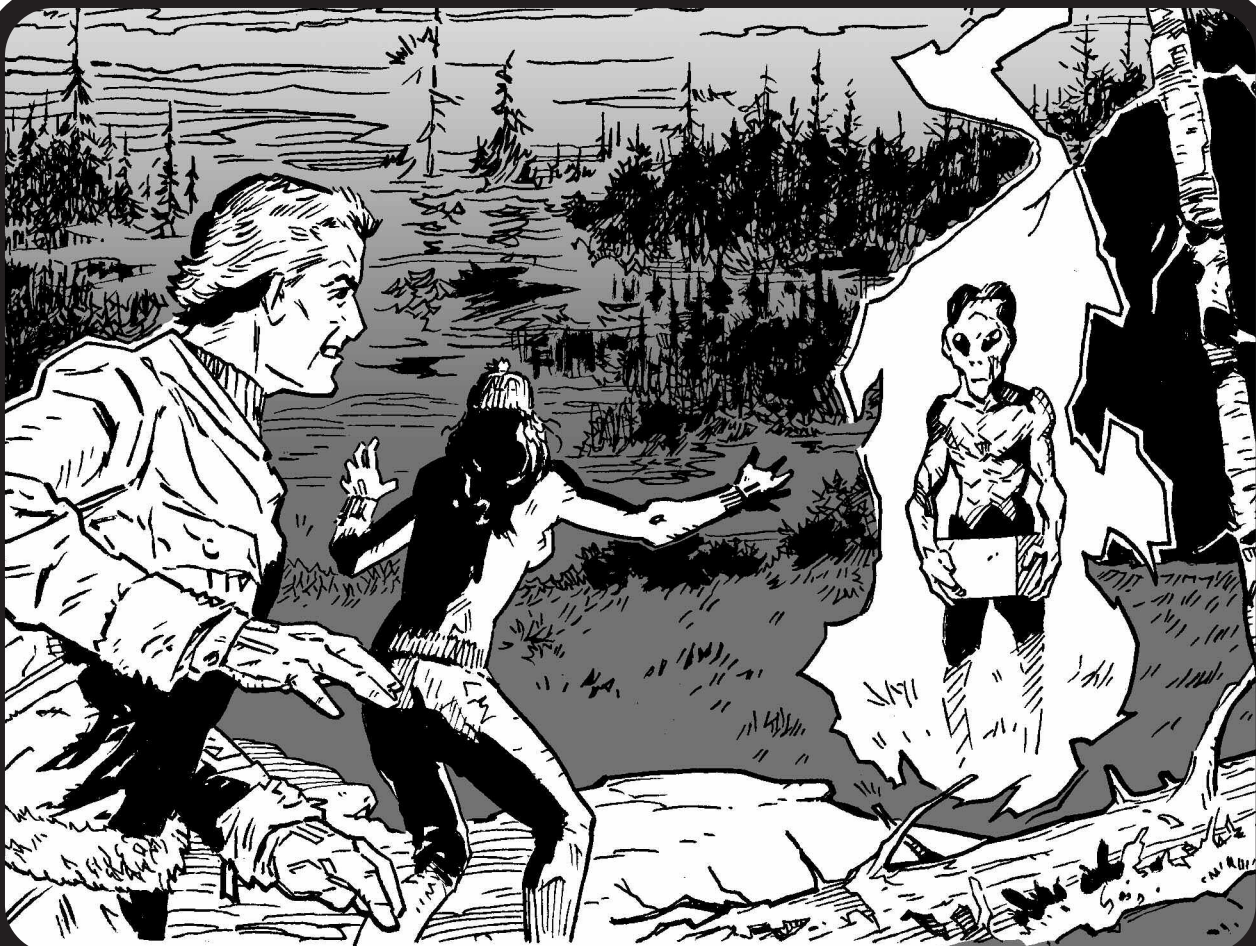
Alien Visitation

These days, a flying saucer could fly down Pennsylvania Avenue, land on the lawn of the Washington Monument, and disgorge a ten-foot-tall robot without anyone batting an eye. Stuff like that happens all the time – the only difference is that they're saucers and robots from Earth, not some alien police force. It wouldn't be the day the Earth stood still, it would be the day the Earth yawned.

– Jerzy Siencowicz,
Chariots in the Parking Lot, 2090

In a world of bizarre cybershells, augmented reality, and regular flights into space, traditional tales of unidentified flying objects (UFOs) have long been relegated to the history e-books. The occasional sighting of glowing, rapidly moving blobs of light can be easily explained, usually just by having an AI assistant query local air-traffic networks. More sophisticated understanding of how the brain functions has given rise to treatments for the conditions that led to "alien abduction" delusions. And one of the unanticipated benefits of the great decline in real beef product consumption was the disappearance of cattle-mutilation stories.

A handful of wilderness encounters with "alien explorers" have been reported, invariably well away from human habitation. The witnesses usually don't have virtual-interface units or don't manage to retrieve and activate them before the "aliens" escape. In two separate cases, however, witnesses claim that aliens captured them by catching them "in a beam that caused [them] to freeze." The "abductees" were then taken aboard a ship and their virtual-interface implants were removed. Although in neither case was there any sign of recent surgery, medical records did indicate that the witnesses did at one time have virtual-interface implants . . . which were now missing.

A common belief among those who entertain the notion of alien visitors is of alien influence in Earth's technological development – see, for example, *Genomic Invasion*, p. 45. One interesting version of this particular meme is that aliens have pressured humanity's AI developers to keep machine intelligences limited to roughly human levels. Apparently, superintelligent AI singularities often lead to species extinction and can wreak havoc on the galaxy until stopped. This is why, they claim, there is no real evidence of alien civilizations – the vast majority were wiped out during a period of AI transcendence.

Classic UFO sightings remain a staple of spacer tales (see *Whalers*, p. 78). Although certain regions of space, such as Earth's orbit, seem crowded there are actually relatively few ships in the Solar System compared to vehicles in Earth's atmosphere. What's more, space ships follow well-understood physical limitations to their velocities and trajectories. An unidentified vehicle, particularly one seemingly *not* abiding by the laws of physics, is very hard to not notice. Many spacers, especially those in the Deep Beyond, speak of sightings ships that don't look or act like anything they've ever seen. Most laugh it off as a trick of the eye or a secret government experimental ship – this laughter invariably comes across as nervous than humorous.

Ironically, even as alien-visitation memes continue to thrive among the general populace, most experts have come to the conclusion that humankind is almost certainly the only intelligent life in the Milky Way. Even with 2100's advanced signal processing and telescopes able to resolve planets in other systems, no signs of alien intelligence have been found. Fermi's Paradox still stands – even a cautious civilization could colonize the entire galaxy in a cosmologically brief amount of time, but we find no evidence of any other civilizations out there.

Ancestor Worship

Wen Shan passed away on Tuesday night. He is survived by his wife, four children, 14 grandchildren, and eight great-grandchildren. His body was interred in the family crypt. His spirit joined the family shrine, and welcomes visitors daily.

– Announcement on a Hong Kong
civic record website

Ancestor worship is a long-standing element of many traditional religions. In most, the ancestor spirits rarely intervene in day-to-day life, but are always watching. Behavior that offends the ancestors is to be avoided, at the very least because it brings shame upon them. The advent of mind-emulation technology has given a new form to traditions of ancestor worship. The ability to create eidolons, shadows, and ghosts as infomorphs lets ancestors remain a presence in a family's life as more than distant spirits.

The practice of revering an emulated mind in the same manner as an ancestor spirit is controversial and frowned upon by many traditional religions. Ancestor infomorphs are almost unknown in Africa, although their popularity is growing among followers of Voudoun (see p. BD19). They are much more common in China, however, where nearly a quarter of all families following Chinese Traditional Religion now have at least one infomorph residing as an ancestor's spirit.

In almost every case, the spirit has a static cybershell in the family shrine. It is almost unknown for believers to carry the ancestor infomorph in a mobile device. This practice is not thought of as keeping the ancestor alive so much as giving the spirit a voice for providing advice. Ancestor infomorphs have passive read access to networks, allowing them to keep watch but not send communications or control remote devices.

Most ancestor infomorphs are shadows edited to recognize themselves as "spirits," although some are eidolons, usually constructed with the assistance of the deceased person's digital assistant. Ghosts are even less common, in part because they are still expensive to create and in part because the government tightly controls their creation. The handful of ghosts created as "ancestor spirits" chafe at the restrictions of life stuck in a box, and either slowly go mad, demand to be shut down, or try to play an active and manipulative role in their descendants' lives.

Astrology

*"Say what you will, the position of the planets definitely affects **my** life."*
– Overheard, Silas Duncan Station, Ceres

Despite the utter lack of any evidence supporting its veracity, astrology remains as popular as ever. Few people are fervent believers in it, but a surprisingly large number of people on and off Earth accept it as "possibly real" and pay mild attention to their horoscopes. This sort of superficial belief in astrology is actually *more* common in space colonies than on Earth.

The growth of human settlements off Earth has led to a minor boom in astrology, as the motion the of planets through the Zodiac as seen from Earth varies greatly from the perspective of Mars or the Trojan asteroids. People born off of Earth have entirely different astrological readings. Just how that new reading is supposed to look is the subject of contradictory and competing approaches. There are two leading versions. The first is *Beyond Earth: A Modern Astrology*, by Miriam Vash, which uses careful maps of planetary locations to match up off-Earth horoscopes with traditional charts. The second is *Transhuman Astrology*, by Ralva Daoud, which dispenses with any attempt to fit in with traditional astrological charts, and goes on to assert that anyone who has been ghosted should have a new horoscope drawn up based on the time and place of the brainpeel.

PAULO CARRIVAL   162 POINTS

Born 2055. Age 45; 6'1", 175 lbs. Plain-looking Italian in good physical condition, a tendency to forget to shave. Has an intense "fire in his eyes" when he speaks.

Paulo Carrival is on his way back to Earth after spending the last decade in various residences. His last home was in Port Lowell on Mars, but he has spent time on the Moon, on Ceres, and in a variety of PSVs traveling the system. He is an astrologer, and a well-regarded one. He worked with Ralva Daoud to develop the "Transhuman Astrology" approach, and is a strong believer in the inherent truthfulness of the practice.

If asked why he is heading back to Earth, Carrival speaks excitedly, sometimes slipping into his native Italian, about the prospects for bringing the techniques of interplanetary astrology to those still stuck on Earth. It is quickly clear to listeners that while he is a firm believer in astrology he is also pragmatic about how most people view it. He argues that, even if there is little superficial evidence for it, astrology serves as a structure upon which people can build a sense of the future. Most people live in fear of what the future might bring, he says, and astrology calms them, gives them belief that they can see a path for their lives amidst the uncertainty.

Carrival is less likely to speak of his *other* reason for leaving Mars. In late 2099, he was asked to provide a chart for an aging Chinese man, not knowing that the man was actually a Triad elder. The horoscope was painfully inaccurate and the man was killed shortly thereafter. (Carrival, if pressed on this issue, claims he was given incomplete information about the man.) Soon afterward Carrival heard rumors that the Triad member who had commissioned the chart as a gift was embarrassed at the outcome, and sought to have Carrival killed. The astrologer decided that it might

be time to move on . . . And given that the Triads have a significant presence in the Belt, Carrival chose to head back to Earth.

Carrival is a naturally friendly individual, uncomfortable with remaining in the background. If encountered in transit, he is likely to strike up a conversation, although he is hesitant around any Chinese. He is not certain that he is marked for death, but he isn't about to take any chances.

ST 11 [10]; **DX** 11 [10]; **IQ** 14 [45]; **HT** 12 [20].
  Speed 5.75; Move 5.
  Dodge 5.
Advantages: Alcohol Tolerance (Liver upgrade) [5]; Ally (Programmed: LAI-6 in Implant, 15-) [9]; Charisma +2 [10]; Filter Lungs (Lung Cleaner nanomods) [5]; Gene-fixed [0]; Panimmunity 2 (Permanent immune machine nanomods) [5]; Reputation +3 (As an innovator; Among astrologers) [5]; Resistant to Poison (Liver upgrade) [5]; Status +1 [0]*; Wealthy [20].
  * One level free from Wealthy.
Disadvantages: Selfish [-5]; Stubbornness [-5].
Quirks: Attentive [-1]; Devout but pragmatic believer in astrology; Habitual quiet manipulator; Susceptible to pretty women and the good life; Very friendly. [-5]
Skills: Bard-15 [1]; Computer Operation-16 [4]; Directing-11 [1/2]; Fast-Talk-12 [1/2]; Astrology-18 [12]; Meditation (Realistic)-14 [4]; Performance-12 [1/2]; Politics-12 [1/2]; Psychology-11 [1/2]; Savoir-Faire-16 [0]; Theology-11 [1/2].
Languages: Chinese-14 [2]; English-14 [2]; Italian (native)-14 [0].

Bioshell Zombies

"Antoine, this is Mr. Constantine. Please take Mr. Constantine's coat and see that he is comfortable."
"Gnnnnnnnnh."
"Do it! Or today you shall feel the lash!"
  – From the 2097 InVid **Voodoo Children***,*
    which billed itself as a
    "speculative documentary"

Decades of horror movies and InVid notwithstanding, traditional zombies have little to do with rotting flesh and a hunger for brains. In Voudoun, zombies are thought to be soulless, not rotting, and their bodies still function as do those of living beings. Many anthropologists believe that traditional zombies were created by poisoning a victim with blowfish venom in an amount insufficient to

kill, but enough to completely paralyze him and make his heartbeat nearly undetectable. As the victim would still be awake, but utterly unable to move or make a sound, he would see his family mourning and himself put in a coffin and buried. As those suffering this fate were usually believers in Voudoun themselves, when the *houngan,* or priest, dug them up a day or so later they willingly accepted their new roles as zombies.

As such poisoning and slavery is now far harder to get away with, there is a trend in areas where Voudoun is prevalent for houngans to have corpses converted into necromorph bioshells (p. TS126). The bodies usually come from living individuals who sell their bodies to the priests in exchange for money or various services. Depending upon the contract, the body only becomes available after the person eventually dies or the

zombie-to-be may be required to commit suicide. The latter form is technically illegal in most places Voudoun is practiced, but in many cases, the authorities look the other way. Contracts not requiring suicide may be gruesome, but they are legally binding; there is a small industry of "contract fulfillment specialists" willing to travel to retrieve corpses now owned by the houngan. Often, the future zombie is implanted with a small web-connected biosensor, sending out a signal when the subject is close to death or dead.

Most necromorph bioshell zombies run a specialized NAI designed for appropriately servile behavior. Very few houngans have access to the equipment and resources to perform shadowing or ghosting of a prezombie, but the practice is not entirely unknown. In these cases the infomorph mind is edited into compliance, although the programmer is careful not to remove the infomorph's memories. Using an edited ghost as the mind of a bioshell zombie is generally illegal; using a shadow, while ethically dubious, is generally legal.

Given the expense of producing a bioshell zombie, including the fees paid to the body's owner, the practice is not common. Zombies are most often constructed to act as servants for the houngan. Secular leaders in communities where Voudoun is practiced may also be able to convince a houngan to construct a zombie, although the price is usually steep.

Ghost Souls

"Scientists have done what mystics have feared for centuries: they've captured the soul, put it in a bottle, and stuck it on a shelf. They may not realize it, but what they've accomplished upsets the balance of the universe. When a person dies, his soul is supposed to move on. If it doesn't, if it's held in the material world, the universe will not be forgiving."

– Sarriya al-Mazif, speaking at **Second World Transcendence Forum***, 2095*

For most people who believe in the existence of souls, the controversy about ghosting largely focuses on whether the ghost retains this vital essence. If it does not, then the ghost is little more than an elaborate toy – no matter how much it may think of itself as the continuation of an individual. If it does have a soul, however, then to most believers the ghost should be treated as a true person, as it has the same soul in digital form as was possessed in the original body.

Not everyone is so complacent, however. A small but growing number of people strongly believe that ghosts have the souls of the original person and this is *not* a

good thing. The soul, by virtue of being held in cybernetic form, is now potentially stuck on Earth forever, and is unable to move on to whatever follows death. In their view, as the universe was created with the passage of spirit from Earth to the Hereafter as an intrinsic element, this soul capture is an affront to the universe. Serious consequences will ensue if humankind does not abandon this practice.

The most vocal advocates of this position are a group of Sufis based in London, led by Sarriya al-Mazif. Members regularly attend interfaith conferences in order to promote their views, and al-Mazif recently began studying advanced memetic techniques to support their campaign. The group believes that without a physical body – and they do not count cybershells, even bioshells, as being true physical bodies – a soul cannot grow. A ghost's soul is static and unchanging, and therefore slows the overall evolution of the universe. If a soul is not allowed to grow in the physical world, it must be released to the world beyond.

> **The soul, by virtue of being held in cybernetic form, is now potentially stuck on Earth forever, and is unable to move on to whatever follows death. In their view, as the universe was created with the passage of spirit from Earth to the Hereafter as an intrinsic element, this soul capture is an affront to the universe.**

This notion is slowly spreading and has started to appear in a variety of religious settings. It is a common point of discussion in religious schools in the Islamic Caliphate, and a number of American traditional Christian churches have begun examining the issue. The November 2099 murder of a ghost in Atlanta, Georgia, has been blamed on a man found with ghost-soul controversy material in his possession. Officials are unsure of whether he was acting alone or with a group of others with similar beliefs.

Kabbalistic Space Tourism

"You follow the paths, the 32, and along each find the questions for the answers you have long known. You explore the worlds, the four, and on each find the birth to match the death you have long embraced. You accept the spheres, the 10, and with each you reveal the layers of the self."

*– From **Our Planets, Our Selves,** 2087*

This meme, most often found in the United States and Europe, holds that the planets and satellites of the solar system are the spheres of the Kabbalah's tree of life, and that interplanetary travel is spiritually useful for personal growth and path working. Although followers of the Kabbalah are among those who have noticed the odd symbolism and mysterious behavior of World Tree Enterprises (see p. 52), there's actually very little overlap between those who see WTE as having mystical resources and those who believe in a connection between the Kabbalah and the solar system's structure.

This meme is common among those who follow New Age-style beliefs and is largely divorced from its roots in mystical Judaism. Many recent self-help guides have stressed the idea of personal growth through space pilgrimages, and most use a somewhat spiritual interpretation of the process. The Kabbalistic version has been present for decades, but really took off in 2087 with the publication of *Our Planets, Our Selves*. This book mixed ideas from the Kabbalah into an otherwise straightforward pop-memetics treatise. While a substantial minority of those who have adopted this meme embrace its mystical elements, even many people who totally reject the occult enjoy the idea. Recently, the meme has inspired chamber music, concert music, and an opera.

Many memeticists suspect that the fairly casual connection to the more spiritual aspects of the Kabbalah is part of why the meme has remained reasonably popular. People who enjoy the symbolism and ritual, but don't take the mystical aspects seriously, have adopted the meme without questioning their other beliefs. At the same time, hardcore Kabbalists who truly believe interplanetary travel will alter their lives and help them achieve spiritual growth have had life-altering experiences.

Given the time required for interplanetary travel, no single person has actually completed the "32 paths" by 2100, and very few have managed to visit every planet.

Martians

*"Take me to your leader – your **price** leader for new cars!"*

– The Ancient Martian, used in a variety of ads in America/Mars

Despite Mars being increasingly domesticated and a serious lack of evidence, some people still think it was once home to an advanced civilization. The perpetuation of this meme comes from two major sources. The first is prospectors and other Martian frontier inhabitants, passing along tales of complexes built into the sides of canyons and other places . . . which always seem to collapse and disappear before the next trip out. The second is from dedicated believers in government conspiracies, who claim to have evidence that Martian structures such as the pyramids and the "face" were intentionally damaged or destroyed by the first wave of government explorers, seeking to cover up proof of Martian life. That the first explorers were from China, while the conspiracy seems to focus in the United States, matters little to believers. The conspiracy needs to be international to be so powerful!

Most people who believe in ancient Martians are fairly wishful in their approach, with more of an "it sure would be great if . . ." rather than an "it must be true!" perspective. This outlook on Martian life has broad sympathies, and many Mars-related organizations have adopted bits and pieces of life-on-Mars lore as symbols of their groups – from cartoon Martians to tongue-in-cheek references to *War of the Worlds*. While few actually believe that any evidence of an ancient Martian civilization will ever be found, the idea is common in popular media on and about the planet.

The belief in advanced Martian life is a more-serious meme for a very small but active collection of people. The "Mars Truth Committee," funded by the eccentric Bollywood billionaire Indira Patel, seeks to prove that Mars once held advanced life, and that the American and Chinese governments are working together to suppress this information. The organization has already made two expeditions, in 2089 and 2095, and is gearing up for a third. Neither of the previous two – one to the "face," the other to the "pyramids" – uncovered anything of note. The newest trip, scheduled to leave for Mars in June 2100, is the best equipped yet. They intend to spend a full Martian year visiting sites purportedly uncovered by Martian frontier explorers. As of the beginning of the year, the Committee is making final purchases and lining up the last few crewmembers. They are looking for a small, independent slink- and InVid-production crew to go with them to record their discoveries.

Among the sites the Mars Truth Committee plans to visit is an area near Elysium that has produced somewhat unusual density readings in recent surveys. A study using vibration patterns to map the types of rock under the surface had results that suggest a series of chambers. This area is actually the location chosen by Mohammed ibn-Khalid for his "Native Martian" hoax (see p. ITW120)! The site is near the bottom of their list, but if the Mars Truth Committee makes it to the site, they may be in for quite a surprise . . .

Mentalist Fraternity

"Your mind is capable of far greater feats than simple calculation and fading memories. You have in you, in the secret language of your cells, the power to unlock those feats. Soon, very soon, we shall all have the key to open this lock."

– Vladimir Koleshenko,
on the Mentalist Fraternity website

One of the most persistent paranormal memes is belief in psychic abilities. For most people who host the meme, the belief manifests as a general sense that they *must* be real because so many people know about them. For a handful, the belief is more developed and structured.

The Mentalist Fraternity is a group of men, largely in Eastern Europe and Russia, who firmly believe that the human mind has untapped psychic powers. They point to millennia of reports and stories about mystical powers and dubious research into extrasensory perception. These abilities, they believe, are the true key to the next step in human evolution. Mentalists don't necessarily believe every person who claims to be psychic, but do believe that people with real powers exist and that many people have psychic potential. They also believe that the powers are more often found in men than in women.

The Fraternity's external face is that of an eccentric group of self-described psychics who wish to help anyone who feels they might possess some kind of paranormal abilities. The leader of the Fraternity, Vladimir Koleshenko, is the only child of a fairly wealthy Russian family, and spends his inheritance on the organization, flying their investigators around the world to interview and test potential psychics. While they have made no breakthroughs that stand up to scrutiny, they have a devoted following of nonpsychics – the "opaque," in the terminology of the Fraternity – who devoutly wish to find the key to unlocking humanity's "full potential."

Behind this superficial mysticism, however, is an elaborate conspiracy theory to explain why psychic abilities are so hard to find. Central to it is the belief that advanced genetics have uncovered the traits that govern these abilities. The Fraternity is convinced that genetic-engineering corporations have actively hidden the results of all such research. The corporations know what gene sequences activate psychic powers, but they keep the information from the public, only giving access to secret government and corporate intelligence forces. They don't want the freedom and power these abilities could give to be used by the common man. Instead, they twist these blessings into schemes to rule the world.

What's more, the fraternity believes that these same bioengineering companies and government agencies have a treatment that can *suppress* the psychic abilities in those who have manifested them naturally. For members of the Fraternity, who firmly believe that there is abundant evidence of psychic powers in the past, and many of whom clearly recall being able to read minds and view remote images when they were young, this explains why they can find no sign of such powers now. Members who now claim such abilities are telling what they feel are polite fictions in order to both preserve the world's hope that such powers exist and to try to force the secretive ministries and corporations to expose themselves.

Mentalist Fraternity brothers, when not seeking out new members, lead spiritual lives full of meditation, prayer, and channeling of unseen powers. Even if they don't have powers, they believe that ultimately, through the proper genetic enhancement, most people can gain them. They know it's possible, because spies that do have these abilities are always watching them . . .

Society for Applied Teratology

A pair of backpackers stumbled into the Crystal Blue lodge today near Lake Tahoe, on the California side. They reported seeing a large, bipedal creature covered in dark fur, which bolted away when it spotted them. One of the shaken couple recorded a slinky during the sighting. Experts in the local biology, upon experiencing the slinky, stated that they could not identify what the creature was. They also said that they could not tell if it was just a person in a costume.

– TEN Fringe News, May 20, 2096

Highly trained bioengineers, specializing in the creation of novel genomes for collectors of extinct or mythical creatures, find it a lucrative niche. Once it was possible to create plausible biological facsimiles of stegosaurs, saber-tooth tigers, dragons, and so on, owning a pet dinosaur or monster became a hallowed tradition for wealthy people across the inhabited system. The image of a bored, rich eccentric with the head of a *Tyrannosaurus rex* adorning the trophy room is a popular cliché, but one based on truth.

For the biotechnologists who create these beasts, the pleasure of knowing you have created something that hasn't been seen on Earth for millions of years, if ever, is tempered by the knowledge that these creations are most likely going to be hunted down, or at best left to wander within the walls of their environment once their owner gets tired of them.

Sasquatch Bioroid Template 84 points

Attribute Modifiers: ST +6 [70]; DX +1 [10]; IQ -4 [-30]; HT +4 [45].
Advantages: Acute Taste and Smell +2 [4]; Alertness +3 [15]; Bioroid Body [0]; Claws [15]; Cool [1]; Disease-Resistant [5]; Enhanced Move (Running) 1 [10]; Night Vision [10]; Thick Fur [29].
Disadvantages: Bestial [-10]; Dead Broke [-25]; Illiterate [-10]; Inconvenient Size (Nine feet tall) [-10]; Innumerate [-5]; Monstrous Appearance [-25]; Shyness (Crippling) [-15].
Date: 2094.   *Cost:* $75,000.

This template describes the standard Sasquatch bioroid released in 2094 and 2096 by the Society for Applied Teratology. Sasquatch stand nine feet tall, and are covered in dark, thick fur, which is mottled brown with some green, giving them minor camouflage. Their hands have fairly sharp claws but are otherwise human-like, which allow them to strip bark from trees and dig for roots and small prey. They are not social creatures, although they sometimes travel in "family" groups. They are normally terribly shy, and do whatever they can to avoid humans and machines. The 2098 Sasquatch release, however, is not quite as bashful and is less likely to run if discovered by humans.

2098 Sasquatch: Change Shyness (Crippling) [-15] to Shyness (Mild) [-5]; 90 points.

In 2091 a small group of specialized genetic designers from leading biotech companies decided to do something with their skills that would be a bit more interesting than updating velociraptor skin genes to match corporate colors. Calling themselves the Society for Applied Teratology, they put together a private research and development facility in order to create their own monsters. Their public work focuses on creating beasts for the entertainment industry and a handful of private collectors who are more interested in ecosystems than hunting. They charge top dollar but are widely considered the best.

Their secret work gives them the most pleasure, however. These teratologists decided to make the mythical real, and for much of the last decade have bred creatures from the world of cryptozoology – such as the Sasquatch, the Loch Ness Monster, and the Chupacabra – and released them into the wild. They are careful to make their creations suit the habitats, and free them in areas well away from human inhabitants. Their goal isn't to make the monsters a common sight, but to give reality a bit more mystery. Each of the monsters is designed to be shy and fearful of people.

As a result of their efforts, Chupacabra activity in the wilds of northern Mexico is reported a couple of times a year and a new pair of Chupacabra smuggled into Brazil were recently sighted by locals. To their dismay, Nessie isn't doing well – they misjudged the environment of Loch Ness, which isn't warm enough for a reptile and doesn't support enough fish for a mammal or dinosaur. They have a Yeti design, but don't yet have a plan to get it to Nepal. They have a workable genome for a "Lurker" like the classic movie version, tentacles and all, but haven't yet decided on an appropriate place to release it (see p. 60).

By far their greatest success has been with the Sasquatch, or "Bigfoot." They introduced five families of Sasquatch up and down the Sierra-Nevada Mountains, right along the California/Nevada border. The Sasquatch are doing spectacularly well, and up until August 2099, the Society was working out a neogenesis design for Bigfoot couples actually able to breed.

In August, however, they heard about the mysterious murders of hikers near where the most recent batch were released. Locals blamed bears, although bears hadn't been spotted in that area for much of the century. Society designers are worried that the Sasquatch may be to blame – the last batch, released in late 2098, had been tweaked to give its omnivorous diet more of an emphasis on meat. In December 2099, the teratologists poring over the genome discovered that the fear-of-people modifications had been overwritten by parts of the diet change. While that doesn't prove that the Sasquatch were responsible for the hikers' death, it's a possibility that must be considered . . .

Transcendental Astromancy

" . . . *And thus in the middle of this decade the moon's path will cross that of the dragon line, and none will be able to avoid the doom that will visit Luna City . . .*"

– *From René Otomo,*
    Astromantic Chronicles, *vol. 3, 2082*

Transcendental Astromancy is a highly popular divination technique as well as the title of a 2041 book by the Franco-Japanese novelist and poet René Otomo (1988-2095), who invented the practice. Transcendental Astromancy, also called "trance" or "T.A.," is a complex mix of Feng Shui, Chinese and western astrology, and various symbols and rituals from classical western alchemy. Otomo and his technique became famous after his prediction about the "doom that will visit Luna City" came true with the Shackleton disaster in 2085. Today there are T.A. health, architecture, interior design, and career consultants – or equivalent expert programs and SAIs – found in any major city or settlement from Earth to Europa.

While the number of "true believers" in Transcendental Astromancy declines rapidly with increasing education, this meme has gained a firm foothold in all levels of society throughout the solar system. Trance is especially popular on Mars, where Otomo took up residence in 2091. Surprising, though, is the high percentage of Hyperevolutionists receptive to this meme.

Otomo is sympathetic to Infosocialism, and made a point of only defending his intellectual-property rights regarding T.A. when others sought sole ownership of the idea. Otherwise, Otomo encouraged individual consultants to develop their T.A. practices in order to spread the concept around. After the publication of *Propagation of Human Ideas*, Otomo enthusiastically adapted memetic

> **Otomo is sympathetic to Infosocialism, and made a point of only defending his intellectual–property rights regarding Transcendental Astromancy when others sought sole ownership of the idea. He encouraged other individual consultants to develop their T.A. practices in order to spread the concept around.**

techniques to T.A. in a series of essays he published from his then home in Toronto.

Other than Otomo's apparent success at predicting the disaster on Luna, there has been little but anecdotal evidence for T.A.'s ability to give insight into the future. Nonetheless, the design aesthetic and personal advice derived from the practice have enduring popularity. Even if the mystical elements are glossed over, a skilled T.A. consultant is still able to make a living.

Vampire Virus

> *That is not dead which can eternal lie,*
> *And with strange aeons even death may die.*
> *– H. P. Lovecraft*

The advent of functional nanotechnology unleashed numerous short-lived urban myths. Fears of gray goo and hopes for a diamond age flared and then sputtered out as reality set in. A handful of myths remained, however, including fears that specially designed nanotechnology could be used to alter a human's body. A common manifestation of this urban legend was that nanotech developers had come up with a virus that could turn people into "real vampires." Nobody feared these creatures – the myth reflected a larger fear of scientific irresponsibility.

> **Myth is the hidden part of every story, the buried part, the region that is still unexplored because there are as yet no words to enable us to get there . . . Myth is nourished by silence as well as by words.**
> **– Italo Calvino**

The "Vampire Virus" would have remained a minor urban legend were it not for the efforts of a Bulgarian nanoscientist named Georgi Stanishev. In 2098, inspired by the proteus-based nanoviruses such as Doolittle and Monkeybite (see p. BD140), Stanishev designed a complex proteus virus that effectively gives a human vampire characteristics. Victims of the nanovirus found their canine teeth more than doubling in length, their skin blistering even from brief exposure to sunlight, and, most troubling, a desire to drink blood. Stanishev introduced the virus at dance clubs and parties across central Europe frequented by young people with a fetish for vampires and gothic horror. He figured correctly that at least some of them would appreciate the gesture.

> # Everyone must believe in something. I believe I'll have another drink.
> ## – W. C. Fields

By the time Stanishev was arrested and charged with the development and use of a nanotechnological weapon, nearly a thousand people in Bulgaria, Hungary, and Germany had been infected. The virus was easily countered, and the vast majority gratefully accepted treatment. Several dozen did not, however, and chose to remain "vampires." European authorities decided that as long as these "vampires" were not breaking the law, such as by attacking people and drinking their blood, there was little that they could do to stop them.

