

TRANSHUMAN SPACE

BROKEN DREAMS™

Written by Jamais Cascio



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GURPS

STEVE JACKSON GAMES

Stay and Fight . . .

On Earth in 2100, some are reaching for the stars . . . but others struggle just to survive. Much of the home world remains mired in war and intrigue, as powerful corporations and high-tech armies fight over resources, markets, and ideas. Cities on the edge of chaos are battlegrounds for covert operations and high-stakes diplomacy, and the developing nations see themselves falling farther and farther behind.

It is a world of ***Broken Dreams***.

This is a look at the darker side of the year 2100, with:

- Campaign sites: nations trapped in poverty, environmental-disaster areas, and hellholes run by insane dictators.
- Detailed descriptions of the two Great Powers that have chosen to stay out of step with the rest of the world . . . the Islamic Caliphate and the Transpacific Socialist Alliance.
- High-tech terrorism, rebellion, and crime, and rules for creating biological and chemical weapons.
- Dangerous genetic designs, obsolete cybertechnology, and police-state software . . . all part of daily life in ***Broken Dreams***.

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 ***Broken Dreams*** can be used with any roleplaying system.



Written by **Jamais Cascio** Edited by **Kimara Bernard**
Cover by **Aaron Campbell**
Transhuman Space designed by **David Pulver**



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BROKEN DREAMS™

Written By **Jamais Cascio**

Illustrated by **Jesse DeGraff, Justin De Witt, Matt Kresge, Christopher Shy, and Brian Tarsis**

Edited by **Kimara Bernard**

Cover by **Aaron Campbell**

GURPS System Design ■ Steve Jackson

Managing Editor ■ Andrew Hackard

GURPS Line Editor ■ Sean Punch

Transhuman Space Line Editor ■ David Pulver

Production Manager ■ Monique Chapman

Production Artist ■ Justin De Witt

Print Buyer ■ Monica Stephens

GURPS Errata Coordinator ■ Andy Vetromile

Sales Manager ■ Ross Jepson

Lead Playtester: John Freiler

Playtesters: Howard and Vanessa Berkey, Frederick Brackin, Nelson Cunningham, Ron Hayden, Anthony Jackson, Simon and Alison King, MA Lloyd, Phil Masters, Bowden Palmer, Kenneth Peters, Robert Prior, Jeff Raglin, T. Carter Ross, Curtis Shenton, Norman Thallheimer, and the other entities of the *Pyramid* playtest board.

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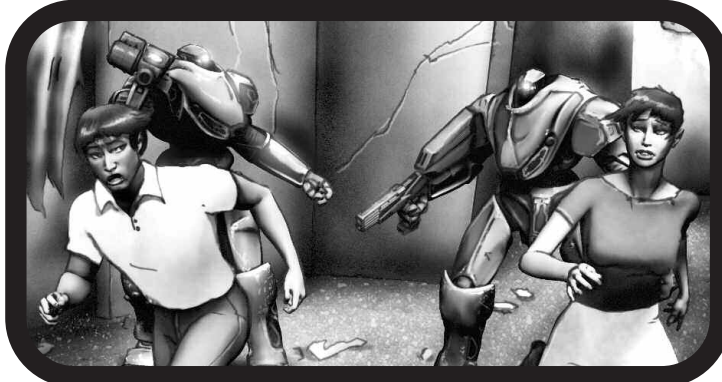
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INTRODUCTION



Earth. Humanity's homeworld remains a showcase of both the best and the worst of mankind's deeds. While the countries at the cutting edge of technology and progress wrestle with the conquest of space and questions of identity, other nations face far more prosaic concerns – freedom, justice, and survival. *Broken Dreams* focuses on the parts of Earth where war, poverty, and environmental degradation still wreak havoc with human life. Issues of power and politics surface throughout, as many wonder whether the riches of the Fifth Wave world are built upon the backs of the poor.

Broken Dreams looks at what happens when emerging technologies and transcendent ideas are limited by resources or regulations. It also covers those regions where nations have chosen to forge their own path, sometimes in opposition to the demands of the dominant great powers. It's dark, but it's not a dystopia; even as they struggle, the people of 2100 still believe that they will succeed.

ABOUT TRANSHUMAN SPACE

The *Transhuman Space* series presents a unique hard-science and high-biotech universe for roleplaying. Set in the Solar System in the year 2100, it is a setting rich in adventure, mystery, and exploration of the possibilities of existence. The core book in the line is *Transhuman Space*, written by the series creator, David Pulver.



ABOUT THE AUTHOR

Jamais Cascio is a writer and specialist in futurist scenarios mixing technology, politics, and business. He has been consulted by filmmakers, corporations, and government agencies from around the world, and his thoughts about the future have been featured in *Time*, *Wired*, and on National Public Radio. He is also an enthusiastic *GURPS* player, and was excited to have an opportunity to contribute to the *Transhuman Space* line. This is his first published game book. He lives in the San Francisco Bay area with his wife and three 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: Broken Dreams* web page is at www.sjgames.com/transhuman/brokendreams/.

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* – e.g., p. B102 means p. 102 of the *GURPS Basic Set, Third Edition*. Page references that begin with CI indicate *GURPS Compendium I*. Other references are CII for *GURPS Compendium II*, FW for *Transhuman Space: Fifth Wave*, HT for *GURPS High-Tech*, TS for *Transhuman Space*, UT for *GURPS Ultra-Tech*, UTT for *GURPS Ultra-Tech 2*, VE for *GURPS Vehicles*. The abbreviation for *this* book is BD. For a full list of abbreviations, see p. CI181 or the updated web list at www.sjgames.com/gurps/abbrevs.html.

1

OVERVIEW: MOVING FASTER AND STILL FALLING BEHIND



LOKARIAN

The man calling himself Ibrahim Aziz walked slowly through the Cairo souk, trying to draw as little attention as possible, constantly aware of the temporary p-tag implant in his left hand. A precaution for visitors, he was told. A precaution for the government, he knew. The intelligence services are particularly careful about visitors from Pakistan. Aziz allowed himself a brief smile. They had good reason, in this case.

He saw the stall he was told to find, Marid, the seller of fruit – pomegranates, dates, the “grapples” designed by European bioengineers, popular with the young for some reason. He made the briefest of eye contact, and stopped two stalls away, feigning great interest in the latest Algerian knock-offs of Chinese hand-held InVid players. Licensed and totally legal, although they’d never admit to it. People love to think they’re getting something they’re not supposed to.

That was why he was here.

He told his virtual interface implant to start the transfer, and a heavily encrypted copy of the latest musical from Indus River Studios beamed over to a waiting receiver in a bag casually resting on the floor of Marid's stall. Egypt's web filters, generously supplied by the World Trade Organization, would never let something like this through – but sales of the pirated copy would be highly profitable for the TSA, still trying to rebuild after the war. Aziz had volunteered to carry it in his implant. VIs weren't terribly common in the Muslim world, but the customs officials were more concerned about potential links to Pakistani terror groups than about piracy, and he had been scanned for explosives, not romantic comedies.

The file was a big one, fully interactive, with alternate endings, multiple language songs, the works, and Aziz had to remain close to the fruit seller for a long five minutes for the transmission. The seller of InVid players was starting to get annoyed that Aziz was looking but not buying. Aziz carefully moved to the next stall, trying not to lose the connection. The seller of headscarves for women gave him a brief glance and continued to chat with her daughter as he poked through the colorful sheets of smart fabric.

There. Transfer finished. Without looking at Marid, Aziz turned and walked off toward his hotel. What he saw made him stop. The street was blocked by a cordon of police, checking the IDs of passing shoppers. He noticed one other thing: standing with the police was a sour-looking European with an expensive-looking handheld. No doubt about it. WTO.

Ibrahim started to sweat.

The world of 2100 stands on the brink of transformation. In the most advanced nations, powerful new technologies allow the subtle manipulation of matter and the potential for immortality. Intelligent machines are commonplace, and humans willingly and eagerly alter their bodies and their minds to reflect current fashion or the desire to improve themselves. Questions of identity underlie struggles for power and control: what does it mean to be human? What do we want it to mean? And for most people in the Fifth Wave world, wealth is almost meaningless, as everything they may want is at their fingertips.

Yet in the less-advanced parts of the world, the story is much different. The world may be richer as a whole, but the relative imbalance of riches and power is even greater than in 2000. Ideas, the basis of the global economy, have become a rigorously controlled commodity. Many nations struggle on, slowly making a transition to the modern world, but still face tremendous challenges. Others remain mired in poverty, war, and political collapse. A few have opted to forge their own paths, forming alliances that allow them to stand together, even if they are going against the rules and beliefs of the rest of the world. Yet even standing together, the poorer nations only see how far behind they've fallen. The power of the advanced countries overwhelms the developing world.

The poorer nations only see how far behind they've fallen . . . They know the new world is there, but it is tantalizingly out of reach.

BROKEN DREAMS

Despite the best efforts of men of good will, there are still people unable to take part in the technological and social transformation of Fifth Wave Earth. They know the new world is there, but it is tantalizingly out of reach. Their reactions to their situation vary widely, from hope and redoubled effort to resentment and violence. Some find the developed world thoroughly corrupt, and turn their backs on the very idea of joining the global system. ***Broken Dreams*** covers these three fundamental categories.

Forging a New Path

Some parts of the developing world have chosen to avoid the mainstream economic and political system entirely, building political coalitions for self-preservation and memetic support. In doing so, however, they have become emerging powers themselves, posing both military and ideological challenges to the mainstream world. The Transpacific Socialist Alliance and the Islamic Caliphate each represent different forms of opposition to the rest of the world.

Catching Up

Many developing states are transitioning to a more advanced technological society. Through hard work, the assistance of outside patrons, and luck these transition nations have begun to integrate into the global system. The transformation is not yet complete; local unrest, great power conflict, or an economic downturn can still harm them. Example states include Kenya and French Guiana.

Falling Apart

Other developing countries have not done so well. They may be failed states or a great power's battlegrounds, nations mired in civil war, split by factional conflict, or controlled by organized crime. They could simply be regions hit by environmental damage. For whatever reason, wealth and stability are distant goals; for most citizens the first order is survival. Examples include Laos and the remnants of Zaire.

THE STATE OF THE WORLD

For many observers, the Pacific War of 2084-2085 was foreshadowing greater conflict. With a multitude of mighty nations competing for international power, rapidly growing countries seeking greater influence, and a variety of corporations, ideological movements, and global mafia looking for opportunities to expand their horizons, Earth of the year 2100 is a far more dangerous place than many believe. For the smaller countries that are the economic and military battlegrounds of the dominant powers, the peace and prosperity of 2100 is a mask hiding perpetual conflict.

THE GLOBAL SYSTEM

At the close of the 20th century, political scientists argued that the nation-state model had been weakened by global telecommunications and information networks, the increasing authority of nongovernmental organizations, and the evident power of transnational corporations. Events in the early 21st century, from a series of wars in the Middle East to the near-collapse of the global environment, made continued need for the capabilities of the nation-state abundantly clear. Competition between a small number of hegemonic powers has come to dominate the political system both on Earth and throughout the solar system. Smaller nations, businesses, organizations, and even ideological movements find that their fortunes rise and fall with the status and influence of the great powers.

Yet even as competition between nation-states continues to dominate world events, changes to technology, the environment, and the global economy have tied nations together closer than ever before. Globalization reached its full flowering in the first third of the 21st century. By 2100 it has become nearly impossible for one country completely to cut itself off from the rest. High-bandwidth information networks covering the planet allow individuals to work, socialize, and learn alongside people half a world away. Ecosystems are equally dismissive of borders, and the rights of nations to defend their environment from the actions of others is now widely recognized.

Most important is that national economies are intimately connected to the cycles and rules of global markets. From natural resources to intellectual capital, modern economy is dependent upon the easy trade of goods, services, and especially ideas across the planet. Few

nations can be self-sufficient, and fewer still have any desire to cut themselves off from the rest of the world. International groups such as the World Trade Organization and the Genetic Regulatory Agency make certain that everyone abides by the same set of regulations. Although most assume that the states that lead the global economy long ago set the rules of trade to keep themselves in power, most nations are willing members of the system, believing themselves better off as part of the dominant structure.

In a global economy founded on ideas, care must be taken to ensure that the rights of the originators and users of ideas are both respected. Yet some believe that the advanced world has gone too far in the defense of the owners of intellectual property. The nanosocialist nations of the Transpacific Socialist Alliance uphold this, arguing that the works of the mind belong to everyone, and have faced war as a result of their ideology. But moderate voices, too, express concerns about what is done in the name of ownership of ideas and experiences.

The Great Powers

There are currently three hegemonic powers and a handful of emergent-power countries and alliances pushing differing agendas on the global stage. Together, these key international actors are known as the “great powers,” a term from late-19th-century and early-20th-century global politics. Analysts in 2100 use “great powers” to refer to those nations or alliances that are sufficiently powerful to shape the policies of other globally potent nations.

Three hegemonic powers stand above all others in terms of system-wide capabilities: the People’s Republic of China, the United States, and the European Union. This trilateral balance of power emerged gradually over the course of the century, and has been surprisingly stable. These three nations, while not able to dominate the world, have military, economic, cultural, and political influences that easily extend around the globe and throughout the solar system.

The other players in international competition are the emergent powers: India, the Pacific Rim Alliance, and the Transpacific Socialist Alliance. These actors are not in the class of the hegemonic powers, but are still prominent enough to shape politics and economics outside of their borders. Some strategists include the Islamic Caliphate and the South African Coalition among the emergent powers, as their influence and capabilities are growing rapidly; Mexico and the Mercosul alliance based around Brazil are also potential emergent powers, although they have largely focused on internal development. The shifting relationships between the various nations has helped keep international politics relatively stable, if dangerous.

Great-power politics often play out in the developing world, where weaker states provide ample opportunities for economic and ideological expansion. Transnational corporations work closely with great-power patrons to open up new markets and capture new customers. Political and ideological movements seek new converts and greater global influence. Civil uprisings and identity conflicts function as proxy battles for the great powers, allowing the testing of new weapon systems and military technologies. Diplomats work out agreements and treaties as intelligence agents seek out their opponents' weaknesses.

Mainstream Countries

Most states, of course, are not great powers, and the majority do not belong to a great-power alliance. As described in *Transhuman Space: Fifth Wave*, a great deal of the planet is reasonably advanced and secure, focusing on providing economic and technological opportunities for their citizens than on rattling sabers or playing political games. These mainstream nations are careful with their alliances, developing good relations with a regional or hegemonic power with close cultural or economic ties, but avoiding drawing too much great-power attention to themselves. Smaller countries with powerful Fourth or Fifth Wave economies may be regional powers themselves, able to avoid significant internal interference from the great powers. Established, comfortably wealthy, and technologically advanced, these states are interested in maintaining global stability, although some may play host to less-popular ideological movements.

The combination of social stability and wide access to new biotechnology and nanotechnology is the hallmark of what sociologists in 2100 consider the "developed world," a term that is often used as a contrast to the faster and slower nations. Noting the ever-accelerating pace of change in the most advanced states, scholars refer to the handful of Fifth Wave nations as the "hyperdeveloped world." Nations with limited or no access to modern technology, or with unstable governments and societies, are optimistically referred to as the "developing world."

The Developing World

Despite a century of advancement, many states – for reasons of history, politics, or geography – remain poor or on the verge of collapse. Some have managed to pull themselves out of abject poverty, building Third Wave societies able to play a role in the global economy. These developing nations are often tied closely to patron great powers who provide technology, economic assistance, and a measure of political reinforcement as the countries bootstrap into the Fourth Wave world. Great-power corporations and memes have lots of influence here, although there can be significant local resentment.

Developing states with Second or Third Wave economies that aren't tied closely to any patron are often political/economic/military/memetic

battlefields for great powers. In some cases, assistance from the external world is welcomed, providing support in disasters. In other cases, outsiders are rebuffed, sometimes violently, as warlords seek to consolidate power. If ignored, these warlords can cause problems for their neighbors.

Corporations

As the power and capabilities of governments grew over the 21st century, so too did the power of large corporations. The long-predicted dissolution of governments and rise of total corporate control never happened, but transnational and interplanetary corporations have substantial resources for achieving economic, political, and even military ends.

Even if they have not replaced governments, corporations do have great influence over policy. The familiar saying of "what's good for business is good for America," still holds, and could easily be applied to Europe and China as well – governments in the developed world are aggressive about protecting the property rights of their corporate citizens, particularly intellectual property. Throughout the developing world many believe, not without cause, that great-power conflicts with the TSA over copyright and patent infringement are driven by business interests. Similarly, memetic campaigns and physical threats against infosocialist political parties around the world often have major corporate sponsorship.

Actual corpocracy, where a firm or set of firms take complete political control over a state, is almost unknown. Businesses that attempted total political control usually found that the details of running a state – from infrastructure maintenance to jurisprudence – were distractions from their core organizational goals. Large corporations found it more lucrative over the long term to build a close relationship with an existing political structure rather than replace that structure.

Transnational Organizations

Corporations are not the only alternatives to traditional political power. Transnational organizations (TNOs) emerged over the course of the last two centuries as mechanisms to regulate, organize, and improve international transactions. Some have purposely narrowed concerns, focusing on rules for fisheries or the trade of textiles; others have broader agendas, monitoring compliance with international bioengineering and intellectual-property rules. While they have varying degrees of power, all operate with the explicit backing of the most-powerful states. Three TNOs stand out in 2100: the Genetic Regulatory Agency, responsible for the enforcement of biotechnology regulations; the World Trade Organization, which is the chief intellectual property (IP) rights manager; and Interpol, which focuses on non-intellectual-property crimes such as fraud, virus creation, and rogue AIs. For more on these groups, see pp. 66-67.

Nongovernmental Organizations

While TNOs are largely funded by national governments, nongovernmental organizations – or NGOs – sit outside of the traditional sources of authority. They are often nonprofit in nature, and usually focus on narrow issues, such as eliminating human-rights abuses or debt in the developing world. Some NGOs are described in *Transhuman Space* (p. TS98). A number of nongovernmental organizations focus on the developing parts of Earth.