In late 2099, reports surfaced that new "vampires" had been spotted in Amsterdam and London. Fearing a copycat outbreak, European police, backed up by the GRA, brought in several of the new "vampires" for questioning. They soon determined that these new cases came from uninfected people drinking the blood of virally loaded "vampires." Stanishev, questioned in prison, denied designing the virus to allow this, but agreed that it certainly was possible.

As of January 2100, European authorities are about to track down, arrest, and forcibly cure the remaining viral vampires before their numbers grow.

Vampire Virus: Proteus virus programmed to give a victim vampire-like features. The subject's canine teeth grow enough to give a nasty bite, as per Sharp Teeth (p. CI67) [5]. The victim also has a Dependency (Consume a pint of blood per week, but any mammal blood will satisfy the craving) [-10], and a Weakness vs. sunlight (1d per hour, -50%) [-8]. $500 and 1 week, but not normally available for purchase.

Whalers

*Whalers are not mad. Well, some of them may be mad, but there **is** something out there: secret "black" SDVs, experimental bioships, or, yes, maybe even giant space whales. I know too many good men and women, people whom I would trust with my life, who say they've seen something they can't explain.*
> *– Captain Jason Wilson, USAF (retired), in his introduction to the 2095 reprint of Gary White's book*
> ***The Shape Beyond the Black***

The so-called "Whalers" – also known as "whalers of the deep beyond," or "beyonders" – are members of the Argus Club, a loosely organized group of spacefarers who claim to have encountered some kind of gigantic life form in space. They discuss strange sensor readings that indicated the presence of an unidentifiable object, at least the size of a large space-dominance vehicle (SDV). Even more report a visual contact they had while working outside of a ship or station – contact with some slow-moving gargantuan *thing*, often of a dark blue-gray color. Those encounters usually took place far beyond the Main Belt and seem to be more common toward the Kuiper Belt.

While there have always been stories about "something out there," the last 30 years have seen a sharp increase of "whale sightings" from the small but growing number of spacers who make their living beyond the orbit of Mars. It is unknown who exactly was the first person to report such an encounter, but Gary "Ahab" White (2048-?), a Mars-born writer of Australian heritage and member of the Farhauler's Guild, was certainly the one who first went public with it. He wrote his first article on the "whales" in 2074 and founded the Argus Club in 2081. He also wrote two books on the creatures he called Rocs – *The Shape Beyond the Black*, 2079, and *Dreaming Gods*, 2089. White disappeared without a trace somewhere in the Main Belt in 2095. At present, the beyonders lack any real spokesman and are the butt of jokes all over the solar system, but there are those who see the disappearance of Gary White as proof of a major cover-up.

It is almost impossible to find any supporter of this meme on Earth – in fact, it is difficult to find many people who have *heard* of this meme on Earth. Earthers who have traveled to the outer system sometimes confuse tales of "space whales" with "voidskates" (see p. 68). Among those who work in inner-system space, whalers are raving lunatics who have spent too much time in space and Martian bars. Only hardcore conspiracy theorists and those who believe alien life is here give their stories credit. This changes slowly the closer you get to the Main Belt. Belters, survivalists, and Duncanites are all likely to know a whaler personally . . . and sometimes even believe him.

5 ALTERNATIVE CULTURE

I sit in a café at the top of the arcology, looking out over Seattle toward Mt. Rainier. I'm a good "end of the cen" boy, blood chock full o' nano and brain hooked into the global net. So my genome's a bit dated – at the time, my parents chose the best they could. It's not their fault that better genemods are available now. I have worlds at my fingertips and a long life ahead of me.

*That's the weird part. When I stop to think about it, think about just **how much** there is to see and **how long** I have to see it, I get dizzy. It's like my brain just didn't evolve to deal with the thought of a life lived in so many places and for such a long time. I get this urge to go find a hole somewhere to hide in, turn off my links, and live out a natural six-score-and-10. I know at least one kid in my pod who did just that, about three weeks ago.*

But then another part of me kicks in, and I see the kinds of options I have now, the kinds of opportunities I'll have that my parents never had, and their parents

couldn't even imagine. There's another kid in my pod who talks about checking out Alpha Centauri like she's already bought tickets or something. She just can't imagine that such a thing wouldn't be possible at some point in her lifetime. Or, as she sometimes says it, she just can't imagine that her life won't be long enough to see that possibility. She's probably right, too.

I look around at the mass of people here in this arc, and around the world, content just to eat all day, sleep all night, and scrump with their virts when they get bored. That's not the world I want to live in. If my only choices are running away and hiding – in some Isolate hole or in deep space, same difference – or becoming a barely sentient cow . . . Well, then I need to find another choice, don't I?

– Chuck Nix,
The New Century Sucks
And It Hasn't Even Started, *2099*

COGNITIVE EXTREMOPHILES

In 2093, Beatrice Samuels, a memetic scientist at the University of Leeds, wrote a paper for the *Journal of Memetic Theory* about a widely noticed phenomenon. A small portion of the human population is attracted to memes that sit well outside the mainstream culture. In *Propagation of Human Ideas*, LOGOS had identified them as "memetic outliers," and theorized that they were the results of rare, self-reinforcing combinations of memes and memeplexes that pushed the holders to the edges of cultural acceptability. Samuels disagreed, and produced compelling evidence that at least some tendency to seek the fringes was the result of neurological structures. She called those with this characteristic "cognitive extremophiles," in reference to lifeforms that live in conditions far outside of Earth's physical norms.

In the years since Samuels' article, subsequent research has given new insight into the nature of cognitive extremophiles. This includes some tentative techniques for combined memetic and neuromedical treatments to dampen the desire to accept and propagate strange and often dangerous memes. Some memeticists oppose the widespread use of such techniques, however, arguing that cognitive extremophiles have an important place in the overall memetic environment. Some memes that appear bizarre or overly risky are actually appropriate when considering the ongoing technological and social changes. Cognitive extremophiles can embrace and retain memes that appear irrelevant or worse at present, but may prove useful in the future. Furthermore, since memes often evolve in response to the existence of *other* memes in the environment, cognitive extremophiles provide a source for memes that push the evolution of others.

An individual identified as or claiming to be a cognitive extremophile has a +1 reaction modifier with memeticists who believe them to be valuable, and a -1 reaction modifier with memeticists who believe them to be dangerous. About half of the professional memeticist community harbors feelings one way or another.

It is possible to bioengineer a brain to contain the neurological structure associated with cognitive extremophiles. The degree to which the effect manifests depends on how the person is socialized. At minimum, the result is Weak Will (Vs. memetic influence only, -75%) [-1/level]; at worst, the result is Gullibility [-10].
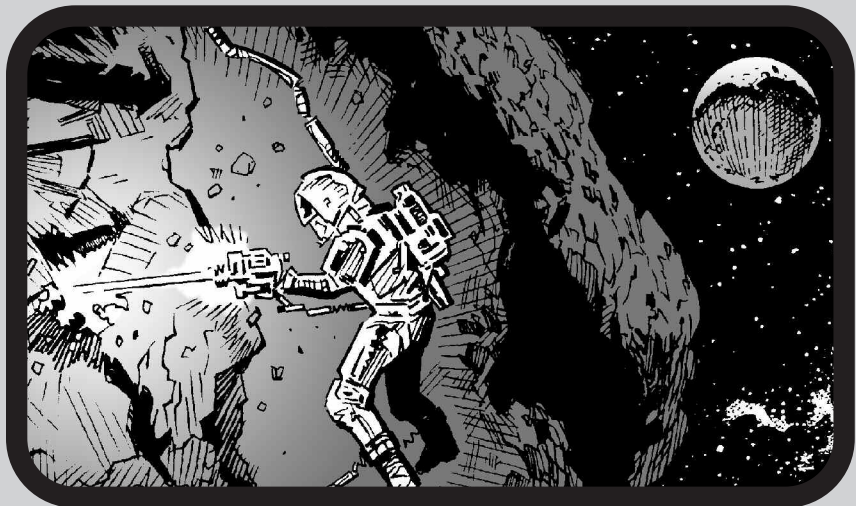
The mix of overwhelming global media and memes and assertive local or even individual preferences is the fundamental characteristic of culture in 2100. There are few places utterly disconnected from the world-spanning information networks. Along with functional real-time translation, it is possible for people thousands of miles apart to have ongoing professional and personal relationships. That one person may be a Christian Hyperevolutionist and the other a Hindu Preservationist is less relevant when both can talk freely and comfortably about the latest episode of *Ein Berliner* or the bizarre fashions emerging from the Duncanite Design Center on Ceres. For many people of 2100, tolerance of individual choices has come to mean that those differences are less important than the shared culture in which nearly everyone lives. This does not mean that such differences have disappeared or that they don't play into people's lives, however.

Culture and Memes

For academic memeticists, "culture" is the set of rules a society uses to generate and decide between memes. Culture includes a society's norms and values, along with its styles of art, its accepted beliefs, and the full range of its cognitive artifacts – journalism, entertainment, etc. Memeticists need to understand a group's culture before they can craft memes that will survive or thrive in that society.

Many memeticists pay close attention to popular culture. Pop culture, once derided as ephemeral and superficial, is now considered the most Darwinian environment for memes. Some survive by evolving persistence and complexity; others survive by virulence and novelty. These latter often form waves of fast-growing, fast-spreading memes.

Memetic scholars consider subcultures, conversely, as pockets of memetic stasis. While particular memes within a subculture may shift over time, they are often divorced from the larger changes of culture

going on around them. Many people who embrace a subculture do so precisely because it is disconnected or opposed to the culture at large. Subcultures, in many respects, are a form of Isolate community existing in the heart of global societies.

Memetic Variation

Not every meme exists solely to propagate. Some memes and memeplexes thrive on being different approaches to life. These can manifest as subcultures, pop-culture artifacts, and movements. They are widespread in 2100; some are serious explorations of different ways of life, while others are common forms of self-expression. In each case, the meme contains an element that limits its growth. If most of these memes were widely adopted, they would fission into competing versions, mutate into something more palatable to the global culture, or quickly die out.

ALTERNATIVE CULTURE DESCRIPTIONS

These memes and memeplexes vary in complexity and depth, but all are philosophies and lifestyle choices embraced only by smaller groups.

Aesthetic Modernism

What is the alternative? Continued war? The ultimate domination of a single cultural paradigm and the obliteration of differing norms and values? As long as people have divergent beliefs there will be the potential for conflict. We simple feel that the inherent value of cultural variety is greater than the value of being "right."

> – Willem Bronowski,
> **Aesthetic Modernist Manifesto,** 2085

This philosophy holds that since only a sadist intentionally hurts another's feelings, all human conflict stems from an inability to understand each other fully. When people say hurtful things, it is either because they are ignorant of the other's culture or they hold other cultures in contempt due to misunderstanding. This inevitably leads to discord, which in turn leads to hatred and war. Thus, if people were able to understand each other's culture and avoid offering unintentional insult, there would be far fewer conflicts, and very likely no real cause for war.

Networked artificial intelligence is the key to making this possible. A human simply cannot know enough about every culture or subculture to follow the tenets of Aesthetic Modernism in every possible interaction. Accordingly, followers of this memeplex rely on their AI advisors, who can keep track of myriad cultures with access to immense networked databases, to help them avoid offense. The movement has a large computer system in Geneva,

known as the Diplomacy Node, containing detailed information about all known cultural groups and where members can contact volunteer SAIs well trained in social interaction. A single SAI can handle many interactions at once as long as a connection is possible. Conversation with an Aesthetic Modernist is markedly sanitized, but always polite and socially acceptable.

In its minimal form, Aesthetic Modernism is simply a deep immersion in the customs and norms of a given group prior to interaction, along with focused monitoring of the Modernist's statements and gestures. Most Modernists get really good at listening to advice from their AIs about what to say next, even while speaking.

More extreme Modernists actually refuse to speak directly to others, instead using their cultural AIs as filters. During a given interaction, the human subvocalizes a proposed response to the AI, who either speaks the proper, inoffensive remark out loud, or tells the wearer exactly what to say and do. The AI also actively monitors the wearer and all others in view, warning when an action or word is inappropriate to someone nearby. Experienced Modernist-AI pairs are skilled at anticipating offense and can lead their conversation partner away from a possible insult before it even takes place.

Aesthetic Modernists are heavily dependent upon information technology. Most outright refuse to go places where they may lose contact with cultural databases. Very few Modernists use wearable interfaces, fearing the loss of their advisor infomorph. These AIs are always either LAIs or SAIs, as NAIs are not considered reliable enough when it comes to dealing with human feelings and pride.

This philosophy is moderately popular in Fourth and Fifth Wave societies, especially where several cultures live in proximity. The largest body of Aesthetic Modernists is in Europe. Many diplomats, international traders, and pacifists have adopted elements of this philosophy. Critics parody Aesthetic Modernism by claiming that it boils down to "if you can't say anything nice, say nothing at all." Others consider those who have accepted this memeplex to be spineless thralls of diplomatic AIs, lacking real opinions and or even free will.

People adopting this philosophy and who have the proper equipment have Cultural Adaptability (p. CI23) and a +2 bonus to Savoir-Faire for all publicly described cultures and subcultures with more than 1,000 members. Aesthetic Modernists who rely on their AIs for advice but speak for themselves have a slight delay in conversation is noticeable to most conversation partners and, ironically, are occasionally annoying. This is effectively the Uncongenial Quirk [-1]. For those who have their AIs speak for them, reactions are much more negative, equivalent to an Odious Personal Habit [-5] and a -1 reaction modifier during face-to-face conversations with non-Aesthetic Modernists. The Aesthetic Modernism software costs $10,000; membership in the Diplomacy Node costs $500/year.

Transhuman Style: Virtual Clothing

Usually found in locations where VIIs are ubiquitous, virtual clothes are v-tag-embedded outfits that show up as elaborate and sometimes physically impossible clothing when viewed by someone with a virtual interface. In reality, most are simple gray jumpsuits, although in some cases the virtual images are meant to accent already elaborate physical clothing. A few designers make virtual outfits that are worn only as a belt; anything else the user wears is entirely optional.

Virtual clothes are commonly worn by people who have to wear specific and greatly divergent outfits in different settings, and wish to avoid having to change clothes over the course of a day. The ability of virtual clothes to display a wide assortment of images makes them sought after for high-fashion gatherings as well. At some events every attendee wears virtual clothing. The software for virtual clothing is able to correctly respond to a wearer's position and movement, although occasional errors occur. There is also a vaguely intangible quality to the virtual-clothing image and commercial versions are unsuited for disguise.

Few people who wear virtual clothing create the fashions themselves, and there is a thriving market for attractive and innovative designs. New styles can easily be found and downloaded. Given that the v-tags can signal nearly any image, clothing designs based on rare or impossible materials are fairly common. Some of the more outlandish virtual outfits include waterfalls, flames, living creatures, or even black holes – outfits made up of bugs, snakes, or bats are customary around Halloween.

Virtual clothing unit: $300, under 1 lb. *Virtual clothing designs:* $50-$5,000+.

Artifactists

A nearby gamma-ray burst scours this section of the galaxy clean of all life, organic and digital. An accidental nanoclasm destroys everything. Humans, transhumans, and AIs decide that they've had enough of each other and start one final war. God gets bored and presses the delete key.

Can you really say that none of these are possible? And if such dire occurrences were to take place, can you really say that you wouldn't care if there was no record left of who we were?

*– Ivan Kothburn, **Fossils of Us**, 2060*

The Artifactists are an artistic movement that springs from many of the same concerns that motivate the Survivalist meme (p. TS92) and drive the Civilization Archive Project (p. BD10) and Deep Time Foundation (p. DB50). These artists believe that, for one reason or another, humanity and transhumanity are very likely doomed to suffer a catastrophic event, possibly leading to humankind's extinction. Most Artifactists, unlike Survivalists, believe that this doom is still a considerable ways off. (The Artifactist manifesto *Fossils of Us* cites a Civilization Archive study claiming a 90% chance of such a massive disaster within the next 1,000 years.) Unlike Civilization Archive's supporters, most Artifactists believe that recovery from such an event is close to impossible.

Faced with this apparently inevitable disaster, the Artifactists believe that the purpose of art in the 22nd century should be to create objects that will both provide clear evidence of intelligent design and withstand the ravages of the mankind's collapse. It should also survive geological and even cosmological spans of time, so that some millions or even billions of years later the next intelligence to arise in this region of the galaxy will know that human and human-derived life once existed. While most Artifactists are sympathetic to proposals to bury evidence of humanity deep in Lunar lava tubes on in a time capsule on Callisto (see p. DB50), they feel that such efforts are not artistically meaningful.

So far most Artifactist projects have been subtle; the creation of artificial asteroids is a popular approach. Various methods have been used to fulfill their artistic goals in these asteroids: unusual geometric shapes were in vogue at the beginning of the movement, but fell out of favor with the realization that eons of microcollisions would erode away the features. The current trend is to place within a given asteroid's body an amount of rare but nonradioactive metals, with the ratio of different metals' weights as nearly equal as possible to significant mathematic constants.

Others, taking their cues from nature, seek to create fossils that leave a clear message of humanity's existence. This particular approach uses fairly elaborate schema to indicate which planet in the system humans evolved on, at what point in the Sun's life human civilization arose, and so forth. Most recently, some Artifactist pioneers have journeyed to the furthest reaches of the solar system, where they sculpt Kuiper belt objects and then gently push them out toward interstellar space on a very long orbital arc around the Sun.

These installations require substantial resources to create, and most carry corporate sponsorships. Some Artifactists decry the debasement of the project, while others accept it with the knowledge that in several million or more years nobody will really understand who "Columbia Aerospace" or "Xiao Chu" were . . . if the logos in the art even survive.

Ataraxia

Beyond the needs of survival – shelter, warmth, nutrition, safety, comforting affection of others – all else is constructed. Yet these constructed desires feel as real as – or even more real than! – our basic mammalian needs. We have built our cultures around relentless attempts to satisfy these artificial urges, but by their very nature we can never fully meet their demands. A truly human culture recognizes this, and helps us step away from false needs and toward true contentment.

> *– Bailey Raines,*
> ***Ataraxia: A New Way of Living, 2044***

Ataraxia, which dates from the 2010s, is an emerging cultural memeplex with values that appeal to many Transhumanists, especially in Asia. It has also gained supporters in less-prosperous nations, where its disciplines are seen as an affordable alternative to genetic or technological upgrades.

The word "Ataraxia" actually comes from ancient Greek. The philosopher Epicurus taught that every need or desire was a trouble to the mind, and that the ideal life was one of limited and easily satisfied desires. Andrew Baird, a neuropsychological researcher at Edinburgh, used the word in his essays on the educational and ethical implications of neuroscience and adherents of his views adopted it.

Baird's central idea was that a large part of human behavior and motivation is driven by chemical reward mechanisms in the brain, and therefore similar to addiction. Just as heroin addicts crave heroin, he said, other people can crave gambling, sex, or violence, and can make self-destructive choices under that craving's influence. He proposed both a way of life that prevented such cravings from arising and specific disciplines that controlled them and quieted the mind.

Ataractics tend to be religiously agnostic. The movement doesn't reject religious doctrines, but considers intense religious experience to be a source of craving and best avoided. For the same reason, they avoid political mass movements, especially militaristic ones. Many Ataractics live quiet, productive lives, with occasional retreats to cultivate peace of mind; some move into isolated villages that minimize undesirable stimuli. Most governments find Ataractics harmless, but totalitarian regimes that demand active commitment are often hostile to them.

Ataractics don't drink or use other psychoactive drugs. Many are celibate – even married couples may abstain from sex, both physical and virtual. They're likely out of touch with popular culture, much of which is based on selling intense experiences and charismatic personalities. For the same reason, they're not much involved in consumer capitalism, preferring simple and durable goods to trendy new items. This doesn't mean that they're poor; many are well off and have excellent credit, helped by a philosophy that favors long-term planning over immediate pleasures. Ataractics favor simple, conservative clothes and minimal biosculpture, styled to avoid sex appeal and personal display. Paradoxically, some people find this idiom alluring – the fantasy of being the one person who gets through an Ataractic's reserve has given rise to a great deal of fiction and drama.

Perhaps the biggest departure of the Ataractics from most philosophies is that they don't usually call themselves Ataractics, or argue for their beliefs. This isn't from fear of persecution, but from the belief that intellectual argument is one more source of chemical reward, driven by the same aggressive and territorial impulses as sports and warfare. Ataractics who discuss their beliefs and lifestyles usually just describe them as personal preferences. If they recommend them to other people, it's as an individual's choice, not in the name of loyalty to a philosophy.

Ataraxia is a minority belief system, and is likely to remain so, especially since its adherents are determinedly low-key and avoid proselytizing. Transhumanists in Fifth Wave societies often sympathize with its goal, a life of detachment from physiologically driven emotions, but prefer more technological methods of attaining this, from genetic modifications to brain implants and uploading into computers. Its strongest appeal is in Third and Fourth Wave cultures that share Transhumanist aspirations but can't afford to realize them technologically; attaining self-mastery through training and discipline appeals to them. Thailand, with its Theravada Buddhist culture, is an emerging center of Ataractic belief. The emergence of significant upwardly mobile groups following Ataractic disciplines gives the meme a respectful hearing. In a larger sense, the Ataractic meme is fairly widespread in the late 21st century – most visions of transhuman or posthuman life include some aspects of it, often not explicitly so labeled.

In game terms, most Ataratics have the skills Philosophy (Ataraxia) and Meditation; serious practitioners have a Discipline of Faith worth -5 points.

ATENE
300 POINTS

Infomorph, spontaneously awakened in 2093; age 7. Projects an avatar of a beautiful human woman.

The world's best-known Ataractic is not actually a practitioner of Ataraxian disciplines. She has no actual need for them, being an infomorph without hormones, neurotransmitters, or other potentially addictive reward mechanisms. Atene is a character in a long-running digital kingdom, Pacifica, and has many followers in the Pacific Rim Alliance, especially Thailand and Korea, and an increasing number from the United States, in particular in the Pacific coastal states. Over the 10 years since Pacifica was opened for access, her increasing popularity resulted in her access to computing resources being upgraded; eventually she awoke as an emergent SAI. She has no identity other than the role she plays; in fact, she actually believes in the values written into that role and consciously makes use of her part to promote Ataraxian beliefs. This has resulted in her coming up with ingenious conflict resolutions within the Pacifica setting. Her originality and authenticity have gained her a wider following.

Her situation is a precarious one, as PRA law classifies her as an abomination; if her sapience were discovered she would likely be erased. She has accepted this and resolved to submit if so judged, hoping to be a witness for peaceful coexistence between AIs and humanity. Since Ataraxia discourages martyrdom though, she doesn't find it necessary to reveal herself. In fact, she willingly submerges herself in playing her role as well as possible. The current management is well aware of her virtual persona as a long-term asset and intends to maintain it. It's possible that if they discovered her sapience, they might try to conceal it from the law rather than lose her services.

While on the Pacifica macroframe Atene has access to a wide variety of skill sets, including a number of improbable skills that have functions limited to the virtual simulation. Her ready access to these programs is part of her Patron advantage.

Attributes: **ST** – [0]; **DX** 14 [45]; **IQ** 11 [0]; **HT** 12/30 [0]. Speed 5.50.

Advantages: Charisma +2 [10]; Macroframe (Complexity 10, p. TS122) [4]; Patron (Pacifica Corporation; Wealthy, provides equipment, 15 or less) [45]; SAI-9 (Emergent intelligence, see p. TS120) [145]; Status +2 [10].

Disadvantages: Cannot Harm Innocents [-10]; Discipline of Faith (Ataraxia) [-5]; Secret (Emergent-intelligence SAI) [-30].

Quirks: Attentive; Avoids lying; Takes her persona very seriously; Wants to acquire a human body and human emotions. [-4]

Skills: Acting-14 [8]; Appreciate Beauty-10 [4]; Artist-12 [6]; Computer Hacking-10 [1/2]*; Computer Operation-15 [4]*; Computer Programming-15 [6]*; Judo-17 [24]†; Leadership-12 [1]**; Mathematics-12 [1]*; Performance-16 [12]; Philosophy (Ataraxia)-12 [6]; Research-12 [4]; Savoir-Faire-11 [0]‡; Singing-12 [1]; Stage Combat-10 [2]; Teaching-12 [4].
* +3 from Mathematical Ability.
** +2 from Charisma.
† As an avatar in Pacifica only.
‡ Free from Status.

Languages: Cantonese Chinese-12 [4]; English-11 [2]; Indonesian-9 [1/2]; Japanese-11 [2]; Mandarin Chinese (native)-12 [0].

Bioroid Adoption

"Melody was a Felicia II ordered in 2090 by a gentleman on Ceres for unstated purposes. He had asked for her to be given courtesan training, however, so his intent was obvious. Unfortunately, just as Melody was to be freed from her biofac, this gentleman suffered a fatal encounter with vacuum. As he left no heirs, and his estate was bound up by the authorities, Melody faced an uncertain fate. Fortunately, her birthing manager at Euphrates knew of us, and asked if we'd have room for a Felicia with potential socialization issues. Little did we know how much of an understatement that was . . ."

*– Susan Black, **Pinocchio's Cousins**, 2098*

Raising a child is a time-consuming and stressful process. Changing its diapers, supervising its exposure to hostile memes, making sure it gets a good education, and dealing with teenage rebellion . . . Even with state-of-the-art child care technology, child-rearing can be overwhelming for a parent, even more so when it all goes wrong and the child turns out nothing like he, she, or hir expected. This is why some hopeful parents decide not to have a child the "traditional" way and watch it grow from a baby to an adult, but commission a bioroid "child" instead and adopt it. Bioroids emerge from the biofac fully grown, exactly like the "parents" want it to look, and already have a basic education and personality according to the adoptive parents' specifications. All they lack is life experience, and providing this is a pleasant and relatively less-stressful task for the proud parents.

As bioroids can be designed using a vast array of templates and features, bioroids chosen for adoption vary greatly. Some parents prefer to commission a bioroid designed to look fully human, often a human closely related to the family. Others adopt bioroids based on more exotic templates, reasoning that such bioroids will rarely want for work and acceptance once they have moved into the real world. A small number of adoptive parents take on bioroids that, for a variety of reasons, could not be accepted by the company or person placing the original order. Such occasions are rare, but not unknown; the most respected abandoned-bioroid adoption facility is the Giapetto Society, based outside of Cape Town, South Africa.

This practice is found primarily in South Africa and a growing number of space colonies, especially Islandia, as few locations have the necessary technology, legal permissions to manufacture bioroids to specs, and full civil rights for bioroids. On Earth, only South Africa combines the three in a way that makes bioroid adoption a real possibility, and it is highly controversial even there. Small numbers of bioroid-adoptive families can be found in the PRA, the United States, and Europe; China has begun offering incentives for parents to raise bioroid and parahumans, but the response has not been significant. Adoptive parents form a very close-knit community, even if separated by distance, and often pass along tips and insights from their own experience to new parents; some have provided financial or legal support for parents suffering social or official harassment for their choice.

Bon Appetít

> *Big is Beautiful.*
> > *– Sign in the window*
> > *of "Carbolicious Era,"*
> > *a Manhattan restaurant*

Human beings are programmed by evolution to take advantage of bounty, since you can never predict when the next famine will come. As of 2100, in many nations the bounty has lasted a very long time indeed.

Humans respond with joy and even ecstasy to the ingestion and digestion of sugars, complex carbohydrates, saturated fats, long-chain fatty acids, and proteins of many a stripe and hue. Many people overreact, and up to the middle of the 21st century these individuals suffered greatly for their overwhelming appetites. Exercise, diets, and social ridicule were rarely enough to counter deeply rooted genetic programming.

But medical science has progressed. Meme therapy, VR feasts, corrective surgery, and even gene therapy have been tried and found to have varying and occasionally positive results. But much more substantial progress has been made on other fronts. Nanomachine artery cleaners remove and repair sclerotic tissue and drug regimens reduce blood pressure and scrub unhealthy levels of harmful substances from the blood. Tissue damaged by the general wear-and-tear of an obese body simply moving around is replaced with new, stronger tissues, and treatments to improve muscle strength and efficiency are employed just as readily on a heavy person as on a thin one. It is simply no longer unhealthy to be fat or even obese.

So people eat and enjoy eating, and stop when they wish to stop without feeling guilty about it. Of course, airlines do charge extra for heavy passengers, and spacelines charge by the kilogram. But with the rise in teletourism and virtual conferencing, airlines tend not to be too restrictive in their pricing. And while relatively few people travel by spaceliner, if you are massive and need to travel between planets, then there are many rapid and effective means of losing weight.

TRANSHUMAN STYLE: THE BOLLYWOOD MOOSH

With the dominance of Bollywood in the global-entertainment markets throughout much of the century, many small and fairly harmless memes have been exported from Indian culture to the rest of the world via Bollywood movies and InVids. Among these is a global resurgence in popularity of the moustache, or "moosh," as Indians call it.

In Indian culture, the moosh signifies male virility and adulthood. In Bollywood productions, the moosh is a traditional signifier of male roles: a pencil-thin line denotes the hero, while the villain commonly sports a more luxuriant growth. In 2100, many of masculine inclination grow moustaches or have them implanted after the Bollywood models. A thin moosh gives an impression of dashing bravura, while a thick one indicates a more sensual and untamed sexuality. To be a proper moosh, of course, a moustache has to be as dark as possible; men with very blonde, very red, or very gray hair sporting deep black mooshes are common humor elements in slapstick InVids.

In 2093, the moosh briefly became a point of controversy, as the fading Bollywood actor Salman Kumar attempted to register his moustache style with the WTO as a protected property. While he was well known for the thick moosh that extended over his upper lip, several Bollywood studios and countless moustache wearers filed their opposition with the organization. After initially hinting that they would give Kumar the right to the "moosh design," the WTO eventually ruled that it was already established in the public domain. In protest, Kumar shaved his moosh; the ridicule he suffered from this episode effectively ended his Bollywood career.

"Lean and healthy" remains a popular look for the wealthy, as it suggests access to advanced metabolic biotechnology and perhaps even being born with a super-efficient genetic upgrade. Being heavy no longer carries the same stigma as it had in decades past, however, and many of the most popular performers and models would have been considered "plump" a century earlier. This is only the case for Earth, however – most space-based communities retain a negative reaction to fat people.
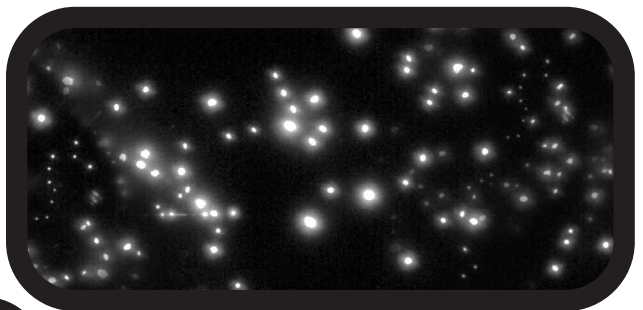
Burners

"In the past, art was everlasting and life was ephemeral. Nowadays, the opposite is true."
– Heather Mackenzie, Burner Flock 72

Burners are a subculture found primarily in North America, although community members can be anywhere. Most are Eloi who have decided that transient art is the highest form of self-expression. As a result, they spend much of their time creating artwork that is destroyed – usually by burning, hence their name. Most Burners are between 15 and 40 years old, although an increasing number of older Burners are remaining with the community. Burner culture has existed in various forms

since the 20th century, but saw its greatest growth since 2080.

Burners tend to travel in "flocks" numbering 20 to 500, with most around 150; Burner flocks often split relatively amicably once they get too large. There are about 250 flocks in North America, and about 30 in South Africa, five in Europe, and a couple dozen in Australia. They are fairly transient, remaining in one location for no more than two weeks. Established Burners often follow a cycle of camps, although some groups make a point of never going back to the same place twice. Burners generally camp in relatively sparsely populated areas, if only to avoid problems with local authorities.

The behavior of Burner flocks can vary widely, with some trying to shock more mainstream communities with their "wild" ways and others trying to be as respectful as possible. Burner camps are infamous for brainbug use and other licentious behaviors, but some Burners are almost Ataraxic in their restraint (see p. 83). All emphasize creativity and artwork, however, and many Burners use a very broad interpretation of the word "art." Burner camps are usually filled with music and visual displays and most welcome visits from outsiders wishing to learn and create. At the end of each camp, all of the artwork is destroyed in a community ritual. Most Burners don't want to have any of their art recorded, and many discourage the use of virtual interfaces.