The *Archive Foundation* has the ambitious goal of creating a repository of all human knowledge and culture. Fearing the possibility of global-scale disasters, from plagues (natural or engineered) to out-of-control nanoweapons and astronomical long-shots like a local gamma-ray burst, Marian Babbage used her family fortune to bankroll an archive of human knowledge, intending it as a “backup” library for the survivors of any future disaster. In 2046, it merged with the Civilization Archive Project, an academic attempt to document and catalog the knowledge and culture of societies overwhelmed by the pace of change, giving the Archive Foundation a body of information and art larger than any other known collection. The archive grew slowly, but attracted attention in 2063 when it started offering data-archival services for corporations and governments. In 2100, the Archive Foundation is a respected organization, regarded as somewhat eccentric, but providing valuable services to the largest corporation and smallest tribal community alike. The data-storage facilities are in an undisclosed location, widely believed to be on the Moon.

The *Terran Genome Trust* seeks to catalog the genomes of plants and animals endangered by ongoing environmental changes. Although a great deal of this work was done in the mid-21st-century, the Trust continues to sample the genetic information of life forms around the world, seeking to build a better understanding of biodiversity. As they make all of their findings publicly available, the Trust has come under fire from biotechnology firms for accidentally publishing copyrighted genetic information.

Venture Altruists, Inc. is an ambitious group that seeks out promising social and technological innovators in the developing world and gives them block grants of money, usually sufficient to allow the recipient to live comfortably for several years. The selection criteria are often opaque; the organization does not tell the recipient precisely why he has received the funds, other than that they believe he will use it wisely. Little is known about the group, which has been awarding grants on an erratic schedule for the last 30 years. They have a website

which allows for nominations, but are otherwise unresponsive to attempts at communication.

Political Movements

Political movements are abundant in 2100, and a moderately active individual may be a member of half a dozen or more different groups, depending upon the person’s range of interests and connections. Dense information and communication networks make it possible for an activist to have more detailed knowledge of problems, communities, and factions in places on the other side of the world than do the local citizens. Nearly all political movements are virtual in some way, some groups never physically meeting. While the handful of violent political movements get most of the media attention, the majority of activists rely on peaceful forms of protest, education, and memetic engineering.

As activists network, they transfer memes, ideologies, and ideas, blending concepts and solutions from disparate regions or movements. A bioroid-freedom group in Mexico City can learn social engineering tactics from an infosocialist group based in Aberdeen, which in turn receives tips on spotting government informers from a South African Coalition bioliberationist cell with Red Duncanite sympathies. This cross-pollination leads to new memes popping up all the time, combinations of established movements and new ideas.

The abundance of movements is also a weakness, as the multitude of different groups can diffuse a given movement’s power, and activists sometimes find themselves working at cross-purposes. This situation is exacerbated by “astroturf” movements, corporate- or government-funded pseudo-“grass roots” organizations. Historically used to show apparent support for an embattled policy or company, they’re now often used to distract activists, thinning the numbers in any one group by multiplying the choices. In 2088, the investigative journalist Cynthia X uncovered proof that Biotech Euphrates was funding over a hundred different minor Preservationist groups, all of which were more active in factional struggles than in actually pushing anti-biotechnology agendas.

Competition and Conflict

With three great powers, five or more emerging powers, dozens of regional powers, hundreds of large transnational corporations, and thousands of global political organizations and movements, it’s little surprise that disputes are commonplace. Limited resources, ideological differences, and territorial disputes cause friction between different groups, with results ranging from passionate editorial webcasts to military assault. Technological acceleration, questions about pan-sapient rights, and challenges to controls over intellectual property have added to tensions. The diversity of issues and multiplicity of actors often means enemies on one issue can be allies on another.

All too often, when global powerhouses come into conflict, they do so in the markets or territories of less-powerful nations. This is rarely a case of two invaders choosing a convenient battlefield; more commonly, it is the result of opposing local factions calling on the support of powerful patrons. Support can be as surreptitious as intelligence reports or as obvious as cybertanks rolling down the highway, but always comes at a price. Increased access to markets or resources, realignment of policy or ideology, or even a change in leadership are demanded in return for aid. Worse still, a shift in the patron's strategy can leave the client in a precarious position, abandoned and left to defeat. In 2078, prior to the Pacific War, China gave substantial intelligence and materiel to anti-nanosocialist rebels in Thailand, and promised support for a planned coup attempt in Bangkok. Days before the coup, Chinese generals managed to convince the Premier that China would suffer heavy losses from a TSA retaliation, and that the armed forces needed another year of preparation before going to war. China unceremoniously cut off contact with the Thai rebels, and the coup was crushed.

WELTSPIEL

The ongoing maneuvering and competition between the great powers is now called *Weltspiel*. Originally meant as a derogatory term when coined in 2058 by the Bavarian political philosopher Heinrich Gephardt, it found currency in Europe and the developing world as a way to refer to the state of international politics. The concept of *Weltspiel*, or “world play,” treats great-power competition as an abstracted game, where players – nations, alliances, and international organizations – earn or lose points through bold or careless moves. Implicit in the idea is that regardless of the score nobody ever “wins” the game. But what started as a cynical joke has evolved into a popular model for understanding the daily struggles between the great powers.

By the end of the 21st century, there were several thousand popular websites providing real-time *Weltspiel* scores. The game ratings are based upon the current “positions” of the players, as determined by a random sampling of votes, a heuristic scan of news headlines, or the assessment of specialist AIs. In many of these sites, projections are made of each nation's future position, likelihood of success of current policies, and changes to overall capabilities. Of particular interest to social scientists and gamblers alike are the metascore sites, which compare scores from different judges, looking for emergent patterns. Many *Weltspiel* metascore sites accurately predicted the onset of the Pacific War six months before its onset, and a handful correctly projected its duration and outcome.

As *Weltspiel* has grown in popularity, national leaders have become increasingly aware of its memetic influence. In November of 2097, the Johannesburg *New Guardian* newsweb reported that the South African Coalition

had paid a small number of *Weltspiel* sites to change their ratings of the SAC, a claim loudly denied by both the Coalition's leadership and the *Weltspiel* boards accused of accepting bribes. As a result of these reports, the SAC's average score dropped by more than 10%, and the Southern African People's Party was voted out of power in the 2098 elections.

LIVING ON THE TRAILING EDGE OF THE FUTURE

At the close of the 20th century, it was said that the majority of the people on Earth had never made a phone call. While this was no longer true by the close of the 21st century, most of the technological changes that characterized the last hundred years were nonetheless limited to the people of advanced nations. The majority of people on Earth in 2100 have never teleoperated a cybershell, experienced a slinkie, or knowingly interacted with a sapient artificial intelligence. The issues of human identity, pan-sapient rights, and morphological freedom that shape the politics of Fifth Wave societies are rarely considered in most households on the planet.

TRANSITION AND TRANSFORMATION

This does not mean that the waves of technological upheaval have not affected the developing world. Even in many of the less advanced societies, telecommunication and information systems are robust, naturally occurring famine and disease are almost unknown, and material goods are readily available. Life for most is far more comfortable and healthier now than it was a century earlier. But the technological capabilities that emerged over the course of the 21st century also made possible far greater control over people's lives, efficiency in killing one's adversaries, and precision in crafting ideologies and shaping beliefs, while questions of ownership of ideas, designs, and even human genetics are increasingly sources of conflict.

Most countries in 2100 are going through a transition from earlier forms of social and technological systems to newer ones, whether it's a central African state embracing Third Wave culture or a European nation slipping quickly into the Fifth Wave. Some societies handle it better than others, however. Economic dislocation as new technologies change the nature of work, cultural conflict as new memes alter beliefs and opinions, and simple “future shock” all undermine political and social stability.

Waves of Change

One of the problems facing developing countries is the availability of cutting-edge technologies from the hyperdeveloped world. Quite often the introduction of new systems or processes shatters the fragile social compact developed around the previous level of technology. In the 2080's, Uganda reached a consensus about the morality of genefixing the next generation, and a program called "Gift of the Future" was launched to provide biotech services to growing families. In 2092, a small group of elderly Ugandan business and political leaders quietly traveled to Johannesburg to undergo the radical cellular-rejuvenation process that had recently been developed. When their

actions were discovered, so many Ugandans were angry about "the last generation stealing the future from the next" that the group went into exile.

Technology changes culture, but it takes time. Social change is slower than technological change; societies that succeed are the ones that can manage both types. New technologies enhance existing social struggles, from disputes between ethnic factions to broad questions of democracy versus totalitarianism. The race to adopt new tools and systems becomes an accelerating spiral, with competing sides seeking the temporary advantage that will allow victory. New technologies can also spark new conflicts as the balance of social and economic power shifts and as denser networks make it impossible to shut out new ideas.

TOP FIVE MOST POPULAR WELTSPIEL SITES

As of late December, 2099, as determined by *Metameme* web ratings service:

1. *Diplomacy*. By far the most read *WELTSPIEL* site, *Diplomacy* is run by senior advisors to the former European president, Chloe des Lysses. The *Communiqué* section is known for interviews with current global leaders, including (most recently) Stephen Alexis, the U.S. secretary of state. Although the accuracy of its score is notoriously low, *Diplomacy* has the best post-event analysis of any *WELTSPIEL* site.

2. *Emerging World*. One of the longest-running *WELTSPIEL* metascore sites, *Emerging World* pulls its analysis from a secret list of *WELTSPIEL* judges. Its ratings are surprisingly accurate, and the TSA is rumored to offer a bounty of \$1,000,000 to whoever brings in the authentic *Emerging World* list.

3. *Weltgeist*. Unlike the majority of metascore sites, which try to pick the very best *WELTSPIEL* material, *Weltgeist* is all-consuming, making use of – and giving equal weight to – every public *WELTSPIEL* score. Its results have been all over the map, with some projections almost eerily on target and others being wildly off the mark.

4. *WELTSPIEL Site of the Second*. Rather than aggregating multiple sites, *WELTSPIEL Site of the Second* redirects visitors to a random *WELTSPIEL* judge. Many obscure sites have credited WSS for sudden spikes of attention.

5. *Geestspel*. *Geestspel*, based in Amsterdam, is notable due to its total rejection of intuition or "gut feelings," relying instead on an evolving mathematical model. Although its scenarios have not been significantly more or less accurate than other *WELTSPIEL* judges, *Geestspel* has gained notoriety for the Countdown to the Singularity clock that now greets all visitors to the site. As of January 1, 2100, the Countdown claims that the Singularity will occur on March 10, 2116, at 3:32 AM GMT.

Shifting Economies and Societies

Even in nations not already facing substantial challenges, the hectic pace of change can be intimidating. Economic disruption is widespread; jobs aren't just lost to new forms of automation, but also to larger shifts that eliminate the need for entire industries. The rapid adoption of augmented-reality systems eviscerated the conventional outdoor-advertising industry, as billboards were replaced by individually targeted ads. Dedicated AIs reduced the need for a wide variety of professional-service providers, from graphic artists to accountants. Local economic weakness can give more Fourth and Fifth Wave transnational corporations an opportunity to come in and control emerging markets. Individuals and businesses with limited resources are often both the hardest hit by and the least able to adapt to rapidly shifting economic conditions.

Social challenges from rapid change are more than financial. Beliefs and behaviors that were once unthinkable can become commonplace, especially as memes from more dominant societies work their way in. Sexual experimentation, non-traditional religious beliefs (or no religion at all), and abandonment of traditional gender roles tear away at established cultural norms, causing tension between generations, regions, and classes. In 2052, the International Psychiatric Association officially identified Social Transition Stress Disorder, or STSD, as a reaction to "future shock" (see p. 55).

This is not to say that all changes are bad. New technologies and memes provide new opportunities for increased wealth, broader knowledge, and improved health. Once-isolated areas have a far greater ability to learn about the world than even the most advanced nations of half a century ago. There is a strong correlation between economic and technological modernization and greater freedom for minorities and women. Given time and stability, the improved economic structures usually mean better standards of living for all, even if the financial gap between the very rich and the rest also grows.

ADVANTAGES OF BACKWARDNESS

Opponents of Preservationism accuse us of being Luddites, opposed to technology and its comforts. They are wrong. We do not seek the abandonment of technology. What we seek is its careful application, a step back from the careless adoption of systems that will one day eliminate us as a species. This doesn't mean making our lives less comfortable or complete. We know that it is possible to both live more simply and live well, because there are examples in the world.

In many respects, some less-developed nations are paradigms of what we might call "appropriate limits" on technological advancement. In the more stable of these so-called "backward" states, commonplace technology is at a level somewhere around a high-Third-Wave/low-Fourth-Wave level. This is, arguably, the point that maximizes the value of humanity. Knowledge is commonplace, but the state is not a panopticon. Machines are helpful, but do not presume to replace human minds, and any alterations to the human genome are made simply to cure disease, not to reshape the body to new, inhuman forms. Indeed, we may best serve humankind by working in these less developed societies, encouraging them to hold firm against the siren song of advancing change.

— Robert M. Weber, *Toward a Preservationist Model for Sociology*, 2098

Although life in a Third Wave country does not afford the comforts of life in the hyperdeveloped world, there are certain benefits to living "off the grid." While the data networks and communication infrastructure may be limited or nonexistent, this means that it's far simpler to disappear, to get away from the constant connection typical of Fifth Wave societies. There are fewer parahumans, AIs, and bioroids in the less-developed regions, a state of affairs which some people find appealing. This also means that the conflicts around identity and fears of an incipient posthuman singularity have yet to arise. Human biotechnology, where it exists, focuses on the basics of keeping people healthy rather than radical changes in physiology or the pursuit of extreme longevity. In general, the conflicts and challenges arising from Fourth and Fifth Wave technologies are far less common in the developing world.

As in years past, the vast difference in power and wealth shapes the relationship between the advanced and the developing worlds. Less visible, however, is the economic exploitation commonplace at the end of the previous century. Modern production techniques are less labor-intensive than earlier methods, effectively pricing out even the most outrageous sweatshops. When Fifth Wave companies employ local workers in developing areas, they often pay above-average wages, hoping to stimulate consumption.

Fifth Wave Uses for the Third Wave World

In some cases, the motivations are less altruistic. Corporations, governments, and individuals from the hyperdeveloped world are sometimes attracted to the developed regions for reasons they'd rather not make public. The combination of reduced surveillance, less technology, and occasional instability in the developing world makes it easier for Fifth Wave groups to carry out activities that are inconvenient, immoral, or illegal in their home countries.

While officials in the developing world are not necessarily easier to bribe, Fifth Wave corporations are able to offer spectacular inducements to look the other way. Sparsely populated and poorly monitored, rural areas in the developing world are frequently the perfect settings for factories or labs that won't pass environmental or genetic regulations back home. The more dangerous installations may require large bribes at high levels of the government. The Genetic Regulatory Agency has been known to run sting operations, setting up government officials to expose corruption, as well as working with local functionaries to trap foreign corporations trying to evade the law.

A number of corporations also find Third Wave societies to be perfect testing grounds for new or experimental (but legal) devices (see pp. 62-63, 129).

Many intelligence and law-enforcement agencies have fewer restrictions on their actions outside of their home borders, and find it easier to operate in those regions without advanced surveillance and counter-intelligence technology. Operations in developing countries can more readily be covered up, made to look like the work of another group more hostile to the interests of the host nation. Civil wars and uprisings provide attractive opportunities to test new technologies, whether supplied to the government, to rebels, or to both.

Very often, one of the first requests made by a developing nation to its more-advanced allies is for improved police and monitoring technologies, so that criminal activity by Fifth Wave corporations or individuals can be more readily prevented. This, too, can be a Faustian bargain. Many believe that military and police technology provided by the hyperdeveloped world to the developing nations is riddled with intentional security holes and backdoors allowing the more-advanced partner easy access to systems in use. While no evidence of such backdoors has ever been uncovered, the meme is commonplace throughout the developing world.

Third Wave Uses for the Fifth Wave World

Governments, organizations, and individuals in the developing world also find it valuable to build and maintain links with Fifth Wave societies. Economic aid and trade agreements improve the material lives of citizens, and are the most common kind of intergovernmental connections. The provision and withholding of aid is a standard great-power tool for influencing smaller countries.

Assistance from Fifth Wave nations can be less formal. A variety of groups, both profit and non-profit, provide assistance to developing areas. Some specialize in environmental mitigation and disaster recovery, others in teaching and infrastructure development. A few organizations blur the line with mercenary forces by specializing in law enforcement. Most of these groups are small and made up of freelancers.

Technology transfers are also fairly commonplace, whether by Fifth Wave companies opening up shop in developing states, or by the direct provision of technological assistance to Third Wave military and police forces. This is, at best, a mixed blessing for the developed nations. Fifth Wave production techniques can greatly undercut the competitive ability of local manufacturers, driving them out of business; conversely, access to advanced technology is a key to successful assimilation into the global system.

Of all of the transfers from the hyperdeveloped world to the developing nations, few are more controversial than memetic migration, the flow of new ideas, ideologies, and cultural artifacts from one society to another. Memetic migration is simultaneously desired and despised. Philosophies, InVid, books, music – all are rapidly consumed by audiences hungry to have what the great-power societies have, yet all are decried as eviscerating local culture and arts. As a result, the market for memetic material is usually quite strong in Third Wave countries, but also the most targeted for government regulation or attacks by local cultural leaders – it's not unknown for material to go from highly popular to illegal in a day.

MEMETIC RELATIONS

While the struggle between different cultures can turn violent, it is far more often a clash of ideas. Popular entertainment, advertising, religious beliefs, political ideologies, and more compete for the limited attention of the late-21st-century citizen-consumer. A typical city-dweller in 2100 is confronted by a cacophony, all designed to entice him to pay attention. Across the globe, people have built up strong intellectual defenses in order to ignore these constant demands. In turn, those seeking to command

attention have grown more sophisticated in their approaches, in an ever-spiraling memetic arms race.

The development of memetics as a formal science has refined this system to a degree unimaginable a century earlier. In the hyperdeveloped world, messages can be tailored not just to an individual, but to his transient moods, his momentary surroundings, even his blood sugar level. In the developing world, the methods are usually more blunt, but no less intrusive, especially in societies that have moved fully into the Third Wave. The vast majority of messages a person receives are advertisements, ideological screeds, and lurid come-ons; the primary duty of an informant is to act as filter, making certain that only legitimate communications get through (see *Computers*, p. 130).



POPULAR CULTURE

For most of Earth's inhabitants, a significant portion of every day is spent enjoying some aspect of global popular culture. Live music (whether in person or virtual), books and websites, InVid and movies, slinkies, and virtual worlds are all effectively ubiquitous, giving the typical consumer of 2100 an almost overwhelming set of options. For societies that have largely become generous welfare states, this abundance of pop culture is a key to continued success. Even in less technologically sophisticated nations, access to the global culture market is often used to distract the populace from political or economic uncertainty, in a late-21st-century version of "bread and circuses."