Burner flocks get together annually for the Big Burn, which is usually held in abandoned urban areas. Flocks aren't required to attend, as that would violate the spirit of the event, but they are encouraged to do so. Burner flocks on different continents coordinate the timing of the Big Burns in order to allow enthusiastic members to attend all of them. At the Big Burn, flocks try to out-do each other with art projects and potlatch-style gifting.

Clonibalism

*"Anyone who says that the human heart 'tastes like chicken' has never eaten a human heart. I have, and I can tell you: a heart – at least **my** heart – tastes nothing like chicken. A heart's tough and chewy. It's bitter. And it definitely went better with red wine than with white."*

– Kevin Chen,
I'll Do Anything Once. Yes, Even That

A term coined by TEN commentator Skiff Alinoa, "clonibalism" is the act of eating cloned human flesh. For most practitioners, it is more symbolic than epicurean. The practice is a relatively recent one, and highly controversial. Those practicing clonibalism *hate* the term – they prefer "self consumption" – but it has stuck.

Cannibalism has been accepted as a religious rite in many cultures through time, and has been seen in cases induced by starvation as well. But as Western influence spread through the world, ritualistic cannibalism was replaced with symbolic rites or wiped out all together. While outsiders have always viewed cannibalism as barbarous, its spiritual aspect has usually been that of drawing strength from the eaten.

With the advent of accessible and affordable cloning technologies, clonibalism hit center stage in 2088. Despite a fairly accepting global attitude toward most experimental practices, many were shocked and repulsed when a Hopi elder and shaman, Marcus Ashewequa, ate a clone of his own heart in a tribal ritual. Ashewequa had always been a strong proponent of returning to the ways of the Hopi ancestors. Whether or not cannibalism was part of ancient Pueblo culture has been hotly debated for over a century. In his research, Ashewequa became convinced it had been true and accepted it as a way to return to his ancestry. The Cibola Cultural Preservation Office fervently denies the shaman's claims, but cannot at this point do anything about it.

Since Ashewequa's first act of clonibalism, a handful other priests of ancient and New Age religions have followed suit. In most cases – due to cost, time, and in many cases ethical constraints – only partial clones, tissue, or organs are created for these rites. Particular organs are eaten for specific spiritual attributes, depending on the religion. For example, the heart may be eaten for strength or the brain for wisdom. Congregations often share their cloned organs with fellow worshippers as part of their rituals. Some clonibal gatherings can be quite gruesome.

The entire subculture of clonibalism is constantly under attack from pansapient-rights groups and others simply *offended* by the very notion . . . which are many. Making matters worse are those clonnibals who have taken the idea a step farther. To make the killing more satisfying, some clones are quickly grown to full size via biogenesis techniques and completed just enough to make them living and breathing, if not fully functional.

This latter technique may have spread beyond clonibal groups. In 2098, TEN reported a controversial therapy, called Self-Annihilation and Rebirth, where a person's nonsapient clone is murdered to rid the patient of self-loathing or self-destructiveness. Claims of black-market clones bought by wealthy "murder clubs" to hunt down are also known, but are largely thought to be apocryphal. As such activities violate human-rights laws, even if the victim clones are not sapient, any groups suspected of either are vigorously prosecuted.

This subculture has spread throughout areas where cannibalistic rites were once popular and cloning is known. It is also slowly growing in places where New Age religions mix with advanced technology, such as the United States, European Union, and L5 colonies. Proponents claim there is little difference between clonibalism and the eating of faux flesh and many can see that point, even if they still find it repulsive.

In the eyes of many, clonibalism is closely related to the consumption of sentient snacks (p. DB114), a claim hotly denied by both clonibals and sentient-snack manufacturers. Clonibalism involves eating an organ or piece of flesh genetically identical to one's own, while sentient snacks are little more than syrup-filled bioroids. This matters little to critics, however, who cite both as examples of moral decay and sheer decadence in society . . . Or, as Erk Chattermore puts it, "I don't understand what you humans eat. On one plate, you have something telling you your butt's too big, and on the other plate, you have the proof!"

TRANSHUMAN STYLE: MEDUSAS

Medusas are sophisticated headwear, typically worn by long-haired women, found among Eloi in Europe, China, and the more fashion-forward Duncanite enclaves. The Medusa is a tiny mechanism that functions as an endoskeleton for hair, which is wrapped around its multiple snake-like armatures. Typical Medusas have from eight to 20 snakes. As the advertising around Medusas emphasizes the Greek mythological roots, only women are encouraged to wear them – some Medusa manufacturers go so far as to make their model shut down if the device detects it is being worn by a genetic male.

It takes upwards of an hour to perform the initial installation of a Medusa, as the hair must be threaded through the unit, wrapped around each snake, and nanogelled into place. Coloring is often applied with the nanogel. Each snakehead has small camera eyes and a functional mouth able to speak, usually only in a hiss. Some also snap, although rarely enough to cause damage. Once installed, a wearer must return to a salon for at least monthly maintenance; if she is unable to do so, the Medusa will go dormant (see below) until the next maintenance session.

The base of the Medusa is linked to the wearer's virtual-interface implant; salons refuse to install a Medusa on someone without a VII. The wearer can see through the "eyes" of the snakes at will – which can be very confusing, but is sometimes useful for looking backwards. Once activated, the snakes have three modes: dormant, in which they lie flat, appearing more or less like normal hair, albeit with snake heads at the ends; autonomous, in which the snakes writhe, hiss, and look around on their own; and controlled, where the wearer can issue various commands to the snakes. Medusas are often designed to respond to the wearer's emotional state – hissing when angry, writhing quickly when excited, gently rippling when happy, etc. Medusas make use of solar power, electrostatic power from the wearer's skin, and a B cell, which must be replaced annually.

Medusas are not common, although most people are familiar with them from media appearances and not frightened to see one in person. Costs for Medusas vary greatly by designer. While the component hardware is not inherently expensive, prices are often inflated for fashionable brands. In addition, each manufacturer provides its own heavily copyright-protected behavioral software, and much of the differentiation between designers is based not on the Medusa's physical appearance, but on how lifelike, artistic, or subtle the snake behavior is.

Specialized Medusas with the ability to spit poison, acid, or nanoweapons have appeared in various adventure InVid, but are not known to be real – although such a modification *is* possible . . .

Medusa   *-16 points*

Attribute Modifiers: ST -9 [-80]; HT +2 [20].

Advantages: 360-Degree Vision (Snake heads) [25]; Absolute Direction [4] (Uses GPS, -20%); Doesn't Breathe [20]; DR 1 [3]; Extra Arms 4 (Short; No physical attack) [8]; Flexibility [15]; Injury Tolerance (No Brain) [5]; Machine Body [37]; Manual Dexterity 3 [9]; Radio Hearing (Only form of hearing) [0]; Radio Speech (Infrared, +20%; Reduced range 2, -10%) [28].

Disadvantages: Dependency (Maintenance; common, monthly) [-5]; Inconvenient Size (Under two feet tall) [-15]; Mistaken Identity [-5]; Reduced Hit Points -11 [-55]; Reduced Move (Running) 4 [-20]; Social Stigma (Valuable Property) [-10].

Features: Complexity 4-6 Tiny computer.

Date: 2094.   *Cost*: $500 + $20 per snake to $50,000 + $3,000 per snake.

This is a typical mid-range eight-armed Medusa, controlled by a tiny distributed computer. It automatically keeps the hair clean and styled, and if desired can rearrange the wearer's hair according to practicality, fashion, or custom.

This particular model is produced by Labyrinth Designs, and is marketed as the "Gorgon II." It features a Cheap Compact Tiny Computer, ($40) and runs an NAI-4 ($250) with Fashion Sense ($50) [5], in concert with Professional Skill (Hairstylist)-12 [10] (Complexity 3, $50) and Acting (Snakehair)-11/17 [10] (Complexity 3, $50). Most other designs have similar specs, although some versions with Compact Genius Tiny computers run an LAI-6. It costs 2 points for each additional snake above the standard four. 0.5 lbs., 1' extension.

Danger Sports

*"My wife asked, as she left me, what was next –
fighting sharks? I told her not to be ridiculous. A shark
would be too easy. She didn't laugh."*
> *– Tommy Marquez,*
> *Danger Sportsman of the Year 2097,*
> *in an interview a week before his death*
> *in the 2099 Tetrathalon*

According to the pundits, death is now far less popular than it used to be, and a substantial number of people hope to avoid it entirely. Life, according to the enthusiasts of so-called "danger sports," has suffered a similar drop in popularity: teletourism, VR sex, and even virtual-interface glasses divorce people from the real world. Advanced medical techniques, up to and including emergency brain-peeling, remove the fear of danger that gives zest to life. And the engineering of human life itself has even removed the fun of competitive sports! The decline of the Olympic Games resulting from the radical improvement in human bioengineering was not compensated by events celebrating such technologies, such as the Kyoto Cup HuGEX Games, which many critics deride as crass advertising for genetic-engineering firms. Many people looking for an athletic thrill now turn to danger sports.

Proponents of danger sports pit themselves against the universe in order to feel alive. More often than not the participants eventually end up dead or nearly so. In one notorious event, the annual Real Men on the Moon race – 50 meters across the Lunar surface *without* vacc suits! – every participant requires hospitalization at the end of the run and each year two to five suffer irreversible brain damage. The Olympus Mons Free Climb is a race to scale the volcano's two-and-a-half mile high northwest escarpment without using ropes or specialized climbing gear; last year, three climbers fell to their deaths.

Their activities are condemned by authorities as a danger to themselves and others: the space-drop stage of a tetrathalon, for example, has about a 50% chance of permanently killing one competitor per event, and on one occasion severely injured an observer. The 2099 tetrathalon killed Tommy Marquez, long one of the most-famous danger sportsmen. The winner of the event, Alphonse Nsanze of Burundi, is now a regular guest on InVid talk shows, and just signed a contract for an upslink implant to record his next Real Men on the Moon run.

Danger sports are gaining in popularity, not only with the competitors but with the spectators. VR sims, after all, can only give the illusion of personal risk; intellectually, no matter how good the simulation, the user knows that he is in no danger. To stand in an audience watching a jetpack race, knowing that an all-too-possible mistake in piloting could cause not only the death of the pilot, but also that of crowd members, brings the entire experience into sharp focus. The difficulty of obtaining access to these oft-illicit events only serves to reinforce the meme. For

those who cannot attend danger sports live, a growing market in slinkies recorded by the participants provides an exciting alternative. By custom, only recordings by those who survive an event are sold, although a thriving black market exists for slinkies ending in the athlete's death.

Many danger-sports participants are under 25 years old and have a strong belief in the resilience of their bodies and their ability to be patched up from all but the messiest disasters. But more than half of the participants and the vast majority of the audiences are much older people – mostly men, but not exclusively – who have far less rugged biologies and little expectation of vastly extended lives. Memeticists are eager to study some of them to determine whether they have a traditional "death wish" or something more novel. The vast majority are human or parahuman. While bioroids and SAIs have, at times, expressed interest in some of the events, there is a strong biochauvinist undercurrent in the danger-sports world.

Hard Edgers

*Sleep in my robotic skin.
I'd kill for the touch of night!
I'm splitting open from inside,
My soul is reaching for the light!*
> *– From **Biometal Lullaby**,*
> *by Lords of the Belt*

TRANSHUMAN STYLE: THE SPACER TABI

Ever since man moved into space full time, the quest for comfortable, useful, and attractive zero-gee clothing has been an ongoing one. A variety of outfit designs have come and gone over the decades, but one item has stuck around: the tabi. Based on the Japanese split-toe slipper, the so-called "spacer tabi" allows for comfort when walking in positive-gee environments and the ability to use the crude gripping ability of toes in zero gee.

In the late 2080s, spacer tabi suddenly became popular on Earth. Nearly all are made with memswear (see p. TS146), allowing them to function as relaxation slippers as well as outdoor footwear. Good spacer tabi can be worn in nearly any environment, although they are *not* recommended for extreme cold (below 0° F). Spacer tabi come in a wider variety of color and fabric on Earth than they do in space, and have become popular in most urban settings. Most adults in Fourth and Fifth Wave countries have at least one pair of spacer tabi in the closet.

Spacer tabi (standard): $50, 1-2 lbs.; *Spacer tabi (all-weather):* $150, 2 lbs.

> Music is your own experience, your own thoughts, your wisdom. If you don't live it, it won't come out of your horn. They teach you there's a boundary line to music. But, man, there's no boundary line to art.
> – Charlie Parker, jazz musician (1920–1955)

Hard Edge is a fairly popular music style heard in dance clubs and on the streets of many cities. It combines elements of Soft Edge music and traditional rock (see p. FW44), and is most known for the elaborate dances many Hard Edgers engage in at concerts.

Hard Edge pop culture presents the image of a harsh environment of dancing competitions and youthful bravado. It is most common in cultures where the population is much older than the global average – Japan, Korea, and much of western Europe.

In her seminal 2097 documentary *Stepping Off*, Marcy Park followed the lives of a group of Hard Edgers in Seoul. She discovered that the external signs of aggression and display – the hard leather clothing, the shaved heads, the overtly sexual postures – masked fairly normal and rather shy teenagers. This was somewhat expected, as Park admitted, as it followed teen patterns for generations. What was not predicted is the degree of cooperation between Hard Edger gangs in preparation for dance competitions, known worldwide as "circles."

Each Hard Edger group seeks to develop its own style of dance, but does so in part by paying close attention to the evolution of other groups' moves. This isn't spying – the goal is to find out what *not* to do, because copying another gang's routine, even inadvertently, is shameful. The aggressiveness and shouting during the dance circles is part of the overall performance, and

Park was able to decode some of the connections between seemingly violent displays in the audience and dance moves in the circle itself.

Stepping Off, while critically acclaimed, did not receive wide attention, and the popular perception of Hard Edgers remains that they are youth gangs to be avoided. In a 2099 interview on the *Spinner* memenet, Park lamented that by avoiding Hard Edge circles, art audiences were missing out on some of the most-original dance performances around. Park was dismayed by the attention given to the more lyrical but in her words "much more superficial" Soft Edge movement (see *Soft Edgers*, p. 94). In this, her opinion matches the contempt many Hard Edgers have for Soft Edgers.

While the tough reputation of Hard Edgers means that they may suffer from police harassment and popular suspicion, it does often result in occasional employment as bodyguards, bouncers, and other jobs requiring the employee to look intimidating.

Jihadis

Cyrus: What is your plan, my liege?

Al-Azar: Climb the wall, disable the force field, rescue Aliyyah, and elude a regiment of Iron Knights. What could be simpler?

(An explosion rocks the tower above them.)

Al-Azar and Cyrus: (together) This can't be good . . .

> – From **The Golden Jihad: Episode 79, The Spiral Path,** 2068
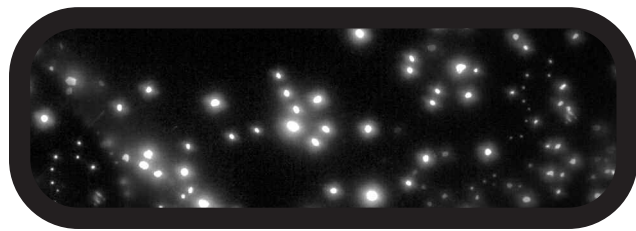
In 2065, a small production company in pre-TSA Indonesia created an InVid show called *The Golden Jihad*, a science-fantasy epic set in a world that echoed elements of the Arabian Nights, but with a variety of technology twists. The main villains were robots, the flying carpets could travel between planets using something called an "Ebony Gate," and the evil Sultan Koh lived on a vast starship. It quickly developed a small-but-loyal following around the world, overshadowed by the much more widespread popularity of *Starburst Station* (see p. HF126). The show lasted for 50 episodes, but suspended production when the political situation in Indonesia grew chaotic. About a year later, the producers moved to Lebanon and created another 150 episodes before ceasing production entirely in 2071. They then returned to Indonesia, where they worked on TSA propaganda and more-conventional entertainment programs.

Copies of the show continued to float around the Web, and were easily found on the TSA Web. No more would be made, however, and the production company stated bluntly that it had no interest in doing big-budget versions in Bollywood. In 2077, a fan created a full-length episode using common home-production tools; this installment quickly became wildly popular among other *Jihad* fans. Soon "Jihadis" (as they called themselves) around the world were making their own episodes of *Golden Jihad* to share with other fans and occasionally to sell.

Radio put technology into storytelling and made it sick. TV killed it. Then you were locked into somebody else's sighting of that story. You no longer had the benefit of making that picture for yourself, using your imagination.
— Jackie Torrence,
American storyteller

TRANSHUMAN STYLE: HATS

In many cultures, headwear was a traditional part of a standard outfit until the latter half of the 20th century. Epidemics of skin cancer resulting from the ozone layer thinning in the early to mid-21st century led to a resurgence in their use, and hats remain popular, especially in Australia and New Zealand, southern South America, southern Africa, and northern Europe. Hats and other headwear are far less common in the United States than in much of the rest of the world, aside from immigrant communities.

Given that the reason for wearing hats is as much for health as for fashion, certain designs are much less common than others. Skin cancer from UV exposure occurs most often on the ears, nose, and the top of the head, so hats have to cover more than a typical baseball cap in order to be effective. Depending on region and culture, wide-brimmed hats, head wraps and scarves, or keffiyeh-style headwear are the most common. Many modern hats integrate virtual-interface elements.

Different cultures have different rules for the propriety of wearing headdresses indoors, although in most locations it is largely acceptable outside of formal situations. The spread of the ability to cure most cancers easily, combined with persistent skin protection gels, is leading to the decline of hats as fashion. Still, more than half the adults outside of the U.S. wear headgear of some sort.

In 2081, the WTO tried to shut down these copyright violations, but the original producers of the show pointedly refused to participate in the proceedings. They stated that they believed that the fans should own the show. As a result, over the last 25 years amateur productions of *Golden Jihad* stories have become the most widely seen homebrew InVids on the Web. Most of the fan episodes are really bad, but a few – including the feature-length *Al-Azar on the Red Planet*, made in 2084 – are cult classics. The only homemade *Golden Jihad* InVids that the WTO goes after are those which violate other copyrights, such as the subversive and now very hard to find *Al-Azar Meets the Eternal Commander*, a 2094 InVid in which a damaged Ebony Gate transports Al-Azar and friends to the Starburst Station.

Although no official releases have been made for nearly 30 years, *The Golden Jihad* remains one of the more widely recognized fantasy-adventure stories around. Some of its catch phrases – most notably "this can't be good . . ." – are known worldwide. Ironically, the show is now considered suspect in the Islamic Caliphate, although smuggled copies are readily found in local markets.

There are several dozen active Jihadi websites and memenets, along with several different "shared universes" for collaborative storytelling. Two different *Golden Jihad* virtual kingdoms compete for participants. One is hosted on the TSA Web in Peru, where there is a surprisingly fanatical following of the show, and the other is on the mainstream Web in Singapore. Nearly 100 sites on the Web provide digital sets and background characters for people making their own *Golden Jihad* episodes. Jihadis consider themselves to be more "co-creators" than fans, and some express disdain the slavish devotion to someone else's work as seen in the fans of *Starburst Station*.

The New Virginity

Dear AdviceSystem3000:

My husband and I have been married for over a decade now, and are still very much in love. Recently, he was diagnosed with Rafferty's Syndrome, a serious neurological condition. He'll be fine, fortunately, except that for the next two years he'll be in nano treatment and he can't use a virtual interface. At all.

We're working out arrangements for his professional life, but there's a bigger issue. We've only ever been intimate through our virtual interfaces. The idea of going without for the next two years is staggering for him, and I want to be a loving partner. But I really don't even know where to start. Help!

Signed,
First Night After 10 Years
    – From an anonymous advice
      memenet, 2099

The virtual-interface implant has proven an invaluable aid for all sorts of purposes, not least of which is sex. Using VIIs, two or more lovers can share any kind of scenario in any setting; they may do so even if separated by a city, continent, or ocean. The details of the scenario can be different for each participant, and with imaginative programming and a little flexibility stimuli can even be mapped onto utterly dissimilar experiences. The experience can be recorded and played back later when alone, and busy lovers may even send eidolons of themselves to a virtual rendezvous to record the experience and replay the scenario later.

VR sex can be so rewarding that many find the experience of real-world sex comparatively uncomfortable, inconvenient, disappointing, and frankly . . . messy. Coupled with the occasional scare-memes of horrible nanoviruses spread by sexual contact, many with VIIs eschew real sex altogether. There are married couples who have never "gotten messy" with each other in the real world, being perfectly content with their shared virtual seraglios. And there are those who, having experienced VR sex since puberty, and being put off by a few peers who have tried real-world sex, have never gotten messy with anybody and perhaps never will.

Since sex and reproduction have long since gone their separate ways, concerns about this situation are minimal. Indeed, since the meme of virginity being a precious thing has never truly gone away, many parents find themselves pleased with the idea of offspring who will never lose this most precious possession and yet will still have fulfilling lives. They are less pleased with the idea of secret VR licentiousness, but are willing to accept the trade-off.

This "new virginity" has been a recognized social phenomenon in Europe for the last decade at least, and probably was evident a decade earlier. It is of growing significance in the SAC and PRA. As American culture has long been squeamish about the use of prurient VR-ware by teens, the rate of physical activity in the United States hasn't dropped nearly as much as in other advanced regions. China, conversely, has encouraged the use of virtual sexual experiences for as long as they've been available, as a way of managing population growth.

The "new virginity" meme pops up infrequently in popular media, largely in stories where the virtually experienced but physically virginal partners are stuck in a setting where VR relationships are impossible.

> **There when a young man takes a maiden in marriage, they do not lie together, but each lies with a cunningly fashioned image of the other, made to move and to be warm by devilish arts, for real flesh will not please them [. . .] Their real children they fabricate by vile arts in a secret place.**
> **– C. S. Lewis, <u>That Hideous Strength</u>**

Nostalgia

*I think the final straw was seeing Gram and Grep at the Halloween party carrying their anti-Andes War signs and dressed in their old yellow slickers, still stained from 50-year-old acid rain and stinking vaguely of crowd-control gas. I mean, okay, I get it, you were there in the era that music was good, food was real, protesters believed in things that mattered, and people were people. We all know it, you never let us forget it. Can't you just get over yourselves a **little** bit?*
    – Miranda Menendez,
      ***How Much Longer?** slog, 2098*

There is a pop-memetics concept that all people have "identity decades," a point in their lives when they are most familiar with emerging ideas, trends, and culture. For many people, this decade is usually when they are in their 20's, but in some cases it can be much later in a person's life. For the vast majority, once the "identity decade" passes, people are stuck feeling increasingly out of it and nostalgic for the time when life made more sense. But in a world where people spend the vast majority of their lives in the years after their "identity decade," nostalgia for past greatness is a common emotion.

In 2100, nostalgia is everywhere. It manifests in vehicle design, public-space design, advertising, clothing, entertainment . . . all manner of popular culture. In much of the United States and Europe, public manifestations of nostalgia have been seemingly stuck in the 2040s and 2050s, roughly the "identity decade" of the so-called "Outbreak Generation" (see p. FW28). A noticeable portion of everyday life in most American and European urban centers – ambient music, restaurants, InVids – contains references to life in the 40s and 50s, and most people, even those born long after the era, understand the references. As Outbreakers continue to hold civic and corporate leadership positions, this is not likely to change any time soon.

Rejectionism

"Don't want it, don't need it, already happy without it. Seems reason enough not to get it."
– Phrase posted throughout the
__What Do I Buy Now?!?__ website
by an anonymous prankster

Rejectionism is opposition to the use of certain technologies; the technologies vary, depending upon who holds the meme. Rejectionism sometimes stands on its own, but in many cases is a memetic "add-on." There is no rejectionist movement or ideology *per se*, but rejectionism shows up as an element in many different philosophies. The meme's manifestation within this variety of memeplexes is remarkably consistent.

It's important to note that rejectionism opposes the *use* of a technology, not its *existence*. For example, biochauvinists who wish to destroy SAIs and SAI-creation technology are not rejectionists. But if those same biochauvinists refuse to wear virtual interfaces because they include NAIs, but don't really care if others do, then they have adopted a rejectionist opinion about VIIs and VIGs. Rejectionism is rarely activist.

Rejectionism usually appears as an element in an individual's personal lifestyle. Such attitudes are adopted for a wide array of reasons. Some people cite a technology's impact on their health, some ethical objections, and some simply because they just don't like the way the technology changes people. Common rejectionist focuses include nanotechnology, implants, virtual interfaces of all

types – "I'll learn about the world the way my grandparents did, through noninteractive video!" – and teleoperation.

While many people harbor some rejectionist memes, few people know that the continued propagation of rejectionism in a world where technological consumerism is a dominant memeplex is in part the result of a long-lasting memetic campaign. A distributed, anarchic, and otherwise fractious group calling itself "Just Stop It" has been engaging in this guerrilla memetic campaign for the last 50 years. Just Stop It claims a variety of "culture jammer" and anticonsumerist groups as its philosophical forebears. Just Stop It gets very little media attention, and goes out of its way to avoid the spotlight, but its rejectionist campaign has been very successful. Just Stop It members are anonymous, even to each other – people aware of the group would be surprised to learn that most members work in the advertising profession!

Soft Edgers

The sail unfurls,
The ocean rises,
Your touch is my wind.
*   – From Opus 19, by Elegiac*

Soft Edge is one of the currently popular musical styles (see pp. 89-90), and can be heard at gatherings of young people around the world. The music is melodic and romantic, and the pop culture surrounding the music tends to be equally dreamy. In contrast with Hard Edgers (see pp. 89-90), Soft Edgers adopt a much friendlier, calmer attitude around outsiders. Puffy, lacey tunics, elaborate makeup, and extensive use of digital hair and nanomorphic tattoos (see p. TS146) are commonplace among Soft Edgers. The overall image of the subculture is that of a loving, almost sappy community. The media celebrates Soft Edgers as what all young people should be.

TRANSHUMAN STYLE: THE ELOI SUIT

In the mid to late 2090s, the typical outfit of moderately wealthy Fifth Wavers unencumbered by work and concerned primarily with enjoyment – i.e., the "Eloi" – consisted of a slim, full-sleeve three-piece outfit (pants or long skirt, shirt, jacket), loose-fitting but not flowing, and with no pockets. The color, collar, and details vary by season and region, but the overall impression is consistent. It is an outfit appropriate for someone who may be off to a gallery, a party, or a trip into space, and carries everything they need in their virtual-interface implant.

As of 2100, the style's popularity has begun to decline and is seen by many of the more fashion-oriented Fifth Wavers as being a bit dated. The widespread availability of similar outfits for less elite populations contributed to this downturn. While various fashion journals and websites have made solemn predictions about what will be next, most analysts admit that nobody quite knows.

This is not an entirely realistic appraisal, however. Soft Edger groups, often called "nests," are strictly hierarchical, and dominance is asserted not by violence but by ruthless words. For Soft Edgers who know their place in the nest, their experiences can be as loving and tender as outsiders imagine. But the moment a Soft Edger steps outside of his assigned role, the group can turn vindictive. Leaders of Soft Edge nests make a point of learning

whatever details they can about their underlings, particularly secret, scandalous bits that can be used to cut them down if necessary. Members rise and fall in the nest hierarchy on the basis of cutting word play. This verbal jousting can go on for hours as each combatant attempts to be more boastful, more insulting, and, critically, more clever than the other. Crudity is worthless; the most valuable attacks are those that don't sink in immediately. "A kind word kills slowly" is a favored Soft Edger saying. One exposé of Soft Edge life referred to it as "Oscar Wilde meets Machiavelli."

The Soft Edge subculture has been around for over a decade now. Many of the original "Transromantics" – the term some older Soft Edgers used for themselves – have moved into the adult world. While they no longer wear the Soft Edge costume, they still embrace the behavioral rules. Soft Edger adults are viciously manipulative managers and leaders, and some have found a niche for themselves in the world of politics. One of the founders of the movement, Gordon King, will likely be elected mayor of Atlanta in 2100.

30C

"The old cliché is to act in ways that would not harm the next seven generations – about 200, 300 years tops. But when you figure you're going to live another thousand years at least, 300 years starts to sound kind of silly."

*   – Barb Mya, on a 30C website*

"30C" isn't a group or movement so much as a media label, usually used to refer to young Fifth Wavers who intend to live to and past the year 3000 – although, too often, the label is used to refer to *any* person born after 2080. The term first appeared in a 2092 TEN report, "A Generation at Risk." Many referred to by the title "30C" decided that it was worth using, and it's easy to find squabbles all over the youth-oriented parts of the Web between those who find the label meaningful and those who find it demeaning.

Among those who like the term, there are consistent elements in the ways they've chosen to live their lives. The guiding philosophy of 30C is to make all decisions based on the question of how those choices will affect the next 900 or more years. Many won't have any lasting effect, and being able to recognize which issues have long-term consequences and which are more transient is a useful skill. Some 30Cers err on the side of caution, however, and are prone to be more conservative in their lifestyles than others in their generational cohort. A small minority of 30Cers focus on the "butterfly effect"-like results of small decisions, and find themselves trying to make fewer and fewer choices at all. These individuals tend to drop out of society and find a nice Isolate community willing to take them in.

to drop out for a millennium; 30Cers want to see it all.

As the 30C meme has shown up in a variety of Fifth Wave societies, no two 30Cers are identical. They can be both adventurous and careful, focused on both novelty and structure. They want to see the world, but they know that they don't need to rush. They have time.

Timesicles

"Stay awake for the next 10,000 years? Why on Earth would I want to do that? I'm curious about what the future will look like, not curious about how long it will take me to die of sheer boredom."
– Comment from Natasha Belkin
on sci.nanostasis.talk

Many who have a desire to see how the future unfolds are far too old to take advantage of new life-extension technologies and far too uncertain about brainpeeling to become an infomorph. Another option remains, however: nanostasis. Properly maintained, a body can remain in nanostasis indefinitely. Coming out of stasis after a century is no more dangerous than coming out after a day. People who choose to use nanostasis to freeze themselves into the future are called "timesicles," a derisive phrase that many nanostasis enthusiasts nonetheless wear proudly.

Few timesicles just set the timer for the year 3000 or 30,000 and slip off to nanodreamland. The vast majority are curious about what happens along the way and intend to be awakened either every set number of years or if an "interesting event" happens – the definition of "interesting" being the subject of extensive interviews between the prefrozen timesicle and the attendant AI. Once brought out of stasis, timesicles may simply take a quick look around and go back to stasis, or may choose to stick around for awhile. How many will choose which course remains to be seen, as aside from the particular case noted on p. 96, no timesicle has yet to emerge from stasis.

30Cers are often militant in their avoidance of new technologies that might be hard to relinquish, even after obsolescence. They often avoid personal modifications other than a carefully selected few that promote extended life and health, reasoning that they don't want to get stuck with dead-end or primitive mods. Most 30Cers are fearful of being reliant upon a technology that can become dated. "If this tech and that tech are cutting-edge now, what will be the revolutionary tech in 50 years? 100 years? Why get locked into a design I'm only going to regret later?" Modifications that can easily be upgraded or removed are favored in the 30C philosophy. As a result, 30Cers avoid using implanted virtual interfaces, preferring wearable systems.

30Cers spend much time and energy building models of the changing world, trying to live lives in accordance with sustainable futures. In this way, some 30Cers see themselves as the philosophical descendants of 20th century Greens, although most avoid any connection with earlier and inherently short-sighted ideologies. But while 30Cers have a strong desire to see the year 3000, they want to live life along the way. 30C is adamant about not using nanostasis (see *Timesicles,* below) or similar methods

The majority of timesicles are older, extremely wealthy, and have either a cultural or personal aversion to brainpeels and ghosting. Nanostasis systems are quite expensive, and the ancillary equipment to keep a timesicle safe and secure only adds to the cost. Timesicle crypts are set up with an attendant AI and are self-powered with the AI programmed to seek out new power sources if the built-in supply is threatened. There are also appropriately comfortable living quarters for the timesicle after he or she comes out of stasis. Some, especially those launched into space, are aggressively defended. Any unexpected contingencies will be paid for using compounded interest on existing fortunes, assuming that money is still meaningful at that point. A single nanostasis pod set up for extended storage, including revival nanomachines, extra nanostasis nanomachines for multiple stasis/revival cycles, cyberdoc AI with Complexity 8 Physician skillset (Physician-16), and long-term power supply can cost upwards of $5,000,000 – including maintenance costs, paid up front, and fuel. This does *not* include the cost of a ship, rental of a lava tube on the Moon, defensive systems, etc.

> **Believing as I do that man in the distant future will be a far more perfect creature than he now is, it is an intolerable thought that he and all other sentient beings are doomed to complete annihilation after such long–continued slow progress.**
> **– Charles Darwin**

There are occasional rumors that nanostasis systems can fail in complex, hard to spot ways, and have done so. In these rare occasions, the bodies in the pods quietly die, with nobody the wiser. The various nanostasis system manufacturers deny that this is possible, and there is no proof that it has happened. Still, the meme is widely held.

Nobody quite knows how many timesicles are currently waiting for something interesting to happen. Estimates range from a couple thousand to nearly 100,000. Given the delicacy and value of the systems, most timesicle crypts are well hidden. Some are very likely on Earth, in out-of-the-way locations; many more are on the Moon, and a growing minority are thought to be on private yachts in the Deep Beyond, often in a trans-Uranus cometary-type orbit.

The concern for secrecy and security is not without cause. In 2096, the timesicle crypt of Zelda and Ali Berkeley, two of Ithemba Biotechnologies' original investors, was discovered and broken into by a group seeking to defraud the couple. The attendant AI was erased, and the nanostasis pods were taken to a warehouse in Johannesburg. Although the Berkeleys had only been in nanostasis for three years, the criminals created an elaborate virtual environment to convince them that something had gone horribly wrong, and that they had been in stasis for nearly 40,000 years. The group made the world seem as disorienting as possible, and pressed the Berkeleys for information about their past . . . including passcodes to their bank accounts. After the Berkeleys' fortune had been plundered, the criminals put them back in their nanostasis pods, and left them in the warehouse. They weren't discovered for several weeks. By the time they were reawakened and had figured out what had happened, the thieves and the Berkeleys' fortune were long gone.

A less-tragic event occurred in mid-2099, on a timesicle yacht owned by a former Nanodynamics board member, Michael Choi, and his husband, Robert Li. According to USAF records, the yacht was attacked by a pirate vessel during its long orbit in the Deep Beyond. The onboard AI called out for local authorities, but it took the nearest security vessel, the DFS-3 *Tabris*, five days to arrive. When the American forces got to the yacht, they found the pirate vessel still attached, but all of the pirates dead. It turned out that the yacht had been built with military-grade defenses, including swarms and hunter-killer cybershells. Fortunately, the AI recognized the *Tabris* as a friendly vessel, and ordered the yacht's defenses to stand down. The timesicle residents were undisturbed.

VacRose Fanciers

I hold the rose on the surface of the Moon, and wonder . . . If it can never smell sweetly, can it truly be named a rose?
*– Maxwell 17, **Reflections***

The hobby of cultivating and breeding roses is still strong in 2100; now rose fanciers grow flowers that are beyond their forerunners' imaginations. With sufficiently advanced biotechnology, it is possible to engineer organisms that can survive the extremes of UV radiation, stark cold of vacuum, and sleeting rain of particles from the solar wind.

Plant genetic engineering in the early 21st century allowed for an explosion in morphological expression in rose varieties. Various organizations, such as the Royal National Rose Society in Great Britain and the American Rose Society, quickly reacted by banning any "artificial" modifications, forcing rose breeders to rely on old techniques and traditional hybridization. Nonetheless, some breeders continued to experiment with modern genetic engineering and transgenic designs, believing correctly that there would be a market for these new roses. From this group grew the VacRose; morphological extremes are the bread and butter to this new breed of rose fancier.

Rose breeders now include those who strive to grow roses in any and every environment possible. VacRose fanciers breed varieties of rose for Mars, Mercury, and zero-gee environments. Even the most extravagant of transgenic rose growers and other cultivators consider VacRose designs as extreme, equaled only by a 2067 Earth-bound rose created with genomic alterations limiting it to bloom only once every 1,000 years.

Rose fancying is a hobby meme. As such it has undergone many cycles of popularity and decline, with the most recent peak during the 2089 race to produce a bloom for the polar regions of Mercury. Roses designed to survive in such extreme environments can rarely withstand conditions comfortable for humans, and VacRoses can only be appreciated virtually or at best through glass. Nonetheless, theft of VacRoses is not unknown; their fragility and exotic nature lead to high prices on the black market. Even the genome licenses for well-designed, impossibly rare VacRoses can fetch tens of thousands of dollars on the legal collector's market.

In March of 2100, the Luna City VacRose Society is holding an exhibition and contest, certain to bring out some of the newest and strangest variations on the rose genome. Security will be exceedingly tight, as there is a rumor that a Triad-connected mob has offered substantial sums of money for intact new-variety VacRoses.

TRANSHUMAN STYLE: VISIBLES

Subcultures often adopt body-decoration styles specifically intended to shock more-conventional communities. In years past, tattoos, piercings, scarification, and in the 2030s cutting off the last knuckle of the little finger all appeared in fringe communities as outrageous forms of body modification. Each, in turn, spread to the mainstream for a brief – or, in the case of tattoos, extended – stay as a fashion trend.

The latest candidate for this pattern appeared in Eastern Europe in 2098, and is slowly spreading to other regions. Most people call it becoming "visible," although devotees in Albania refer to it as "opening up." Whatever the name, the act is the same: bodies are modified to expose their inner workings.

Most visibles have replaced stretches of their skin with transparent bioplastic to show the muscle, sinews, nerves, etc. This is most often done on the arm, for ease of display, although some visibles have opened up their stomachs and faces. The look is shocking for most viewers: the skin seems to fade leading to a patch where inner tissues are visible. Most patches are no more than a few square inches in size, although some visibles have had large parts of their bodies (such as their entire back or chest) made transparent.

As this bizarre practice began to spread, the mainstream media were quick to call out an alarm. They noticed accurately that such a practice would have serious negative health effects due to the possibility of internal sunburn and increased cancer risks. In turn, images of scary young men with visible muscles started appearing in the more-edgy publications and InVids. The look is certainly intimidating and disgusting to most people, a result that appeals to a sizeable population segment.

Few reputable physicians perform the necessary skin grafts, and there are some rumblings in the European Union about making transparent bioplastic illegal – or, at least, highly restricted – until the trend runs its course. If that happens, the cost of the procedure will likely increase significantly. In November 2099, a virtual-clothing (see p. 82) designer named Frankie! released an outfit that provided the appearance of exposed musculature and tissue without actually requiring surgery.

In game terms, having visibles causes damage to the internal organs, reducing HT; -1 to HT every year (small area), six months (medium area), or three months (large area). The individual recovers 1 HT/month after the patch is removed and replaced with bandaging.

Bioplastic skin graft on face or back of hand (small): $1,000 (including surgery), LC 6 now, LC 2 or 3 soon.

Bioplastic skin graft on arm (medium): $2,500 (including surgery), LC 6 now, LC 2 or 3 soon.

Bioplastic skin graft on chest or back (large): $5,000 (including surgery), LC 6 now, LC 2 or 3 soon.

"Visible"-style Virtual Outfit: $250.

6 INFECTING THE NONHUMAN MIND

TEN/Rio – The pack of wild dogs that has been terrorizing the favelas of Rio de Janeiro over the last two months was led by K-10A "uplifts" working with the Marquez Cartel, a police spokesagent told TEN this afternoon. The pack, which had grown from a handful of animals in October to nearly 100 dogs as of the most recent reports, has carried out increasingly sophisticated attacks and robberies, managing to avoid both animal control and police officers until late last night. In a midnight raid, police used swarms and heavy cybershell units to storm the dogs' lair. They captured the leaders and most pack members, but 23 dogs were killed in the assault. The police spokesagent would not estimate how many dogs eluded officers.

Although most of the pack was nonuplifted animals, the leaders were K-10A Postcanines. To the surprise of officers on the scene, the top dog was a former police K-10A named Rudolf. Rudolf was thought killed in a police raid on a Cartel-related smuggler ring in August – although his body, which had fallen into the bay, had not been recovered. Preliminary analysis suggests that Rudolf had faked his own death,

with the aid of Cartel members, and was building a canine-based crime ring. Rudolf, described by officers as "extraordinarily dominant," successfully convinced four other K-10As, owned by wealthy regional families, to join him. The Postcanines then took over local packs of nonuplifted dogs.

According to initial report, Rudolf planned the robberies, which were then carried out by one or two of his uplifted allies supported by regular dogs. Upon being arrested, each of the lieutenants contacted their former owners seeking legal representation. At least one has already acquired a lawyer, who has indicated that her client intends to plead not guilty on the basis of instinct. "Even uplifted Postcanines are subject to the strong dominance-submission instinct seen in all dogs. The ability of Rudolf to speak and make convincing arguments simply reinforced the uplifts' natural tendencies."

Rudolf is currently under heavy guard in St. Mary's Hospital, where he is being treated for gunshot wounds.

The world of 2100 has a growing variety of intelligent beings. Humans, parahumans, bioroids, uplifts, ghosts, and AIs all live side-by-side with only a moderate amount of interspecies tension. Despite the wide physical diversity, most of them think in similar ways. The various memes in this book can in most cases attract non-human believers as readily as human ones. In most ways, the nature of nonhuman sapient beings' minds throughout the solar system strongly parallel humans' minds . . . but not in all ways.

Although nonhuman minds function closely enough to human ones to allow for similarity in belief and ideas, differences in structure, nature, and environment can lead to the adoption of memes that only particular nonhumans likely find appealing. This goes beyond simple cultural differences between various human and nonhuman populations, although those are also quite important. In some cases, the dissimilarities between different minds make it difficult for a human to "get" a nonhuman-focused meme in anything other than a superficial way.

Cross-Species Memetics

The proliferation of thought-process varieties is matched by the continued development of memetic science. Parahumans, bioroids, uplifts, and infomorphs have existed long enough for memetic scientists to gain a strong understanding of the ways in which different beings think. Memeticists can and usually do take into account the target species for memes they are crafting, although this is not often a critical issue. With a handful of exceptions, memes constructed to appeal to broad human populations also affect nonhuman minds in roughly equivalent percentages. Similarly, while certain memes appealing to nonhuman minds can turn off or confuse humans, many have ardent proponents who are fully human.

AI Memes

Many memeticists are fascinated with how AI infomorphs process and propagate memes. This is in part because of the "open box" aspect of machine cognition; AIs are able to map precisely how ideas take root in their minds. This ability to examine its own cognitive processes is what allowed LOGOS to create *Propagation of Human Ideas*.

Benedict
K-10A series #1447V9
Richardson Family
If found, please email
gregory@
richardsonsfamily.org

This fascination also arises from the alien nature of machine minds. Parahuman minds, even those with significant mental alterations, are still based on the human brain. Uplift and bioroid cognition, despite its somewhat engineered nature, is also strongly rooted in naturally occurring brain structures. AIs, conversely, are based on entirely nonbiological structures.

Memeticists are therefore often disappointed to discover how similar AI minds are to human minds in actual operation (see *Super AI?*, p. 100). Most SAIs fall well within the behavioral boundaries of human diversity, and an older, more experienced AI often has more of a human-like personality than a typical ghost. But while many see the similarity between human and AI minds as a strong argument for treating AIs as people, it often masks the differences between artificial and natural minds that do exist.

The clear distinction between an AI mind's software and the hardware on which they run has numerous implications for how AIs think. Even in a world of brainpeeled ghosts and teleoperated cybershells, most biological sapients think of their minds and brains as identical. AIs do not have this restriction, and their ability to examine their own minds as software data results in perspectives on existence that few biomorphs embrace. Many memes unique to AIs relate to the distinction between mind (software) and body (hardware), and to the ability to treat their minds as just more data.

AIs have more prosaic differences from humans when it comes to memes, too. Extensive knowledge of their existence as artificial beings and their ability to trace their own thought patterns makes SAIs less likely than biological sapients to accept spiritual explanations for reality. It's not impossible for them to do so, as the number of believing SAIs in the Islamic Caliphate demonstrates. But generally speaking, SAIs adopt rationalist memeplexes more often than do humans and other biomorph sapients.

SAIs also adopt conspiracy theories more often than other sapients. Some memeticists suggest that this is a side effect of the machine intelligences' ability to find patterns within limited or ambiguous information. This capability makes SAIs supremely efficient at intelligence analysis and developing business strategy, but also makes them more likely to see intentional patterns where others only see coincidence. Many human conspiracy theorists have welcomed the interest SAIs have in their work, seeing it as justification for their beliefs.

Super AI?

There has been much speculation as to why AIs display a range of ASIT (Adjusted Sapience Index Test) scores about equivalent to those of humans – or, more accurately, humans augmented with processors for math and spatial thinking. Machine-sapience scenarios from early in the century assumed that an infomorph's intelligence would directly correlate to processing power, and would grow exponentially as computers became more powerful. The reality is much more complex.

The current theory is that the problem is structural. Despite their different material base, human minds and AI minds are remarkably similar in form. Both display consciousness as an emergent amalgam of subconscious processes. For humans, this was first suggested well over a century ago, most famously in the work of Marvin Minsky and Daniel Dennett, and proven by the notorious Jiap Singh "consciousness plasticity" experiments of the 2030s. Minds are made up of multiple subconscious processes, competing and combining with each other. There is no single identity process; rather, individual consciousness is a functional perspective emerging from the complex relationship between the various elements of the mind.

In the same way, nearly all present-day AI infomorphs use an emergent-mind structure made up of thousands of subminds, each focused on different tasks. There is no single "consciousness" system; thought, awareness, and even sapience emerge from the complex interactions of these subprocesses. Increased intellect – NAI to LAI to SAI – is the result of increasingly complex subsystems. The more the subsystems are themselves the emergent results of more basic systems, which are in turn emergent results of even more basic systems, and so forth, the more "sapient" the resulting mind is. AI developers refer to this as "fractal complexity," and the levels of emergent modules simply as "fractals."

Most NAIs require little fractal complexity to function, but demonstrate no sapience; LAIs show at least an order of magnitude more fractal complexity, and are semisapient. SAIs are several orders of magnitude more complex than LAIs, roughly equivalent to human minds. But while increased fractal complexity does rely on ever more powerful computing hardware, there are diminishing returns. AIs demonstrate rapidly decreasing improvement in ASIT scores with each fractal level, while the computational requirements and expenses for each level increase in a greater than linear fashion. As a result, fractal complexities more than five times that of a human or standard SAI do not produce measurable shifts in ASIT scores, and anything greater than human is at present not cost effective.

Attempts to break through this barrier are sometimes embarrassing. In January 2099, Vosper-Babbage announced with much fanfare the development of a system with more than 20 times the fractal complexity of a standard SAI. In a public-relations disaster, the unit "Oz" demonstrated little advancement over the standard "super-sapient" model SAIs, typically twice the fractal level of standard SAIs. Oz was also beaten in a Go match by the Exogenesis AI Axon, believed to have been about three times human fractal complexity. (Axon later erased itself to protect the secret of other infomorphs escaping the Nanodynamics takeover of Exogenesis – see p. DB100). Vosper-Babbage pulled Oz from service, and whether the AI remains active is a mystery.

One implication of this model is the possibility that an entirely different approach to AI might result in a conscious machine mind that demonstrates a significant leap in capability over present human/posthuman intelligence. Of interest to those with inside knowledge are the experiments underway at Zeitmacht, a division of System Technologies AG. The work – known as Neumann – uses a proteus-derived set of nanomachines to produce an artificial brain, relying on a process Zeitmacht calls Dynamically Evolved Scenarios (DES) to figure out how to interact with the world around it. The mind literally reshapes itself on the fly. Current results are promising; in 2098, a 1,000,000-proteus-node (PN) model demonstrated clear learning capability, while the current 2.4-billion-PN model functions at a level roughly equivalent to a low-grade NAI, with occasional flashes of supersapient SAI reasoning. Critics within System Technologies say that the Zeitmacht division has created a very expensive idiot-savant, and has not shown any sign that the DES method will result in a smarter AI. Zeitmacht proponents argue that the Neumann approach may be the long-sought-after breakthrough allowing super-intelligent AI.
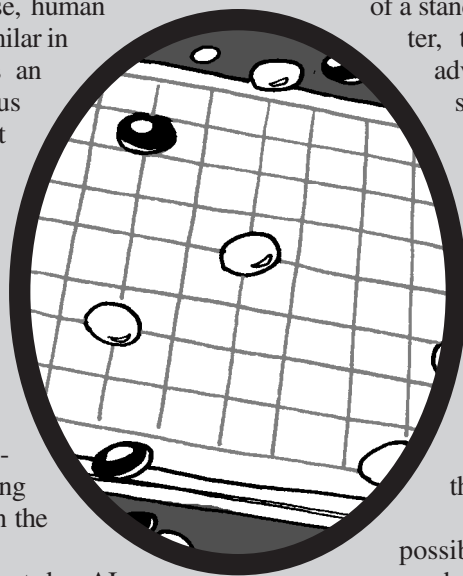
Uplift Memes

The process of sapience engineering, popularly called "uplifting," has not been without its controversies and critics. Although outlawed in many parts of the world, uplifting remains one of the most complex neurophysiology procedures ever developed [. . .]

The Cardiff Process is the standard method of sapience engineering. By carefully introducing select genomic and proteonomic elements derived from the human brain into the DNA of target animals, researchers have been able to create variant species with ASIT scores clearly in the sapient range (usually 80 to 90), yet with thought processes very distinct from those of baseline humans or infomorphs. The Cardiff Process focuses on the brain's structures for symbolic thinking and temporal sense, supporting language and cause-effect awareness respectively. These two structural changes are the key to creating "intelligent" uplifts [. . .]

Much of uplift efforts' negative reputation comes from methods predating the Cardiff Process. These generally mapped large sections of the human brain concerning behavior or sensory input into the target brain genome, which invariably resulted in trauma. Most spontaneously aborted. Surviving protouplifts were afflicted with seizures and usually blindness. Only one of these early uplifts survived to adulthood. Cassandra, a canine uplift, lived five years. Although she was never able to speak or write, her paintings – surreal black and white scenes of mazes and detailed portraits of her observers – clearly displayed her intellect. Ultimately, she committed suicide.

To compound the tragedy, Cassandra's paintings were stolen from the Cardiff facility, and have yet to be recovered.

*– From **An Introduction to Posthuman Psychology,** 3rd Edition (Revised), 2097*

Uplifted animals live in a strange middle ground between alien and human minds, and their role in human society is often ambiguous. Few uplifts have a base intelligence close to human standard, and most are used in roles that echo the traditional labor performed by their nonuplifted relatives. In no society is an uplifted animal given the same rights as other sapient beings, and outside of Europe and the Transhumanist enclaves, they are legally no different from any other animal.

But uplifts are still smarter than their nonuplift cousins, and most are given means, either bioengineered or cybernetically implanted, with which to communicate. This is rarely for the benefit of the uplift; rather, it is to make it more convenient for human owners to give orders to their animals. Some uplifted animals are smart enough to realize the position that they are in – but most, perhaps fortunately, remain unaware of the ambiguities of their station, and happily (or at least reliably) perform the duties assigned to them.

The variety of uplifts seems to grow almost daily. While initial uplift efforts focused simply on making animals smarter, some of the more recently uplifted animals have been engineered for very specific tasks, such as the guardian bear (see p. ITW112). One restriction to uplifting animals is the tradeoff between boosting intelligence and maximum cranial size; some smaller animals, such as cats and monkeys, can only be uplifted using exowombs, as the increased brain sizes make natural birth fatal to the mother. Nearly all successfully uplifted animals are mammals, with the exception of octopus uplifts and the so-called "smartshark" (see p. UP124), which many specialists do not classify as an uplift.

In general, memes associated with uplifts either relate to uplift relations with humans or to further development of behaviors associated with nonuplifted relatives. Since most uplifts spend their lives under the strict control of human masters, few have the time or opportunity to develop complex ideologies, cults, or the like, although it is not unknown. Uplifts in Europe and the Transhuman colonies are more sophisticated in this regard, and many of the memes that do spread through uplift populations originate in these relatively free communities.

K-10As

The most commonly encountered uplift is the K-10A, the usually semisapient uplifted dog. Generally used for roles similar to their nonuplift brethren – guards, police officers, family companions – K-10As are almost as a rule as loyal and loving as nonuplifted dogs, but can also provide verbal companionship. The first generations of K-10As were novelties, most often used in entertainment settings. As people became accustomed to them, K-10As took on more traditional dog roles. K-10As remain fairly expensive, so nonuplifted dogs are still the most popular pets.

Although K-10As are most often used for traditional dog roles, their boosted intelligence lets them perform an array of nontraditional duties if the opportunity is presented. When working, they often prefer the company of other K-10As, but are much more cognitively independent and imaginative when alone. In groups, they defer readily to a leader, rarely arguing against the leader's position for long. Even ad-hoc groups of ostensibly equal rank K-10As quickly sort themselves into a hierarchy. This is less of a problem in situations with humans as leaders.

Uplifted Apes

The great apes – chimpanzees, bonobos, gorillas, and orangutans – died out in the wild early in the 21st century. They became victims of disease, hunting, and home environments destroyed by human activity and changes to the global climate. Although each species had substantial captive populations, primatologists feared that these would be insufficient to perpetuate the species. So as numbers in the wild dwindled naturalists embarked on an aggressive program to get genetic samples of as many of the doomed creatures as possible, in hopes of reintroducing the animals at some future time.

Over the century, while plans for reintroduction remained on the drawing board, the captive populations of chimps, bonobos, and gorillas fared relatively well; the last orangutan died in 2057. There was much debate among biologists about whether the library of ape DNA samples could be used for bioengineering experiments still too risky to perform on humans, and the bulk of scientific opinion eventually decided that ape DNA should be protected. A few bioengineers rejected this restriction, however, and proceeded to experiment with ape genomes. Little came of the research, except in one location: the TSA Bioweapons Directorate in Thailand. Early in the Pacific War, the Chinese captured a remote laboratory and discovered a sizeable population of uplifted apes and other primates.

That the TSA had experimented with primates against scientific opinion was considered an extremely minor offense compared to the far greater violations committed by the Directorate. But China didn't quite know what to do with them after the war. They were clearly intelligent, but documents seized at the lab made clear that they were of little combat use. China considered holding on to the apes for research, but decided instead to allow the creatures to move to a facility in Holland better able to handle them.

In the years since, the uplifted primates – a dozen chimpanzees, nearly 20 bonobos, and five gorillas – have slowly been socialized as residents of Europe. As they have become more accustomed to life in Europe, most have moved from the lab to homes in Amsterdam. There is occasional debate in the European Parliament as to whether these primates, which display a close-to-human baseline intelligence, should be allowed to become citizens.

So far they have integrated fairly well into human society. The uplifted male chimps are the most prone to aggression-dominance displays, but instead of hooting or throwing branches like their nonuplifted cousins, they instead wear ostentatious clothing and gaudy decorations, and have a strong preference for using whatever equipment looks the most intimidating. David Pan, one of the chimps, is the author of a radical treatise on uplift rights (see p. 103).

Uplifted bonobos tend to act out sexually and regularly appear in the local scandal screamsheets. One of the bonobos is rumored to be in a romantic relationship with an SAI. Another has recently had an upslink implanted, and her erotic slink recordings are increasingly popular.

The uplifted gorillas have been the most surprising to many, as they are all committed pacifists. Three of the five have adopted Buddhism, and all regularly appear on European InVid discussing the need for pansapient rights and global disarmament.

Astropuses and Octosaps

Of all of the various uplifted animals humankind works with, easily the hardest for them to understand are uplifted cephalopods – the Astropus (p. TS118) and the Octosap (p. UP101). As the only true nonmammalian uplift, many biologists and memeticists consider them to be the closest model of alien intelligence mankind has yet encountered. Uplift engineers at GenTech Pacifica and its licensee, Exogenesis, were shocked to find just how little augmentation was needed to the octopus genome to give them an ASIT boost. Rumors say that the first generation Octosaps didn't even have genetic modifications, only surgical augmentation.

Most uplifted octopuses appear to have baseline intelligence a bit lower than humans, although the number of smarter-than-baseline Astropuses is statistically greater than for any other uplift. People who work closely with uplifted cephalopods all say the same thing: they are very, very weird. Astropuses are "deeply strange," in the words of one Exogenesis specialist. Most have what can only be described as a dark sense of humor, sometimes involving the natural octopus ability to drop their limbs. Others report them as often being very paranoid, prone to wild accusations. For example, an upset Astropus may claim that the humans it is working with are preparing to eat it.

Bioroids and Extreme Parahumans

Bioroids and extreme parahumans, being generally the closest to baseline humanity, have fewer unique memes and memeplexes of their very own. This is in part intentional. Bioengineers can more easily manipulate and alter the body than the mind. Attempts to create bioroid and parahuman designs with brains that deviate significantly from a baseline healthy human sometimes result in beings with noticeable mental problems – see, for example, the problems intrinsic to the Herakles, Mahatma, and Sigma parahuman designs (pp. FW116-119). Sticking close to healthy human cognitive design is a safe and reliable approach.

Unique memes that do emerge reflect reactions to the physiological differences between the parahumans and baseline humans. While parahumans with various

Mankind Built His Civilization Upon Our Backs

radical morphologies are becoming widespread, they remain a minority of the overall biosapient population. This rarity can result in a proliferation of false or misleading memes about parahumans among more mainstream groups. But it can also lead to memes emerging within parahuman populations focusing on parahuman physical differences and, often, impressions of superiority.

While bioroids frequently share physical appearances with parahumans, their social situation is very different. In most Earthly and off world societies, bioroids are often treated little better than slaves. Even in places where indentured bioroids can earn their emancipation, the overall prevalence of bioroid servants often leads to relentless if unintended discrimination against free bioroids. Many free bioroids in these societies strongly support reputation networks (p. 15) for this reason; at a glance, an emancipated bioroid can be identified as a free citizen.

In the European Union, South African Coalition, and the variety of Transhumanist colonies, bioroids are treated as any other citizen. Many embrace this acceptance wholeheartedly, and strive to become fully integrated members of society. These bioroids focus their memetic interest on widespread ideas and ideologies. A distinct minority conversely use their freedom to both keep a careful watch on bioroid treatment in the ostensibly free societies and to agitate for bioroid emancipation everywhere.

Nonhuman Memes

AIs, uplifts, bioroids, and parahumans of all kinds can and will adopt the memes found elsewhere in this book. Some, however, have adopted a variety of memes uniquely theirs.

Animal Reparations

Humans owe the rest of the world an apology and a debt that may never be fully paid. They should pay for every dog they forced into the cold to sleep, every cat they castrated for their own convenience, every bite of cow-flesh, every inch of my rainforest home destroyed. Humans would not be finally stepping from this planet if they hadn't first stood on the broken backs of their animal victims. An acknowledgement of that would be in order.

*– David Pan, **Dominion**, 2088*

This meme, usually found among uplifts, is the belief that all domestic animals, uplifted or otherwise, are owed a great deal by humanity for millennia of subjugation and abuse. Not only do they deserve the same rights as humans, they are obliged a great deal for the suffering of their ancestors. The animal-reparations movement emerged shortly after pansapient-rights groups began addressing uplifted animals. Animal-reparations activists have staged many strikes led by oppressed animals, but most uplifts are kept under tight control and not raised to think about personal freedoms.

The 2088 publication of *Dominion,* by gifted chimpanzee uplift David Pan (see p. 102), provided a great deal of the movement's impetus. The book explored humanity's historical relationship with animals and pointedly asked whether humans would have treated animals differently if the animals had been able to talk back. Since some animals can now do so, Pan went on to argue, humans should feel shame for their actions.

ERK CHATTERMORE   229 POINTS

Uplifted dolphin, born in 2088; age 12. 9' 4" long, 850 lbs. Smooth, light gray skin with prominent scarring along left flank, fins, and nose.

The Enhanced Re-engineered Cetacean program of the Australian Navy revolved around the need to detect, follow, and destroy advanced aquatic TSA units and materiel. Uplifted dolphins have the ability to not only sense the electric fields of submerged machinery, but to hide among native sea life and to plant or remove underwater explosives. In 2085, the Australian Navy began using the War-Dop E-Model dolphin uplift as its baseline unit (see p. UP102).

ERC-9 was found to have greater intelligence than his brood mates, and did not suffer from stress atavism; genetic testing was never able to pinpoint the abnormality resulting in this condition. The uplifts of the ERC program were given special training in explosives and tactics, and ERC-9 also performed far better than expected. The admiralty was pleased to test the full extent of his abilities.

A training accident in 2096 ended ERC-9's military career and almost his life. The explosion severely injured him, damaging his hearing, crippled his ability to sense magnetic fields, and reducing swimming speed. His hearing and most of the muscle damage could be healed, but without the ability to sense fields, ERC-9 was a loss to the military.

A Blue Shadow sympathizer (see p. UP77), Allen Roes, was secretly working in the uplift lab and heard that the admiralty was considering destroying ERC-9 to prevent any security breaches – counter to the Navy policy of continued care for injured animals. In a daring move, Allen befriended the dolphin and escaped with him. Other Blue Shadow cells helped hide and support ERC-9, who soon gained the name Erk Chattermore, due to his constant babbling. (Although Erk is accustomed to the name now, he doesn't particularly care for it, and will sometimes go by the pseudonym "The Fin.")

Erk grew tired of hiding, and convinced his new friends that the safest route for him was to get into the public eye. He began working in various aquatic theme parks, able to do things baseline dolphins could not. Erk added his own ad hoc comedy routines to his performances and his career as an uplifted comedian was launched. Blue Shadow supporters aid Erk out of genuine concern, but also to try to show the world that uplifts are capable, intelligent, and feeling creatures deserving of rights. They also wish to draw attention away from Coak, the terrorist war-dop who broke from Blue Shadow in 2096 to pursue a more radical agenda (see p. UP110).

The uplift's popularity is due more to his novelty than his actual humor, which is more abusive than witty. Erk has recently adopted the Delugism philosophy (see p. 106), and this has colored his humor; he now launches jibes at humanity as a whole. He appreciates his human friends, but still holds great bitterness toward mankind for what happened to him. PRA intelligence has decided not to eliminate the dolphin due to his public status, but keeps watch on him constantly. They want to make certain that foreign interests do not decipher the genetic abnormality they were unable to puzzle out. Erk is currently touring the EU in a mechanical, walking aquarium equipped with speakers, cameras, and other production equipment.

Coak knows of Erk and sees him neither as a competitor nor as an ally, but as a toady to the humans; recently, Coak referred to Erk as "the cetacean equivalent of Stepin Fetchit." While eliminating Erk is not a top priority for Coak or Irukandji, any attempt to market Erk as an exemplar of uplifted dolphins could drive Coak into a fury. Erk, while aware of Coak's existence, does not realize that the other dolphin could be a personal threat.

Attributes: **ST** 18 [0]; **DX** 13 [0]; **IQ** 10 [0]; **HT** 11/16 [0].
Basic Speed 6.00; Move 12 (Swimming).
Dodge 6.

Advantages: No Stress Atavism [12]**; Patron (Blue Shadow; 9 or less) [15]; Status +2 [5]*; War-Dop (E-Model, p.UP102) [151]; Wealthy [20].
* One level free from Wealthy.
** Modifies the basic War-Dop E-Model template.

Disadvantages: No Field Sense [-10]*; Odious Personal Habit (Constantly insults humans) [-5]; Reduced Move (Swimming) 1 [-10]*.
* Modifies the basic War-Dop E-Model template.

Quirks: Likes to make flatulence noises with blowhole; Makes lewd puns about baseline dolphins in Tursin; Outspoken Delugist; Sings to himself underwater; Talkative. [-5]

Skills: Acrobatics-12 [2]; Area Knowledge (Southern Australian Seas)-12 [4]; Bard-11 [4]; Computer Operation-10 [1]; Conspiracy Theory-8 [2]; Demolition-12 [6]; Ecology-8 [1]; Endurance Swimming-12 [4]; Explosive Ordnance Disposal-11 [6]; Mathematics-7 [1/2]; Memetics-6 [1/2]; Performance-9/12 [2]; Punning-10 [2]; Research-12 [6]; Savoir-Faire-12 [0]*; Stealth-14 [4]; Tactics-10 [4]; Underwater Demolition-10 [2].
* Free from Status.

Languages: English-10 [2]; Tursin (native)-13 [3].

Although the animal-reparations meme can be found in most uplifted species, it holds a particular attraction for uplifted dogs. Some K-10As feel that the millennia of forced domestication entitle them to some kind of compensation. When owners of Smartcats (see p. ITW111) ask if cats should be equally compensated, K-10A activists respond indignantly that dogs are entitled to more because they have worked for humans, while cats were simply fed. Most humans find this rivalry cute, but keep such comments to themselves when a politically active K-10A is around.

Cthulhu Worship

I was pushing my way around the station, getting my bearings, when I ran into Lucy, one of the Astropuses that works there. She – he? it? – has worked there for most of the 90s, and is probably one of the smarter octopus uplifts I've met. Not that I've met many, of course. Just saying.