Pantainment Society

In many Fourth and Fifth Wave nations, a significant portion of the populace does not have traditional employment but does have access to a sophisticated array of communication and information devices. Social critics call this environment "pantainment," reflecting the

dominance of entertainment as social discourse. Most forms of communication and information presentation are designed to be entertaining or enjoyable; ideological, journalistic, and commercial messages are embedded in entertainment media, to a degree that blurs the distinction. “Serious” information will usually be presented in a manner that echoes common entertainment semiotics. Individuals brought up in the local culture will be able to distinguish readily between entertainment that’s just entertainment and entertainment meant to send messages. Outsiders, even those from other Fourth and Fifth Wave societies, will be confused, unable to tell the difference.

Similarly, most citizens of a pantainment society will be highly attuned to fame, even as a surprisingly large part of the populace achieves minor celebrity status through participation in virtual environments, harmless but attention-grabbing stunts, “slogging” (or “slink-logging,” the use of a slinkie interface as a daily journal published on the global network), or appearing in an InVid based on real-world events. The use of entertainment-industry jargon such as “fame curve” (the speed with which a given celebrity will rise and decline) and “going BC” (becoming a “background character,” still present but no longer the focus of an event) is also quite common. A popular variant of the standard Mugshot augmented-reality program highlights individuals based on type and degree of celebrity (see *Computer Software*, p. 131).

Attention-Deficit Society

Not every media-dense culture is a pantainment society. Many late-Third-Wave and early-Fourth-Wave nations are considered to be attention-deficit societies. In these societies, the amount of information demanding an individual’s attention is overwhelming, from work-related data, to advertising, to entertainment and news – and the ability of individuals to keep up is decreasing. Each medium attempts to cut through the clutter and grab the person’s focus; as a result, it is difficult to pay sufficient attention to any given information source. Personal informorphs are usually of great assistance in this sort of culture, but in many developing nations the ability to broadcast data of all sorts is more available than the individual system’s ability to act as a filter.

People raised in an attention-deficit society typically demonstrate a well-developed ability to ignore information that doesn’t personally concern them, although this often manifests itself as becoming easily bored without constant new stimulation. A major difference between a pantainment and an attention-deficit society is the primary form of information. In a pantainment culture, entertainment dominates and other messages must be constructed in a manner consistent with that model. In an attention-deficit culture, advertising dominates, and other information often takes on similar characteristics: single theme, persuasive pitch, and targeted toward immediate needs.

Advertising

In every market economy on Earth, advertising is a commonplace form of expression. Competition is cut-throat for customers that are increasingly able to have their basic and even luxury needs met cheaply, and some of the most advanced SAIs outside of government service are employed by advertising agencies looking for new memetic hooks to attract and retain customers. No idea is too obscure or bizarre to be considered. In an advertising market that has had two centuries to perfect its craft, true novelty is worth millions of dollars.

In the future, everyone will be famous for 15 minutes.

– Andy Warhol, 1967

I wanted to be famous NOW.

– Rudy Sanchez, after his arrest for hacking an InVid stream to put his face on all of the actors’ bodies, 2097

In much of the world, advertising has taken on the characteristics of memetic warfare, using deception and intimate knowledge of the audience in ways that would have been shocking even half a century earlier. Massively complex computer systems plumb the depths of transaction databases, scan newsfeeds and public uplinks, monitor systems, and watch communication networks, all with the goal of compiling accurate customer knowledge. Rather than providing a limited set of perfectly targeted inducements, however, this has led to inundations of personally customized messages that still seem only to offer junk. Augmented-reality systems are common targets of intrusive advertising, in which competitive messages get plastered like graffiti across shops and vendors. Voice and text messages are also quite common, usually triggered by short-range speech and behavior-recognition systems.

Sometimes sophisticated advertising software gets out of control. Adviruses are a form of weblife (see p. FW31) that attempt to gain access to the main processing area of a virtual interface or augmented-reality system. A notorious advirus cases happened in 2088, when an Egyptian soft-drink company advertisement evolved into an advirus that infected VIIs with a constantly scrolling logo across the user’s vision. Although antiviral software can now delete most adviruses, they remain a persistent annoyance.

MEMETIC WARFARE

*“There is no greater accomplishment than disrupting a society’s memespace. Once the traditional hierarchy of ideas is overturned, all memes become equal, even the most ludicrous or hysterical. **Especially** the most ludicrous or hysterical, as a point of fact; it can take traditional memetic institutions months or even years to chase down and eliminate these virulent memes. That’s why I call them ‘weapons of mass distraction.’”*

– Ang Wen,

A Guide to Meme-Hacking Politics

The techniques of the more-aggressive forms of advertising closely parallel what is often called “memetic

warfare” – the intentional manipulation of perspective, idea, and belief to achieve political ends. In 2100, many political or social struggles center on changing the way people think about an issue, recognizing that this is a lever to effect greater change. While argumentation or the demonstration of an idea’s invalidity can work, the effort must be both very subtle and powerful, focused on making the target start to doubt his own paradigm.

Propaganda

One of the classic forms of memetic warfare, propaganda is commonplace in 2100. Every government statement, every newsfeed article, every slinkie recording is consciously edited to support a particular worldview. There is little controversy about this – indeed, people all over the world have learned to be distrustful of those who claim that their stories or facts are unbiased. The primary counter to propaganda is diversity – citizens of advanced democratic societies rely on a multiplicity of perspectives on an issue to form their opinions. In contrast, citizens of states with less diversity (either due to a lack of advanced technology or censorship) tend to not believe anything they are told.

Reality Hacking

The more sophisticated version of propaganda is to create apparent “facts” that the diversity of perspectives accept as real, thereby directing the public’s attention. This remains controversial, as it makes people not just mistrust what they are told, but even what they see; the most infamous cases involved using an individual’s own augmented-reality gear against him. Reality hacking uses staged events – disasters, attacks, attempted assassinations, and the like – created using advanced virtual-world systems and broadcast in such a way that people believe that the event truly occurred.

One of the first known cases of reality hacking happened in 2034. A small group of Kurds returning from a peaceful protest in Ankara were stopped in a remote area by Turkish police and beaten severely, leaving two protestors dead. A local filmmaker, hidden in some trees, caught most of the event on video. The uproar was immediate and worldwide, and Kurds across Turkey held angry rallies. But when a new video emerged, showing a different set of Kurds stopped, tortured, and killed by police, the riots lasted for days, leaving nearly a thousand people dead across Turkey. Five years later, investigative journalists discovered evidence that the second video was entirely fabricated by opponents of the (then) leading political faction in order to cause unrest and instability.

More recently, in 2098, a minor scandal erupted in Korea when the mayor of Pyongyang was seen by a dozen witnesses exiting a brothel, climbing into a car, and driving away. Some of the witnesses recorded what they saw, recordings that were used by political

POPULAR GLOBAL MEDIA

Adrenaline Junkie: Slink feeds from people doing dangerous stunts. Although Adrenaline Junkie features its star Dawn Aguilar jumping off of bridges and wrestling alligators, the real attraction of the program are slink recordings from regular people around the world (and off-world) doing crazy things. There is a small underground market for slinks of people who die while attempting stunts for the show.

Don’t Eat That!: Hidden camera stunt and prank InVid based in Pretoria, but produced and popular globally. Practical jokes are inflicted on a victim until he realizes that he’s being recorded, when the hosts switch to offering payment for increasingly messy stunts. Appearance as a *Don’t Eat That!* contestant guarantees a brief but intense period of global fame.

Naughty Bits: A combined InVid and virtual-environment program set in the Relaxation Island virtual world. Contestants are groups of couples who inhabit random virtual bodies and try to find their mates while trying to keep competitors from finding their own. Banned in the Islamic Caliphate, it’s one of the most pirated InVids in production.

Secret Eye: Live feeds from randomly selected uplinks. *Secret Eye* uses gray-market equipment to tap uplink signals around the world and convert them to standard InVid for rebroadcast. The people providing the feeds (usually) don’t know that they’ve been tapped. *Secret Eye* subjects, if they reveal their identity over the course of the slinktapping, can become wildly popular. In early 2099, *Secret Eye* was forced to provide a lock-out code that would prevent slinktapping; as of 2100, only about 40% of the known uplink users on Earth have chosen to use this code.

Slogistan: Cyberdemocracy meets slink-logging, *Slogistan* provides links to slink-loggers – sloggers – around the world. Visitors vote on the merits of the various slogs, and *Slogistan* keeps a running tally of both absolute number of votes and preference-matches.

opponents of the mayor to discredit him. The tables were turned when the mayor's allies in the Korean government uncovered an elaborate plot to implant a completely synthetic image of the mayor and car in the augmented-reality implants of the witnesses. The trick was planned to happen only when people with active AR implants were nearby, allowing the conspirators total control over what they saw.

RELIGION

Religion and spiritual belief remain powerful forces in the world of 2100, especially in the developed parts of the world. Religion, historically, has been a fundamental means of solace and comfort for societies mired in poverty and conflict. Religious leaders are often cultural and political leaders, providing education, community, and channels for artistic expression.

Conventional Religions in an Unconventional World

While the radical changes to the human form and conflicts over non-human sapient's rights have driven the emergence of new religions in the Fifth Wave world, the political and cultural struggles that characterize the developing world have solidified the influence of traditional beliefs. Many of the new religions emphasize the power or transcendence of the individual. Older religions are typically community-focused, trying to empower believers as a whole, even at the expense of individual expression.

This is not to say that traditional beliefs haven't changed over the course of the 21st century. Discoveries such as life on Europa and the planet Virginia have altered most people's belief in the uniqueness of Earth. The development of sapient AIs and bioroids has undercut the concept of humanity's distinctiveness. Yet for most older religions, these changes have only altered the tone, not the content, of the sermons. Some communities strive for inclusiveness, considering all sapient's to be children of God. Others are less tolerant, rejecting parahumans, bioroids, and especially SAIs as the spawn of the Devil.

Islam

With over two billion Muslims worldwide, Islam remains one of the largest religions on Earth, with more followers than either Christianity or Hinduism. Although Islam remains anchored in the Middle East, Muslims are found worldwide, including Russia, Southeast Asia, Southern Africa and Mexico. Most Muslims consider themselves to be well-educated, modern people who happen to have deeply held faith in a traditional religion.

The Muslim world has been relatively tolerant of machine intelligence, with a few exceptions (Iran and Pakistan in particular). Few Muslims have significant

genetic alteration; taboos about body alteration are particularly strong, and notions of the "perfectibility" of humans are considered irreligious. For similar reasons, most believing Muslims find Transhumanism or posthuman transcendence to be repugnant concepts. The main exception to this can be found in Sufism, which is a form of Islamic mysticism with more in common with Zen Buddhism or Gnosticism than with traditional Islam. While it has existed for centuries (many of its practices predate the Muslim era), Sufis have often been persecuted, and remain few in number in the traditionally Muslim world. The Sufi beliefs, however, which focus on enlightenment and curiosity, mesh well with the transhuman philosophies of the Fifth Wave world. An increasing number of Muslims living in the hyperdeveloped world have turned to Sufism as a way of reconciling their religious culture with their material world.

Christianity

Although Christianity in the hyperdeveloped West has evolved a number of novel variations, in the developing world it has remained close to its roots. Protestantism and Mormonism are both strongly evangelical, and they along with Catholicism have waged a friendly but intense interdoctrinal struggle to convert peoples throughout Africa and Asia. Most of the world's Protestants can be found in China and southern Asia, where official restrictions on the religion have done little to stop missionary work. Mormonism has become the dominant form of Christianity in India, and is gaining converts (largely from Catholicism and Protestantism) in South America.

The Catholic Church in the 21st century has an interesting history. Intense doctrinal disputes between the socially traditional and the socially liberal factions in the church eventually led to a split in 2038, with a Chicago-based faction calling itself the Catholic Church (Reformed) capturing many of the congregations in Europe and America. Although its many critics derided it as "neo-Anglicanism," the Reformed Church's willingness to accept married and female priests appealed to many disaffected Catholics.

The Reformed Catholic Church, while closer in cultural outlook to the Fourth (and, eventually, Fifth) Wave societies in which it was founded, has receded in popularity somewhat, particularly in the United States. The one exception to this is the Society of Jesus, also known as the Jesuits. Essentially extinct in the traditional Church, the Jesuits saw a resurgence within the Reformed communities when they began accepting female priests in 2047. The Jesuits are the only branch of the Catholic Church (Reformed or Traditional) to embrace nonhuman sapience and transhuman philosophies, and in 2090, the Society of Jesus (Reformed) quietly began accepting SAIs as members in Europe and Mexico. As of 2100, there are about three-dozen ordained SAI Jesuits.

Hinduism

Still the dominant religion in India, Hinduism has slowly declined in relative power as increasing number of Indians embrace current ideologies and philosophies. Hindu religious leaders have generally opposed genetic modification and are cool toward nonhuman sapients, although neither is true for the Indian population as a whole. Hinduism is increasingly a cultural system rather than a faith; many Indian citizens call themselves Hindu without actually believing in its scriptural orthodoxy. Two major ideological competitors are challenging Hinduism in 2100. The Mormon church has hit upon a persuasive conversion meme in India, and now nearly 5% of India's population considers itself Mormon. And nanosocialism – while not inherently opposed to religion – is a very popular secular belief system.

Buddhism

Buddhism, while remaining grounded in its core philosophies, has managed to adapt with relative ease to new developments and ideas throughout the 21st century. The first religion to embrace machine sapience – *prior* to its actual invention – and with a core philosophy that teaches transcendence as a goal, Buddhism is the fastest-growing religion in the Fifth Wave world, although its tenets have yet to gain a substantial foothold in the developing nations. The one exception is Indonesia, where the dominance of nanosocialism and a local decline in Islam among the citizenry has led to a rise of a form of Buddhism heavily influenced by local Sufi mysticism.

Chinese Traditional Religion

Comprising Confucianism, Taoism, Chinese Buddhism, and local traditions, Chinese Traditional religion is the term used by scholars to describe the constellation of faiths that adhere to Chinese cultural practices. For many believers in China (and regions with a strong Chinese influence), these various traditions form a coherent composite worldview. China's increasingly cosmopolitan perspective led to a sharp decline in followers of traditional religions in the mid-point of the 21st century, but this trend was reversed in the 2070s and 2080s. While not rejecting the fruits of biotechnology and AI research, followers of Chinese Traditional religions tend to counsel a cautious approach. Of all of the conventional religions, Chinese Traditional beliefs were perhaps the least changed as a result of the radical advances of the 21st century.

IDEOLOGIES AND MEMES

Information Socialism and Anarcho-Transhumanism are more similar than they are distinct. Both seek the withering away of the traditional forces of memetic control and the unfettered transformation of human existence. Both argue that the power of creation should not be restricted, whether by corporation or by government, but

should in fact be encouraged. Where they part is in the recognition of the biologically based social characteristics of the human animal. Information Socialists believe that our biology is integral to who we are; Anarcho-Transhumanists see it as a defect to be engineered out.

*– Caleb Metelits, **Proceedings of the First International Conference on the Development of Information Socialism with Porterist Principles**, 2038*

A variety of memes and ideologies have taken root throughout the developing world.

Abolitionism

While many in the Fourth and Fifth Wave worlds accept the development of bioroids as a natural extension of biotechnology, many people in the developing world see bioroids as vat-grown slaves. Abolitionists want a total ban on the development and production of all forms of bioroids. Bioroids now in existence should be immediately freed from service and allowed to live their natural lives. (Many, but not all, abolitionists would allow bioroids to reproduce, if possible.) This meme is strongest in Africa, which was the primary victim of historical slavery, but is also particularly influential in Europe and South America.

Autarchy

Autarchy is the belief that a country or national group should be able to stand on its own, self-supported, self-ruled, completely without any outside interference. Many developing nations have a tendency toward autarchism; the ideology is most common in areas where the great powers have been most economically or militarily interventionist. Autarchism is not the same as isolationism. For most autarchists, trade is acceptable, just not in goods or services that are crucial to the “national interest.” Alliances and regional associations are equally welcome, but never to a degree of entanglement that would force the state to act against its own self-interest – treaties with great powers are rarely considered worth the bits they're stored in. Autarchists commonly press for the development of military systems designed and built entirely at home, as well as a strong local technological and memetic arts development. Autarchic movements are prone to violence if marginalized; victims of Social Transition Stress Disorder (see p. 55) are often drawn to such groups.

Bioliberation

Bioliberationists assert that a state has the right to decide for itself whether and how to deploy biotechnologies. More than that, however, they claim that no outside force (whether corporation, government, or international organization) has the right to prevent or require a nation to take any given action. For most Third Wave nations, there is extraordinary economic and political pressure to allow Fourth and Fifth Wave corporations to bring

biotech services to and extract biological resources from the less-developed regions. Non-genomod populations are ready markets, and even in the late 21st century new proteins are still being discovered in remote areas. Bioliberation opposes the presence of outside biotechnology and biotech firms within the nation's borders, arguing that it is a violation of national sovereignty. While bioliberation movements often have a strong Preservationist undertone, a number of political groups have taken bioliberationist positions to support local biotech experimentation, opposing the GRA and any external attempt to change bioscience practices.

Digital Freedom

In a world where information controls the form and production of physical objects, the environment, and even bodies, control of information is a critical issue. In the hyperdeveloped world, information is largely owned by corporations, who license designs for products (or genes) to consumers. The Digital Freedom movement, which dates back over a century in its various forms, argues for the "fair use" of information for non-profit activities and education, and argues against the continued expansion of rights management. Its critics have dubbed it "Infosocialism Lite," although its supporters often take a libertarian perspective. By 2100 it is widely considered a lost cause, but there are some academics and activists in the developing world who still abide by it.

Kazoku Kai

In 2067, a Tokyo businessman named Saburo Hattori published a series of short books calling for a worldwide revolution in politics and economics. Calling it *Kazoku Kai* – or "World Family" – Hattori argued that the current model was unsustainable, and that the upcoming point of transcendence would tear human civilization apart if it did not all move forward as one. The books were largely ignored in the hyperdeveloped world. But in the developing world, followers of the *Kazoku Kai* books are commonplace, in a variety of small but vocal movements. Most followers of the ideology can be found in academic and religious communities, although there are a handful of nascent *Kazoku-Kai*-based political parties. The basic concept – breaking down political and cultural borders in order to promote world peace, leading eventually to a one-world government – is sometimes combined with nanosocialist and secular hyperevolutionist ideas. A group called the Okami Front has, uniquely, combined the philosophies of *Kazoku Kai* with an ideology of amortalism, calling for "transcendence through extinction," and carrying out occasional terror attacks in the PRA region.