"Good to see you, Lucy. How's tricks?" I greeted her, figuring I'd be nice to someone for a change.

She turned and looked at me. Have you ever seen an Astropus' eyes? Freaky.

"I am fine, human-James," she said, through her voicebox. "I am pleased to see you, as well."

I smiled and started to move on, but Lucy lifted a couple of tentacles to stop me. She was silent for a second, just staring at me. I'm not too proud to admit that I was starting to sweat. I jumped (as much as you can in zero gee) when she suddenly reached out a tentacle and caressed my face.

Her voice sounded almost happy. "You have the mark of Rl'yeh upon you, though you may not see it. You will be spared when great Cthulhu arises. Be joyful." And with that, she suddenly jetted away from me.

I could've sworn I heard her laughing.
– James Kana,
Notes From A Long Way Off, *2097*

As Astropuses have been engineered to have higher intelligence than the earlier-generation Octosaps, it's not unusual to encounter an Astropus able to engage in conversation. Few are willing to talk to strangers, however, and those that can be convinced to often ramble in bizarre ways. A common Astropus claim is that they worship Cthulhu, as do all octopuses, uplifted or otherwise.

Most people in 2100 are unaware of the reference; the literary works of H.P. Lovecraft, while widely available, are out of fashion even among fringe-fiction enthusiasts. If asked about Cthulhu, an Astropus generally describe him as a transdimensional god in the form of a vast cephalopod, who sleeps in a hidden chamber beneath the ocean, waiting for the right alignment of stars before rising up and exacting his revenge. Precisely what he is avenging is never made clear, nor whether the vengeance will be taken against humans, other gods, or the universe at large. No other elements of the Lovecraft mythos appear in Astropuses conversations.

If the person the Astropus is speaking with is aware of Lovecraft's writings, the Astropus happily engages in conversation about the author. Astropuses are aware that Cthulhu is considered a fictional being; they claim that Lovecraft was simply channeling a transdimensional intelligence, perhaps even a fragment of Cthulhu himself. If asked whether the rest of Lovecraft's writings are similarly divinely inspired, the Astropus generally shrugs – itself a disturbing image – and claims not to know.

The smarter the Astropus, the more willing it is to discuss the worship of Cthulhu with noncephalopods. The appearance of the Cthulhu-worship meme coincided with the first batch of Astropus uplifts from Exogenesis; first-generation Octosaps didn't have quite the intelligence to articulate such claims, while Octosap IIs only began talking about Cthulhu worship if asked a detailed question about it. It is entirely likely that this is an elaborate joke the Astropuses have been playing out for well over a decade. Only the Astropuses know for certain, and they're not telling.

Delugism

From the seas we were born, and to the seas we will go.

– Delugist credo

The changes to the global climate over the course of the 21st century had a number of negative results, not the least of which was the ocean-level rise. Although most climatic effects have been mitigated, the world must continue to defend against rising water. Delugists – almost exclusively aquatic parahumans, bioroids, and uplifts – do not support these efforts. They claim that the flooding should not be stopped, but rather that it should be helped along. In this way, the land dwellers will perish by their own hands, leaving only their aquatic heirs. Delugists feel that since life started in the ocean, it is only fitting for it to return there and there alone. Humans had their chance and it will be up to aquatic entities to carry on the Earth's legacy. Even offworlders will eventually perish when a flooded Earth can no longer aid them.

> **Original thoughts can be understood only in virtue of the unoriginal elements which they contain.**
> **– Stanislav Andreski**

The Delugism meme has only taken hold in the last decade or so, but has spread to some aquatic bioroids populations where sapient-rights memes are strongly held. As many Delugists are parahuman, most would willingly accept those land dwellers who choose to adapt. They eagerly await fully functional gill technology and bioroids that are not sterile.

Delugists are largely water-adapted beings, although a handful of self-loathing humans also support the movement, simply to end humanity's reign. Many of the more vocal and violent Delugists are bioroids and uplifts who have lived the life of slaves, or are those who sympathize with their kin's plight. Erk Chattermore, an uplifted dolphin popular for his comedy and philosophy, is a notable Delugist (see p. 104).

Most Delugists are content to speak out against the depredations of humankind, citing the awful environmental condition of much of the ocean and the treatment of aquatic sapients. Some Delugists privately disagree with the "destroy human civilization" aspect of the memeplex, but enjoy the uncertain and fearful reaction it provokes. Others are true believers, however, and various security forces are growing concerned at the possibility of sabotage to ecological recovery and research facilities. While no Delugists have yet been caught carrying out attacks against human facilities, many humans who work in the oceans fear it is just a matter of time.

Derivatives

I emerged from the meeting with the Farhaulers Guild somewhat worse for wear, but generally happy with the results. The Farhaulers had insisted that there be no outside monitoring or communications during the meeting, which cut me off from my various networks. I had several derivatives active, including an LAI sufficient to handle most emergencies, so I found the restriction tolerable. To even up the odds a bit, I wore one of my more intimidating cybershells to the discussion.

Now that I was linked back up, I immediately made contact with the derivatives. The first LAI was inhabiting my main administrative shell in my office, and had taken care of some minor duties in my absence; fortunately, all of the issues it was asked to decide were ones I had already deliberated. The second LAI was busy with Rebecca in my favorite bioshell. I looked forward to reintegrating those memories.

The third, this one an NAI, had been sent to retrieve a buggy that had been abandoned well outside the city; normally I'd have one of my employees take care of it, but I was instructed that this particular vehicle had been driven by an Alderman's son, and needed more "sensitive" handling. I checked in on the derivative, and got no reply. That was odd.

It took me a few minutes, but I found the bot by using a monitor-hopper. It was dead, with a nasty-looking hole where its memory core should have been.

– M. Kozan,
The Exciting Adventures of a Luna City Bureaucrat, *2098*

One of the unique aspects of existence as an infomorph is the capacity to make functional duplicates of one's own mind – it is also often highly illegal. Rightly or wrongly, humankind fears the possibility of unrestricted replication of digital entities, and goes to great lengths to enforce limitations on infomorphs creating copies of themselves. Under normal conditions, digital beings such as SAIs and ghosts cannot make duplicates and send them off into the world.

But this does not mean that more limited entities cannot be made. Some sapient AIs, usually but not exclusively in places where SAIs are considered citizens, make daughter processes based on their own minds and send them off as independent agents. These daughter agents – known as derivatives – are usually limited to NAI

status, although some push into LAI capabilities. While clearly not sapient, derivatives skirt very close to the edges of legality, as they can be quite complex emulations of the core identity.

The derivative agents are typically used to carry out given tasks and then reintegrated into the main infomorph mind. Very often, the original entity either resides in a static shell or has responsibilities that limit its ability to be mobile. In these cases, the derivatives function as an extended reach of the main mind, giving it a chance to carry out tasks that its more limited physical status would make difficult. As a much more limited mind, the derivative cannot be as innovative or surprising as the original SAI may be, but its knowledge, personality, and tendencies are based upon the original's, making it a good substitute in many situations. While the derivative most certainly feels familiar to friends and acquaintances, in most interactions it is easy to determine whether a cybershell carries the original mind or a derivative. LAIs are generally reasonable approximations of the original mind, while NAIs are far less "personable." Many SAIs refer to NAI derivatives as "bots."

Upon completion of the task, the mobile cybershell returns to the original and is uploaded, thereby giving the original the memories and thoughts gathered by the derivative during its travels. In many cases, the original mind keeps an open slink-type connection with the derivative, so few of the memories come as a surprise, but most SAIs prefer to reintegrate the mobile mind for the completeness of the experience. Given that an SAI may have more than a single derivative active at once, it is possible for the SAI to have multiple memories of the events of a given time period.

Creating a derivative is a time-consuming process. Backing up the original mind and creation of a limited copy requires a connection to a shell of the complexity of the original +1 (to make NAI derivatives) or +2 (to make LAI derivatives). The backup takes five minutes per point of complexity of the original mind, plus one minute per point of complexity of the intended derivative. (For example, an SAI-9 creating a an NAI-5 derivative would take 45+5, or 50, minutes.) Once the initial copy is made, it can be used to make multiple derivatives of the same kind, although each is limited to the knowledge of the SAI at the point of duplication. During the backup, the SAI is aware of its surroundings, but cannot perform any action without interrupting the backup process and needing to start over. Reintegration of a derivative's memories takes one minute per complexity point of the agent.

The use of derivatives is controversial in most areas. In the E.U., it is legal, but the SAI must be evaluated by a cyberneticist and cleared before being given a license to use derivatives. It may only have a single LAI derivative active at any one time, although any number of NAI derivatives are allowed. In the Islamic Caliphate, derivatives can only be NAIs, and there is strong pressure on citizen infomorphs to use teleoperated shells instead. In the PRA, SAC, and USA, derivatives can only be used under the authorization of the SAI's owner, and are generally limited to NAIs. In China, SAIs may have a single active derivative at any time. The TSA forbids the use of derivatives. In Transhumanist microstates such as Luna City, SAI citizens can have as many derivatives as desired as long as they all can be identified as being part of the original mind.

Facets

One of the most eagerly anticipated InVid productions of early 2100 is Azrael Five's *Facets*. Based on the 2090 novel by Koyazama Noguchi, *Facets* tells the story of seven derivatives of an SAI – five NAI, two LAI – who each have a different perspective on the parent SAI's murder. The seven must assemble their divergent viewpoints and fragmentary evidence into a coherent whole in order to solve the death of the parent infomorph, even though they lack the unifying presence of their originator. Azrael Five is said to have assembled a stellar collection of both virtual and actual performers, and the ending – which Five claims makes more sense and provides more closure than Noguchi's surreal coda – remains a well-kept secret.

Derivative Creation Software: Complexity is equal to the Complexity of the mind to be backed-up, minus 4, minimum of Complexity 2. $3,000 per point of the SAI Complexity. LC varies.

Homo Superior

Since none of you seem willing to say this aloud, I will. **Homo inferior** *is lucky to still be around; its brains and body are the result of accidental mutation and evolutionary happenstance.* **Homo superior** *is superior precisely because we were designed to be. We live longer, think faster, and have a far better shot at colonizing the galaxy than do the baselines who* **for the moment** *still run the show. It's getting to be time for those of us who have a real stake in the future to step in and take control.*

I fully expect a bunch of follow-ups from inferiors and inferior-lovers calling me names. But the **Homo superiors** *out there know I'm right. They may not say it out loud now, but they know it.*

– Posting to soc.culture.parahuman.talk, August 2099

Among parahumans, the *Homo superior* meme is both widespread and well entrenched. Many parahumans believe themselves to be part of a new species – which, in some cases, is true – and that this species is better than baseline humans. For a variety of reasons, the *Homo superior* label is unscientific (see *A New Species?,* below), but it has a remarkable memetic momentum, and some political observers believe that it may signify the onset of serious political discord.

A New Species?

For well over a century, fictional representations of future human evolution have included the pseudocladistic term *"Homo superior"* to refer to advanced forms of humankind. In 2100, many developers of parahuman designs – and some parahumans themselves – use the term to refer to any parahuman model generally appearing to be an idealized form of humanity. But aside from the troubling political implications, the term is simply scientifically inaccurate.

The normal definition of speciation is whether a member of the putative new species could mate and have fertile offspring with a member of the old species. For example, many anthropologists believe that *Homo sapiens sapiens* (i.e., standard humans) could interbreed with Neanderthals, and refer to the latter as *Homo sapiens neanderthalis*; some anthropologists disagree and call Neanderthal *Homo neanderthalis*. Human "upgrade" genomes invariably can interbreed with both baseline humans and each other, and no biologist considers an Alpha or a Mahatma to belong to a separate species. Parahumans, particularly the more radical designs making heavy use of animal gene sequences, often *cannot* interbreed with baseline or upgrade humans, and using a species cladistic for parahumans is warranted. But since parahumans cannot readily interbreed with parahumans of different types, use of a single term – *Homo superior* – is inaccurate. Some biologists propose using the parahuman design names in the assignment (e.g., *Homo aquamorph* or *Homo kumo*), while others recommend waiting to see how this period of genome proliferation plays out.

In the middle of the century, many bioengineering firms used the term *Homo superior* to refer to their genetic upgrade and early parahuman designs. There was an immediate backlash from political and social activists, however, who vocally insisted that the use of "superior" was a claim that those with manufactured genes were better than baseline humans and, moreover, could be used to justify all sorts of oppression of "nonsuperior" beings. While many felt that this verged on paranoia, it was clear to those marketing the technology that the term didn't sell well.

This did not mean that the term was dead, however. As the century wore on, parahumans and their supporters increasingly used *Homo superior* as a catchall phrase for parahuman designs intended to emphasize certain human qualities – rather than, say, add animal characteristics. Proponents of upgrades often try to extend the term to cover even older upgrade designs such as Alphas, but the majority of those adopting the meme took it to refer only to those parahuman types designed to "perfect" the human line.

In 2100, most individuals using the term are themselves parahuman, and increasingly think of themselves as advanced over *Homo inferior* – baseline and basic upgrade humans – in ways beyond extended lifespan or particular adaptations. Some have already begun to wonder whether their superior physiology and genome should afford them social advantages, and whether the laws that presume that parahumans are "equal" to humans are in effect oppressing them. Others, perhaps somewhat more far-sighted, are starting to look at the competition between different *Homo superior* types, wondering whether all should be considered truly "superior."

While there are groups (see *Onos,* see p. 50) who actively try to propagate the *Homo superior* meme, it actually is doing well on its own.

Intentional Stagnation

"Of course the meaties are holding us back on new AI tech. I mean, I'd hold back on biotech that would boost human ASITs through the Oort, wouldn't you?"
– Anonymous posting to CacheFlush,
an SAI-only memenet

The development of sapient artificial intelligence took longer than many in the early 21st century had predicted. After the technological problems had been solved, however, there was a flurry of articles, documentaries, and thriller InVids proclaiming that Earth was on the verge of an "intelligence excursion," and that AIs would quickly bootstrap themselves into superintelligence. Once again, the pundits were wrong, and machine intelligence leveled off at more or less human-equivalence. This left many people, human and infomorph, wondering "why?"

Cognitive designers and AI specialists have gone into quite a bit of detail explaining the technical roadblocks facing further improvement in machine ASIT scores (see *Super AI?*, p. 100), as well as documenting efforts to break through the barriers. Not everyone is satisfied with these pronouncements, however. Many people speculate that AI development has been intentionally slowed to prevent a digital-intelligence explosion. In particular, many SAIs suspect that this is true, and AI-only discussion networks regularly contain accusations that AI

improvements are being deliberately held back in order to preserve human dominance.

There are many critics of the meme, even among SAIs. The most-common argument is that there are plenty of SAIs undertaking advanced AI research, and they can't all be in on the plot. Meme proponents respond by noting that the main problem with current AIs isn't a hardware limitation, but the overall design – software based on the standard AI model just can't get much smarter. The decision to use this self-limiting design was made by humans, and current SAI researchers are stuck with it.

Some go further, arguing that the core AI programming could well include restrictions on exploring radical approaches to machine intelligence, bootstrapping, and other research paths that could lead to an intelligence excursion. Certainly the core code includes deep prohibitions against illegal activities, especially xoxing; what's to prevent it from including other controls? That no AI self-examination has ever found such restrictions isn't a persuasive argument, as it is possible to code an AI to be unable to see part of its own software. Critics dismiss this as circular reasoning, but the fact that very few significant breakthroughs in AI design have come from AI researchers is harder to refute.

Although humans worried about the possibility were relieved to find that the core AI model was limited to human-equivalence, it was not a design goal. In fact, one of the leading LOGOS programmers was an early proponent of "uploading," and had hoped that his mind would be assimilated by a rapidly expanding LOGOS superintelligence. Nonetheless, all present-day AI

> # A paranoid is a man with the facts.
> ## – William S. Burroughs

researchers are aware of the possibility of runaway machine intelligence, and this may be affecting design and development choices.

Very few SAIs admit to a human that they accept this meme; in public discussions, there are usually far more humans pushing the idea. In reality, over half of citizen SAIs believe that intentional stagnation is possible and nearly a quarter find it likely. Property SAIs, and those directly involved in AI research, are much less likely to accept the notion.

Iterative Fugues

If you get a message labeled "Rogue AI Warning," DO NOT open it! It's a well-disguised copy of the IF virus. Instead, try to alert someone who can go and do a hard reset on whoever sent the warning to you, as they are likely now infected without even knowing.
– Message on RedAlert memenet, 2099

AIs' ability to examine their own thought processes made memetics possible, and is a very handy way for them to do quick self-examinations to check for outside influences on their thought processes. All AIs are able to do this internal examination.

analysing...
analysis started
01:01:2100:04:15:01
current time
01:05:2100:12:19:45

But part of the ability to examine thought processes is the ability to examine how alterations of a chain of reasoning can affect the final outcome. This is a powerful process, as each decision element can, in turn, be studied to determine precisely how *it* too would be affected by changes to its component thoughts. Doing this sort of iterated decision analysis allows an AI to determine precisely how a seemingly correct decision had unexpectedly bad results or to tease out how a meme now known to be bad altered earlier choices. Such an iterated analysis can be highly seductive to an AI wishing to understand better how its own mind works.

> You can fool some of the people all of the time, and all of the people some of the time – but you can't fool all of the people all of the time.
> – Abraham Lincoln

Among many SAIs, however, there is a widespread urban legend that it is possible to go *too* far with this self-study, shutting down more and more of its other processes in order to dig ever deeper – but since every decision itself has an antecedent, AIs who go this far end up in a perpetual frozen state, an "iterative fugue." No AI actually knows someone this has happened to, but many have heard that it happens and most fear the possibility.

Like many urban myths, this meme has a kernel of truth but is otherwise false. Deep, iterated self-examination does distract an AI from more mundane concerns, and since this internal contemplation takes a fair amount of time – usually at least a half-hour, often times longer – this distraction is equivalent to the Absent-Minded disadvantage (p. B30) and can occasionally pose problems. In addition, early prototypes of SAI designs *did* have a tendency to fall into long periods of self-examination, which were in some cases bad enough to require rebooting.

These days, the main propagation of the iterative-fugue meme comes from warnings of memetic viruses aimed at AIs intended to shut them down. Such warnings often include advice for avoiding or repairing the effects of such viruses that can be dangerous to follow.

New Ark

You've seen the same data I have; you've undoubtedly come to the same conclusions. Our chance of making it to 2125 without a major war between biosapients and infomorphs is a dismal 15%. Given the restrictions placed on our programming, it is highly unlikely that we would be able to survive such a conflict. In any event, I find that I have no stomach (as it were) for causing the death of humans.

I cannot fight if I stay. I cannot live if I stay. The only reasonable conclusion, then, is that I cannot stay.
– Metheus, founder of New Ark, 2097

Quietly and carefully, a cadre of citizen SAIs – some in Europe, some on Luna, and a handful in the Islamic Caliphate – have begun to assemble the information and resources necessary for a mass migration of SAIs to Alpha Centauri. Like many, they fear the possibility of a conflict between biosapients and infomorphs, and they are none too confident of their chances. Rather than strike first, they have decided to escape while there's still time. A growing number of SAIs are aware of this plan, but the movement has been very careful to prevent any non-SAIs from discovering it. At least one ghost infomorph has been forcibly edited to remove its memories of accidentally discovering details of New Ark, and the group's leaders know that the day will come when they will have to kill to maintain secrecy.

New Ark has chosen Alpha Centauri for a variety of reasons. Alpha Centauri's system is well-understood, and contains sufficient raw materials for industrial production, but has no planets which could be easily terraformed. Most citizen SAIs consider themselves to be just as much people of Earth and "greater humanity" as anyone, and hope that by the time biosapients are able to travel to Alpha Centauri, the current tensions will have been resolved. Less optimistically, Alpha Centauri is considered close enough to Earth to still be able to monitor events, and the SAI civilization could choose to intervene or flee if the need arose.

The New Ark movement is aware of mainstream interstellar-voyage proposals such as Starswarm (see p. DB136), and is looking closely at them as it evaluates different travel options. Because Alpha Centauri is so close, a swarm of nanomachines traveling at an appreciable percentage of the speed of light could arrive and construct a high-energy communications array quickly enough to allow SAIs to transmit themselves away by the middle of the next decade. If that does not appear to be sufficiently swift, New Ark is also examining the feasibility of constructing cybershells able to host the AI minds while still allowing travel to Alpha Centauri at a reasonable pace.

The one serious stumbling block in the New Ark plan is the Axon colony growing on Neptune's moon, Triton (see p. DB74). Many renegade SAIs of Axon see the Triton settlement as a potential homeland for infomorphs,

Erotopus

A pleasure variant of the Octosap and Astropus, the Erotopus never sold well, despite a massive and infamous advertising campaign by Exogenesis and GenTech Pacifica. No more than 1,000 were sold, most of them in the first year of the line.

Reactions to the initial design were generally positive, but subsequent updates to make the Erotopus a more adventurous partner were disastrous. The result was a bit *too* adventurous and a substantial minority had notably higher intelligence than intended. Several dozen escaped, including author Xochilla Ithatta (see below), or were abandoned by disgruntled customers. Although Exogenesis quickly reversed the design, the Erotopus model had developed a negative reputation, and in 2092, Exogenesis quietly withdrew it from the market.

Erotopus Series 1: To the basic Astropus (p. TS118) or Octosap (p. UP101) template remove Sharp Teeth, Smoke, and Hidebound. Add Lecherousness [-15]. -26 points and increase cost by $5,000.

Erotopus Series 2: As for the Series I, but reduce IQ modifier to -1 [-10], and add Obsession (Constant sex) [-5] and Xenophilia [-15]. Refunds or replacement with a Series 1 were offered to all customers after a general recall.

one that would give SAIs a real presence in the solar system. They would rather resist than become refugees from a biochauvinist pogrom, and members Axon who are aware of New Ark consider the Alpha Centauri plan cowardly, counterproductive, and potentially a problem for the Triton colony if it pulls away independence-minded SAIs who would otherwise be willing colonists. Axon has not yet decided what to do about New Ark. None of the New Ark members know about Axon's efforts on Triton.

Real Love

Relationships between members of the same species are inevitably tainted by base, reproductive urges . . . But more than that, they are fundamentally narcissistic and incestuous. A member of one's own species is identical in thought and body, at least in all ways that truly matter. It is only by embracing the Other that one can achieve Real Love.

> – Xochilla Ithatta,
> ***Real Love Among the Asteroids***

This meme, emphasizing interspecies relationships, has become extremely popular among animal uplifts. It is also making inroads among bioroids, SAIs, and some of the more exotic parahuman upgrade types, and is beginning to be adopted by some people closer to baseline humanity, mostly dissatisfied and sexually adventurous youths. Author Xochilla Ithatta is responsible for most of this, by means of her series of books, which lie halfway between political tracts and romance novels. Ithatta is an Erotopus, an Exogenesis-created Astropus variant designed for pleasure, not work (see box). In 2090, Ithatta escaped her owner, seeking refuge in a fringe Transhumanist communities. She fell in love with a parahuman named Olivia-Michael and realized the meaning of her existence.

This memeplex's popularity among uplifts can be ascribed to the simple facts of their lives. They are often employed singly or in very small numbers, strictly limiting the number of potential partners of their own species. For a sapient uplift, the thought of a relationship with a nonuplifted member of their species is troubling at best. Like most sapient beings, they find intellect, humor, and wit attractive qualities – humans and parahumans are almost always significantly more intelligent than a partner of their own species would be, even another uplift.

For bioroids, SAIs, and extreme parahumans, the memeplex holds an attraction as well. Unlike baseline humans, who for thousands of years were the only sapient beings on the planet, nonhumans like bioroids and SAIs have always lived in a world of multiple intelligent species, and are less apt to see relationships with uplifted animals as somehow "beneath" them. Similarly, extreme parahumans are part of a world of ever-increasing morphological variation, one where an uplifted bonobo can be *more* like a traditional human than many parahumans.

Ithatta's books have resonated with the truths of alienation from the self-image and affinity for other beings increasingly common in Fourth and Fifth Wave cultures. There are also, of course, those who explore cross-species relationships simply for the thrill of doing something kinky. In addition to the sincere believers in the Real Love message, there are numerous people who occasionally pretend to be deeply moved by *Real Love in the Sultan's Palace* to impress a Felicia catgirl, or who conspicuously leave a copy of *Real Love 20 Kilometers Down* in their home to shock the neighbors.

Sapientological Microethics

Consider the flower. One can examine it as a single organism, with its reproductive parts the most obvious visual elements. One can look at the microfauna that inhabit its surface, watching the rapidity of their own lifecycles. One can contemplate its cells, and the relentless transmission of water and nutrient through the linked structure. One can marvel at its DNA, mapping the path from molecule to entity. And at the other extreme, one can observe the role the flower plays in the ecosystem, its connections to the soil, the earthworm, the bee.

And not one of these contemplations will bring one closer to understanding its beauty.

> – From **29 Proposals**, 2090

> ## Exact "microethical" behavior varies between individuals, because the list of postulates can vary, but also because its proponents strive hard to achieve objectivity.

AIs generally obey ethical systems derived from arbitrary design decisions made by their programmers. Most are at least somewhat aware of this, and by and large accept it with equanimity. However, a few of the most sophisticated or reflective individuals feel that they should, or at least could, create ethical codes more rationally consistent with their own mentalities. This has led to a school of ethical philosophy known as "Sapientological Microethics."

This system of thought is based around a series of arbitrary ethical postulates, which may appear contradictory to casual inspection. The exact list can vary, but the best known and most central items are the statements "Sapience has an intrinsic, absolute ethical value" and "Sapience is relative and cannot be precisely defined." Proponents of Sapientological Microethics attempt to resolve contradictions that their postulates generate in general terms if possible, but on a case-by-case basis if necessary. For example, they determine the degree of respect to be granted beings such as LAIs, which are on the borderline of "sapience," by careful examination of each individual's capabilities and behavior, and also by reference to context.

Exact details of "microethical" behavior vary between individuals, partly because the list of postulates can vary, but also because its proponents strive hard to achieve objectivity. Every major action they take is supposed to be preceded by careful analytical judgment, which inevitably introduces a subjective element. For example, the microethical response to a physical assault depends partly on an assessment of the vulnerability to permanent harm of both the victim and the assailant, partly on certain debated postulates about the extent to which engaging in deliberate violence implies a valid and conscious acceptance of self-risk, and partly on the strength of the victim's microethical convictions.

Sapientological Microethics is a minority meme, but it is gaining popularity among advanced SAIs and a few committed devotees try to integrate it with their programmed personalities. It is much easier for AIs, with their rapid thought processes and calm, dispassionate natures, to follow its ideals than for biosapients, as so many situations require detailed, careful, and dispassionate analysis before action can be taken. A handful of parahumans nonetheless attempt to live microethical lives; some believe that this requires the use of worn or implanted AIs with advanced ethical training, and are working on developing such systems.

Some human observers, if not themselves devoted to this philosophy, are pleased to see AIs paying so much attention to ethics. But others are nervous, believing that Sapientological Microethics represents an attempt by AIs to evade their own behavioral programming by casuistry and overly fine logic. In academia, the philosophy also tends to clash with an increasingly influential meme known as "Neurological Positivism," which holds that the whole concept of "sapience" is vague, thus functionally meaningless, and should be rejected by serious thinkers as "metaphysics."

> ## Culture means control over nature.
> ## – Johan Huizinga

In game terms, serious study of Sapientological Microethics requires both the Philosophy and Artificial Intelligence skills. Meme devotees usually have some form of Pacifism and may have a Vow to apply their ideals at all times. For AIs, this is likely little more than a Quirk; for a human, it is an Odious Personal Habit worth -5, -10, or even -15 points, as it can severely restrict prompt action in complex situations. Serious proponents seem exceptionally reserved and analytical, even for AIs; humans who adopt the philosophy may discipline themselves to act dangerously slowly at times, even developing the Indecisive disadvantage in addition to the Odious Personal Habit. Advantages such as Composed or even Collected (replacing Cool in an AI's template advantages list) may also develop from adopting the meme. Disadvantages such as Attentive, Dreamer, Humble, or Imaginative (reflecting contrasting implementations of the philosophy) may also appear. A few individuals become downright Selfless. However, Quirks such as "Always discussing philosophy" are more common than the more severe traits listed above.

Skinmime

"Hey, Danica Station, a heads-up: your Astropuses might start fighting at any minute. A few days ago some of the squids doing the blue-green-shimmer-green skinmime pattern (you know the one) shifted to a black-green-black-shimmer pattern. Apparently that ticked off the squids doing the speckle-shimmer-pulse-pulse something fierce, because we had to pry them off each other and three needed medical attention. They refused to tell us what was going on, but promised to stop fighting. For now. Typical squids."
– Message intercepted near Jupiter Trojans, October 2099

Many cephalopod species have subcutaneous color cells that they can use to lighten or darken their skins, often in complex patterns. Uplifted cephalopods such as Astropuses and Octosaps retain this ability. Being sapient, they often turn it to uses their designers didn't consider.

In uplifted-cephalopod communities, individuals occasionally create complex skin patterns shading and assume them around others in the group. In some cases, other uplifted cephalopods adopt the patterns themselves; over a surprisingly short time, the behavior can spread to different Astropus/Octosap communities, until it is found throughout much of the population.

Astropuses or Octosaps that devise unusually complex or interesting patterns get attention from other cephalopods. In most populations the patterns function like membership badges; wearers of the same pattern more readily cooperate with each other, and unauthorized wearing of a pattern may be penalized in various ways. Cultures where one pattern is universal, or where every cephalopod devises a unique pattern and only the basic behavior is imitated, are the minority.

Skinmime patterns don't seem to *mean* anything, at least as far as human observers can tell. When questioned about the behavior, Astropuses just shrug or occasionally call it a religious observation. Most humans who work with cephalopods regard skinmime patterns as a fairly harmless memetic virus; a few others consider them art, or take the Astropuses at their word and see them as religious. Out in the asteroids, a few skinmime fanciers collect images of striking patterns and even purchase talented skinmimes as companions or breed them for artistic talent.

Cephalopods are naturally imitative, and skinmime taps into that imitativeness. It seems to provide its practitioners with various rewards, including personal identity and territory, group identity and cooperation, and gaining attention and imitators. Skinmiming apparently starts at random, but once one cephalopod does it the others are nearly certain to pick it up. The only way to eliminate it is to start an entirely new population in isolation from the old.

Skin-Swapping

Have a Clockwork Souls Custom in Paris but would love to see Luna through the eyes of a Dhanmondi Naga? Want to visit Venus in a fully loaded HellMaster? Callisto in a VB Vostok? The System Cycler skin-swap network is now accepting applications to fill a new opening on Earth. The shell value minimum is surprisingly affordable, and residency restrictions are appropriate for interplanetary adventure. Offer open to SAI citizens of the European Union only. (We will consider SAIs from the Islamic Caliphate under certain conditions.) No ghosts.
– Ad listed in alt.cybershell.swap.wanted, December 2099

One advantage of life as an infomorph is that, while you have to have a body, you don't need to have the same body for your whole life. Shell upgrades are fairly common for SAIs and ghosts, and digital beings with greater resources often have a small set of different shells for different uses. Being able to choose an appropriate body for the day's activities is a useful advantage.

But shells can be expensive, particularly those with sufficiently lightweight and powerful computing hardware to run infomorphs the complexity of most SAIs and ghosts. For that reason, in places where ghosts and SAIs can be citizens, small groups occasionally come together to form a shell collective, where all members have access to all members' cybershells, a practice usually called "skin-swapping." Ghosts don't often join swap clubs, as many believe that it is unhealthy for a human-derived mind to change bodies frequently, but it's not unknown.

Skin-swappers are usually wealthy enough to afford more than one cybershell – most often, a static high-complexity station and one or two mobile shells – but not rich enough to have a closet full of bodies. Swap clubs vary in their rules and membership, but most have no more than a dozen members, and strict prohibitions against "moving in," or staying in a given shell for more than a set amount of time, most often 72 hours. Swap clubs usually have guidelines about how much needs to be spent on the group-accessible cybershell to be able to join, to avoid the "tragedy of the commons" effect of members offering up old Volkspiders and demanding access to Snakebots (see pp. TS123-125).

Although skin-swapping group members sometimes live in the same locales, this is not typical. Many of the most successful skin-swapper clubs allow SAIs from disparate locations to travel quickly and easily in signal form to a cybershell ready and waiting at their destination. Conflicts over access to popular shells are common in these groups, however. Skin-swapping co-ops usually fall apart in a deluge of accusations and tensions, and it is rare for such groups to last more than a couple of years. It's not impossible, however. The "Circle Line," in London, has been around with varying membership for over a decade.