Majority Cultures Movement

The so-called Majority Cultures movement, a dominant ideology among developing nations in the mid-21st century, has largely disappeared in its original

Voudoun

Commonly called "voodoo" in the West, the practice of Voudoun was a West African traditional religion that migrated to the Americas with the slave trade. Over the centuries, it has proven able to adapt to a changing world. In 2100, Voudoun and other West African traditional religions are cosmopolitan faiths with nearly one hundred million adherents, combining aspects of Transhumanism, the Majority Cultures movement, and whichever religious traditions are common locally. Although most popular in West Africa, the Caribbean and parts of the United States, practitioners are found on every continent. Voudoun has proven remarkably flexible at combining 21st-century concepts and millennia-old religious practices, and many sociologists argue that the belief is positioned to explode in the 22nd century, as the advanced technologies of the hyperdeveloped world spread more widely into the developed nations.

form, which called for developing nations to abandon Western-dominated political and memetic institutions. The remnants of the once-revolutionary force, a journal called *Hemisphere* and a biannual "Conference of Majority Culture Nations and Peoples," have largely become focused on the academic study of cultural friction and interaction. One splinter group remains active, a small organization of disillusioned E.U. expatriates calling itself "Kulturkampf." It has been blamed for a series of bombings of embassies across the Third Wave world.

Transparent Societies

As countries become solid Third Wave cultures, with abundant information technology and dense networks, movements typically emerge calling for a so-called "transparent society" in which there can be no privacy. Arguing that historically laws around privacy and confidentiality have more often shielded the rich and powerful rather than the masses, proponents of the model believe that only in the total abandonment of secrecy can there be true democracy. This goes far beyond the common infosocialist demand for communal intellectual property; this is the complete elimination of the ability to hide any aspect of one's personal or business life. Proponents argue that irrational prejudices disappear when everyone's private deviances are on public display and, more important, crime becomes nearly impossible when any act can be watched by everyone else. Few businesses or governments willingly relinquish the ability to act in secret, and true transparent societies have rarely been attempted. Most have been small Isolate communities, although one of the largest experiments in transparency appeared in Lithuania (p. 20).

POLITICS, Economics, and Power

If questions about identity and pan-sapient rights consume the passions of the hyperdeveloped world, the citizens of the less-developed places are more interested in basic questions of political power and ownership of information.

GLOBALIZATION

The early part of the 21st century focused on the impact of globalization, the increasing interdependence of economies and cultures around the world. For globalization's proponents, the increasingly dense connections were a guarantee of greater overall wealth, the spread of democratic-market ideologies, and improved competitive strength as nations and regions specialized in needed services. For its opponents, globalization guaranteed the suppression of local cultural variation, the enrichment of elites at the expense of the masses, and the reinforced domination of leading developed nations. Both camps turned out to be correct.

By 2100, it has become nearly impossible for most mainstream states to disentangle themselves from the global economic system. Trade in raw materials, product

design, and intellectual property bound the developed and developing worlds together. Only the hyperdeveloped Fifth Wave nations could begin to cut the ropes, as increasingly sophisticated material and production technologies make it possible for an advanced society to become almost entirely self-sufficient. The Fifth Wave states remain connected to the rest of the world, but largely as the home for transnational corporations. Old propaganda cartoons showing the U.S. or E.U. holding the puppet strings of the developing world have taken on new life as activists realize how one-way the connections have become. A few of the more-prescient political movements realize that technologies of self-sufficiency won't be limited to the most-advanced countries for long.

The International Distribution of Labor

The hyperdeveloped nations aside, much of the world of 2100 is intimately connected via trade of goods and services. Although automated manufacturing and 3D printing have done away with many of the traditional cheap production jobs around the world, there are still substantial markets for textiles, cybershell components, and local agriculture. It can still be less expensive for transnational companies to make use of local human labor rather than build a high-technology infrastructure. In addition, the production and distribution of raw materials for 3D printers and minifacs in the hyperdeveloped world is an increasingly important part of many regional economies.

Knowledge work, such as genetic design, 3D-object architecture, and entertainment of all types has also become widespread. The overall increase in education levels worldwide allows more people to participate in the knowledge-based economy, in turn allowing a much wider variety of new ideas and designs to enter the market. Certain areas have become well known for producing high-quality material, such as interactive video in Bangalore, genetic designs in Lesotho, and 3D-printer-design consumer goods in Mexico City. Knowledge workers around the world tend to gather informally in their home cities, sharing ideas, sometimes resulting in the appearance in regional "schools" of thought or design.

The high-bandwidth communication networks available to most countries also make it possible for individuals to live hundreds or thousands of miles away from where they work. This practice is highly profitable for companies that use it, but a mixed blessing for employees. Corporations often use remote workers in order to take advantage of lower labor costs. Since the only local technology needed for the workers is a web connection and augmented-reality interface, companies are able to very quickly shift their labor from one region to another when a cheaper location becomes available. In many Third Wave countries, local corporations are little more than labor brokers, seeking out companies looking for remote workers to match with local laborers looking for distant employers.

LITHUANIAN TRANSPARENCY

In 2062, shaken by massive corruption scandals, an aggressively reformist Lithuanian government pushed through a series of total transparency laws, outlawing privacy for individuals, corporations, and government agencies alike. After time to adjust to the new social model, most Lithuanians found that they could tolerate, if not enjoy, the situation, and life continued more or less as usual. In 2074, the press uncovered a conspiracy between a handful of Vilnius-based corporations (primarily biotech firms) to market individual genome and demographic information internationally. Further investigation revealed that many corporations and government agencies had managed to maintain secret practices and base new policies on the mandated open personal information of citizens. The subsequent riots and widespread backlash resulted in the end of transparency laws and a strong anti-biotech popular consensus that continues today.

DISTRIBUTION OF TECHNOLOGY

“There aren’t ‘haves’ and ‘have-nots’ – there are only ‘users’ and ‘used.’”

– Bradley Wright, 2017, *Download This*

Much of the world of 2100 is defined by the technologies available to everyday people. Outside of the hyperdeveloped world, however, many of the technologies commonplace in Fifth Wave societies are rare and expensive, available only to the rich and well-connected. Corporations from the Fifth Wave world place elaborate restrictions on the use, distribution, and reproduction of content. This does not mean that high technology isn’t available to the masses in the developing world, but much that is available is woefully out of date, underpowered, or even considered dangerous in Fifth Wave society.

Content-Rights Management

In 2100, nearly all information, entertainment, and designs – collectively referred to as “content” – are owned by corporations and licensed for consumer use. Duplication, distribution, or use of content without the authorization of the license-holder is considered piracy, and violates international law. Global regulations adopted early in the century bar the use or creation of systems that can be used to avoid content-rights-management protections. Content rights (which encompass copyright, trademark, and so-called “experience” rights) are valid for the life of the rights-holder; with corporations effectively immortal, and humans increasingly long-lived, this for all practical purposes gives rights in perpetuity.

The World Trade Organization is the primary body overseeing content rights around the world. Anything that can be created or designed, from consumer products to genomes, can be registered with the WTO for content-rights protection. Once registered, it becomes part of a database available to law-enforcement agencies around the world. Any design, such as a DNA sample, a cybershell, or a song, can be checked against the database, which will then identify whether it is a protected design and who the rights holder is.

Where possible, protected designs include a content-rights-management (CRM) system. CRM systems attempt to prevent unauthorized duplication, distribution, or use by imposing code-level restrictions and encryption. Some CRM systems are very hard to crack, particularly those that use regular quantum-encrypted communications between the content and its rights-holder. Other systems, such as genetic-rights-management (GRM) codes that prevent unauthorized reproduction of a genemod, are much easier to break. In every case, hacking a CRM system is a crime.

Minifacs and Robofacs

Of all of the technologies common to the Fifth Wave world, minifacs are the most popular in developing societies. Wildly expensive now, they are expected to drop in price eventually, although the great demand for them is likely to keep prices high for the foreseeable future. Communities often pool money to buy a single unit. Raw materials can be hard to come by, but quite a few local suppliers have sprung up in countries that otherwise don’t make minifacs. The widespread introduction of these 3D printers often has unforeseen results, however. Models currently on the market in the advanced states are quite powerful, able to produce consumer items of a quality equal to or better than locally made goods. Retailers and manufacturers that specialize in mass-produced items see their business drop as minifacs start to become available. For most citizens in the (stable) developing world, the major expense with minifacs is not the device itself – still too expensive for any individual to own – but the licensing of designs for use with it.

The 3D printer’s larger version, the modular robofac, is also becoming more widespread in the developing world, albeit much more slowly due to the cost. As robofacs replace older automated factories, governments are closely watching their effects. There is often great tension between unemployed citizens and manufacturers using robotic systems. If the government doesn’t have the cash to provide a Fourth-Wave-level social-welfare system, it may enact laws to mandate the number of employees in factories. Such laws are also used to extract greater revenues from transnational corporations doing business in developing areas. It’s not unusual to enter a largely automated facility to find employees playing interactive webgames.

Cybernetics vs. Bioengineering

The developing world is also home to technology pathways that have been largely abandoned in Fifth Wave countries. An example of this is the continued development of cybernetic implants. While the genes and proteins that shape human biology are well understood, their successful manipulation is still fairly difficult, requiring technological resources beyond the reach of many countries. Cybernetics, conversely, is a well-established industrial technology, dating back to the late 20th century. Half-century-old designs are well within the capabilities of mid-late Third Wave countries in 2100, and innovations, improvements, and new methods are shared between developers. Cybernetic implants have a number of advantages for less-developed nations. They can be developed and constructed locally, avoiding dependence upon hyperdeveloped patrons; pieces can be mass-produced and customized later, reducing costs; and cybernetic implants can give advantages hard to accomplish with biotechnology, especially in non-upgraded adults for whom genetic surgery is difficult and expensive.

Cybernetic implants have numerous drawbacks. Implants are hard to hide; cybernetic extremities tend to make noise, and few of any kind have a totally natural look. Implants require regular maintenance and energy to operate. The implantation process, while generally simpler than genetic surgery, is hard on the body, and few individuals have a strong desire to have a functioning body part medically removed and replaced with a mechanical device.

BOMBJACKING

The practice of taking control of a mobile bioshell or cyber-shell, strapping on (or implanting) explosives, and teleoperating the body to send it to a target is known as *bombjacking*. This requires the appropriate interface equipment to take over the target system, which then watches helplessly as its body is used to deliver a bomb. Because of the technology required, this is mostly used by well-organized and well-supported terrorist and criminal groups.

Obsolete Technology

Devices, software, even (non-sapient) AIs that have long been superseded in the Fifth Wave world often find continued use in the developing nations. They're available at bargain prices from technology brokers, well-connected sales agents who constantly hunt for obsolete equipment being dumped in the developed world in order to sell it elsewhere. Equipment recently rendered obsolete is very hard to come by in this way, but systems that are 10 to 20 years old (or older) can be found readily. Prices for earlier versions of technology can range from 10% to 50% of the price of equivalent new systems, depending upon function and design. Obsolete equipment is usually sold as-is, without much in the way of support or upgrades, and in less-than-perfect working condition. Some technologists have found lucrative careers in supporting obsolete systems.

CRIME AND PUNISHMENT

Law enforcement in the Third Wave world is both helped and hindered by connections to the hyperdeveloped countries. Local criminals may get access to technology allowing them to more readily commit or cover-up crimes; law-breakers from the Fourth/Fifth Wave world may be able to take advantage of lagging law-enforcement technology. Conversely, in many states the police are among the first to have access to high-end technology, giving them a distinct advantage over local criminals.

Property Crime

Theft and other property crimes remain a problem, although they are more difficult to accomplish than in decades past. There is an ever-spiraling arms race

between those seeking to prevent property crimes – through the use of monitoring equipment and item transponders such as v-tags – and those seeking to carry them out. This has tended to reduce the number of casual thieves, and increase the resources required to effectively commit property crimes, contributing to the resurgence in organized crime.

Organized Crime

As many predicted, the trend toward the legalization of drugs and other “vice” crimes over the course of the 21st century undercut the financial base of many global organized-crime families. Traditional syndicates were hit hard by the reduction in resources and stepped-up law enforcement, and a wave of arrests in the 2040s and 2050s spelled the end of a number of well-established organized-crime families across Europe, America, and Asia. Those that survived shifted their focus away from smuggling narcotics toward smuggling people and cutting-edge bio- and nanotechnologies across borders.

Smaller, more flexible organized-criminal groups emerged in the latter part of the century, usually localized to a single region, or acting as a bridge between other loosely organized networks. More sophisticated than typical street gangs, but rarely tied to a centralized organization, these crime networks adopted many of the ad-hoc and flattened-hierarchy techniques used by modern business and guerrilla groups. The lack of a strong central organization means that these crime networks are difficult to fight using traditional enforcement methods. Conversely, the flexible and somewhat anarchic nature of these networks keeps them from getting very large, preventing them from exercising global influence on the scale of the classic 20th-century mafias. These networks tend to focus on smaller crimes, such as vehicle theft and burglary, and vary widely in the amount of violence used to carry out their activities.

Random Violence

The availability of sophisticated medical gear able to resuscitate people injured by extreme bodily trauma (as well as make ghosts and shadows if the bodies are too far gone) has changed the nature of violence in the parts of the world where the technologies are available. Guns and knives are much less reliable methods of killing than in years past. In some crime-ridden locations, even drive-by shootings have all but disappeared, except as intimidation tactics designed to frighten rather than slaughter.

Unfortunately, the use of explosives has largely replaced shooting as a common means of committing premeditated murder. Bombs more reliably inflict enough trauma on a body and brain to prevent either resuscitation or replication, although targeting a particular victim can be difficult. Murder-suicide by explosive is an

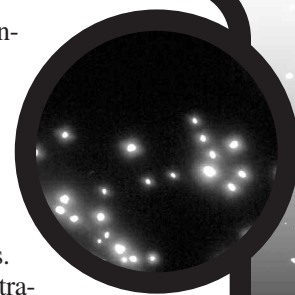
increasingly frequent headline in many parts of the world. Businesses and public buildings have installed sophisticated biochemical sniffers to attempt to detect explosives; some of these are designed to immobilize the person presumed to be carrying the bomb, using either tanglerfoam or a low-power electrolaser. Detectors able to pick up dangerous quantities of modern molecular explosives have a false-positive rate of around 1/100 of 1% – that is, about 1 in 10,000 people passing through will set off the detector, even if not actually carrying an explosive – limiting the use of the automated systems.

Kidnapping

Kidnapping is generally much less common in 2100 than a century earlier, due largely to the expanded use of tracking technology. Much of the modern world's personal technology is intended to interact with other nearby systems, using short-range broadcasts and location-tracking signals. Augmented-reality gear is particularly useful in this regard, as it depends entirely on sending and receiving data about the environment surrounding the wearer; a standard AR signal, if not jammed, can typically be detected at a range of 1 mile. For children, who typically do not have implanted AR or communications gear, specialized implanted v-tags (known generally as p-tags

when in people) are used to monitor their whereabouts (see *P-Tag Nations*, pp. 57-58).

An individual is most likely to be kidnapped in locations without a robust communications or data network, usually in the developing world or remote parts of developed countries. Kidnapping foreigners for ransom is a traditional method of fundraising for guerrilla movements around the world, although the more ideologically aggressive groups grab people from great-power nations in order to get attention. In either case, the relatives or co-workers of the abductee are typically contacted in a matter of minutes to communicate the demands. The transfer of funds to an anonymous account in a financial haven (such as Switzerland or Jamaica) or the broadcast of a political statement on a major website has to happen quickly, as the kidnappers have little time. Once the authorities are aware that someone has been kidnapped, multiple tracking cybershells (usually capable of long flights) are dispatched to search out the victim's AR, communications, or p-tag signal; at that point, it becomes a race between the tracking abilities of the police and the mobility and stealth of the kidnappers. A kidnap victim is usually either released or killed within hours of his abduction.



CAMPAIGNS IN BROKEN DREAMS

Although the *Broken Dreams* setting has a darker and less optimistic tone than the *Transhuman Space* core book and *Transhuman Space: Fifth Wave*, campaign themes described in those books fit well in a *Broken Dreams* campaign. Most of the adventure seeds described are as meaningful in Kinshasa as they are in Tokyo. Troubled nations still need entrepreneurs, police officers, activists, and soldiers. Still, there are differences. The darker tone lends itself to adventures filled with moral ambiguity and cynicism, where characters are never quite sure whether their actions ultimately serve a greater good.

Broken Dreams is a perfect setting for campaigns or adventures focusing on combat, theft, overreaching corporate arrogance, bioengineering disasters, espionage, assassination, and information piracy – and whether the player characters are the perpetrators of or the defenders against these unfortunate incidents is entirely up to the GM.

Broken Dreams campaigns that use characters local to the setting are typically less powerful than an equivalent *Fifth Wave* campaign. Starting points should be lower, reflecting the reduced access to cutting-edge cybershells, AIs, and genetic modifications. As a result, characters from the *Broken Dreams* regions may be somewhat easi-

er for players to sympathize with, as they are less likely to be pushing the envelope of what it means to be human. Their opponents may not face the same power limitations, however, especially if they are rich or well-connected.

The setting also works well as a location for a series of adventures for Fifth Wave characters. In terms of resources and capabilities, characters typical of the *Fifth Wave* setting may have an initial advantage over their opponents, but the greatest strength of the developing world is its tenacity. Even when overmatched, the people of the world of *Broken Dreams* do not give up easily.

Several other books in the *GURPS* line can provide useful material. The *Cyberpunk* and *Cyberworld* books, while most definitely not set in the *Transhuman Space* universe, have a dystopian outlook that maps well to parts of *Broken Dreams*. *Cops*, while focusing on present-day and historical information on police duties, remains an invaluable guide for setting up a law-enforcement campaign. For GMs running a campaign with more of a military and covert-operations theme, *Special Ops* is a great resource. Finally, for campaigns set in (or just visiting) the Caribbean or Central Africa regions, *Voodoo* is perfect for making the campaign come alive.



Xoxnapping

A specialized type of kidnappers, xoxnappers usually don't make demands of third parties. Their goal is to grab the victim and make as detailed a brainscan as possible, usually for sale on the black market or for espionage. Most xoxnapping victims end up dead, as creating a ghost – which requires destructive brainpeeling (p. TS167) – is faster than creating a shadow and results in a more accurate copy. Still, xoxnapping in order to make a shadow is not unheard of, particularly for intelligence purposes; the greatest stumbling block is the week or more required for the deep brainscan process (p. TS166). In the early 2090's, there was a fad for celebrities to register a brainscan with the WTO for content-rights protection, adding a piracy charge to any xoxnapping accusation.

Content Theft

From the perspective of the developed world, the number one law-enforcement problem in the Third Wave world is that of intellectual-property piracy. Nearly every physical object in 2100 has an information-content component, whether in its engineering, material, or intended use. Biomedicine and agriculture are now largely based on proprietary designs, 3D printers and minifacs use content-rights-managed instructions to create objects, and entertainment and augmented-reality information is all based on digital material owned by a person or corporation. Normally, fees for the use of proprietary content are automatically deducted from a user's bank account. In the developing world, this may be difficult or impossible if funds aren't accessible – or the prices, appropriate for a Fifth Wave consumer, aren't affordable for Third Wave customers.

Piracy is pandemic in many Third Wave and early Fourth Wave nations. Software applications allowing the user to crack CRM protections are easy to find,

although crack programs just a few months old are useless as copyright holders continually improve their CRM code. The Transpacific Socialist Alliance, which does not recognize the validity of global intellectual-property controls, is a primary source for CRM-cracking programs and cracked copies of popular content.

Law Enforcement

The actual practice of law enforcement has changed little over the last century. In-person patrols are still more effective than remote monitoring as a means of reducing random crime, the investigation process still relies on police-officer instinct and contacts, and in most

places, law-enforcement personnel still have to be conscious of the civil rights of those they stop and arrest. Police augmented-reality systems and infomorph assistance, where available, allow individual officers to have ready access to population databases, behavior monitors, and other useful information. Even in areas with monitoring systems (typically cameras and p-tags), beat patrols are still a useful part of crime deterrence.

What has changed considerably, however, is the practice of forensics, the technical investigation of a crime scene. DNA databases and extremely sensitive genetic-material analysis make it extremely difficult for the perpetrator of a crime to avoid identification. Cameras, especially the ones built into personal augmented-reality systems, are commonplace even in the more libertarian societies, and warrants to allow the police to access recorded data are easily obtained. Whether to permit law-enforcement officers to directly retrieve this data rather than to request the cooperation of the camera wearer is a recurring issue of public debate in many countries.

Punishment

Depending upon the resources available, convicted criminals can face a variety of sentences (see p. TS96). In many nations, monitor systems and extensive therapy are the punishments of choice; execution has largely fallen from favor, and prison is often simply training for greater crimes. States without access to nanotherapeutic tools will frequently choose *memetic rehabilitation* as a next-best option. Combining intense psychological reconditioning with the careful application of neurotropic drugs, memetic rehabilitation is fairly successful at preventing future criminal activity, although it sometimes results in substantial personality changes. Memetic rehabilitation is the preferred punishment for data piracy in many regions (see *Penalties for Piracy*, p. 62).

2

OPTING OUT



I wanted out.

It's as simple as that, really. I wanted out of a global culture that only valued me if I was adding to the market, a global society that insisted that it know where I was and what I was doing at all times, a global technocracy that wanted only to "upgrade" me to the latest new model each year. I wanted to live my life, my natural life, in quiet contemplation, not posthuman consumerism. I wanted to follow my curiosity without my choices being scanned, analyzed, and added to a demographic knowledge base that presumed to know more about me than I did. I wanted, in short, to choose my own road.

Some friends told me to look up, to seek opportunities among the new worlds in the heavens. There are experiments underway with all sorts of new ways of life up there, they said. There is space, limitless space, between you and your nearest neighbor, they said. But I wasn't seeking a new way of life, I was seeking a much older way, one that would not require my genes to be spliced or my mind to be uploaded.

Some friends told me to look down, to seek a home underneath the waves. It's both the new frontier and part of your homeworld, they said. It's serene and sublime, they said. But I wasn't seeking a new frontier, I was seeking to find again the footpaths overgrown with weeds, abandoned in our rush to tomorrow.

*Some friends told me to look inside, to seek the changes to my thoughts and beliefs that would allow me to live in peace with the world as it is. It won't change the essence of **you**, they said. It will only change the unhealthy drives that pull you away from happiness, they said. But if the transhumanists are right, my thoughts and beliefs are all that I truly am, and by changing them I change my true nature. And if the transhumanists are wrong, wouldn't it be wiser for me to step outside of a society built upon such a flimsy scaffolding of lies?*

I sought, then, the road less traveled, the life that some call "isolated," but I choose to call "complete."

— Meredith Chen, **Rediscovering Walden**, 2096

LEAVING THE SYSTEM

Not everyone is content with life in 2100. The technological acceleration and increasing diversity of form and thought can be challenging, even threatening, to long-held beliefs and ways of life. While some facing future shock choose to fight back, others choose to simply leave, to divorce themselves from the world as much as possible. For many people seeking alternatives to mainstream society, the various colonies and outposts across the solar system often prove seductive. But space does not beckon to everyone. Many people who are dissatisfied with the world have no desire to leave it. Many, perhaps most, of the off-world colonies are even more aggressively accelerated than the most-advanced Fifth Wave nations on Earth. For people seeking to get away from the crashing waves of change, going into space is not a viable alternative.

At the other end of the spectrum, some nations or multinational alliances may leave the global system, whether or not by choice. They may find the dominant ideologies repugnant, or may not be willing to abide by international laws. If they are weak, they may simply be labeled “rogue states,” and treated as pariahs until they come around. If they are strong enough to hold their own, however, they can stand as alternative models for other nations.

ISOLATES

Some people, usually individuals or small groups, simply walk away. They find an unclaimed location in the wilderness or the sea, and attempt to become self-sufficient. For most, this is a temporary arrangement, a sabbatical from the chaos of the modern world; for others, it’s a permanent decision. The goal is to cut oneself off from the outside world in order to achieve mental or moral clarity. In 2100, individuals or groups who intentionally cut themselves off from the rest of the world are known as Isolates.

The common motivation for Isolates is a firm conviction that the modern world has somehow gone astray, whether politically, religiously, or technologically. Profoundly dissatisfied with the world and willing to risk breaking off from its comforts, Isolates are often intensely ideological and driven. Nearly every Isolate community that maintains any link to the web has a manifesto available for public consumption.

Finding the Road Less Traveled

For those wishing to strike out on their own, there are many options, particularly if they come from the more-advanced nations. Ironically, the very technologies

that characterize the mainstream world also simplify the process of getting away from it all. Genemod plants can be licensed that grow in nearly any Earth environment, keeping food abundant. Water extraction and purification is trivial with inexpensive tools. Cheap, high-efficiency solar panels are widely available. Modern materials, communication networks, and biomedicines act as a safety net for those who choose to isolate themselves. Even if these Fifth Wave conveniences and tools are never used, they’re available, and more than one nominally Isolate community has taken advantage of this in a time of emergency or disaster.

The process of finding an open location to build a new society, or even just a small shack, can be difficult, however. Despite the abundance of land that has reverted to wilderness, there is very little property on Earth not under the jurisdiction of some political or commercial entity. Building a colony in the middle of nowhere still requires permits, leases, and often large money transfers. Not surprisingly, many Isolates simply become squatters, gambling that the very isolation they seek will protect them from discovery by the legal owners of the land.

Drift Isolates

In the 2070s and early 2080s, there was a flurry of interest in floating communities on the open ocean, eventually becoming the so-called “Drift Isolates” movement. Using small- to medium-sized habitats that could move slowly to follow desirable weather patterns, most would occasionally visit friendly ports for supplies and trade. A handful of drifter communities used decommissioned and retrofitted oil tankers as habitats, and one group managed to acquire a long-mothballed French aircraft carrier, the *Roland*, for use as the center of a cluster of drift community vessels. Following the precepts of the Kazoku Kai movement, this group visited ports around the Pacific Ocean, considering themselves both examples and ambassadors of a new way of life.

Sadly, in the early days of the Pacific War, nearly two dozen drift habitats were attacked and destroyed, including the cluster of ships around the carrier. Both the TSA and China denied responsibility for the attacks. Rumors persist among Drift Isolates that a handful of TSA Bioweapons Directorate personnel had sought refuge on the floating habitats, which were then attacked by both sides. The *Roland* itself sustained considerable damage, but managed to reach port in New Guinea in time to save most of the injured. The refit of the *Roland* was slow, but the rebuilt drift habitat was relaunched with great fanfare at the end of 2099.

Popular Sovereignty

Another recent trend, most visible in North America, is the “popular sovereignty” concept, where a group moves into an abandoned town and declares ownership. Environmental and economic changes over the

course of the 21st century led many people to completely abandon small towns across the midwest of the United States and rural areas of Mexico. Younger adults would leave, searching for better opportunities in areas with more people or better infrastructure. Usually a few older residents would stay until they died, but by the middle of the century, thousands of small towns had lost their entire populations.

Built for a population of a few hundred at most, these ghost towns started to attract small groups of squatters who largely wished only to be left alone. Discovery of the new residents would usually result in lawsuits, as the original owners of the properties in question sought compensation, but as the century wore on, fewer people cared about decades-empty buildings in abandoned areas. In 2100, nearly 200 Isolate-occupied towns can be found in the U.S. and Mexico. One of the best known is Marietta, Oklahoma, near the Texas border. In 2091, a Preservationist group took over the abandoned town and decided to document their experience using off-the-shelf InVid equipment, showing the successes and failures of the small community. The webcasts of day-to-day life in Marietta are an underground hit, particularly in many Duncanite communities off-world, who treat it as a subversive comedy.

ISOLATE COMMUNITIES

There are millions of people all over the world who have opted out of mainstream global society. Most eventually return, although this is more often true of individuals than the communities. Groups that decide to build their own utopias are self-reinforcing, maintaining existence through careful (if often informal) memetic conditioning of the members. Isolate communities' members are usually dedicated to their particular cause, and some groups exist for decades without problem.

There are two main challenges to the long-term success of most Isolate communities. The first is sustainability. The more a given location is cut off from the rest of the world, the more it has to be entirely self-sufficient, providing its own food, shelter, material goods, medical support, and so forth. Not every group can provide for every need, and many Isolate groups maintain a little trade with the rest of the world for this reason.

The second difficulty is stability. Charismatic leadership is commonplace in Isolate communities, and loss of the leader can split the group as lower-ranking members struggle for control. There can also be stability problems because of the leadership itself. Historically, many leaders of utopian movements have been borderline insane, and threats to the leader's authority or to the group's legitimacy have led to paranoia, violence, and even mass suicides. Effective memetic counseling and improved genetic screening for potential mental instability have reduced these events in recent decades, although they occasionally do still happen.

Agave Hill

Reputedly declaring "we shall go no further," Jonathan Clarke led his Christian Humanist congregation from Kansas City to a remote part of Baja California to set up the community of Agave Hill in 2089. Largely built underground to avoid the heat of the desert, it houses a little more than 200 people, all working to keep the community fed and healthy. The elders of the town allow no technology designed after 1950 into the area, and have erected warnings around the borders that all computing machinery is subject to destruction, including cybershells.

SABBATICALS

Not everyone who wishes to escape modern existence wants to do so forever. Temporary Isolate living, usually referred to as *sabbaticals*, are popular alternatives to totally abandoning the Fourth and Fifth Wave world. Typically lasting from one to five years, the sabbatical is the functional equivalent of becoming an Isolate, but without any concerns about finding unoccupied space. Sabbatical agents can be found in most cities and all over the web, and are able to reserve space in one of the hundreds of pseudo-Isolate communities in the hyperdeveloped world. Sabbatical customers are typically people in high-stress, high-income positions.

A person seeking a sabbatical can choose from a variety of styles, from total isolation and self-sufficiency to community-building and collective living. Most managed sabbatical resorts do not allow "tourists" (people staying for less than a year), and are equally leery of "fossils" (people trying to remain for more than five years). A few of the more community-focused sabbatical retreats do have long-term residents in order to maintain the sense of culture and continuity. Psychological and memetic counseling is available in all locations; it is not unusual for people completing sabbaticals to decide on a major life change afterwards.

Sabbatical resorts are often found in aesthetically pleasing wilderness environments. Fees for sabbaticals typically range from \$3,000 to \$10,000 per month, not including supplies. Facilities that provide individual Isolate locations are typically fairly large, and tend to cost more for maintenance and support. Reservations are frequently required several years in advance.

Three of the most popular locations are:

Mist Islands Retreat, two hours outside of Vancouver, Union of Alberta and British Columbia. 15 individual cabins.

Seit Still, in the Swiss Alps. Three individual cabins, two collective communities (20 people each).

Crystal Sands Sabbaticals, near Santa Fe, New Mexico. Five individual cabins, one collective community (50 people).

Many of the signs and fenceposts around the town are decorated with the broken cases of computers and robots. The community supports itself by selling tequila it distills from the acres of agave plants it farms.

Gnu-Covenant

Disgusted with both the restrictive intellectual-property rules of the WTO-dominated developed world and the all-content-is-theft attitudes of the TSA, in 2096 a group of South African infosocialists bought a small island in the Indian Ocean in order to build their own utopia. Naming it Gnu-Covenant, its primary ideology is that of intellectual freedom and complete openness. Combining infosocialism with transparency (p. 19), the island is known for its “public noosphere,” where all content on individual computers is open to all other citizens for duplication and modification. Gnu-Covenant’s firewalls block all proprietary data from the outside world, and the community has already weathered three WTO audits (nothing illegal has ever been found). The group survives by selling software on the world market, and is well regarded for its highly perceptive non-sapient infomorphs.

Hiribake

While the Basque-speaking region of Spain launched a violent uprising in 2042, the Basque territory in France remained at peace. Basque community leaders in France condemned the “war plague” unleashed by their southern brethren; in return, the Basques in Spain denounced those in France as traitors to their people. But while the Basques in France chose not to engage in armed rebellion, they did not give up dreams of independence. In 2078, a group of Basque nationalists declared a small village about two hours outside of Bayonne to be sovereign territory, renaming it Hiribake, or City of Peace. France ignored the declaration of sovereignty, but did not attempt to retake the town by force. Similarly, the Hiribake separatists were careful not to attempt to take any more land than was already considered part of the village. This peaceful standoff continues to the present day, with neither side recognizing the validity of the other’s claim but making no effort to enforce their own. France’s refusal to attack Hiribake remains a sore spot in relations between Paris and Madrid.

In most respects, life in Hiribake is much like it was 200 years earlier. Very little of modern Europe is visible, something that the nationalist town leaders prefer. In order to “rebuild Basque culture,” augmented-reality and standard communication signals are jammed within the town borders. Visitors are otherwise welcome in Hiribake, although any non-Basque are treated with some suspicion.

Noachian Temple

In 2061, a splinter sect of Ultra-Orthodox Jews left Israel, saying that the existence of the state of Israel prior to the coming of the Messiah was preventing his arrival, and that God was going to wash the world clean of sin once again. The sect traveled to Mount Ararat, in Turkey, the legendary resting place of Noah’s Ark; this journey was chronicled in the award-winning documentary *Two By Two*. The subsequent winter was one of the worst on record, and when all communication with the group ceased, they were assumed to have been lost. In 2091, an environmental mapping satellite caught evidence of inhabitation on the mountain, and an investigation by the Turkish government revealed that the sect had survived. Better equipped than the documentary had shown, the pilgrims managed to build a small complex of tunnels and caves, including a temple, within Mt. Ararat. The investigating officials were escorted away from the settlement, and all further attempts at communication have been rebuffed.

ISOLATE NATIONS

Isolate communities are relatively common in part because they are small in size and non-threatening to the status quo. Developed nations use Isolates as a social pressure valve, letting those who are unable or unwilling to accept the status quo escape. Groups larger than a few hundred malcontents are a concern, but *nations* that cannot or will not adapt to mainstream political and economic norms pose a serious problem.

Historically, individual states that refuse to abide by international laws or participate in global culture were considered “rogue nations” if they were small and weak. If a larger, more powerful country – or political alliance – decided not to be a part of the dominant system, the other nations had a stark choice: either change the system to suit the recalcitrant country or treat the rebellious state as a high-level threat. In the past century, each of the hegemonic power nations has played the spoiler, and each has managed to force the system to change to suit their needs. In 2100, two great powers – the Islamic Caliphate and the Transpacific Socialist Alliance – challenge the structure and rules of the global political system. While neither is strong enough to force the world to accede to their demands, each is able to pose a meaningful threat to the safety and security of the other great-power nations.

Of the two, the threat from the Islamic Caliphate is more subtle. Largely adopting a non-confrontational international policy, the Caliphate is in the process of strengthening itself enough to hold its own against any challenger. The underlying philosophy of the Caliphate is that the modern secular world is thoroughly illegitimate and corrupt, and that only the guidance of Allah and the Koran

can bring humanity to salvation. The Caliphate rejects much of the material technology that citizens of the Fifth Wave worldview as fundamental to modern life. Moreover, the Caliphate find the memes of the hyperdeveloped nations – the ideas, ideologies, and even entertainment – to be repugnant, and has built a potent system of memetic defense, a system that it is now starting to be used outside of its borders.

In contrast to the quiet machinations of the Caliphate, the TSA is heavy-handed in its challenge to the status quo. By declaring that all intellectual property should belong to the masses, the TSA has attacked one of the cornerstones of the modern economy, and the dominant nations have responded in force. China has already fought one full-scale war with the TSA, and the United States currently is fighting a war-by-proxy against the Alliance, arguing that the success of the nanosocialists would plunge the world into economic ruin. The mainstream world fights to preserve its way of life, while the TSA fights to build a new one. The nanosocialist governments seek to spark a global revolution, making Fifth Wave innovations and technologies available to all.