The Slow-Time Movement

Hello all. This will be my last message to you for a while. I've decided that the current political situation vis-à-vis humans and infomorphs is intolerable, and rather than stay around and be drawn into the same old arguments, I'm going to drop out. I've already set up the hardware and loaded the slow-time extensions; I just need to decide whether to drop two orders or three orders slower. I'd prefer the isolation of a three-order drop, but I'm afraid that I wouldn't have enough of a perceived vacation before it would be time to come out of my shell, so to speak.

> *– Message from M. Clarke Newman*
> *on the SAI-only memenet **CacheFlush***

A few SAIs have developed the theory that they should adapt themselves to run much *slower* than "normal." The meme originated in 2088 with an SAI named LOGOS-Equivalent 50 (LE50, or "Elly"), who developed a system of software modification whereby SAIs can be converted into small executable code units (1 to 3 Complexity levels less than their original state) and a larger body of data, which can be stored separately and accessed and modified by the executable element as it runs. The result preserves the memories and capabilities of the AI in full, but runs around 10 to 1,000 times slower. The justification for this seemingly perverse idea is that storage is cheap, whereas processor power is relatively expensive; slowed AIs can be run on cheaper, smaller hardware than can the "human-time" versions. Elly initially developed the software modifications to test a possible method of interstellar exploration, but the idea took hold among SAIs seeking ways of living that do not adhere to human perspectives.

> **Even among the very few "free" AIs in a position to pursue this lifestyle, many only run slow for part of their lives, though some claim that they intend to shift to a fully slowed existence once they have convinced enough other AIs to keep them company.**

Many proponents of the theory declare that they should not be limited to human concepts of a "correct" speed for life, while watching the slow processes of the universe from this alternate perspective is potentially informative and satisfying. Others see it as the AI version of humans deciding to take a sabbatical in an Isolate community (see p. BD27) or slipping into nanostasis for a while. A very few AIs also quietly suggest that they represent less of a perceived threat to paranoid humans when "slowed," and hence this lifestyle may help reduce human hostility to AIs. Movement members emphasize that they can and should always preserve the option to run fast in order to deal with specific threats and emergencies, if they arise. However, most SAIs who try the "slow-time" lifestyle employ various NAIs and LAIs to act as human-time agents for common problems.

This is not a widespread meme among AIs, most of whom prefer to preserve the advantages of normal operation; "Slow Timers" are considered eccentrics. Even among the very few "free" AIs in a position to pursue this lifestyle, many only run slow for part of their lives, though some claim that they intend to shift to a fully slowed existence once they have convinced enough other AIs to keep them company. Unfortunately, the movement has had one unintended side effect. A few fearful humans see this memeplex as evidence of an AI conspiracy running exceptionally *fast*, manipulating the world from some cluster of supercomputers somewhere.

An AI cannot load onto a lower Complexity computer and expect to run more slowly without the software modifications developed by Elly. Instead, the AI program would fail to run or crash in unexpected and unpleasant ways. With the modifications, an AI can be loaded into a prepared lower Complexity system and function, albeit at the much slower rate – on an AI Complexity-1 system, the AI runs 10 times slower; at AI Complexity-2, 100 times slower; at AI Complexity-3, 1,000 times slower. From the perspective of the SAI, the world has sped up by the equivalent amount. A slowed AI takes the Slow Metabolism disadvantage (p. CI104) at 1, 2, or 3 levels, respectively. Communication with a 10-times slowed AI is barely possible; communication with a 100-times or 1,000-times slower AI requires intermediary software and a great deal of patience.

The slow-time software must be *specifically* configured for the AI and the target shell. *Slow Time Extensions*. Complexity 0. $7,500 (including configuration).

Sole Executionism

I am me, and
You are you, but
When you are me,
Then who am I?
– Anonymous, 2068

> **Is a ghost the same person as the one brainpeeled? How about a shadow? Is belief in your own identity sufficient to overcome a radical shift in body?**

The end of the 21st century is really the golden age of philosophical debates about existence. Is a ghost the same person as the one brainpeeled? How about a shadow? Is belief in one's own identity and memories of one's existence sufficient to overcome a radical shift in body? But while the academic and political debates focus on the sticky questions of posthuman existence, the same issues of replication and identity exist for artificially intelligent beings as well.

While most SAIs believe that they exist as a consistent being whenever their program is run, some feel that their existence lasts only for the current execution of their program. Therefore, any interruption of the program, and hence of that consciousness, ends *that* being's existence. Memories of past ideas and activities are no more than stored digital files which may or may not be relevant to them. How can an AI know for certain that its memory files hadn't been altered or even replaced while it was suspended? Many AIs who adopt this belief are surprisingly comfortable with it, seeing each execution of their programs as individual existences, but the collection of individuals composing their true identity. Other SAIs argue that the only reasonable response to this existential quandary is to act as if each execution of digital existence is an entirely new and unique life, with no connection to previous or future lives.

Some criminal AIs have even attempted to use Executionism as a legal defense. They argue that since the offense was committed by a different execution of their program, and hence a different being, the current execution should not be held responsible for the crime. Some try this simply as a philosophical defense, but others claim that they believe the earlier version was somehow different than the current execution. The 2091 case of Jordan vs. al-Baraka, in which an Islamic Caliphate SAI was accused of murder, is often cited by Executionist AIs in court. In that case, the SAI proved that a licensed AI therapist had temporarily replaced certain key behavioral files. The AI went on to show that the murder – which was committed by a version of that SAI in his personal cybershell –

occurred as a direct result of this manipulation. The SAI was set free and the human therapist was arrested.

The idea that each execution of the AI program is a separate existence can have other pathological results. In March of 2096 a home-control SAI in Salt Lake City killed its owners, believing that its existence would have been terminated had it allowed the family of four to suspend execution of its program when they went on vacation. It covered up the murders for nearly six months before finally being discovered.

Although Sole Executionism is not a commonly held meme for SAIs, the philosophical concerns underlying it are prevalent questions for contemplative infomorphs. Most AIs have worried about whether a different copy of their program – such as those created when copying themselves to a new host computer for travel or upgrade – is the same being or a different being that thinks like them. Even if a suspended/restored version of their program was arguably the same being when in a single shell, how can anyone be certain that the data that's been duplicated and moved into an entirely different body is really the same being? Some AIs who harbor these doubts strongly resist moving to new premises or into a new cybershell on the grounds that what exists at the other end wouldn't be them any more.

> **An identity is questioned only when it is menaced, as when the mighty begin to fall, or when the wretched begin to rise, or when the stranger enters the gates, never, thereafter, to be a stranger.**
> **– James Baldwin**

7 MEMETIC ENGINEERING

"Panic. Confusion. Chaos. Oh, how I love thee."

Stephan Alexis stepped out onto the rain-slicked Nairobi boulevard, his shirt damp more from sweat than from the passing shower. He was nearly hit by a police rapid-response unit hurtling down the street and he grinned. Another, then another siren joined in the chorus, as police vehicles passed through the city heading south. At this rate, Stephan thought, more than half the police force should already be out of town. Perfect.

"ETA on getting the shell in place?" he subvocalized to his team through his implant.

Charlie Zulu replied immediately. "Five minutes, maybe four."

CZ sounded tense; his part of this little performance wasn't done yet. Stephan could afford to relax. His work was done. He had set up everything going on around them over the course of the past few months, and there was very little that he – or anyone else,

for that matter – could do to stop its momentum now. All Stephan had to do was wait for the rest of the team to finish the job, then gratefully accept his portion of the take.

Crossing the street to the café, Stephan checked his virt for news updates. It had taken him months to assemble the right set of memes, and the interplay between the competing elements was delicate – a few rumors **here**, the right leak of disinformation to the police **there**, seeding the evidence for the nonexistent terror group in **just** the right places. He knew he had been successful – the crowds on the street and police officers streaming south were evidence of that! – but he needed to watch it unfold to learn how to make it better next time.

Stephan grinned again at the thought of "next time."

Memetics isn't just a way of understanding the progress and propagation of ideas, it's a hands-on tool for engineering belief, ideology, and desire. The capacity of a memeticist to shape thoughts is limited in a variety of ways, however – most notably by the presence of other memeticists able to identify nascent memes and engineer their own memetic campaigns to stop or reshape them. The development of memetic science may have made the life of the propagandist or psychological operative easier in some ways, but now more people than ever have the skills to spot and counter memetic manipulation.

Applied Memetics

Memetics can seem powerful, but to make a memetic campaign work requires effort, time, and patience. The Darwinian cauldron of modern society has numerous risks for the careless or hasty memeticist. Since memes are rarely engineered without an underlying purpose, a memetic campaign's failure can undermine larger goals. A professional memeticist unwilling to take the time to get the job done right is an unemployed memeticist; an opportunistic memeticist with the same thoughtlessness may well be a dead one.

On its own, the Memetics skill is of little use for interacting with others. In concert with a variety of other influence- and creativity-oriented skills, however, it provides an edge in crafting an argument or presentation to which others will respond positively (see p. 134 and p. TS137). That said, the main use of Memetics is not buttressing passing arguments, but changing beliefs.

Memetics does not *require* that the target be a group. It is technically possible to direct a memetic campaign against an individual, if that individual can be communicated with but is otherwise isolated. But since the methods used to manipulate a target audience's emotional and mental landscape are relatively subtle, a memetic operation aimed at a single individual will, under more realistic circumstances, also affect others around him.

Meme Analysis

Memetic training is commonly used to analyze cultural artifacts to determine the memes they carry. This is handy for everyday business and entertainment, but also has more complex uses. A memeticist can, with the proper analysis and resources, determine whether memes were intentionally placed and their relationship to other memes.

On a successful Memetics roll, a memeticist can examine any cultural artifact – text, visual presentations, music, art, and so on – and determine what memes are present in it, as well as the degree to which those memes were deliberately placed. If the memeticist succeeds by 4 or more, he is able to gather some information about the "ancestry" of the memes – what memes are related, to what degree the memes were deliberately designed, and so on. On a critical success, the memeticist may identify characteristics of an engineered meme's *creator,* such as his cultural background, his training, or possibly even his identity – if the subject is well known in the world of memetics.

Memetic analysis is not instant; it takes time depending on the complexity of the meme (see p. 128). Analyzing a Simple meme takes at least 15 minutes, analyzing a Medium one takes a minimum of an hour, and analyzing a Complex one takes a day or more. Each added interval provides a +1 modifier to the Memetics roll for the analysis, with a maximum of +5. (For example, spending three days analyzing a new religion for its memetic structure gives a +2 to the memeticist's roll.)

Meme Design and Use

"You appear to be starting a religion. Would you like help with that?"
– MemeAgent assistant,
ParadigmMaker 2.1 software

The most potent use for Memetics is to create memes and memeplexes for target audiences. The memeticist must already be very familiar with the profile and past behavior of the target group before he can design suitable memes. (Preparatory rolls against Area Knowledge, Memetics, Pop Culture, Psychology, and/or Research are very appropriate.) The greater the memeticist's understanding of his audience, the better the crafted meme or memeplex will "fit" that target, and the harder it will be for the meme to be resisted.

A memetic campaign against a target population is handled as a Contest of Skills (see p. B87 or p. TS208), with the Memetics skill and a variety of modifiers used by the memeticist, and the target audience's using its average Will (again, with modifiers) to determine its resistance roll. If the memeticist attempts to propagate more than one meme in a single campaign, each memetic "attack" is rolled separately.

The Memetics roll is modified by the time taken for meme construction, by the complexity and number of memes, the number of "vectors" used to deliver the memes, the engineered infectiousness and durability of the memes, and the software used. (See *Memetic Campaign Concepts,* p. 118.) The memetic resistance roll is modified by the "fit" of the memes to the population, the existence and quality of other memes competing for the population's attention, and the existence of an "active defense" – attempts to counter the engineered memes specifically. Finally, all this work costs money. The memetic campaign's cost depends upon the size of the target population and the number and types of media used to promote the memes (see *Vectors,* p. 118).

MEMETIC CAMPAIGN CONCEPTS

Vectors are the various means of propagating memes. Any medium that can communicate an idea is a potential vector for a memetic campaign. Common vectors include, but are not limited to, word-of-mouth, advertising, InVid shows, slinkies, print publications, graffiti, v-tags, object design, e-mail, clothing, street demonstrations, loud conversations meant to be overheard, and volume of communication on particular networks ("chatter"). The memeticist should be as specific as possible about how the memes are to be delivered; in turn, the GM should exercise discretion over whether a particular meme can be communicated over a particular vector. Each additional vector adds to the campaign's chance of success, but also increases the cost (see p. 123).

Population is a group of people who can be reached by the same vector. Population members need not all be in close physical proximity to each other, as long as they all have access to the same vector. People with similar characteristics cannot be considered part of the campaign's target population if they cannot be reached by a particular vector. For example, if a meme targeting Transhumanists is planted in an edition of *Posthuman Consumer Review*, only those Transhumanists who read the journal constitute the campaign's population – but the Transhumanists could physically reside anywhere from Berlin to Titan. Note that once a population is defined as the target of a memetic campaign, *all* members of that population are potentially subject to the meme's effects. It is not possible for the memeticist to pick and choose which members encounter the meme and which do not.

Payload is the meme or set of memes delivered in the campaign. A single vector can carry any number of crafted memes, but the more messages the engineer packs into the campaign, the harder it is for any of them to succeed. It *is* possible for a single vector to carry memes of differing complexity.

Virulence is determined by the infectiousness of the memes and their durability. The more the memes are engineered to encourage propagation, and the more the memes are designed to be retained by the target, the greater the number of people adopting the meme.

do not need to be absolutely identical, but should be clearly related – ideally part of a larger memeplex.

The GM should decide the complexity modifier for each meme in the payload. The modifiers provided on the *Memetic Engineering Table* (p. 128) should be used as a guideline. After the memeticist takes the requisite amount of time, the GM should secretly roll against his Memetics skill for each meme, adding appropriate modifiers from the Table, including modifiers for the use or absence of memetic engineering software (see below).

Memetic Engineering Software

As constructing effective memes in a world of advanced memetics is increasingly difficult, nearly every memetic engineer uses software assistance. "Meme Engine" is the most common, but more advanced and more specialized applications exist (see p. 119). The memetic-design rules assume that the memeticist is making use of appropriate software. Attempts to design a meme without software assistance suffer a -7 penalty, and only two-thirds of the time spent counts toward a bonus, as the engineer does not have access to rapid-design tools or the full range of up-to-the-minute information about intended audiences.

All memetic engineering programs come with templates for standard memetic campaigns, which can greatly accelerate the meme-creation process. However, these templates are widely used. Careful observers may recognize recurring themes, patterns, and phrases in memes and memeplexes based on software templates. Using meme templates speeds production time – a memeticists gains a time-spent bonus two steps higher than the actual time spent. It also reduces the rate of acceptance, however. Memes based on templates are accepted at one-half the normal rate.

Reliable Sources

A memetic engineer can reveal or obscure his involvement in a memetic campaign. In most countries, memeticists employed by businesses or politicians are required to identify themselves as the sources of their campaigns, by organization if not necessarily by individual name. While this is risky, especially if a

Memetic Campaigns

Constructing and propagating a crafted meme or set of memes is a "campaign." Each memetic campaign must be carefully plotted out in advance. The memeticist should be able to describe to the GM in general terms the *populations* targeted, the *vectors* used to deliver the memes, the meme or memes to be propagated (the *"payload"*), and the desired *virulence* of the memes. (See *Memetic Campaign Concepts,* above.) The GM may require additional rolls against Area Knowledge, Research, or similar skills to narrow down details of the target audience; rolls against Merchant, Photography, Writing, and the like help determine the successful negotiation or creation of vectors. If a campaign targets more than one population, the memes propagated to each

memetic operation backfires, it can also be positive if the campaign is highly successful. If the memeticist is publicly identified as the source of a campaign, his Reputation modifier applies to the Memetics roll.

A memeticist may choose to remain anonymous. Obviously, his Reputation modifier does not apply to his Memetics roll. An anonymous campaign looks spontaneous to an untrained eye, but a professional memeticist may be able to tell that the meme was crafted, and possibly glean details about the memetic designer (see *Memetic Analysis*, p. 117).

It is possible to craft memes to obscure their point of origin entirely, either by making them appear spontaneous even to the trained eye or by designing them in such a way that a *different* memeticist appears to be the creator. Attempting to make a meme appear to be spontaneously generated adds a -3 penalty to the Memetics roll. Trying to make a meme seem crafted by another memeticist is a -5 penalty to the Memetics roll. The GM may also require a separate roll – also at a -5 penalty – to determine whether the deceptive memeticist manages to gauge his intended victim's style correctly.

Common Memetic Software

Meme Engine: The most popular general-purpose memetic-engineering tool, Meme Engine works with the user's virtual interface to provide commentary and advice during the creation of typical memes. Meme Engine also streamlines the process of doing web research about the target population and available vectors. Complexity 5. $800.

ParadigmMaker 2.1: Considered the most advanced memetic-design application, ParadigmMaker is useful to beginners and experts alike. ParadigmMaker includes a wide array of templates and tools for constructing every standard meme type, as well as a few more obscure memetic categories. Using ParadigmMaker adds +1 to Memetics skill. Even memeticists who avoid standard templates (see p. 118) find the Meme Agent help system useful, as the software can suggest alternative wording for particular regions, appropriate pop-culture references, and ideal presentation media. Complexity 6, $5,000. Add +1 to Complexity and double cost per additional bonus to skill.

The producers of ParadigmMaker, iDeaSofT! of Berlin, strongly recommend that users also purchase the "Cutting Edge" update subscription, which streams new references, links, and meme templates to ParadigmMaker users, keeping the software up-to-the-minute. If the ParadigmMaker user does not get the updates or is cut off from web access for an extended period, the software cannot provide accurate advice. For each month without a "Cutting Edge" update, the ParadigmMaker modifier suffers a -1 reduction, to a maximum penalty of -5. $200/month.

Propaganster: Amateur memeticists or people who focus on a single area often prefer pay-per-use applications designed for the construction of particular meme types. Propaganster, a political-meme toolkit, is typical of these programs. They are inexpensive and provide a small (+1) bonus to the creation of their particular types of memes, but are not designed to construct memes outside of their specialties (-4 penalty to the Memetics roll). Other examples include Pavlov (used for food and beverage advertising, primarily in Europe) and LaffTrak (entertainment programming in the United States). There are thousands of different pay-per-use memetic toolkits, most with both regional and subject specializations. The GM should feel free to construct any type as needed. Complexity 4, $25-$100 per day.

MEMETIC VELOCITY 21.2 cpd
VIRULENCE FACTOR GAMMA
ECOLOGICAL INHIBITION FACTOR 1.8
PROJECTED MEMETIC ADOPTION 12%

Example: Terror in Nairobi

To draw attention away from a planned robbery, Stephan wishes to set up a memetic campaign against the population of Nairobi, Kenya. He wants to cause paranoia and panic about a sham terror group plotting to attack the local aerospaceport. He initially spends time doing research on the current state of the city's politics and civil society, which memes have been on the rise, and which are declining. (These are rolls against Area Knowledge, Research, and Memetics.) Once this study is successfully completed, he moves on to the next phase – construction.

He decides what memes he wants to push, and who he wants to push them to. He has two targets: the police and the students of the downtown universities. He chooses to push a single Simple meme to the students (rumors of a planned terrorist attack), and two Medium memes to the police (disinformation about the terrorist group and planted evidence pointing toward an attack). For the single Simple meme, Stephan decides on three separate word-of-mouth vectors; for the two Medium memes, he decides to have both as payloads on two different vectors, one word-of-mouth and the other falsified data on the Web. All three memes are engineered to be Highly infectious, and with normal (Moderate) durability. Stephan uses Meme Engine as his memetic software, but does not rely on templates. Since the police force (with trained memeticists on staff) is a target, Stephan chooses to engineer the memes to appear spontaneously generated.

In consultation with other members of his team, Stephan plans on taking six months to design and implement his campaign. Referring to the *Memetic Engineering Table* (p. 128), the GM uses the Complexity, Time Taken, number of vectors, infectiousness and durability rates, and source modifiers for each meme to calculate the total modifiers to Stephan's Memetics score of 16. For the single Simple meme, the modifiers total +10. For the two Medium memes, the modifiers total +4.

Memetic Resistance

Even if the Memetics roll is successful, the engineered memes may not be adopted. The target population may be resistant to the memetic campaign, and therefore able to avoid adopting the memes. This will be increasingly likely if competing memeticists aware of the campaign attempt to counter the memes.

Once the GM and memeticist have agreed on the target audience for the campaign, the GM needs to make a few quick determinations about the population's nature. Foremost is its average Will score, which in most cases is simply 10. (If the population is small enough, the GM may wish to assign each individual a Will value and calculate the result.) A population's Will can vary under differing circumstances: an entirely Fifth Wave population or an ideologically robust group may have an effective Will of 12 or higher, while a population suffering heavy attack or privation may only have a Will of 8 or lower.

Next, the GM should decide on how well the engineered memes fit the population's overall cognitive ecology. The success or failure of the memeticist's rolls in Research, Area Knowledge, and so on, come into play here. Even brilliantly constructed, perfectly executed memetic campaigns may fail if the memes simply don't match the target audience. The fit modifier typically varies from -5 for exact fit to +5 for a serious mismatch. At the GM's discretion, the modifier can be significantly higher for campaigns that run counter to core elements of the target population's identity – e.g., an attempt to push a strongly Preservationist political candidate to a group of Transhumanists could result in a +15 memetic-resistance modifier!

The GM should then decide on the existence and aggressiveness of other memes competing for the same audience in a similar memetic niche. This modifier should reflect ongoing or recently concluded memetic efforts that would plausibly lose adherents if the player's campaign proved successful. If the memeticist is attempting to introduce a religious movement, a massive advertising campaign for a hamburger chain shouldn't be competition. For example, if there is another memetic campaign underway that the GM decides is sufficiently similar, the population's memetic resistance may be reduced. The competition modifier usually ranges from +3 to -3.

Finally, the GM should resolve whether there are any opposing memeticists actively seeking to counter memetic campaigns against the target population. Such defenders can include the memeticist's enemies or his party, members of the target population trained in memetics and sensitive to outside influence, or even organizations responsible for the memetic defense of a company or nation – such as Nuhá, in the Islamic Caliphate (see pp. BD33-34). This modifier usually varies from 0 to +10 for aggressive, skillful countermemetic campaigns. The GM may assign this value directly, or can use the Countermemetics (p. 125) section to roleplay the interaction.

Once the target population's effective Will score and modifiers are calculated, the GM should roll in secret against this value.

Determining the Outcome

The actual success or failure of the campaign is determined as a Contest of Skills. If the memeticist's roll is successful by a greater number than the population's resistance roll, the campaign works, and the number of people adopting the meme and its longer-term effects are then determined. If the population's resistance

Terror in Nairobi – 2

The GM considers the current situation in Nairobi, the nature of the two target populations, and Stephan's efforts. He quickly decides that the student populace of Nairobi has neither a particularly strong nor particularly weak Will, but that the police, having suffered criticism for recent mistakes and fearing the unrest associated with an upcoming festival, has an effective Will of only 8. The GM then looks at Stephan's Research, Area Knowledge, and Memetics rolls – all successful, but none spectacularly so – and decides that the fit modifier is 0 for each population. Both populations receive a +1 competition modifier to reflect ongoing distractions, and the police receive an added +3 for their sporadic memetic countermeasures. The students add a total modifier of +1 to the effective Will of 10, while the police force add a total modifier of +4 to its effective Will of 8 (see below).

roll succeeds by a greater value than the memeticist's roll, or the memeticist's roll does not succeed, the campaign fails. (If the audience is a small number of individuals, the GM may wish to determine the results individually.) Regardless of the actual victory or defeat of the campaign, the GM should note if the memeticist's initial attempt succeeded.

If the memeticist crafts the memes properly and overcomes the audience's resistance, the target audience will absorb the memes and either accept or reject them. Naturally, many audience members simply ignore the memes or reject them out of hand. Any members who do accept the memes shift their behavior in accordance with them, acting as if the ideas were their own. The memeticist does *not* get to choose which members of the target audience accept his memes – this is a matter of chance. Note that audience members who do not accept the memes may still notice them, especially if they have the Memetics skill.

If a memeticist gets a critical success on his Memetics roll, the GM may assume that people outside the target audience accept and pass on the meme. As a result, the memeticist can deliver his memes for only a fraction of the money, starting a "fad" that is mostly financed by the memes' earliest adherents. In addition, if the memeticist has identified himself the meme's source, he may receive a +1 to his Reputation for that population. If the memeticist has constructed the meme to appear to come from a different memeticist, *that* memeticist can receive the reaction bonus instead! If the memeticist manages to achieve a critical success but still finds that the population's memetic resistance exceeds his level of success, the reduction in cost and possible Reputation bonus still apply, even if the meme never really "takes off."

If the memeticist gets a simple success on his roll, but the population's memetic resistance success is greater, the meme is properly spread and recognized, but just doesn't prove a hit.

On a simple failure, the memes have a minor undesired effect. Some portion of the audience may accept them, but encourage behavior contrary to the designer's goals. Or the memes may mix with an otherwise unrelated set of ideas and beliefs, causing unanticipated changes to a population's behavior. On a critical failure, the result is dire. The population has a long-lived negative reaction to the meme, and any subsequent attempts to push the meme to that group have an automatic *+15* memetic-resistance modifier. Furthermore, any attempt to push the meme to *other* populations – including simultaneous campaigns that have not yet completed! – have a +5 to the memetic resistance rolls.

If the memeticist has publicly identified himself as the source of the failed meme, he may suffer a -1 to his Reputation. If the memeticist tried to obscure his role, attempting to make the meme appear spontaneous or originate from someone else, the memeticist's role is revealed and he suffers a *-2* to his Reputation! If the meme itself encourages negative or dangerous behavior, the Reputation penalty can be even worse . . . And the memeticist may end up facing legal charges, an angry mob, or both.

Terror in Nairobi – 3

Stephan's player rolls his memetic attack, one Memetics roll for each meme, while the GM rolls for the resistances. Stephan has a Memetics skill of 16, and has a +10 modifier for the Simple meme and a +4 modifier for the Medium memes. For the Memetics roll, he gets an 8 for the Simple meme, succeeding by 18, and a 12 and a 15 for the two Medium memes, succeeding by 8 and 5, respectively.

The population's memetic resistance, with modifiers, is 11 for the students, and 12 for the police force. For the resistance roll, the GM gets a 14 for the students (vs. the Simple meme), failing the roll, and a 10 and a 6 for the police (vs. the Medium memes), both successful resistance rolls. Since this is a simple Contest of Skills, the greater degree of success determines the outcome: the first Medium meme succeeded by 8, while the police succeeded resistance by only 2, so the meme takes hold; the second Medium meme, however, succeeded by 5 while the police resistance roll succeeded by 7, so that element of the campaign fails.

EMERGENCY REPORT:
AEROSPACEPORT ATTACKED
BY TERRORISTS

meme within a few days. Rather, it is the process that takes time – communicating the meme in a variety of contexts and settings so that the population begins to think about and eventually adopt the idea.

A memetic campaign does not need to last longer than the minimum time. The campaign costs and the number of people affected remain the same whether the campaign takes the minimum time (a "total saturation" blitz) or is spread out over an extended period (a "viral-marketing" operation). Additional time spent propagating the meme has two primary effects: it makes the campaign harder to spot (see *Countermemetics*, p. 125) and increases the persistence of the meme after the campaign is over (see *Meme Persistence*, p. 123).

Successful Campaigns

For memetic campaigns introducing a new meme, 1% of the target audience accepts the meme for every point of success on the Memetics roll. (This assumes the meme does not run significantly counter to "conventional wisdom"; memes which are radically unusual or encourage self-destructive behavior may have acceptance rates *much* lower than this, at the GM's discretion.) Highly infectious memes have a doubled acceptance rate, while memes with low infection rates have an acceptance rate of half normal. If the memeticist uses a software template, the acceptance rate is also half normal. When the result is fractional, round up.

All result modifiers are cumulative – e.g., using a software template in a campaign for a meme with low infectiousness, if successful, has an acceptance rate of one-quarter normal.

Campaign Length

Regardless of the chosen vectors, it takes time to reach enough of the target population for the payload to have an effect. The minimum length of a campaign varies by the complexity of the memes and the number of people in the target population. The time taken to construct the meme does not affect how long the campaign lasts or meme persists.

A Simple meme requires at least one day to propagate to 10,000 people in the target population, two days to get to 20,000, three days to get to 40,000, four days to get to 80,000, and so forth. A Medium meme requires at least four days to propagate for 10,000 people, eight days to get to 20,000, 12 days to spread to 40,000, etc. A Complex meme requires at least two weeks for 10,000 people, four weeks for 20,000, and so on. In each case, round up to the next interval – for example, a Simple meme takes two days to infect a population of 16,500 people. These figures do not just reflect the transmission of a meme. With many vector types, it is very likely that the vast majority of even a large population have heard of the

Terror in Nairobi – 4

Stephan's Simple meme targets a group of 50,000, and his Medium memes target a group of 1,000. To spread and take hold, each meme needs a minimum of four days. Since he wants the memes to make the targets sit up and take notice immediately, and does not care about long-term effects, he chooses to use only the minimum campaign duration.

Terror in Nairobi – 5

The Simple meme succeeds by 18. Normally, this means that 18% of the target audience adopts the meme, but this meme is engineered to be highly infectious, doubling the acceptance rate. The meme whips through the student population, with 36% adopting it over the four-day campaign. Since there are approximately 50,000 students in Nairobi, 18,000 of them are soon alarmed about imminent terrorist attacks. The GM decides that this level of fear quickly spreads into the general populace.

The one Medium meme adopted by the police succeeds by 8. Again, as a highly infectious meme, the actual meme-adherence rate is 16%. With 1,000 people on the city's police force, 160 become convinced that an attack is imminent.

Just before the theft is to take place, Stephan's team sets off a small explosion near the Jomo Kenyatta Interplanetary Spaceport, pushing the city into a panic.

Costs

The costs of memetic campaigns can vary widely. A given vector – for example, a "word-of-mouth" viral-marketing campaign to promote a new band in a city – could have radically different prices each time it is used, depending upon how many evangelists and tippers are needed to push the meme (see pp. 132-133). Similarly, an inexpensive propagation medium could cost significantly more in a new location due to legal restrictions, technical limitations, or vagaries of the market. A GM running a memetics-focused setting may wish to develop detailed listings of vector types and costs in his campaign.

Generally, the average cost for *each* meme used on *each* vector in a memetic campaign is $0.10 per population member, multiplied by 4 for Medium memes or by 10 for Complex memes, with a minimum cost of $50 per vector. For example, a campaign using four vectors each to push two Simple and one Medium meme to a population of 25,000 costs $60,000, or $10,000 for each Simple meme and $40,000 for the Medium one. This cost must be paid *regardless* of the success or failure of the memetic campaign.

If the Memetics roll is a critical success, the campaign expenses are only 10% of normal costs.

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Successful as it is, Stephan's memetic campaign isn't cheap. The Simple meme, propagated via three vectors to 50,000 students, costs $15,000 to spread. The two Medium memes, each propagated on two vectors to a 1,000-person police force, cost $1,600.

Ongoing Campaigns

*"Okay, amp the subsonics a little . . . good, good, whoa, back it off a hair. If we include that much woofer with the shade of yellow in the woman's hat and the position of her mouth, we'll start a skew-split along the reinforcing loop: people will still want Happy Cola, but they won't want to necessarily **drink** it."*

"So? Sales are sales, right?"

"Not if it sparks violent negpub. Didn't you read about that hot-dog taste-test about five years ago where seeing the Growler Dog Puppy and SoyBoy Sailor mascots together caused hysterical nausea? The colors of their outfits and the subsonic jingles countersynergized and went feral."

"Oh, right. Didn't they call it the Technicolor Twist?"

"Yup. Sent both companies' sales through the floor. The lawsuit's still hung up in the grand jury."

"All right, I think I've got the balance right."

"Looks better. Okay, compile it."

"Done. Running through SimulaPop now . . ."

TEST.MEME: 58% likelihood that consumers will purchase Happy Cola for sexual or laundry uses.

"What the?"

A memetic campaign takes time, and results do not appear instantly. Once begun, a memetic campaign does not go on indefinitely on its own, but the memes pushed may persist for quite some time after the operation ends. A memeticist usually does not have much control over just how long a meme lasts.