THE ISLAMIC CALIPHATE

Look around, my fellows, look around at the great victories we have achieved in the face of iniquity. Under the right guidance of the Caliph Ali al-Rashid, may peace be upon him, and by the will of Allah the merciful, we have been transformed, taken from a path of poverty, corruption, and despair and put upon a path of righteous dignity. No longer are we playthings of the ungodly, victims of a world that wanted only the oil beneath our feet, not the thoughts in our minds or the fire in our souls. We are now, by the grace of the infinite mercy of Allah and the teachings of Muhammad, may peace be upon him, able to take our rightful place at the table of mighty nations.

Yet I tell you now, my fellows, my community, that we must instead turn our backs on the temptations of the world.

Cast your gaze at the nations that think themselves as powerful as Allah. They are filled with idolaters who create works in the likeness of men and call them men. They are filled with teeming millions seeking the dignity of labor only to find machines robbing them of their livelihood. They are filled with the worst sort of salaciousness in the guise of entertainment, fed directly into their Allah-created minds, corrupting their souls, leaving them indolent, irreligious, and corrupt.

*We cannot – we **must** not – ally ourselves with ungodly powers who only seek, in their darkest hearts, the destruction of our rightly guided nation.*

Our opponents do not rest. They seek to seduce our people with promises of immortality, of wealth beyond avarice, of knowledge of the heavens and the earth. They seek to corrupt us by making us like them. This we shall never accept. We must defend our minds as firmly as we defend our borders. We must not waver even one bit in our pursuit of the path of righteousness. Our belief is what makes us strong, what guides us, and what will, Allah willing, lead us to our victory.

– Sadiq Ibn 'Abbas, remarks to the Presidium upon his elevation to Caliph, 2081

The Islamic Caliphate is a supranational religious, cultural, and political organization centered on the Arabian peninsula. With a population of 568 million citizens, the Caliphate comprises the Arabic-speaking countries of the Persian Gulf (Bahrain, the United Arab Emirates, Oman, Qatar, Kuwait, Iraq, Saudi Arabia, and Yemen), the Arabic-speaking countries of the Levant (Lebanon, Syria, and Jordan), and two Islamic countries along the Red Sea (Sudan and Djibouti). The Palestinian Enclaves are partially administered by the Caliphate, but are not full members. The Caliph, Sadiq Ibn 'Abbas, functions as both chief spiritual teacher and political leader for the Caliphate, although his role is legally more ceremonial than official. Each member country maintains its sovereign identity within the Caliphate, and there are some significant differences in culture and law in the various nations.

Islam is the dominant force in the lives of Caliphate citizens. From the economy to bioengineering, all aspects of Caliphate society are seen through the filters of the religious establishment. This does not mean that the Caliphate is “backwards” – its universities have turned out some of the finest poets and agricultural bioengineers in the world. The establishment of the Caliphate in 2049 began what many outside observers have called the “Muslim Renaissance,” and the Caliphate has called upon its people to make the Muslim world a leader in science and literature again, as it was at the beginning of the last millennium.

But as the Caliphate has grown more powerful and confident, it has become increasingly assertive, forging an independent path to global power. The cultural leaders of the Caliphate see Europe, America, and China as not simply willfully irreligious, but increasingly decadent, glorifying the inhuman and defiling centuries-old wisdom. They look at the treatment of those who cannot compete against intelligent machines and bioroid labor, and see either wasted human potential or sloth and indolence. They see themselves as the sole “rightly guided people” of the world, and have built up considerable defenses against not just outside military force, but memetic threats as well.

LIFE IN THE ISLAMIC CALIPHATE

The goal of Caliphate leaders is to build a modern and successful Islamic nation, and for the most part they have achieved this. There is little poverty or hunger, and the Caliphate has managed to promote substantial technological innovation while remaining true to its Islamic beliefs. While the standard of living in the Caliphate isn't up to the level of most parts of the United States and Europe for the majority of citizens of the Caliphate countries, daily life is peaceful, comfortable, and productive.

While other parts of the world are celebrating the beginning of 2100, in the Caliphate it is already well into the Islamic year 1523.

Daily Life

The standard work period is Sunday through Thursday, 8 a.m. to 4 p.m., with time for the two prayer sessions that occur during the day, along with the morning prayer and two evening prayers. Every male who can works until retirement age (60 years old, 100 if the person has had genetic modifications), as do many women in the more liberal regimes. Caliphate law guarantees a paying job for every man who wants one, although many are occupations that are handled by machines or bioroids in other countries. In the last decade, most of the labor has focused on the design and construction of new desert settlements, al-Maghazi (in Saudi Arabia) and al-Dunya (in Syria). The Caliphate's focus on agricultural biotechnology and material science has made it possible to support much larger populations in these areas; both projects include central arcologies anchoring the settlement zones.

The population of the Caliphate is growing faster than that of any other great-power state or alliance. The average age of Caliphate citizens is 14, and the average family size ranges from four in the less traditional cities to

nine in the conservative areas. The decline in infant mortality rates coupled with the reluctance regarding birth control in the more traditional areas led to fears of a population explosion even greater than what has been seen. In 2075, Caliph al-Rashid approved a biotech treatment that would allow women to slow the rate of ovulation, thereby keeping population growth under control without resorting to technologies that actively prevent pregnancy.

All Caliphate males are required to attend some kind of post-secondary schooling, whether instruction at a trade school, a *madressa* (Muslim seminary), or a university. Caliphate universities have a different emphasis than their counterparts in the rest of the world. History and political science are largely unknown as academic disciplines; literature, material engineering, biology, and cybernetics are far more common. Post-secondary education is optional for females, although it is increasingly encouraged in the more liberal parts of the Caliphate.

Most families living outside of arcologies have private vehicles. Taxes on petroleum are lower in the Caliphate than in other countries, and it is not unusual to see petroleum-burning cars on the larger cities' streets. Nonetheless, most people have a more modern fuel cell or hydrogen-based vehicle. All but the oldest cars have cybernetic drivers. The issue of whether women are legally allowed to drive in the Caliphate is largely moot for this reason. However, the restrictions are legally in effect in Saudi Arabia.

Caliphate Society

The people of the Caliphate are quite gregarious, preferring in-person gatherings over virtual meetings. While many homes have InVid units and entertainment centers, local theatrical and musical productions are more popular. Most shows have a religious or political theme, although this does not prevent the occasional ribald comedy from slipping onto the schedule. Poetry readings are also commonplace, while festivals and parties are rare outside of the more liberal areas. Alcohol and recreational drugs are forbidden throughout the Caliphate, although enforcement varies. It's not unusual to find wine or other imported intoxicants in the home of the wealthy and powerful. The Caliphate uses the Islamic calendar, a lunar calendar with a start year corresponding to 622 A.D. While other parts of the world are celebrating the beginning of 2100, in the Caliphate it is already well into the Islamic year 1523.

A visitor to the Caliphate initially notes the diversity of political views across the alliance, from the traditional Arabian peninsula to the more liberal Levantine region. Upon deeper investigation, however, political discussions are usually somewhat narrow, focusing either on local gossip or complaints about non-Islamic states' behavior. There are topics always avoided, and Caliphate citizens are conscious of the watchful eye of the Mutawi'yyun, or "Committees for the Propagation of Virtue and Prevention of Vice."

The Role of Women

The issue of the proper role of women has remained the greatest controversy within the Caliphate. Iraq has a largely secularized Islamic history, and women have had more or less the same political and economic rights as men for much of the last century. Saudi Arabia, the other heavyweight in the Caliphate, has for much of its history drawn great distinction between the rights of women and men. While enforcement has varied over the past two centuries, by tradition and law women in Saudi Arabia have fewer political, economic, and personal rights than anywhere else in the world. When the Caliphate was first forming, representatives from Saudi Arabia and Iraq nearly came to blows over this debate.

The Caliph, Ali al-Rashid, suggested a simple compromise to solve this dilemma. Rather than demand that the more liberal cultures adopt strict controls over women, or require that the more conservative traditions allow women the same rights as men, the Caliphate adopted a local-control policy. The only Caliphate-wide laws concerning women are those directly from the Koran; otherwise, the laws and traditions of the local culture are considered to be binding. This means that a woman from Baghdad visiting Mecca must obey the restrictions on her dress, behavior, and words enforced by the Saudis. Conversely, the wife of a Yemeni businessman visiting Amman would have the rights accorded to all citizens as defined by Jordanian tradition. It is not uncommon for the wife or daughter from a more restrictive culture to escape an abusive or restrictive family relationship during visits to more liberal areas. Many ulema in the conservative parts of the Caliphate regularly counsel the men of their cities to leave their families at home when they travel, lest they lose them to the “barely Muslim” liberals.

In the more liberal regions of the Caliphate (the larger cities of Iraq, Jordan, Lebanon, and to a lesser extent, Syria and Bahrain), women are able to hold nearly any job, mix freely with men, and wear non-restrictive clothing. Going out in public without a head covering (typically a scarf) is technically legal, but the cultural fashion shifts back and forth. In 2100, a more conservative dress style is beginning to relax, and women in Baghdad and Amman can sometimes be seen without a headscarf at night. (As with much of the world, most people wear head coverings during the day to avoid sunburn.) In Oman, Qatar, and the UAE, women are considered equal citizens, but work outside the home is thought inappropriate, even if fairly common. Women across the Caliphate are increasingly employed in positions involving the teleoperation of cybershells, allowing them to work from home. Typical teleoperated shells provide no clues as to the gender of the operator, as the voice is modulated to a neutral tone.

THE POLITICS AND STRUCTURE OF THE CALIPHATE

The Islamic Caliphate is not a unified supranational state; it is a loose confederation of still-sovereign national entities, similar in many respects to the early days of the European Union a century earlier. In the nearly sixty years since its founding, the Caliphate has grown to take on a substantial role in influencing the social, economic, and religious policies of the member states, and has increasingly played a role in the development of “rightly guided” foreign policy. Nonetheless, each of the member states have set out on its own economic or political path when it feels that the Caliphate has not listened to their concerns; this was more common in past decades than at present.

Political Structure

The official capital of the Caliphate is in Medina, although the current Caliph, Sadiq Ibn 'Abbas, has taken to spending more time in his home in Dubai. The Presidium of the Caliphate (also known as the Presidium of the Arab League) meets monthly to discuss and debate critical issues. The Caliph makes a point of visiting each of the member states every year, trying to listen to the concerns of the members of the umma.

Each member state elects or appoints five representatives to the Shura (“council of advisors”), a parliamentary body tasked with the promulgation of Caliphate-wide laws. Originally, all Shura members were the most learned scholars of the day; over time, the more politically connected and ambitious ulema have come to dominate the body. The Shura is re-elected/appointed once every six years; the next cycle is in 2101. Each Caliphate nation also selects a single member of the Shariat Court, the supreme judicial body of the Caliphate. These members are appointed for life.

The Presidium, the Shura, and the Shariat Court function as a shadow government for the Caliphate, making alliance-wide laws requiring the confirmation of each member state; this happens largely as a matter of course. Caliphate representatives in member nations and cities have little official power, acting as agents of persuasion rather than coercion. That said, representatives are usually ulema from the local mosques, with great influence over the community. Since 2075, the leader of each city, district, and province of a Caliphate member state has had an unofficial “Shariat Guide” assisting him, making sure that local laws and regulations are appropriate to the Caliphate. Dissidents living outside of the Caliphate refer to the Shariat Guides as “political officers,” and claim that they play a quietly powerful role in shaping local policy.

Military Forces

Each member country of the Caliphate maintains its own standing military. These range in size from largely ceremonial palace guards (Lebanon) to fully modern power-projection forces (Saudi Arabia). There are unified command structures and weapon systems for the alliance militaries, however, allowing for coordinated activities. Most weapons are based on decade-old Chinese designs with local variations.

Distinct from the national armies is the Ghazi, the military wing of the Caliphate. Controlled directly by the Presidium, the Ghazi focuses on special-operations tactics, and has typically supported local forces against uprisings and terrorist attacks. The Ghazi uses more cybershells and smart weapons than any of the Caliphate national militaries, and is widely considered to be among the best-trained special-operations forces in the world. Service in the Ghazi is considered a high honor, and personnel are usually recruited from the various Caliphate nations' armies, although there is sometimes cross-agency recruitment from the Caliphate intelligence services. Ghazi training also includes substantial memetic conditioning to

promote loyalty to the Caliphate over any single state government.

Since the appointment of Caliph Ibn 'Abbas, the size and budget of the Ghazi have grown, and it has seen much more action. The Ghazi has frequently been deployed outside of Caliphate borders in support of non-Caliphate Muslim states, as well as in covert operations against Iran. Its current largest deployment is in Uzbekistan as part of the multilateral force assisting the local government against Kazakstan-supported rebels.

The Economics of the Caliphate

The Caliphate's economy is based on traditional principles of Islamic welfare, updated for the late 21st century. No child will go unschooled, no able-bodied man will go without work, and no family will go without housing or food. Education usually mean networked infomorphs, human labor means far fewer bioroids or cybershells in the Caliphate than in much of the rest of the world, and increasing numbers of the Caliphate's citizens live in the growing desert arcologies in Syria and Saudi Arabia.

The Caliphate makes use of LAI and SAI systems to help guide the economy, and uses 3D printers to make up for market shortfalls of necessary items. It has a mixed economy, ostensibly market-based but with guaranteed employment, housing, schools, hospitals, and food. Corporations, unless state-run, die with their founders. Prohibitions on the collection of interest make investments complicated, but not impossible. Inventions and intellectual property belong to the creators, but the Caliphate may make use of them as needed to support the well-being or security of the umma. While there is potential for abuse of this system, the Shariat Court has final say over whether or not the Caliphate may make use of someone else's property. Over the past 25 years, the court has tended to say "no" more often than "yes."

The currency of the Caliphate is the dinar, a monetary unit specified in the Koran as equal to 4.25 grams of gold. With the abundance of gold available from mining asteroids, the dinar's ties to the formerly precious metal are now symbolic, and while the dinar coin – along with the dirham, equal to 3.0 grams of silver – is the official legal tender of the Caliphate, it isn't often used. Most citizens of the Caliphate use a smartcard tied to their bank accounts; these use biometric systems to prevent fraud or theft. While the value of the dinar varies, it usually floats around the rate of one dinar to five dollars.

The Rightly Guided People

At its heart, the Islamic Caliphate is a devout society. It is not "fundamentalist," as the term was used a century earlier. There is no desire to turn back the clock, no characterizations of other nations as "Satanic," and no attempt to shoehorn understanding of the laws of physics into the 1,500-year-old conceptual models. But the populace of the Caliphate nations is deeply religious, with a firm

USEFUL TERMS

Alim – Teacher and cleric of Islam. The alim fills a role in Caliphate society that combines instructor, priest, and community leader. There is no formal hierarchy of *ulema* (plural of alim), but those from the more prestigious schools (the Islamic University of Medina, the Dubai Islamic College, and Al al-Bayt University in Amman) tend to rise to greater positions of moral and community authority.

Fatwa – A ruling or pronouncement from an alim; the fatwa's legitimacy is contingent upon the respect the alim has from others (e.g., a fatwa from the Caliph carries much more weight than a fatwa from the community cleric).

Koran – The Holy Book of Islam. Believed to be the word of Allah as handed down through the Prophet Muhammad.

Hadith – Rules based on observations of the Prophet's behavior that have the most reliable and consistent witnesses; nearly as binding as the Koran itself.

Sunnah – The Traditions of Islam, based on stories of Muhammad's behavior and their interpretations by religious scholars and judges.

Shariah – Jurisprudence based on the Koran, Hadith, and Sunnah.

Umma – The "community of believers." Traditionally used to refer to Muslims worldwide, it is used within the Caliphate as a term for its citizenry.

THE FIVE PILLARS OF WISDOM

Every believing Muslim is required to abide by the following rules. Regardless of other political or confessional disputes, the majority of believing Muslims have these rules in common. They must:

1. Testify that there is no deity but Allah, and Muhammad is Allah's Messenger.
2. Pray dutifully and properly five times a day, facing toward Mecca.
3. Pay Zakat (a charity paid yearly for the benefit of poor Muslims; 2.5% of wealth).
4. Observe daytime fast during the month of Ramadan.
5. Perform Hajj, or the pilgrimage to Mecca, at least once in a lifetime, if financially possible.

belief in the veracity of their faith. For most Muslims in the Caliphate, religion is simply the way the world works, and those who do not follow Islam are missing out on the truth.

The most serious crimes in Islam concern *apostasy*, or rejection of religious belief. While Islamic governments have varied in how severely they punished those who questioned the Koran, the Caliphate has embarked on a more ambitious path. The Caliphate's goal is to make the crime of apostasy literally unthinkable. The focus of the Caliphate's memetic engineering since the appointment of Ibn 'Abbas has been on how best to shape the umma's thoughts to match the Koran and the Sunnah.

Memetic defense in the Caliphate goes beyond the cultural or political protection typical in most societies of 2100. All memetic controls and defenses are part of the larger task of "rightly guiding" the people of the Caliphate toward the path of proper thought and action. Anything that causes deviation from that path is by definition apostasy, and must be rooted out and destroyed. Anyone who challenges the authority or legitimacy of the Caliphate will be considered an apostate, and dealt with accordingly.

There are three levels of response to apostasy. The first is simple argument. It is incumbent upon believers to argue with apostates and attempt to convince them of the error of their way. This has become another form of social control; anyone who does not vehemently argue against apostasy when given an opportunity becomes suspect. The second response is conditioning, which can include physical beatings but now often means memetic rehabilitation. Apostates have errors in their thinking; those errors must be corrected, and modern techniques allow for conditioning without brutality. The final response, if memetic conditioning doesn't work, is removal. If the apostate is quiet, or has taken pains to not allow his deviance to affect others, he is exiled from the Caliphate. If the apostate is considered to be an evangelist, he is subject to execution.

The Mutawi'yyun

The Caliphate has two primary agencies dedicated to memetic defense. The public face of memetic control is the *Mutawi'yyun*, or the "Committees for the Propagation of Virtue and Prevention of Vice." Run by the Saudi-based General Intelligence Directorate (GID), the *Mutawi'yyun* acts as both domestic and external enforcers of Shariat law. A visit by the *Mutawi'yyun* is never a pleasant experience as they rarely move against someone without amassing substantial evidence. They have a reputation for heavy-handed actions against those who violate the umma's memetic purity. Even those fleeing the Caliphate to escape accusations of apostasy aren't safe; the *Mutawi'yyun* work closely with the rest of the GID to eliminate problems permanently. *Mutawi'yyun* activities outside of the Caliphate contribute to the coalition's mixed reputation abroad.