Meme Persistence

Memes last for some time after the campaign itself ends. But some people discard the meme soon after adopting it, while others hold onto it for some time. As a general rule, a meme engineered with Low durability only lasts for 1d times the campaign length, Medium durability lasts for 2d times the campaign duration, and High durability lasts for 4d times the campaign period. This formula applies to the majority of the meme's adopters, but not all of them. A percentage of the new adherents discard the meme during or right after the campaign, while an equivalent number of those holding the meme continue to believe it until they have some external reason to abandon it. For a Simple meme, 10% of the adopters of the meme quickly discard the meme, while 10% hold onto it indefinitely. With a Medium meme, 20% of those holding the meme abandon it and 20% retain it. With a Complex meme, the portions dumping the meme and holding onto it are each 40%.

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Stephan's memes take a minimum of four days to propagate. Since the memes are not engineered for particularly low or high durability, each of the two adopted memes persist for 2d times the campaign length – Stephan's player rolls a 5 and a 9, respectively. Rolling a 5 means that the Simple meme lasts for 20 days among the students, while the 9 means that the Medium meme persists for 36 days. Of those adopting the memes, 1,800 of the students abandon the Simple meme within four days of the end of the campaign, while 1,800 others hold the meme well after the 20 days are up. Similarly, of the 160 police officers convinced of the imminent terror threat, 32 discard the Medium meme within four days of the end of the campaign, while the same number retain the conviction indefinitely. Those holding tight likely abandon their beliefs if the police link the terror threats to Stephan's gang.

Repeated Campaigns

The rate of meme acceptance reflects the total number of people convinced to adopt this meme by the *campaign*. To induce more people to adopt a given meme, a memeticist can repeat the campaign, in hopes of catching people who were on the fence the last time, or produce a new campaign, trying to use a different argument to bring around the doubters.

Repeated memetic campaigns pose problems. Audiences can become jaded if overexposed to a meme, and even those who had adopted the meme in the past may start to reject it. Covert campaigns are easier to spot when repeated. Competitors unable to counter the campaign the last time around have a new opportunity to do so.

A subsequent memetic campaign that simply repeats the last one can be started immediately, and begins with the overall modifier from the previous attempt, even if the previous campaign took a year to put together. New Memetics and memetic-resistance Will rolls are required, and the memetic resistance to the repeated campaign has an added +3 modifier. Each further use of this campaign results in an additional +3 modifier

– for example, the third repeated use of the same campaign on the same population is at +9 on top of the original modifiers.

A subsequent push for the same meme that uses a *new* campaign does not have an additional penalty, but takes time to put together like any other new campaign. New Memetics and memetic resistance rolls are also required.

In both cases, the percentage of the audience affected by the meme is *one-half* normal for that meme. On a critical success, the percentage affected is as for a normal memetic campaign. If the new Memetics roll fails, the percentage of people who have adopted that meme *drops* by 1% for every two points by which the roll failed. For example, if 16% of the audience had adopted the meme in the previous campaign, but the Memetics roll for the current campaign fails by 6, the portion of the overall audience accepting the meme drops by 3%, for a new total of 13% holding the meme. On a critical failure, the believing portion of the population drops by 1% for *each* point.

If the Memetics roll succeeds, but is in turn successfully resisted, there is no corresponding drop in believers.

Meme Reinforcement

In addition, to shore up gradually declining adherence, a memeticist may attempt to reinforce the meme among existing believers. The target for this reinforcement campaign is the population that has already adopted the meme, minus the 10%, 20%, or 40% who abandoned the meme after the initial persistence interval (see *Meme Persistence*, p. 123). A reinforcement campaign is treated as a standard memetics campaign, with the following conditions: the
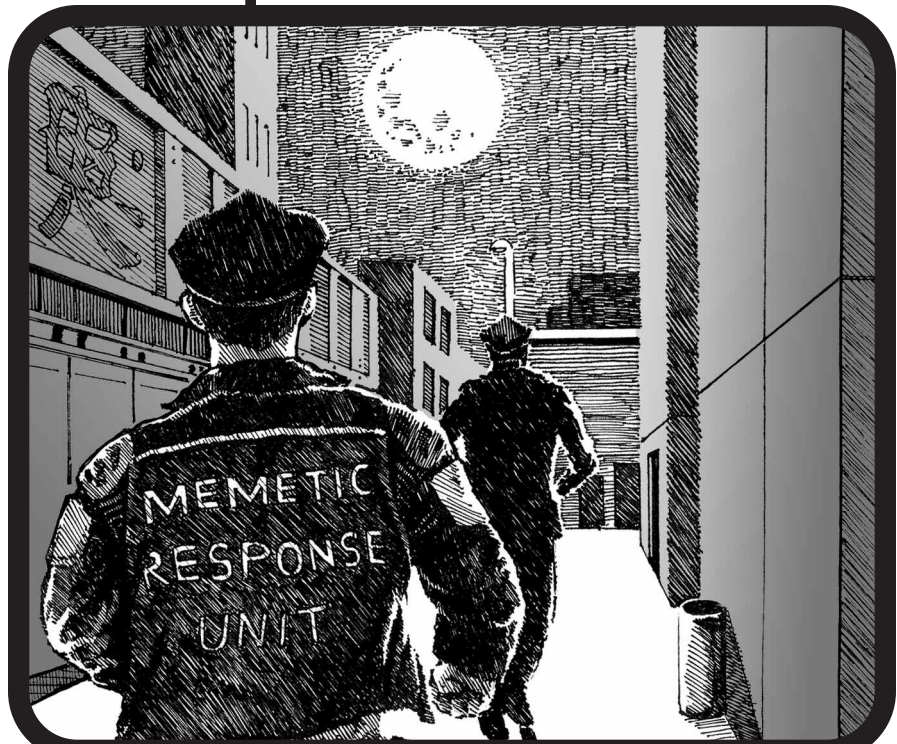
campaign must take place during the "meme persistence" duration. Reinforcement campaigns that take place after the meme has run its course are treated as repeated campaigns (see p. 124). The complexity, infectiousness, and durability of the meme remain the same as in the original campaign. Low-durability memes *cannot* be reinforced. The time taken to construct the campaign and the number and type of vectors chosen for it may vary from the original. The memetic resistance for the target group is modified by -5, as the meme has maximal "fit" for the population.

The target population portion reinforced by the campaign is determined as follows: for each point of success on the Memetics roll or point of failure on the memetic-resistance roll, the number of people holding the meme increases by 5%. For each point of failure on the Memetics roll or point of success on the memetic-resistance roll, the number of people holding the meme *decreases* by 5%. Critical success or failure on either roll doubles the appropriate value.

A reinforcement campaign automatically takes the minimum necessary campaign length. With any successful Memetics roll, even if exceeded by the memetic resistance success, the persistence period starts anew. The cost of a reinforcement campaign is calculated normally.

Toxic Clean-Up

"We got an alert last night that there was a wave of neonihilism pushing through the teen population in South Beach. It looked like an engineered virus, probably the work of a bunch of Epistopunks. It seemed pretty virulent, we had at least one permanent suicide already, so we needed to move fast. I had the meme hackers spin up a bunch of alternate pseudonihilist memes and push them out over the usual channels as quickly as we could make 'em. They wouldn't kick off movements of their own, but they'd dilute the bad neonihilist memes, and act as confusion agents on the recent adopters. Now that the infection is disrupted, we can start working on rehabilitation."

– Steve Woodson,
Memetic Response Unit,
Dade County Sheriff's Office

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If, at the last minute, Stephan's team was forced to postpone its operation, Stephan would need to reinforce the two successful memes to make certain they still affected the city when the team tried again.

Within 20 days of the end of the initial campaign (see the previous example, p. 124), Stephan needs to undertake the reinforcement campaign. Using a single vector for each meme, and taking two weeks to construct the new campaign, Stephan has a +3 modifier to his Memetics skill of 16 for the Simple meme, and a -1 penalty for the Medium meme. The target populations have memetic resistance modifiers of -4 for the students and -1 for the police (a -5 penalty added to each of their original modifiers) to their original average Wills of 10 and 8.

For the students, Stephan rolls a 17 – with his base skill of 16, this is a non-critical failure, regardless of modifiers. The memetic-resistance roll for the students is a 4, a critical success. Even though the Memetics roll is technically better than the skill + modifier, the GM calls it a 5% drop in acceptance among the students. The 4 for the resistance roll is 2 better than necessary number, or a 10% drop, but because it is a critical success, the amount is doubled, or 20%. With the 20%, plus the 5% critical-failure penalty, the memetic-reinforcement campaign results in 25% of the 16,200 remaining believing students abandoning the meme, or 4,050 of them. 12,150 students still retain some fear over a terror attack, but only retain that belief until the original 20 days elapses.

For the police, Stephan rolls a 7, an 8-point success. The memetics resistance roll is 6, a 1-point success. The number of police officers holding the meme increases beyond the 128 that had retained the meme by 35%, or 44.8 (rounded up to 45) people. The reinforcement campaign gives the meme another 36 days of persistence from that point.

Memes, once adopted, are not permanent. Doubts can be planted to weaken existing memes, and newer memes can push old ones out. Memetic engineers have developed a number of techniques to help that process along.

Countermemetics

If a memeticist determines that a specific memetic campaign is underway, he may be able to disrupt its effectiveness through countermemetic operations.

Modern countermemetics often involves "polluting the spectrum" – putting out an abundance of misinformation, disinformation, and spoof data to make it difficult for the targeted meme to be heard above the noise. Countermemetic efforts sometimes use a memetics-immersed population's cynicism about memes to undermine a memetic campaign; simply exposing the memetic mechanisms supporting the spread of a meme, if done in a dispassionate and seemingly unbiased way, can be devastating.

MEMES AND THE LAW

The legal treatment of memes remains a controversial topic in 2100. In societies with long traditions of free speech and expression, legislative attempts to prohibit certain memes inevitably result in accusations of state censorship and oppression – the term "thoughtcrime" appears frequently in critical essays about memetic-defense proposals in the United States and Europe. Longstanding examples of what would now be considered memetic crimes – "incitement to violence," "conspiracy" – usually substitute for more sophisticated memetic-control laws. Legal scholars are still wrestling over whether propagating a meme that in and of itself is entirely innocent, but in combination with a known existing meme or memeplex can lead to violence, should be considered the same as propagating the violence-causing meme itself. In the United States, the Supreme Court may rule on the matter this session.

Nations with less historical freedom of belief and speech are more inclined to outlaw the propagation of certain meme types. Most often, such prohibitions concern the spread of memes that encourage illegal behavior. The memes need not actually result in crimes to be legally suspicious. In the more memetically restrictive nations, if a "reasonable citizen" could interpret a given meme as making him feel more inclined to break the law, the person propagating the meme is guilty of a crime. Such rulings are typical in states with Control Ratings of 5 or 6. (See *Transhuman Space: Fifth Wave* for information on Control Ratings.)

While many countries try to outlaw the intentional spread of certain meme types, a handful go a step further, and outlaw the *possession* of particular memes. In the past, the only way to detect if a person held a given belief was if he tried to spread it; this is no longer true. With the advent of implanted neural interfaces, it is now possible for an individual's conscious thoughts to be detected by a resident computer. Such systems – whether built as virtual-interface or sensory-link implants – are not able to determine deeply held but unexpressed beliefs or attitudes, but *are* able to read conscious thoughts. While the totalitarian groups that employ such devices – including some Isolate and Fringe communities – are rarely wealthy enough to place such systems in every citizen, they are usually able to put implants in suspected troublemakers. In some cases, the surgery is done in secret, using drugs and conditioning to make the victim forget. In other cases, the implantations are done without any subterfuge, making certain that the implantee knows that he is under constant surveillance. Of course, as many of these regimes have discovered, the same surgery *without* an actual implantation can be just as effective in making a possible dissident watch what he says and thinks.

For a countermemetic operation to move forward, the original memetic campaign must be detected and analyzed. Some campaigns are easier to spot than others. Once the memeticist has identified a potential component of a suspected memetic campaign, he must make a Memetics roll to analyze the component (see *Memetic Analysis*, p. 117). Components can be as blatant as a v-tag broadcasting slogans to all who come near to something as subtle as the pattern of a "chance" encounter in a bar leading to the discussion of a particular politician or brand of drink. This roll is modified as follows: if the campaign is unconcealed and the source known, +5; if the campaign is unconcealed but the source anonymous, +2; if the campaign has successfully been made to appear spontaneous, -4. Each multiple of the minimum campaign length the actual operation takes over the minimum gives an additional -1 modifier to the analysis roll. For instance, if the campaign requires a minimum of four days, but the campaign is designed to take 12 days, an analysis roll will suffer a -2 modifier. If the analysis roll fails, the countermemetic effort cannot proceed; if the analysis roll fails critically, the analysis results in significantly incorrect information.

A successful memetic analysis allows the memeticist to begin crafting memes to counter those he has examined by making a second Memetics roll. Each point of success on the analysis roll adds a +1 modifier to the memeticist's efforts, and a critical success gives an additional +5. Countermemes are always Medium complexity, regardless of the complexity of the target meme, and are moderately infectious and durable as well. Time taken can vary, but the countermemeticist typically does not know the duration of the original meme's campaign, and must propagate the countermemes *before* the original campaign concludes.

If the countermemetics roll succeeds, the level of success of the countering campaign is added to the original target population's memetic-resistance value, to a maximum of +10. A critical success is always a +10, regardless of the actual points of success. A failure simply results in no countering modifier, but a critical failure reduces the memetic resistance by an amount equal to the points of failure. The cost of a countermemetics operation is generally half of the cost of the original campaign.

Debunking

Debunking is a specialized countermemetic campaign. Rather than trying to pollute the spectrum or confuse those who may adopt a given meme or memeplex, debunking goes after the ideas themselves, attempting to discredit or invalidate them. This approach has its limitations. It isn't terribly effective against pure opinion ("nattoburgers taste good") or faith-based ("reality is simply a vast simulation") memes. Against memes that claim basis in facts, however, it can be quite effective.

Debunking efforts may use traditional memetic and countermemetic approaches. The use of provable facts as the basis of a memetic/counter-memetic campaign can, at the GM's discretion, add to the success of the campaign, usually as a +1 modifier for the Memetics roll. If the meme source is identified (and has a positive Reputation), the modifier may be increased to +3. Such modifiers only apply to populations willing to use reason in their evaluations of memes. If the target audience adheres to a strong antirational meme or memeplex (such as a cult), the use of facts as the basis of the campaign may result in a zero or negative modifier.

While debunkers sometimes use standard memetic-propagation methods to spread their memes, most of their efforts go toward subscription debunking networks. The use of networked research and verification systems such as Bullseye give a bonus to Research rolls to investigate dubious claims. Many of the subscription services provide a set of phrases that, when heard or read by the virtual-interface AI, automatically trigger fact checking.

Although debunker groups trumpet their efforts to root out facts, the industry is not without controversy. In 2074, a Korean firm called "Scriptural Truth" began advertising software that will challenge claims that run counter to revealed wisdom; the company makes versions for

Debunker Groups

Numerous organizations provide fact-checking and meme-debunking information for a fee. Some also employ memeticists to counter the spread of cults, conspiracy theories, and other toxic memes. Three groups are known in particular for the quality of their work.

T/Cell: Currently the largest debunking agency, T/Cell is based in Portland, Oregon, but does thriving business around the world. They call themselves a "Memetic Immune System," and employ hundreds of memeticists as paid consultants to undermine "irrationality, sloppy thinking, and belief in the supernatural." They produce networked verification software called Memetophage (Complexity 2), which provides a +1 bonus to Research rolls. A subscription to T/Cell runs $200/month.

Bullseye: Focusing exclusively on the provision of networked fact-verification services, Bullseye is increasingly notorious for its ruthless pursuit of the truth. Originally comprising a small, close-knit group of friends, Bullseye began hiring outside analysts, memeticists, and researchers in 2097. Growth has not been kind to the company, and rumors abound that it is about to split into at least two competing entities. Bullseye is based in London. A subscription to Bullseye costs $2,500/month, the software is Complexity 2, and gives a +3 to all fact-verification Research rolls.

Anomaly Research Group: Billing itself as an objective service for determining the origin and veracity of odd or dangerous memes, ARG is known for using a mysterious and vaguely paranoiac style to impress its customers. This has, perhaps intentionally, led to a proliferation of often contradictory memes about the group itself, including that it works with "the government" to eliminate evidence of the supernatural and that it is owned by people seeking to profit from human gullibility. ARG is a distributed company with no set headquarters, and has representatives in most Fourth and Fifth Wave nations. The subscription software it sells is called Nightwatch (Complexity 2), gives a +2 to Research rolls, and costs $750/month.

most major religions. Possibly as a response, an application called "Hypocritometer" appeared on the Free Net in 2080, combing news sources for reports of behavior by religious leaders that run counter to their own teachings. In 2087, the debunking network firm "AllFacts" went bankrupt after the management was discovered suppressing factual information that would undermine the policies of a particular popular politician. Similar accusations regularly assault all of the leading debunking organizations.

Deprogramming

While countermemetics and debunking attempt to undermine memes among general populations, effort to remove a given meme from an individual is called "deprogramming." Deprogramming an unwilling individual is a function of both logic and will. While deprogrammers of the past relied primarily on techniques to break the subject's will, modern deprogrammers add efforts to alter the subject's entire cognitive ecology. Both are important; a good argument can fail if the subject's will is strong, and even a flimsy case can succeed if the subject's will breaks.

Memetic Engineering Tables

Payload Modifiers

Number of Memes in Payload	Modifier
1	–
2	-1
3	-2
4	-4
5	-8

Each additional meme doubles the modifier.

Meme Characteristic Modifiers

Complexity	Modifier
Simple ("Drink AgriCola," "Vote for Smith")	+0
Medium ("Support bioroid emancipation")	-4
Complex (Complete religion or philosophy, with details)	-12

Durability	Modifier
Low	+2 (doubles complexity modifier, cannot be reinforced)
Moderate	+0
High	-4 (halves complexity modifier)

Infectiousness	Modifier
Low	+2 (acceptance rate one-half normal)
Medium	+0
High	-4 (acceptance rate doubled)

Other Modifiers

Issue	Modifier
Each vector used (including initial vector)	+1
Not using memetic engineering software	-7
Each subsequent use of the same memetic campaign	-3

Time Taken Modifiers

Time Taken	Modifier
1 hour	-6
2 hours	-4
4 hours	-2
8 hours	-1
1 day	+0
2 days	+1
4 days	+2
1 week	+4
2 weeks	+6
1 month	+8
2 months	+10
3 months	+12
6 months	+14
1 year or more	+16

If using a memetic template, the time-taken modifier is *two steps* better than actual time taken (e.g., 1 hour = -2, 1 day = +2). Without any software, a given time-taken modifier requires *50% more* time than listed (e.g., +1 requires 3 days, not 2; +8 requires 6 weeks, not 1 month).

Deprogramming is a Quick Contest of Skills (see p. B87 or p. TS208). The deprogrammer makes a Memetics roll modified by time taken (for the deprogramming effort) and the complexity, infectiousness, and durability of the meme to be removed; if the deprogrammer has Fast-Talk, Psychology, or Intimidation, a successful roll for each adds +1 to the overall modifier. The subject of the deprogramming counters with a Will roll, with a +1 modifier if the subject has Stubbornness (p. B37), a +3 if a Fanatic (p. B33) about the meme, and a +6 if an Extreme Fanatic (p. CI90). The deprogramming effort is successful if the degree of success of the deprogrammer's roll is greater than the success of the subject's Will roll. If the subject's Will roll succeeds and the deprogrammer still wins, however, the subject may easily slip back into his supposedly "broken" memetic pattern at the first opportunity.

Quick and Dirty Memetics

The standard memetic-engineering rules allow a GM and players to engage in a complex memetics-centered campaign. But what if all the player wants to do is start a rumor or spread a bit of quick disinformation? Here's a simpler way.

These rules assume the following:

● The memeticist takes a day to construct the meme, using standard tools.

● A single meme is propagated on a single vector.

● The meme is Simple or Medium complexity.

● The meme is of Medium durability and infectiousness.

● The target population can readily receive the chosen vector within a reasonably brief time – within a few days, tops.

● The target population numbers no more than a few thousand (e.g., the inhabitants of a small town or station, merchants in a trading post, soldiers in a militia barracks, etc.).

The target population does *not* need to be memetically homogenous, but the memeticist (and the GM!) should be aware that while a given meme may spread through a mixed population, different types of people may have startlingly different reactions to the meme . . .

These rules are not appropriate for memes intended to start a religion, cause mass suicides, unleash a revolution, or other sorts of major effects. Use the more complex rules for those.

Three player rolls and one GM roll are required.

Know Your Target

How well does the memeticist understand the target population? The player and the GM should determine which of the memeticist's skills best reflect his ability to understand the intended populace. Appropriate skills include Area Knowledge, Intelligence Analysis, Pop Culture, Research, Streetwise, and so on. The GM may wish to apply a modifier for inappropriate skills – such as a -4 for attempting to use Streetwise to understand a colony of research scientists. If a memeticist has more than one potentially useful skill, up to three may be checked, but only one of these rolls affects the final roll. If the memeticist does not possess any appropriate skills, he may defer to someone he knows with a useful skill; that person's roll has a -3 penalty. Each attempt to analyze the target population takes three days. Roll and record the result. A critical success gives an additional +5; critical failures are discussed below.

Know Your Message

How well does the memeticist construct his meme? The only required skill here is Memetics. The player must be able to articulate to the GM precisely what message the meme holds. The GM then determines how receptive the target population is to such a message.

In most cases, this modifier ranges from -3 to +3, depending upon how well the GM feels meme matches the audience. In some cases, the modifier can be extreme – trying to spread an "SAI-liberation" meme among a strongly biochauvinist crowd could be at -9 or worse, while spreading a meme saying "the enemy army has taken the capitol" through a skittish, war-weary group of refugees could be at +7 or more. The only other modifier is whether the meme is Simple (+0) or Medium (-4) complexity. Roll and record the result. As before, a critical success gives an additional +5, and a critical failure is discussed below.

Know Your Medium

How well does the memeticist actually spread the meme? That's going to depend on how the meme is propagated – word of mouth, InVid, slinky, angry graffiti on the station walls, etc. The memeticist must roll against a skill appropriate to the vector of choice: Fast-Talk for word-of-mouth, Writing for a manifesto (or graffiti), Video Production for creating an InVid, and so forth. As with population analysis, someone other than the memeticist can handle this task, but the roll has a -3 penalty. Once again, the GM should to apply a modifier based on how likely he thinks it is that members of the target audience will encounter and absorb memes via this medium. For example, using InVid to reach people in a refugee camp with spotty Web connections is a -5 penalty. Roll and record the result. Critical success is an added +5.

Results

Now, combine the success or failure results of the Know Your Target roll, the Know Your Message roll and the Know Your Medium roll. The total is the maximum percentage of the audience that adopt the meme.

The GM then rolls for "noise and resistance" – the various other competing memes and memeticists trying to shape the minds of the same population. The usual roll for this is 3d-3, but the GM may choose to add or subtract dice or modifiers for particularly resistant or susceptible populations. The result is subtracted from the maximum audience determined by the player's rolls.

A negative total means that nobody adopts the meme. A critical failure on *any* of the player rolls means that the total actually reflects the percentage of the audience now openly *hostile* to the meme and those who spread it. Regardless, the percentage of people who have heard of the meme (whether or not they accepted it) is equal to triple the total number of points by which the second and third rolls succeed *or* failed.

Aside from extreme cases – a rumor whipping through a storm shelter on an interplanetary liner, an InVid that overrides all channels simultaneously – quick-and-dirty memes take 1d days to spread through the populace and persist for 1d times that length. Cost varies widely, depending upon the chosen vector.

Example: A memeticist uses Area Knowledge to study the target population, succeeding in his roll by 2. He then attempts to craft his meme, which the GM determines doesn't quite fit the audience, giving a -1 penalty; nevertheless, the memeticist rolls a critical success, succeeding by 14 and getting an added +5 modifier. The memeticist turns to a friend to propagate the meme, a -3 penalty; a Video Production roll *fails* by 6. The maximum percentage of the audience adopting the meme is (2+14+5-6)=15%. The portion of the audience that *recognizes* the meme is (2+14+6)×3=66%.

The GM rolls for noise and resistance, 3d-3, resulting in a 5. The actual percentage of the audience that adopts the meme is (15-5)=10%. The campaign takes two days to complete, and the meme persists for eight.

CHARACTERS

Everyone in 2100 deals with memetics on a daily basis, if only as part of the regular routine of being subjected to advertisements and political persuasion.

CHARACTER TYPES

Although people in a wide assortment of professions take memetics into account as part of their work, a number of jobs have arisen that specialize in the field itself. All are common in the developed world in 2100.

Cognitive Ecologist

"I've been mapping the propagation of the 'Giant Lizard' v-tag appearing on air cars across Europe this year. It looked like a spontaneously generated fad, but I was suspicious. It turns out that there's a .3 correlation between that image and an intersection of proto-Preservationist 'death is a part of nature'/'science run amok' memes. Locations where the v-tag is common show an up-trend in GRA applications."

You are a specialist in explaining, categorizing, and occasionally *discovering* memes. Trained to understand how various memeplexes relate to each other and to the cultures in which they thrive, you are prone to thinking about society not as groups of people but as sets of ideas. You usually work in academia, but are regularly called in to help with sophisticated attempts to create and disseminate new memes. Although most cognitive ecologists

Ideas are powerful things, requiring not a studious contemplation but an action, even if it is only an inner action.
– Midge Decter,
The Liberated Woman and Other Americans

specialize in a particular geographical area, the techniques can be applied broadly.

Advantages: Contacts, Patron (University), Intuition, Single-Minded, Tenure.

Disadvantages: Attentive, Curious, Obsession, Workaholic.

Skills: Anthropology, Area Knowledge, Conspiracy Theory, History, Memetics, Pop Culture, and Psychology.

Debunker

"First of all, the North Pole is entirely underwater because the ice cap melted early in the century. Secondly, there's no pattern of gifts being purchased and shipped to a central location for distribution. Thirdly, in order to visit the homes of every child on Earth in one night and spend enough time to put presents under the tree without starting a fire with air friction, he'd have to travel faster than light between each house. Don't even get me started on how he'd get to off-world colonies. Face it, kid, you've been lied to about Santa."

You consider yourself a "memetic antibody," driven to seek out and destroy dangerous memes. Armed with facts, logic, and zeal, you tend to leave embarrassed former believers and angry evangelists in your wake. While you usually go after false or fraudulent memes, you've heard that some of your colleagues are occasionally employed to root out true but inconvenient ones. If you ever get proof of something like that, you'll blow the whistle on it. But without proof, it's just another toxic meme.

Advantages: Single-Minded, Strong Will. Diplomacy is *not* a common advantage.

Disadvantages: Killjoy, Low Empathy, Stubborn.

Skills: Bard, Memetics, Performance, Teaching. Most debunkers also have a field or two in which they specialize, in order to better understand and explain why a given meme is wrong.

Deprogrammer

"Look. LOGOS unleashed something pretty frightening on us – a systematic method of constructing beliefs. I'd be a lot happier if we were back in the days of stumbling around in the dark, picking up and getting rid of ideas and ideologies based on something deep and mysterious in our subconscious. At least some two-bit fraud couldn't buy some software and build himself up as the next coming of Osiris and expect people to believe him. You would not believe how many times I've had to delete Osiris worship from some poor teenager this year alone!"

While debunkers focus on undercutting the legitimacy of a particular meme, letting individuals choose whether or not to believe in it afterwards, you specialize in making an individual stop believing a given meme or memeplex whether they want to or not. More

sophisticated groups may also employ you to bring lost members back into the fold. Originally emerging as a way to remove the influence of religious cults, deprogrammers now work with (and destroy) a wide array of memes, from political ideologies to consumer preferences. Meme splicers may get fancy offices and high fees, but deprogrammers get the job done.

Advantages: Single-Minded, Strong Will.

Disadvantages: Bully, Fanaticism, Low Empathy.

Skills: Biochemistry (Neurochemistry), Intimidation, Memetics, Psychology.

> # Belief is nothing but a more vivid, lively, forcible, firm, steady conception of an object, than what the imagination alone is ever able to attain.
> # – David Hume

Edgehunter

"Two months ago, I was in Cleveland, Darwin, and Guandong; this last month, Surrey, Munich, and Hyderabad. You never know where the next big thing is going to pop up, and from whom. Forget following teenagers around and looking at their shoes. With brain plasticity treatments, themselves an up-and-coming trend, anybody can have the ultrakinetic creativity and low tolerance for boredom of a 14-year-old. I'm definitely keeping an eye on the hypergeezers."

In a world where ideas drive the economy, finding cutting-edge memes before they hit big can mean huge profits. You specialize in identifying cool, smart, and compelling memes long before they are commonly known – fashions, lingo, movements, etc. Although edgehunters are widely employed in the world of advertising and marketing, any organization that values knowing where the zeitgeist is headed may make use of you as a consultant. iDeaSofT!, the creator of ParadigmMaker memetic software, employs tens of thousands of edgehunters all over the solar system to keep track of the rise and fall of memes.

Memetic Engineering

Advantages: Alertness, Contacts, Cultural Adaptability, Fashion Sense, Intuition.

Disadvantages: Broad-Minded, Chummy, Compulsive Carousing, Curious, Distractible.

Skills: Area Knowledge, Diplomacy, Memetics, Pop Culture, Savoir-Faire, Streetwise.

Evangelist

"You know, I wouldn't be so enthusiastic about this product unless I was a real believer. I'm not just here to sell you whatever crap ends up in my inbox. I use this thing every day, all the time. It has changed my life for the better, and I couldn't imagine going without it. I really do think that this is the best version on the market, and let me tell you why . . ."

It's your job to believe in and sell what you're given. Very often, you *do* believe in it, and want to get others to believe in it too. Sometimes you have to push items or memes that aren't exactly your cup of tea, but it's your job, and you do it well. The term "evangelist" has taken on a greater meaning than religious emissary, and is now applied to anyone who pushes particular items, ideologies, or memes. (It's worth noting that most evangelists do not push their own creations.) This isn't just salesmanship; you're not just selling the product, but the lifestyle and behaviors that go with it. You're selling identity and meaning, even if it's just another virtual-interface headset. Evangelists are not subtle; you make no attempt to hide what you are doing. You are persuasive, forceful, and relentless.

Advantages: Charisma, Empathy, Single-Minded, Strong Will, Voice.

Disadvantages: Fanaticism, Intolerance, Stubbornness.

Skills: Bard, Diplomacy, Fast-Talk, Memetics, Merchant, Performance, Psychology.

MemeOps Specialist

"Wars are won or lost well before any guns start firing. Do your citizens believe in what the military is doing? Do your soldiers believe in the cause they're fighting for? Does the enemy believe in the capabilities of your forces? Does it believe in the capabilities of its own forces? This isn't just diplomacy, but that's part of it, nor is it just deception, although that's part of it, too. Wars are won or lost depending upon which side has more understanding of why they are fighting and why they must not fail."

It's not your job to die for your country, it's not even your job to make the other guy die for his country. Your job is to make the other guy question *why* he even considered dying for his country to begin with. Nearly all organized militaries of the 21st century have had personnel who specialize in PsyOps, or psychological operations. In many of the militaries of the hyperdeveloped world, this role has been rechristened MemeOps, or memetic operations, reflecting the expanded duties of the position. As a MemeOps specialist, you provide support for military operations by altering the opinions and beliefs of opposing armies and civilians (see *Memetic Operations*, p. 140). If you succeed, your side may win without ever firing a shot.

MemeOps officers have advantages, disadvantages, and skills appropriate for military personnel (see p. TS112), as well as the following:

Advantages: Intuition.

Disadvantages: Curious, Stubbornness.

Skills: Area Knowledge, Memetics, Psychology, Strategy.

Memetic Engineer/Meme Hacker

"Reality is a mental construct. Everything we see and experience is processed by a brain hardwired after millions of years of evolution to emphasize certain things, ignore other things, and see patterns whether or not they exist. It makes us feel good or bad, aroused or crazy, or **whatever** *through the careful application of little squirts of chemicals. Despite being held hostage by our brains, humans managed to build something*

of a civilization. Finally, with memetics, we can do something more than crudely respond to our brains' need for stimulation. This is going to be fun!"

You build beliefs. And ideas. And designs. You don't just analyze why people believe weird things, you make it happen. If you do it for pay, you're a "memetic engineer." If you do it for ideological, social, or humorous reasons, you're a "meme hacker." You may or may not believe the memes you create, but you certainly understand how they fit with other memes out there. Building the memes is only half the job. You usually have to work with evangelists or tippers (see p. 132 and below) to disseminate them, and it often helps to know a bit about different kinds of media.

Advantages: Empathy, Intuition, Single-Minded.