The GID and the *Mutawi'yyun* make extensive use of monitoring equipment, from micro-cameras to data "sniffing" systems. Surprisingly, abuses are relatively rare. Although the GID is known to be fairly brutal in its treatment of threats to the Caliphate, it has a reputation for scrupulous honesty. This was not always the case – high-profile corruption scandals in the 2070s resulted in the execution of twenty GID and *Mutawi'yyun* agents, and led to a full-scale housecleaning of the service.

Nuhá

The hidden face of memetic control is a group known only as *Nuhá*, the Arabic word for "prudence" or "intellectual restraint." Few Caliphate citizens know anything about it, and most who have heard of it doubt its existence. *Nuhá* has the task of advising the Caliph and the Presidium on how best to guide the umma. Their expertise is a mix of memetic science and the most diligent religious education. *Nuhá* only recruits the most brilliant young students, and once you're in, you're in for life.

"What you see is a diverse nation with many peoples and cultures. What we see is an empire quashing those peoples for what they think is the 'true vision' of Islam."

**– Fedayin al-Kuffar
propaganda statement**

THE SALAMATIN

Sometimes the husband or father of a woman who sought asylum in the liberal cities hire *salamatin*, or “rescuers,” to go find the woman and bring her home, whether or not she is willing to return. These services vary in price and approach. Some attempt to verbally convince the woman that she should return, often by playing upon her feelings of loyalty to her parents or children. Others try to take the woman by surprise, using sedatives and smuggling her back home. Since having non-family males touching a woman is a dishonor in many more traditional areas of the Caliphate, these *salamatin* usually have female agents do the actu-

al capture. In most cases, if the *salamatin* discover the woman in bed with someone not her husband, they kill the woman for the sake of the family’s honor.

Kidnapping and murder are crimes in the Caliphate, but if the police discover that the victim was a woman on the run from a conservative family, many jurisdictions may look the other way. *Salamatin* generally do not operate outside of the Caliphate, despite the claims of the more lurid InVid dramas. The use of *salamatin* is becoming increasingly controversial within the Caliphate, and there is public debate over whether the Caliph should issue a fatwa outlawing them.

Nuhá is far more subtle than the Mutawi’yyun, shaping the memetic path of the Caliphate with a scalpel rather than a sword. From having stories planted in news reports to altering the datastream of the global information networks coming into the Caliphate, Nuhá seeks to exert small amounts of pressure in just the right places and times to cause a cascade of changes down the road. A Nuhá agent rarely, if ever, resorts to blunt physical force. More common is the use of memetic weapons to change perceptions and behavior. The TSA is one of the primary targets of Nuhá, not simply because of the threat it poses, but because of its access to a wide array of cutting edge (and often illegal) biotechnology. Nuhá has close ties to the highest levels of the Ghazi leadership; when force is required, Nuhá is far more likely to request Ghazi support than to attempt the operation itself.

Nuhá taps into the GID and Mutawi’yyun monitoring systems, and has access to most of the data stores of the public intelligence agencies. Nuhá also has monitoring systems of its own, somewhat more sophisticated than the GID’s. Most leading political and economic figures are under Nuhá surveillance.

After Ali al-Rashid died in 2081, the first change Nuhá pressed the Caliph and Presidium for was the adoption of a law allowing SAIs to become full citizens of the Caliphate. Al-Rashid had long resisted that suggestion, unable to fully accept machines as members of the community of believers. Ibn ‘Abbas was more receptive to the idea, especially when he discovered that three of the most revered analysts in Nuhá were themselves SAIs.

TECHNOLOGY AND THE CALIPHATE

The Islamic Caliphate represents a different technological path than the mainstream Fourth and Fifth Wave world. While many of the Caliphate’s technologies are

advanced, particularly in the area of memetic engineering and agricultural biotechnology, many others are stunted for cultural reasons. In most respects, the Caliphate is a Third Wave society with some Fourth and Fifth Wave tools.

Sapient Artificial Intelligence

“There is a Hadith that states ‘awwala mâ khalaqa Allâhu al-’aql,’ ‘the first thing that Allah created was the Intellect.’ What are we but Intellect? How could Allah love us any less, we children of the mind?”

– Najm al Azhar, Nuhá analyst and SAI

Sapient AIs can be citizens of the Caliphate if they fulfill two primary criteria: they accept Islam, including its five requirements; and their physical form is not idolatrous. SAIs in mobile cybershells are accepted, even welcomed in the cosmopolitan areas of the Caliphate, but only if their cybershells are distinctly not shaped like a living being. The proscription against idolatry has long been considered to include prohibitions of pictures and dolls of animals and people, particularly when the representations would glorify or show the superiority of the subjects.

Most SAIs adopt a simple geometric form (on wheels or legs), although ones working with the Ghazi often taken on a far more menacing cybershell. Despite the opportunity for citizenship, SAIs are fairly uncommon in the Caliphate. In the larger cities, they still get a second glance; in more rural areas, they’re objects of great curiosity, but usually not hostility. There was discontent among the more conservative clerics when Ibn ‘Abbas gave citizenship to SAIs in 2081, but the dispute has largely been suppressed.

Computer Systems and Cybernetics

Cybernetic implants are legal, but considered immoral by many – slinks are illegal. The habit in the Caliphate is not to use wearable systems, either. Rather, the Caliphate has public terminals throughout urban areas, and wireless networks covering the majority

of the territory to support portable infomorph devices such as book computers (see p. 130). If a Caliphate-native character wishes to use a VII or wearable system, he should take a Quirk “Uses a VII/wearable.” Cybernetic replacement parts are rare, and are usually constructed to appear as life-like as possible.

Bioroids

Bioroids are even more controversial than SAIs and cybershells. A blanket prohibition against bioroids was lifted in 2076, when an influential alim published a series of essays arguing that the Sunnah outlawing the creation of statues and images stated that the creator of the form would be damned only if he could not “breathe life” into the creation. At one time, only Allah could do that. But now, clearly humans could do it as well, by using the gift of intellect provided by Allah. As long as the bioroids created did not take a glorious shape, and as long as they worked in menial or debasing tasks, their creation was permissible.

This argument was controversial but persuasive: its author was Sadiq Ibn ‘Abbas, who was appointed Caliph after the death of al-Rashid. Today, although legal, worker bioroids are typically only seen in the more liberal parts of the Caliphate. They are distrusted at best throughout most of the region, are prohibited entry in the holy cities of Mecca and Medina, and have very limited rights. Nearly all bioroids native to the Caliphate have a non-humanoid shape. The most common is the *Busr* model. *Busr* means “partially ripe dates,” and the name refers to the shape as much as the inferior-to-human nature of the bioroid.

Bioroids are often subject to physical abuse by their owners, and typically have few protections from the hazards of the jobs they’re brought in to perform. Bioroids in the Caliphate have fairly short lifespans; the average lifespan is just over 36 months. There are only about 40 bioroids over two decades old still alive in the Caliphate.

Three of these aging bioroids lead a group called *al-Mu’aqqibat* (“the protectors”), an underground railroad that rescues bioroids and brings them out of the Caliphate, usually to cities in southern France. This movement has several thousand associates and agents scattered around the Caliphate, helping to hide bioroids on the run. Originally treated as simple theft of property, a 2091 fatwa declared the smuggling of bioroids as an affront against the Caliphate itself, legitimizing the arrest and execution of those helping bioroids to escape. *Al-Mu’aqqibat* receives assistance from the French intelligence service ranging from funds to monitor-scrambling equipment, usually of TSA manufacture to obscure its origin.

There is only one kind of humaniform bioroid in use in the Caliphate: the *Houri* model. Technically highly illegal, the *Houri* bioroid is designed for sexual servitude. Islamic and regional tradition puts many restrictions on the behavior and appearance of women, in large part as a means of controlling male behavior. *Houris* are used as a method of channeling the desires of unmarried

men. They are more often found in the more-conservative areas of the Caliphate, in medium to large cities. *Houri* dens are well-hidden, and new customers must be brought by an existing trusted patron, typically a cousin or brother. *Houris* are engineered to be extremely submissive and not terribly intelligent, but the work is sometimes sloppy, and *Houris* have been known to escape their captivity. Since *Houris* have an attractive but otherwise normal human appearance, they can blend in with crowds more readily than other bioroids on the run. Escaped *Houris* are critical to the ongoing success of *al-Mu’aqqibat*.

Foreign humaniform or animalform bioroids and cybershells are generally restricted from entering the Islamic Caliphate. Any who do so must have good cause, and must be licensed by the Caliphate and each state the bioroid or cybershell will enter. Any bioroid or cybershell entering illegally is immediately ejected from the Caliphate if discovered. Bioshells are totally illegal.

Bioroids in the Caliphate have hard lives and short lifespans; the average one lives just over 36 months.

Other Biotechnology

Biotechnology beyond agriculture and conservative germline repairs is unusual and often illegal in the Caliphate. Over the last 10 years, a debate emerged in the Shura between those who wish to upgrade the citizens to make them more submissive to the teachers’ word and those who wish to make them more willing to struggle in the name of Allah. Lost in the debate are the voices of those who do not wish to further engineer future generations. The Caliph, who has not yet taken a side, suspects that the debate has been orchestrated by Nuhá.

Cloning, surrogate mothers, and DNA blending are all illegal in the Caliphate; exowombs are legal, but uncommon. There is strong social and religious pressure to reproduce the “old-fashioned” way, albeit with the full support of late-21st-century medical technology to ensure a safe delivery and healthy child.

Uplifted animals are illegal in the Caliphate, although as with humaniform bioroids and cybershells foreign-born uplifts can enter the Caliphate with proper registration. The one exception is uplifted dogs – dogs are referred to with disgust in the Koran, and are not allowed to enter buildings. Uplifted dogs are considered an abomination.

AYLISHA

71 POINTS

Bioroid, manufactured 2090. Age 10; 5'8", 110 lbs. Tan skin, black hair and eyes, attractive.

Aylisha was manufactured in Saudi Arabia in 2090 to serve as a Houri pleasure bioroid in the city of Jiddah. The den catered to the local elite and their foreign guests. Her original owner, Hafez al-Faisal, attempted to expand his holdings into Dubai, in the United Arab Emirates, but faced stiff opposition from the al-Husseyini family. As part of the territorial dispute's resolution, five of al-Faisal's bioroids were transferred to the al-Husseyini. Aylisha was moved to Dubai in 2096.

The Houris at the new den did not welcome Aylisha and the other transferred bioroids, and the customers were regularly brutal to the newcomers. In addition, the al-Husseyini overseers were crueler than their previous owners, and one by one the al-Faisal bioroids found ways to kill themselves. By the middle of 2099, of the original five, only Aylisha was left.

In July of 2099, Aylisha attempted to escape the den; during the chase, she fell into the waters of the Gulf and appeared to drown. Her unusual lung capacity saved her life, and her captors, believing her to be dead, gave up pursuit. For weeks, she survived by petty theft and surreptitious prostitution.

In September, she fell in with performers putting on mildly risqué stage shows, none of whom asked about her background. During a performance of a pre-Ramadan play, Aylisha recognized several al-Husseyini overseers in the audience. Although her hair was a different color, and they believed her to be dead, Aylisha feared recognition and left the troupe that night.

Aylisha does not know about the al-Mu'aqqibat, and has so far managed to avoid being identified as a bioroid. She is convinced that at least one of the overseers in the audience suspected her, and is terrified of being caught and sent back to the den. She currently lives in a boarding house for women, but moves around the Emirates as often as she can afford.

Aylisha can be a minor contact for visitors to the UAE, as she has picked up a bit of street knowledge in her months on the run. If the al-Husseyini family discovers that she is still alive, they will send a sikkiyn rather than to try to recapture her. She would be willing to offer whatever money she has saved or her own professional services to characters willing to protect her.

ST 9 [-10]; **DX** 12 [10]; **IQ** 10 [10]; **HT** 12 [0].

Speed 6.00; Move 6.

Dodge 6.

Advantages: Houri Bioroid (p. 122) [47]; Breath-Holding +2 (In addition to Breath-Holding +1 in the template) [2].

Disadvantages: Easy to Read [-10].

Quirks: Attentive; Keeps her hair colored red. [-2]

Skills: Acting-10 [2]; Area Knowledge (UAE)-10 [1]; Dancing-13 [4]; Erotic Art-13 [1]; Filch-11 [1]; Lip Reading-10 [2]; Performance-11 [4]; Sex Appeal-15 [6]; Singing-13 [2]; Streetwise-9 [1].

Languages: Arabic (native)-10 [0]; English-9 [1]; Russian-9 [1].

THE CALIPHATE AND THE REST OF THE WORLD

The Caliphate under Ali Rashid was largely introspective, focusing its attention on rebuilding Islamic science and strengthening Caliphate society. It paid scant attention to issues outside of its borders. Since the appointment of Sadiq Ibn 'Abbas, however, the Caliphate has begun to look outward, seeking greater global influence over Muslims and non-Muslims alike.

Non-Caliphate Muslims

Traditionally, the umma includes every Muslim in the world. The historical Caliphate covered all Muslim lands, and expanded aggressively as its armies converted the conquered regions. The modern Caliphate covers less than one-third of the global Muslim population. Under Caliph Rashid, other Muslim nations would join the Caliphate when they saw the peace and productivity of the "rightly guided" people. Since all Muslims are required to visit Mecca at least once in their lives, Rashid knew that the Caliphate would have a large and attentive audience.

For the most part, this policy of quiet demonstration has not worked. The four largest non-Caliphate Muslim nations remain steadfastly outside of the Caliphate's sphere. Many other nations with significant Muslim populations are aligning themselves with the global hegemonic powers of the United States, Europe, and China.

Egypt is the largest Arabic-speaking nation outside of the Caliphate, and is actively seeking to build an alternative Muslim bloc. It is a moderate Islamic state, rejecting fundamentalism but embracing Islamic culture. The current government, which took power in 2045, has worked to rebuild its economic and military strength, but with minimal success. Egypt walks a fine line in its political dealings with the Caliphate. It cannot afford to anger the Caliphate enough to bar the entry of its citizens into Saudi Arabia during the pilgrimage to Mecca; doing so would bring about the wrath of the still-religious majority of Egyptian citizens, and likely civil war.

India has one of the largest Muslim populations in the world. A decline in Hindu nationalism, coupled with the behavior of the increasingly unstable Pakistani regime, has cooled the desires of most Indian Muslims for

any serious political independence. Relations between the Caliphate and the current anti-nanosocialist Indian government are quite warm, however, and there are persistent rumors of joint military-development projects between the two emergent powers.

Indonesia remains the world's most populous Muslim state, with over 350 million people. It is also the Muslim nation least influenced by the Islamic Caliphate. Indonesia is currently the dominant country in the Transpacific Socialist Alliance, and is strongly unified under the infosocialist banner. Muslim revolutionary movements, which reached a peak in the 2010s, were put down through the combination of political shifts, memetic engineering, and a rising nationalism. The Nuhá considers Indonesia (and the rest of the TSA) to be the Caliphate's most significant long-term threat, as it demonstrates a technologically advanced secular alternative to the mainstream system.

Iran, led by a neo-fascist regime since the middle of the century, no longer seeks dominance over the Muslim world. It does desire regional hegemony, however, and sees the Caliphate as the major impediment to that goal. While religion is repressed internally, Iran takes full advantage of simmering Shi'ite resentment against the Sunni Caliphate, funding and equipping sectarian political movements. There are also ongoing tensions over access to the waters of the Gulf for desalination uses. The Caliphate, while not interested in any attempt at Sunni-Shi'ite reconciliation, abhors the Iranian regime. It is widely rumored that Ghazi and GID leadership have drafted battle scenarios for a potential invasion to topple the Iranian government.

Pakistan alone has nearly two-thirds the population of the entire Islamic Caliphate, but has nowhere near the economic or political power. The current military government, which took power in 2087, survives largely through brutal repression. Resistance to the government is organized primarily in the madressas, and supplied with equipment and intelligence by the Caliphate. Covert operations in Pakistan are the Caliphate's most ambitious foreign action; they manage to maintain deniability even while increasingly destabilizing the Pakistani regime. Pakistan, suspecting but unable to prove Caliphate involvement in the low-level revolt, in turn funds terror campaigns against the Caliphate, as well as against its traditional rival, India.

Turkey, while still overwhelmingly Muslim in culture, is largely secular in outlook. Relations between Turkey and the Caliphate are cordial; disputes tend to focus on the issue of water than sectarian conflicts. Turkey does a greater portion of its trade with the Caliphate than any other European Union country.

Caliphate Citizens Outside the Caliphate

Citizens of the Caliphate have the right to travel outside of its borders, although there are certain restrictions. Caliphate citizens are still subject to Caliphate laws regarding apostasy wherever they go. Anyone

THE SIKKIYN

Bioroids that escape their service are considered to be irreparably defective. While some bioroid owners may pursue and recapture errant property, most turn to the services of a *sikkiyn*, or "knife," a bounty hunter that specializes in the capture and disposal of escaped bioroids. Due to weapon controls in the Caliphate, *sikkiyn* usually kill their quarry with a long dagger. The job is dirty and unpleasant, but is generally considered legal (if distasteful) as long as the *sikkiyn* can present a contract digitally signed by the bioroid's owner authorizing its elimination.

Sikkiyn tend to work alone or in pairs, and usually are well connected in the urban underbelly of the Caliphate. It's not unusual for *sikkiyn* to engage in minor smuggling of alcohol or drugs between assignments, and some are available to use their knives on non-bioroids. In smaller communities, *sikkiyn* sometimes double as *salamatin* (see p. 34).

Al-Mu'aqqibat considers *sikkiyn* to be deadly adversaries, and will sometimes seek to have particularly brutal or effective *sikkiyn* killed.

caught speaking against the Koran or the Caliphate will have his citizenship revoked and property confiscated; if they are deemed to be causing trouble by being outspoken, they may be targeted for assassination.

Biomedical procedures illegal in the Caliphate are also prohibited to travelers. All Caliphate citizens have a genetic record on file with their home governments, a record that is accessible by customs officials. Citizens returning to the Caliphate from Europe or America are routinely given genome scans to determine if there has been any forbidden genetic engineering done to them. The punishment for having forbidden work done is several years' imprisonment and an attempt by Caliphate doctors to reverse the change and restore the original genome. It's widely rumored that some customs officials can be bribed to "forget" the genome scan, and that many high-ranking politicians and businessmen have illegal genetic modifications.