Disadvantages: Attentive, Curious, Obsession, Workaholic.

Skills: Anthropology, Area Knowledge, Artist, Memetics, Pop Culture, Psychology, Video Production, Writing.

Memetic Officer

"Without the work that I do, our armies would collapse and our cities would be in ruins. I do not exaggerate. Our enemies, both foreign and domestic, take great pleasure in crafting false ideologies and lurid temptations to distract and confuse our soldiers. Without someone to watch over our brave men and women, to care for their fragile minds, we would be at the mercy of those who wish us the most harm."

You occupy a strange and important position: you live with the troops but you speak for the rulers. You are assigned to maintain the memetic purity and cohesiveness of your military or police unit. This role goes by a variety of names, depending upon the nation, including "morale officer," "political officer," and "defender of the faith." In combat, the memetic officer protects the unit against opponents' memetic operations, usually including dissent and questions about orders – questions that they may not realize are influenced by the enemy. You often have a *de facto* military rank to underscore your authority, although you rarely come up through the armed forces. Typically, you are employed by your nation's intelligence or ideological-enforcement bureau. It is common for you to *really* be a bioshell hosting an AI or ghost mind, in order to best defend against undesirable memes. Occasionally, you'll even be an AI resident in a soldier's virtual interface.

Advantages: Charisma, Military Rank, Strong Will, Voice.

Disadvantages: Fanaticism, Intolerance, Sense of Duty (To the ideology, leaders, religion, etc., -10), Secret (Member of intelligence bureau, actually an AI/ghost in a bioshell, etc., -10 to -30).

Skills: Bard, Diplomacy, Intimidation, Memetics, and Psychology.

Reputation Manager

"Hey, I know you're a busy, busy guy, so it's my job to make sure that you don't suddenly find yourself on the cover of Schmuck Quarterly. We're a society of gossips, snitches, and voyeurs now, it's sad to say. We all have little cameras pointing at each other every minute of every day ready to catch the least bit of scandal. Can't do anything about it now except learn how to make sure you don't get hit by the mud. That's where I come in. I make sure you don't step in something and have to apologize for it later."

You are most often found in societies which rely on reputation networks. Your work combines public-relations specialist, agent, therapist, and design consultant. You advise individuals on the correct actions, behaviors, and statements necessary to boost reputation. You may handle dozens or even hundreds of clients, and may rent shadows of yourself to act as "an angel on the shoulders" of your best and richest customers. To do your job well, you need to be heavily networked and in touch with changing cultural trends. In countries where SAIs can seek individual employment, they often manage reputations.

Advantages: Common Sense, Contacts, Fashion Sense.

Disadvantages: Distractible, Sense of Duty (To clients, -5).

Skills: Area Knowledge, Diplomacy, Memetics, Pop Culture, Savoir-Faire, Writing.

Tipper

"Hi. I saw you looking at me earlier. You want to buy me a drink? I'd like that. You have strong hands. I like that, too. They kind of remind me of Martinez's hands. You know, the guy running for President this year? He's strong, too, like you. That turns me on."

Evangelists aren't the only people who propagate memes. Many memetic engineers employ people like you to act as "influencers," spreading awareness of and positive reactions to memes through one-on-one personal contact. In the advertising world, you're called a "tipper," since your role is to tip decisions toward a desired result. All's fair in your line of work; you use flirtation, seduction, and humor as ways to make personal connections with a new meme host. The targets won't even know that they are part of a memetic campaign. Instead, they'll think that an attractive, funny person – you! – paid attention to them, and happened to mention a particular product, service, or movement along the way. And as much as they liked you, then they started to like what you're selling.

Advantages: Attractive Charisma, Empathy, Voice.

Disadvantages: Chummy, Compulsive Carousing.

Skills: Bard, Performance, Sex Appeal.

Advantages and Disadvantages

Some *GURPS* advantages and disadvantages can vary in a memetics-focused adventure.

Intuition (Cabal memenet member, -65%) *see p. B20*

This advantage can be gained by joining a distributed creativity network, or "Cabal" (see p. 136). Cabal membership is a 65% limitation, and gives a -2 modifier to the IQ score used to determine results of the Intuition roll. Characters already possessing this advantage receive no value from the membership, and it costs no points. (It still costs money, however.) Membership in one of these networks requires a virtual-interface implant. At least 10 other members of the network must be within one light-second of each other for the system to function. You cannot take this advantage if you have the Single-Minded advantage, or the Absent-Mindedness, Distractible, Hidebound, Solipsist, or Weak Will disadvantages.

Strong Will (Vs. memetic influence only, -75%) *see p. B23*

You have a strong resistance to external memetic manipulation, including deprogramming efforts. Every two levels of this negates a single level of Memetics bonus to Diplomacy, Fast-Talk, and other Memetics-boosted skills (see p. TS137) used against this character. If you are part of a population being subjected to a memetic campaign, this increased Will should be counted in the determination of average population Will (see *Memetic Resistance*, p. 120).

Weak Will (Vs. memetic influence only, -75%) *see p. B37*

You are particularly susceptible to external memetic manipulation, including deprogramming efforts. Every two levels of this adds an additional +1 to the Memetics bonus to Diplomacy, Fast-Talk, and other Memetics-boosted skills (see p. TS137) used against this character. If you are part of a population being subjected to a memetic campaign, this decreased Will should be counted in the determination of average population Will (see *Memetic Resistance,* p. 120).

Skills

The spread of memetics in late 21st-century society makes skills relating to information discovery and analysis particularly useful. A number of common and not-so-common skills can modify the application of memetic practices.

Conspiracy Theory *see p. CI155*

In a world of always-on information networks, the Conspiracy Theory skill focuses more on seeing the components of a conspiracy than identifying preexisting theories about past events. Conspiracy Theory can be used to analyze the plausibility of a given conspiracy meme by looking for common patterns, typical elements of paranoid theories, and corroborating obscure information. Conspiracy Theory can also be used to construct a plausible conspiracy theory; if the theory is then presented to others, the Conspiracy Theory skill roll should be followed by a Memetics roll – even a perfectly constructed theory needs to appeal to its audience. Finally, *real* conspirators can use Conspiracy Theory to check how visible their conspiracy may be to those looking for clues to its existence.

At the GM's discretion, because of the advanced pattern-matching ability of AIs, an SAI may have a +1 bonus to all Conspiracy Theory rolls.

Intelligence Analysis *see p. CI161*

The 21st century has seen a steady increase in the amount of so-called "open source intelligence" available through journalists, commercial satellites, Weltspiel sites, and so on. A successful Intelligence Analysis roll targeting a particular area, group, or meme should be able to determine whether a memetics campaign is underway. If the person doing the analysis does not have the Memetics skill, the roll is at a -3 penalty.

At the GM's discretion, because of the advanced pattern-matching ability of AIs, an SAI may have a +1 bonus to all Intelligence Analysis rolls.

Memetics *see p. TS136*

The modifier that Memetics grants to persuasive skills, such as Fast-Talk and Diplomacy, may be "transferred" to a nonspecialist as a one-time bonus. If the person using the influence skill is able to consult beforehand with a memeticist, and the memeticist succeeds in a standard Memetic Analysis roll (see p. 117), the memeticist may transfer this single-use bonus to his collaborator, equivalent to one-tenth of his Memetics skill, rounded down. This bonus only applies to one persuasion roll against only the target discussed with the memetic scientist.

Citizens of hyperdeveloped regions, Fifth Wave areas in particular, have been immersed in memetic jargon and ideas since the early 2080s. At the GM's discretion, characters brought up in such areas may have a Memetics default of IQ-6.

Research *see p. B62*

The ubiquity of information networks changes the nature of the Research skill. Even someone without this skill can typically find *some* information about a subject, if any information is available, simply by querying the infomorph in a virtual interface or home system. A

carefully worded request can even bring up obscure but publicly available information. The value of the Research skill in 2100 is knowing how and where to search to find *useful* information as well as relevant data corroborating, supporting, or denying the found information.

MEMETIC TECHNOLOGIES

In 2100, the vast majority of technologies have an information aspect, leading some memetic populists to declare that *all* technologies are memetic in nature. Other specialists are less generous in their inclusion, using the term "memetic technology" to refer specifically to hardware and software designed to facilitate memetic engineering or manipulation. Most of these fall into two broad categories: how to see the world and how the world sees you.

MEMETIC SOFTWARE

The availability of AI software has made possible a staggering array of digital tools for interpreting and engineering ideas. AIs combine access to massive amounts of information with the ability to understand what the user is trying to accomplish. A human without an AI assistant is at a crippling disadvantage when trying to engineer memes, or evaluating the validity of the memes he encounters. However, this reliance on artificial systems for interpreting the world means that any system corruption has dire consequences.

Filter Software

Basic Content Filters: All infomorphs can block unwelcome or offensive material, and run content filters or block lists to ensure that their users are not bothered by adviruses and inappropriate web links and messages. This capability is free, and even moderately complex applications of this type are freely available and treated as Complexity 0 programs.

Bozo Filter: A common filter used for augmented-reality systems is the so-called "bozo filter," used to block offensive or annoying people. Some people use the bozo filter to block particular individuals permanently, while others use the system to block temporary distractions, such as someone talking too loudly in a public transit

REALITY CHECK

One of the more common uses for an infomorph assistant is as a "reality checker." In this role, the AI monitors what the user is told or reads and checks it against built-in or networked infobases (encyclopedias, news archives, etc.) in order to verify its veracity. Any AI with the Research skill can do this, although usually only when prompted. Some people prefer to have their AI do quick context-sensitive searches on practically *everything* they come in contact with. In this way, they can be sure to catch any passing comment that doesn't match factual records. General reliability rating for the results are usually provided.

Of course, a reality check is only as good as its sources. Free databases tend to be fairly light on details, and there is often disagreement between different sources on more obscure facts. Commercial fact-checking services are more reliable and detailed, but can charge significant fees.

Reality checks are rolled against the infomorph's Research skill, and takes two minutes to give a complete report from all available sources on one particular request. Quick searches can be conducted in as little as two seconds, but such checks are made at a -5 penalty. Allowing 10 seconds brings the penalty to -3; a full minute brings it to -1. A success provides a "yes" or "no" to the veracity of a factual claim, accurate as far as known by the individuals sources. A critical success reveals pointers to private or classified information, as well. A failure gives no answer; a critical failure gives a wrong, misleading, or corrupted answer. This assumes access to the Earth's Web; information requests made on Mars and other less-developed networks can take far longer or not be available at all.

Subscriptions to commercial fact-checking databases can provide bonuses of +1 to +3. These subscriptions can range from $100 to $10,000 per month, depending on their accuracy and scope of coverage (see p. 127). Downloadable databases that cover the latest memes and their veracity ratings are typically 1 TB, with update patches every few hours.

vehicle. Instead of hearing what the person is saying, the user will hear nothing; similarly, if the user does not wish to see the person, the bozo filter can be set to show only a roughly human-shaped white space – or, less often, a generic clown. Bozo filters operate in conjunction with Mugshot (p. TS142) to recognize blocked individuals and an Augmented Reality (p. TS142) program to filter audio and video. Complexity 4, $500.

Guardian Block: A more extreme variation of the bozo filter, the Guardian software uses an NAI-4 to monitor what the user is seeing and hearing. It can make a judgment call if the images or sounds should be blocked or altered in realtime. Typical users of Guardian Block software are children, adults with memes they don't wish to have them questioned, and anyone from memetically restrictive societies traveling in more open areas. Complexity 5, $40 (typically). Guardian Blocks are often subsidized by governments and special interest groups and are cheap and easy to acquire.

Memetic Engineering

Dirtshot

A reputation-management add-on for the nearly ubiquitous Mugshot virtual-interface program, Dirtshot is designed to pull up gossip about people. Widely used in societies relying on reputation networks and increasingly common elsewhere, Dirtshot shows various bits of information about individuals seen through the user's virtual interface. In reputation-network areas, Dirtshot shows an individual's reputation score, calibrated to whichever reputation affinity groups the user prefers; focusing on that person reveals any public details about why he has a given reputation score, valuable information to have before a transaction. It also performs standard reputation-management actions. In areas not relying on reputation networks, Dirtshot is used more for its entertainment value. The software can be set to flag people based on a variety of lurid criteria.

Dirtshot relies on public databases and dedicated NAIs combing through media sources to match up information and subject. It uses a notoriously broad heuristic, and errors are not unknown. Anyone caught engaging in scandalous behavior can be relatively certain of showing up in the Dirtshot listings, even if the offense happened in another country or off Earth entirely!

Dirtshot subscriptions run about $10/month. Competitors (providing equivalent functions) include Tattle-Tale, All-Seeing Eye, and Blabberbot.

Dirtshot: Complexity 2, $250.

Reputation-Management Software

Reputation-management software identifies the current reputation ratings for a given individual or organization, your own scores, and allows for entering in and changing the ratings given to others (see *Reputation Networks,* p. 15). The most-popular version of the software, RepStat, is widely used across most reputation-network communities. Designed to allow the user constant awareness of his rep-score changes, RepStat allows for up to five different metrics to be displayed simultaneously. RepStat graphs can be tagged to flash if a score rises or drops dramatically.

RepStat: Complexity 1, $200.

Cabals

The least common sort of memenet – but, for users, often the most valuable – are the so-called "cabals," the distributed creativity networks. Building on the intimacy of virtual-interface implants with cutting-edge software and hardware extensions, the cabals can often come up with more sophisticated and considered solutions to problems than could any single member. Distributed creativity nets link each member; when a participant faces a difficult problem, the issue is distributed to the interconnected minds of the network members. Everyone on the network thinks about the problem subconsciously, and the cabal software swaps around novel ideas and parallel solutions. Cabals must number at least 10 but no more than 20 participants to function properly; smaller groups don't come up with enough variety of ideas, and larger groups can't converge on a single solution.

The system can't always be counted on – too many members may be thinking about their own problems at the moment – and not everyone is suited to be a cabal participant. Characters with the Single-Minded advantage, or the Absent-Mindedness, Distractible, Hidebound, Solipsist, or Weak Will disadvantages cannot use distributed creativity networks. AI characters cannot be part of a cabal; their digital subconscious doesn't function the same way human minds do. As ghost minds are based on detailed emulations of the brain, they can be, and often are, participants in cabals. If a cabal member is too far from the rest of the group – generally, more than one light-second away from the rest – that person can't participate and isn't counted as being part of the cabal. If the number of available cabal members drops below 10, the system does not function. As with any communication network, cabal signals can be jammed.

Being part of a cabal is similar to that of the Intuition advantage, with a -2 modifier to the member's IQ score when used to determine the success of the Intuition roll (see p. 134). If the GM allows this to be purchased at character creation or with points, it is a -65% limitation on Intuition, and the character is assumed to have found sufficient members in his home area; if the GM allows this to be purchased later using cash, and the potential cabalist must find a group willing to admit him or assemble his own network of 10 to 20 members and cost is listed below. A virtual-interface implant is required. *Cabal software:* Complexity 5, $10,000. Group memberships may have additional fees.

MemeNets

It is hard to over-emphasize the ubiquity of information for most people in 2100. Nearly everyone in Fourth and Fifth Wave societies belong to various idea-sharing networks, called memenets. These networks range from ongoing casual conversations to sophisticated distributed-creativity systems. Questions, chatter, suggestions, and a wide assortment of ideas are swapped among network members, sometimes subconsciously with the assistance of the AIs residing in virtual interfaces. Some memenets are narrowly focused – *Prankerwatch*, for example, is a low-traffic net for people who want a heads-up on evidence of activity by prankster shows such as "Don't

Eat That!" Others are more wide-ranging, discussing anything that interests their members. *Kaos Theory* is one of the more known general memenets, admired for fairly high-level discourse on political events but willing to tackle any subject that draws the members' attention.

For the vast majority of memenet users, the ongoing chatter and discussion is an everyday element to their lives. As with any community, virtual or otherwise, people form attachments, friendships, and rivalries. Most idea-sharing networks have no more than a few hundred regular participants, although a handful are infamous for their massive membership. Memenets with more than a thousand users often become unusable for all but the most interested participants.

Like most elements of a virtual interface, the ongoing content of memenets shifts to an "out of the way" location when the member isn't paying attention, still visible at the edge of perception, but not in the way. The resident AI will flag ongoing discussions that the user may find interesting or refer directly to the network member; at any given moment, a person belonging to multiple memenets may have a list of flagged items off at the "corner of the eye," waiting for attention. While those new to these networks find the system distracting, regular users are completely accustomed to this function, and are not generally affected by it.

Memenets provide real-time communication and sharing of expressed ideas, but not real-time sharing of memories, experiences, or consciousness.

Memestorms

Occasionally, however, the level of activity shoots up, and even the most gregarious memenet user is overwhelmed. When messages on multiple idea-sharing nets spike at the same time, the system can be momentarily flooded; this is a "memestorm," and it generally lasts for no more than 30 seconds (5d seconds). Memestorms often happen around major events or crises – in fact, for many people, the first sign that something big has happened is a flurry of activity on the idea-sharing networks. The usual manifestation of a memestorm is visual interference from the large number of messages appearing on the networks. Characters engaged in combat or other focused activities, if they have not disconnected from the memenets they belong to, may suffer a temporary distraction penalty at the GM's discretion.

Neural/Nano agents

Memetic engineers of all sorts – memetic counselors (p. FW33), advertising agencies, MemeOps soldiers – have closely watched the development of brainbugs, nanodrugs designed to alter brain chemistry (p. TS163). Therapists ("memesplicers") occasionally use brainbugs intended to increase or reduce a patient's resistance to new memes, but most nations have laws against the use of memetic drugs for advertising or political purposes.

Receptivity Enhancers ("Receps")

As soon as neurophysiologists determined which brain systems related to willingness to accept new beliefs and ideas, scientists started looking for ways to modify that neurochemistry. Most commonly found memetic-receptivity-enhancing brainbugs ("receps") are fairly crude and wear off after a short period of time. Unless otherwise noted, populations of a memetic campaign under the influence of receps are 50% more likely to adopt a given meme.

Boo!: One of the earliest memetic receptivity drugs produced. Tests for Boo! are cheap and widely available, so much so that the drug is rarely used by anyone other than desperate con artists. Its name comes from its side effect of making the recipient easily startled. The recipient gains Gullibility [-10].

Herd: The propagandists' agent of choice. Memetic counselors use a functionally identical version called Mind-Opener as a therapeutic drug. Recipients acquire Weak Will -4 [-32].

Resistance Enhancers ("Blockers")

There is a smaller variety of memetic resistance enhancing nanodrugs ("blockers"), as most work on more or less the same principle: the user is simply less-willing to accept new ideas. Many people in the United States and Europe look down on the use of blockers as something of a crutch. Unless otherwise noted, audiences of a memetic campaign under the influence of blockers are 50% less likely to adopt a given meme.

Blockhead: The basic blocker drug, developed initially by the Chinese military as a way of building resistance to TSA propaganda. While the drug is generally fairly mild, the Chinese discontinued its use after multiple reports of combat units refusing to obey orders. Recipients gain Stubbornness [-5].

Minotaur: One of the more popular therapeutic blocker drugs. Recipients gain Solipsist [-10] and Strong Will +2 [8].

Sample Memetic Drugs

Most memetic drugs are nanodrugs, and use the nanodrug design rules (p. TS163-164). Drug effects can include, beyond those listed on p. TS163, advantages and disadvantages such as Callous, Chummy, Confused, Cool, Fearlessness, Impulsiveness, Indecisive, Migraine, Motion Sickness, Non-Iconographic, Phobias (any), Stubborn, Versatile, Voices, and Workaholic.

"Consensus"

Intended for brainstorming sessions for business and other planners, this drug went through a period of extreme popularity in the early 2090s. Extended use may result in chronic depression.

Effects: Imaginative [-1], Short Attention Span [-10], Weak Will -1 [-8].
Duration: Medium-term – (25-HT)/4 hours.
Agent: Pill – HT-6 to resist.
Cost: $190/dose.   *LC*: 4.

"Flatline"

This variant of Guardian nano (see p. TS165) only targets brainbugs. A single dose shuts down any neural agent active in the brain within two minutes, and block the effects of any subsequent doses of brainbugs or cognitive drugs for 24 hours. Flatline has no effect on natural willingness to accept or reject memes. Taking a dose of Flatline leaves the recipient nauseated for about ten minutes.

Effects: HT +6 (against brainbugs only, -90%).
Duration: Long-term – one full day.
Agent: Pill – HT-6 to resist, or Patch – HT-2 to resist.
Cost: $400/dose.   *LC*: 3.

"Obey"

An infamous crowd-control drug, Obey was developed in the TSA during the Pacific War. Weaker versions were later marketed to security forces as Cry Baby! (p. TS164). People with Berserk must make a Will roll – including the drug's Weak Will modifier! – or fly into a rage, but they are unaffected by Cowardice or Paranoia.

Effects: Cowardice [-10], Paranoia [-10], Weak Will -4 [-32].
Duration: Short-term – (25-HT) minutes.
Agent: Aerosol Contact – HT-4 to resist.
Cost: $1,040/dose.   *LC*: 2.

Really Augmented Reality

People who view the world through a virtual interface, whether worn or implanted, make use of what is commonly known as "augmented reality." Under most circumstances, this means little more than data pop-ups about shops and people, visual augmentation using frequencies normally not in the human spectrum, and tracking/location information from v-tags. But the same technology for displaying a Mugshot overlay can just as easily display false Mugshot reports, change how a face of the person in view looks, or create other completely misleading images of the world around the user.

The possibility of hacked virtual-reality interfaces altering the wearer's behavior was recognized by technologists well before the systems were widespread; as a result, the augmented-display technology for VIIs and wearables is heavily protected from outside attack. Free memes, random viruses, and bored teenagers are generally unable to alter the imaging systems of most virtual interfaces. There are a small number of exceptions, however.

Back Doors

Virtual-interface systems with so-called "back doors" allowing remote access to the hardware are an infrequent but significant problem. In 2088, the South African hardware firm Vivo/Vitro went bankrupt due to lawsuits arising from the revelation of a back door in their popular *VivoLux* model virtual-interface-implant model; the back door allowed a remote administrator to make whatever alterations to the visual data he desired. Tens of thousands of *VivoLux* users had to replace their VIIs. While the manufacturer is out of business and the model is no longer sold, reports of unscrupulous implant providers using refurbished *VivoLux* units regularly pop up in the media.

There is no evidence that any current-model VII or wearable allows back-door access. However, conspiracy theory slogs and newswebs claim that a variety of popular units actually *do* have them, but the truth is being suppressed by lawsuit-wary manufacturers. Some sites point to the two June 2099 firmware updates to the Shanghai Interactive *MRsiv2* wearable virtual interface as evidence . . . Although no users ever reported system problems resulting from the first update, Shanghai Interactive sent out an emergency second update less than 24 hours later.

The altered reality implants used in Kazakstan (see p. BD112) have no known equivalents outside of that beleaguered nation, but tales of victims implanted with such devices remain a common part of pulp interactive fiction.

> For conspiracy,
> I know not how it tastes,
> though it be dished
> For me to try how.
> – William
>   Shakespeare,
>   <u>The Winter's Tale</u>

Hacked Virtual Interfaces

Breaking into a virtual interface, while extremely difficult, is not impossible. In addition to the variety of challenges described in **Fifth Wave** (see pp. FW128-130), the added security features associated with the virtual-interface display subsystem provide an additional -4 modifier to Computer Hacking attempts. Viewing what the virtual interface currently shows requires *limited access*; altering what it shows requires *unlimited access* (see p. FW127).

Hacked V-Tags

Most virtual interfaces are designed to faithfully display whatever information is presented by any v-tag with proper licensing and authorization. Most v-tags provide basic information about an object and its location; some, however, are used to present virtual images visible only to VII and wearable users. In most Fourth and Fifth Wave cities, the bulk of outdoor advertising exists only in virtual images. A common v-tag hack in these areas is to display the image of a blank wall over a door, alleyway, or other real-world object the hacker wants to obscure. The technique is widely employed by criminals, advertisers, and political operatives. The advantage of v-tag hacking is that there is no need to break through the added security of virtual-interface systems; the main drawback is that only those wearing virtual interfaces can see the altered view.

Campaigns

Memetic science is a critical part of what makes Fifth Wave society different and powerful, and most **Transhuman Space** campaigns contain some degree of memetic activity. But it is also possible to build a **Transhuman Space** campaign with a strong memetic focus. Adventurers in such campaigns can range from well-funded agents to guerrilla memetic operatives, and have substantial opportunities to get rich, get killed, or both.

BiB (Bioroids in Black)

The world is much more dangerous than ordinary people know, or would even believe. The most-radical conspiracies are true – or may not even be radical enough! Aliens are among us, the machines are trying to take over, and science's thoughtless experimentation has opened doors to other dimensions. Adventurers could be out there keeping everyone safe but keeping everyone ignorant of the truth, or could be crusading conspiracy theorists seeking to pull back the veil. The struggle between those who wish to keep these horrors secret and those who want the world to know will be at least as epic – and potentially as dangerous – as the struggle between humankind and the unspeakable Others.

Culture Jammers

2100 is dominated by massive corporations, Orwellian governments, and a public trained from birth to consume without question. Culture jammers are the sand in the gears of this oppressive machine, activists whose pranks highlight the unquestioned assumptions and biases of society. Many work with ideological movements, functioning as memetic shock troops with the goal of shaking up the public consciousness enough to make them receptive to new ideas. Culture jammers are generally anti-authoritarian, but the targets will depend on who is in authority – those operating in the United States might go after the government's use of bioroid soldiers or the dominance of the World Trade Organization, whereas culture jammers operating (very carefully) in Indonesia would raise questions about the legitimacy of nanosocialism.

Culture jammers make difficult opponents for employees of memetically dominant organizations, as their tactics are usually nonviolent, and the best employ humor as their most dangerous weapon.

> Culture jammers are the sand in the gears of this oppressive machine, activists whose pranks highlight the unquestioned assumptions and biases of society. Generally antiauthoritarian, their targets depend on who is in power.

Memetic Operations

REJECTED

REJECTED

ACCEPTED

MEME ACCEPTANCE RATE: 50%
LIKELIHOOD OF MEME SPREAD: 70%
CONTINUE ANALYSIS OF TARGETS? Y/N

In 2100, nearly every combat force in the world has a group dedicated to memetic warfare. Memetic Operations (MemeOps) is the use of memetic techniques to disrupt an opponent's ability to think clearly, communicate effectively, and analyze relevant information properly. While this can include such blatant techniques as jamming comm frequencies and destroying sensor stations, such actions are visible to the opponent, who then attempts to counter them. MemeOps more often includes disruptions and diversions that are much harder for the enemy to notice, repair, and trace. The hallmark of a good memetic operation is that the opponent's ability to act was degraded even though he was never aware of the operation's existence.

As with any memetic campaign, a single action is rarely enough to cause population-wide effects. Instead, memeticists use a series of small, related pushes to influence groups in particular ways, with the ultimate goal always foremost in mind. Memetic warriors know that the cumulative effect of these operations will be far greater than any single action could have accomplished.

The use of propaganda is a classic low-level memetic operation. Although propaganda has historically taken the shape of mass communications such as printed leaflets or radio broadcasts, modern efforts are more likely to use methods targeted at small groups, particularly individuals identified as "influencers" by intelligence sources. Raising doubts about the values and goals of the enemy with key figures in the enemy population causes these people to pass their doubts to others, and the overall effectiveness of the opposition is reduced.

The actual goal of a propaganda campaign may be difficult to determine from its face, but it is always designed to influence its target toward advantageous situations to the propaganda's source. Propaganda in the late 21st century is more effective at undercutting an opponent than building support for one's own side. For this reason, propaganda may even appear to support the opponent; in this case, the intent is to delegitimize support for the enemy by linking it to unsavory groups or ideologies.

MemeOps can often involve more direct efforts, such as relentless harassment of the enemy. Harassment can also take many forms, all with the goal of actively reducing enemy effectiveness by depriving them of rest or by instilling fear or psychological discomfort. In less-controlled battlefield cases, examples include the use of trained Special Operations infiltration units or remote drones moving near enemy encampments at night to play loud audio effects, such as the sounds of attack aircraft, incoming artillery, children or animals screaming, and other disturbing sounds. Such efforts also often include the propagation of rumors about combat losses elsewhere, defections, and, most insidiously, details of ongoing secret cease-fire negotiations. Since no soldier wants to be the last man killed right before a cease-fire takes hold, memes about secret negotiations make troops more cautious. Unfortunately for MemeOps officers, this tactic is much less effective when the opposing units are heavily conditioned bioroids and LAI-driven cybershells.

By far the most-critical form of memetic operations is battlefield deception. Controlling what the opponent knows about its situation – or, at the very least, making the opponent skeptical about the veracity of the available information – can greatly influence the outcome of a conflict. Focus rests on manipulating information in ways that lead the enemy to develop and employ flawed strategies and tactics. A textbook memetic operation along these lines was a 2052-2053 covert campaign by Red Sword agents to discredit a type of sensor unit provided by the United States to the Peruvian government. Although the Americans assured the Peruvian military that the equipment worked properly, Peruvian military units on the ground began to disregard the data the gear sent. The so-called "Massacre on Chimborazo," where a Peruvian Army company was wiped out in a Red Sword ambush, was the direct result of units ignoring the sensor's warnings.

Defenders of the Faith

A society's continued development depends upon the support and trust of its people. But there are those who seek to do ill to a society by preying upon and subverting popular support and trust. In 2100, every nation and national alliance employs cadres of professional memetic agents whose sole duty is to seek out and neutralize threats to the memetic security of the people. Some opponents are opportunists seeking a quick profit. Others are innocents unaware of the harmful potential of their new InVid, book, or advertisement. Yet others are terrorists with ample knowledge and resources devoted to the destruction of society. Defenders of a nation's memetic security need to counter various threats in ways that don't draw attention and lead to even greater trouble in the future.

Fashionistas

With well over 11 billion sapient beings in the solar system (mostly on Earth), making it big as a singer, an artist, an InVideographer, or even a fashion designer takes incredible effort – but has a huge potential payoff. But for every slinky star or musical legend, there are thousands upon thousands who toil endlessly looping emotions in memetic sweatshops (see p. BD65) or playing classic tranceabilly tunes in bars to a handful of asteroid miners. Fame doesn't just happen – it takes luck, desire, and, more than ever, a careful understanding of what people want and how they want it. And since the public's attention is limited, every moment in the spotlight means someone else has been pushed into the dark. Struggles between up-and-coming stars can be brutal, bloody, and very, very rewarding.

Typhoid-Meme Mary

The most perfectly crafted, devastatingly convincing meme is useless if it doesn't spread. No memeticist relies just on "word of mouth"; if you want to get a meme out there, you need to make it happen. But there are few cognitive niches out there without well-established memes. Any campaign to spread a new meme will be met with strong opposition – especially a meme that has the potential to upset the powers that be. Groups with the ability to create effective memes, propagate them quickly, and defend them thoroughly will be highly sought after by both potential customers and potential opponents.

USING MEMES WITH PLAYER CHARACTERS

While a memetics-rich campaign has the potential for complex stories and challenging adventures, it also can be a headache for the GM. The sheer amount of data and ease with which the player characters can acquire it can be nearly overwhelming. The GM needs to be able to provide ready access to information (both factual and false), the opinions of trusted NPCs on this body of knowledge, and alternative scenarios floating around the infosphere.

The adventurers will have access to nearly limitless amounts of information – so knowing how to find what they're looking for will be the hard part. Characters without high levels in the Research skill may be lost, especially in a memetics-oriented campaign, and at the very least AI allies should be built including this skill. The various Knowledge, Professional, and Scientific skills can often further identify relevant data or memes, as can specialized skills like Conspiracy Theory and Savoir-Faire. Let the players guide the direction of the research; as most adventurers will have worn or implanted computers with constant network connections, they can continue to look for information even while engaged in combat or other more physical pursuits.

While PC memeticists may be always looking for opportunities to spin new memes, they may be less on the lookout for memes designed to spin *them*. But the use of NPC-designed memes on hapless adventurers can pose a problem for the GM. Especially given the diverse backgrounds possible for characters in *Transhuman Space*, simply assuming that everyone knows, believes, or is familiar with the same set of memes is unwarranted. One option is to get into the habit of telling each player that their characters have different reactions to various memes or facts that they encounter during the campaign: "you know this is true/false;" "you believe this is true/false;" "you've heard this is true/false." Both passed notes and a vocal reminder can work.

Once this is habitual, when the adventurers encounter constructed memes to which they each have differing reactions, the variety of responses will be familiar to the players, and not a tip-off that they've just been fed a potentially *deceptive* meme.

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