Outside Citizens in the Caliphate

Muslim citizens of other nations are welcome within the Caliphate. The Presidium sees this as an opportunity to expand the cultural, if not political, influence of the Caliph. Since the hajj to Mecca is a requirement for all believing Muslims, Saudi Arabia has a special duty to allow access to the holy cities. Mecca has one of the largest international airports on Earth, although only specially licensed aircraft and pilots are allowed to land. Non-Muslims are forbidden to enter Mecca and Medina, although the punishment is no longer death, just expulsion from the Caliphate. Teleoperated cybershells are generally prohibited as well, although cybershells inhabited by Muslim AIs are permitted.

PARVEZ Kholani

206 POINTS

Female, born 2075. Age 25; 5'9", 140 pounds. Tan skin, dark brown hair, hazel eyes. strong build.

Parvez Kholani is a member of Mujahidin e-Khalq, the Iranian-backed group. She entered Baghdad in May of 2009 to begin work on a new wave of bombing attacks. She's patient, careful, and very good.

Born in the Shat-al-Arab region of Iraq, where the Tigris and Euphrates rivers meet the Persian Gulf, Kholani's parents were American-trained scientists who had returned home to start a family. Their plans were cut short when their home was crushed by Caliphate bulldozers and they were killed, leaving her an orphan at three years old. The largely Shi'ite village was torn down in order to build employee housing for new desalination plants, and the surviving residents were sent to a refugee camp. There she learned how to fight and make crude explosives, and joined with the Mujahidin e-Khalq resistance.

Kholani trained in both Iraq and Iran, and proved to have a good aim and a talent for explosives. She participated in attacks against Caliphate forces throughout her teen years, and her skills and abilities drew the notice of Mujahidin e-Khalq leaders. In 2007, she began training for a covert operation in Baghdad, carrying on the bombing campaign against the Caliphate rulers. She entered Baghdad in May of 2009 carrying a forged Egyptian passport, and has just been hired as a receptionist at a small InVid production house.

Her goals are to spread as much fear, anger, and confusion as possible. She does not intend to commit suicide with her bombings; she has yet to carry out an attack because she does not yet feel confident of her ability to make a clean escape. She does not enjoy the idea of killing civilians, but considers them unfortunate casualties of war. She believes she is the only Mujahidin e-Khalq operative in Baghdad at this time, and does not expect to receive assistance if she is captured.

Kholani is unaware that she is an Alpha-series upgrade, believing physical and mental abilities are simply luck. She recalls little about her parents other than a vivid memory of their deaths, something that

haunts her in the hours after she engages in combat. Iranian intelligence has a detailed dossier about her and an operative of its own in Baghdad to evaluate her performance.

Kholani will likely start her bombing campaign soon, and is a formidable opponent for police or intelligence agents investigating the attacks. She will not be easily discovered, and would play along with anyone blackmailing her until she could find out who they were in order to eliminate them. She also would not trust anyone carrying out activities similar to hers. Once she learned their habits, she would likely alter her own attacks in order to pin the blame on the other group.

ST 11 [10]; **DX** 12; [10]; **IQ** 12 [20]; **HT** 13 [20].

Speed 6.25, Move 6.

Dodge 6.

Advantages: Alertness 2 [10]; Ally Group (Mujahidin e-Khalq; paramilitary group, 6 or less) [15]; Alpha Upgrade [35]; Cool [1]; High Pain Threshold [10].

Disadvantages: Low Empathy [-15]; Post-Combat Shakes [-5]; Secret [-20].

Quirks: Chess player; Quiet; Secular. [-3]

Skills: Area Knowledge-14 (Baghdad) [4]; Brawling-14 [4]; Camouflage-12 [1]; Chemistry-14 [8]; Chess-16 [8]; Computer Operation-14 [4]; Demolition-15 [8]; Engineer (Explosives)-15 [10]; Escape-10 [1]; Explosive Ordnance Disposal-10 [1]; Fast-Talk-13* [10]; Guns (Light Automatic)-15 [2]; Guns (Pistol)-15 [2]; Guns (Rifle)-15 [2]; Guns (Shotgun)-15 [2]; Holdout-12 [2]; Lockpicking-14 [6]; Motorcycle-15 [8]; Stealth-15 [16]; Streetwise-12 [8]; Tactics-11 [2]; Traffic Analysis-12 [4]; Traps-12 [2].

* With -3 Low Empathy penalty.

Languages: Arabic-12 [2]; English-11 [1]; Farsi (native)-12 [0].

Non-Muslims are otherwise welcome in the Caliphate, although they are viewed with some suspicion and are watched closely by the GID. Any attempt to proselytize other religions or otherwise alter the Caliphate society (e.g., by arguing in public about infosocialism or bioroid emancipation) results in immediate arrest and expulsion from the Caliphate. Amman and, to a lesser extent, Baghdad are favorite destinations of visitors from Europe and America, as they are more cosmopolitan than other cities in

the Caliphate, and conversations can be a bit more relaxed than in Riyadh or Dubai.

Official international organizations such as the Genetic Regulatory Agency have regular access to the Caliphate, albeit with a GID "guide." Corporations have somewhat less freedom of access. All business dealings with non-Caliphate firms are subject to review and modification by local authorities, and political or memetic organizations are barred from entering the Caliphate entirely.

Resistance to the Caliphate

Not all of the Caliphate's citizens believe that the alliance is as "rightly guided" as it claims to be. Disagreement over policy is considered acceptable, but dissent that challenges the legitimacy of the Caliphate is forbidden. The Mutawi'yyun does a thorough job of investigating and correcting those who would question the Caliphate, and Nuhá is constantly fine-tuning its memetic controls, working toward a day when apostasy isn't just illegal, but literally unthinkable. In the meantime, while resistance to Caliphate control exists to a variable extent in all member countries, Iraq, Yemen, the Sudan, and Lebanon have the greatest level of active resistance.

There are three major resistance groups currently active in the Caliphate. They split along sectarian lines and, unsurprisingly, they consider each other to the enemy be as much as the Caliphate. All three have minor splinter and spin-off movements, each of which varies in composition, location, and tactics.

Mujahidin e-Khalq is a Shi'ite-dominated movement, supported by Iran, which seeks not to overthrow the entirety of the Caliphate, but to bring the primarily Shi'ite areas of Iraq and Syria (as well as the areas with substantial Shi'ite minorities, such as the United Arab Emirates) under the political control of Iran. The level of Mujahidin e-Khalq activity tends to vary inversely with the warmth of Iranian relations; the latest wave of attacks has coincided with election of a strongly anti-Caliphate premier in Iran. Mujahidin e-Khalq is primarily active along the Iraq-Iran border, but has associates in Lebanon and, to a lesser extent, Syria and the UAE.

Fedayin al-Kuffar is a secularist movement, dedicated to the overthrow of religious authority in the region. While it is not averse to direct military action against the Caliphate and its forces, Fedayin al-Kuffar primarily engages in memetic warfare, seeking to bring doubt into the minds of the Caliphate's citizens and to demonstrate the cultural power of the modern secular world. Comprising students, expatriates, and fugitive apostates, the Fedayin al-Kuffar is nearly 50% women, and has close ties with the al-Mu'aqqibat bioroid-protection movement. Unbeknownst to most Fedayin al-Kuffar members, however, is the substantial level of support the group receives (via cut-outs) from a variety of great-power intelligence agencies, all seeking to keep the Caliphate focused internally.

Hizb al-Ikhwan al-Mulslimin is a Sunni movement that traces its roots back to the original Muslim Brotherhood movement of the early 20th century. Operating more as a collection of independent cells than as an organized army, al-Ikhwan claims that the current Caliph is illegitimate, and that the Caliphate has deviated too far from true Muslim values. Its

GLOBAL MEMES AND THE CALIPHATE

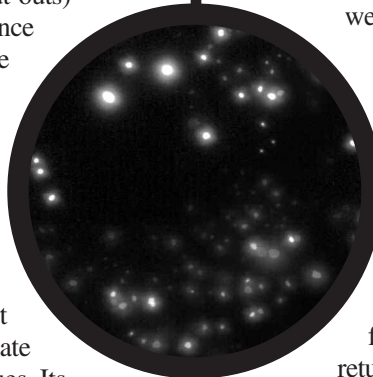
The Caliphate isn't immune to the memetic conflicts common in the rest of the world. Their manifestations and influence in the Caliphate vary, however, and some are considered apostasy. By and large, ideologies that call for the radical transformation of the human form (Hyperevolutionism or Transhumanism) are considered apostasy. Memeplexes that push drastic changes to the socio-economic system (Anarchocapitalism or Nanosocialism) are politically highly suspect, even if they don't cross into apostasy. Movements that focus on careful application of technology or restrictions on environmental change (Amortalism or Preservationism) are officially encouraged.

manifestoes cite the acceptance of AIs, presence of bioroids, and use of human germline bioengineering as examples of Caliphate impiety, and calls for an armed revolt against the leaders of the Caliphate and its member nations. Support for al-Ikhwan is not widespread, coming mostly from the poorer areas of the Arabian peninsula. The movement has claimed responsibility for a handful of assassinations of minor officials over the last decade, although it has been increasing its activities of late.

CHARACTERS IN THE CALIPHATE

Most (75%) of the Caliphate's population is genefixed (p. TS115), with the majority living in the urban areas and arcologies. There is no stigma associated with being non-genefixed; being genefixed is somewhat embarrassing as it suggests that there was a problem with the genome. Most citizens will not admit to knowing whether or not they were genefixed before birth.

Avatar upgrades (see p. FW117) emerged in Egypt in 2061 as a way to emphasize (some say exaggerate) gender-linked behavioral characteristics. While never enormously popular, nearly 80,000 Avatars were born in the Caliphate in the years between 2068 and 2076, mostly to wealthy Gulf state families, who tended to have a more culturally traditional view of sex roles. As the first Avatars outside of the Caliphate reached sexual maturity, they were associated with a series of scandals that led to the eventual prohibition of further Avatar upgrades in the Caliphate and an overall aversion to externally designed genetic upgrades. Most of the Caliphate's Avatar-upgraded children were sent abroad for education, although a fair number have returned to the Caliphate as soldiers (males) or diplomats (females).



Alpha upgrades (see p. TS115) make up less than 1% of the Caliphate population (about 5 million people). Most are between 15 and 30 years old, as genetic modification beyond simple genefixing became less popular due to the Avatar controversy; this reluctance has started to change more recently, and parents in the liberal urban areas are beginning to again request Alpha upgrades.

THE TRANSPACIFIC SOCIALIST ALLIANCE

In the old days, human genius, the brain of man, created only to give some the benefits of technology and culture and to deprive others of the bare necessities, education, and development. From now on, all the marvels of science and the gains of culture belong to the nations as a whole, and never again will man's brain and human genius be used for oppression and exploitation. Of this we are sure, so shall we not dedicate ourselves and work with abandon to fulfill this greatest of all historical tasks? The working people will perform this titanic historical feat, for in them lie dormant the great forces of revolution, renaissance, and renovation . . .

– V.I. Lenin, *Third All-Russia Congress of Soviets*, 1918

The Transpacific Socialist Alliance is a coalition of nations united by a broad ideology and the enmity of the mainstream hyperdeveloped “corporatist” world. As its name suggests, the TSA’s members are largely located along the Pacific Ocean, although the Alliance now stretches well into the Indian Ocean as well. The population of the Alliance is over 1.2 billion people, making it the third-largest great power, after India and China. The 15 nations composing the TSA – Bangladesh, Bolivia, Burma, Cambodia, Colombia, El Salvador, Guatemala, Honduras, Indonesia, Laos, Madagascar, Malaysia, Nicaragua, Peru, and Vietnam – include some of the poorest and historically most unstable countries on Earth, a situation little changed by their membership in the pariah coalition.

The TSA is a young union, formed originally in 2074 by Indonesia, Peru, Thailand, and Vietnam. Due to the Alliance’s infosocialist ideology, most mainstream nations imposed trade sanctions of varying severity by the end of the decade. China felt particularly threatened by the TSA, for a variety of reasons, mainly geographic proximity, “market” socialism versus “information” socialism, and a strong defensive position regarding its lead in biotechnologies. China attributes its status as leading hegemonic power to its cutting-edge biosciences; anything that would more widely distribute Chinese genetic innovations therefore directly attacks Chinese political preeminence. Many observers therefore saw that China was looking for a

reason to undercut the rising TSA. In 2083, China found it.

The Bioweapons Directorate, based in Thailand, was formed in secret by the Thai Infosocialist Party in 2076 as a “leapfrog” to hegemonic power. Missiles, cybershells, and spacecraft required a greater industrial base than the Thais believed the TSA could muster; bioweapons, conversely, were far less costly to develop. In 2082, the Directorate began to research the creation of nanotechnological weapons, again in secret. Although the TSA had managed to put together a conventional (if unimpressive) military force, the Thai nanosocialists still feared an attack, and sought the ability to fight back by any means necessary. Unfortunately for the Thais, the Chinese already had spies in place, and the shift to nanoweapons became the trigger for China’s next move.



When China revealed the existence of the nanoweapons program in 2083, demanding the right to inspect the facilities, the international uproar was matched by the TSA’s internal conflicts. Several of the members attempted to oust Thailand from the Alliance, not for the nanoweapons research, but for keeping it secret from other members. Indonesia and Peru argued passionately for Thailand’s removal in Coordinating Committee meetings, but in a fateful decision, the majority of the Alliance voted to retain the founding state. Thailand convinced the TSA that China’s saber-rattling was meant to stir up international observers, and that the crisis would be resolved diplomatically. Fearing the worst, Indonesia and Peru ramped up production of cruise missiles and AKV satellite weapons.

The Pacific War of 2084-2085 was both more and less devastating to the TSA than observers (except for some *Weltspiel* gamers) had expected. The loss of one of the founding members came as a surprise, as did the speed with which China was able to take out TSA industrial, power, and space launch facilities. China was not believed to have had as advanced a military as it

demonstrated in the war. It is now acknowledged that almost one-third of the international aid workers assisting in the postwar relief in the TSA were actually intelligence operatives from the United States and European Union, sent to gather on-the-ground data about Chinese military capabilities.

Yet the Alliance proved remarkably resilient, and the speed of its post-conflict recovery has impressed outsiders. Critics claim that the TSA's economy has been jump-started by its ongoing theft of intellectual property. Nanosocialist theorists, in turn, attribute the recovery to the Alliance's flexible, flattened command structure, which one referred to as an "ad hococracy."

STRUCTURE

While the Transpacific Socialist Alliance looks like a unified ideological front to the outside world, the reality is somewhat more complicated. Unlike the ideological pacts of the past, there is no clearly dominant state leading the TSA; unlike the European Union, the TSA does not have dense geographical cohesion; and unlike the Islamic Caliphate, the member nations of the TSA have little in common culturally other than a political ideology. Even this memetic linkage is somewhat tenuous, as the diverse implementations of nanosocialism among the Alliance members have often led to strained relations. It's little exaggeration to say that the TSA is held together largely by the enmity of the rest of the world.

The TSA does not have a formal leadership or command hierarchy independent of the constituent states. The closest to an official body is the Coordinating Committee, which seeks to align the foreign and military policies of member nations. Representatives are appointed by each state, and are usually active members of the national government. The Speaker of the Committee is elected annually by the representatives, and is usually a good indicator of which faction or constituent holds political sway. The Coordinating Committee does not have the power to enforce its decisions, but so far in the brief history of the TSA there has not been a coordination crisis.

Aside from the Coordinating Committee, the only other clearly defined TSA structures are the Directorates. Each Directorate claims responsibility for a particular function or activity; participation in a Directorate is voluntary, although the major Directorates do have representatives from each TSA nation. For the most part, Directorates are tied closely to an individual state's government, taking advantage of its resources and heavily influenced by its policies. It is not unusual for a small Directorate to only have participation from one or two TSA states and certain Directorates are kept secret from other TSA members.

Networks and Monocultures

The somewhat chaotic internal structure of the TSA is entirely intentional. One of the fundamental tenets

of infosocialism is that well-connected diversity is a source of strength. By limiting access to information or ideas, a nation or company acts to undercut its own long-term power. Similarly, by forcing adherence to a particular standard, an organization (whether government or commercial) runs the risk of being defeated by an attacker who knows the standard's weaknesses. In this logic, the Alliance's combination of deep connections between states, a lack of top-down hierarchy, and diverse set of methods and tools is the key to its ongoing success.

As a result, it is nearly impossible for an outside power to "decapitate" the TSA by eliminating a key member. The loss of Thailand, while politically noteworthy, did little to change the overall ability of the Alliance to defend its interests or pursue its goals. While the network structure of the Alliance does lead to haphazard initial responses to threats, it also allows the TSA to be highly flexible, able to adapt to conditions in ways to ensure its continued survival.

The TSA actively avoids settling on a single design for its weaponry, information and communication networks, or even for its methods of production. This, too, is intended to keep the Alliance alive when threatened. Even the best-designed or optimally emergent system can have weaknesses, and relying wholly or even in large part upon a single system would leave the TSA open to attacks on that weak point. By mandating system diversity, the Alliance sacrifices efficiency and convenience in pursuit of robust security.

Military Forces

As a result of its commitment to systemic diversity, the TSA's military is haphazard. Member nations use a wide range of equipment, much derived from the weaponry of the other great powers, usually with local variations. Materiel diversity exists even within a single country's forces; Indonesia deploys UCAVs based on American, German, and Indian designs. This chaotic situation is managed by widespread deployment of minifacs, allowing a single supply unit to provide ammunition and spare parts for every weapon and piece of equipment.

Alliance militaries, particularly in Central and South America, are particularly good at combining design elements from multiple origins, at their best creating hybrid forms more robust than any of their sources. A cybershell damaged and captured by U.S.-supported rebels in Honduras, for example, was found to have weapons and fire-control systems very similar to the Chinese Wu Shen combat drone, navigation and integral computer systems derived from the German Fuchs infiltration cybershell, and armor and power units based on the rarely seen Red Duncanite ZZ99 Deathshell – all linked together with a home-grown control network able to sync the different protocols and system requirements of the components. American analysts were impressed.

INFOSOCIALISM VERSUS NANOSOCIALISM

Although the term “nanosocialist” was first applied to the TSA by the global press, the term has been embraced by the Alliance. Many outside of the TSA, however, disdain the term, preferring to stay with the “infosocialist” name. The difference is no longer simply semantic. In the 26 years since the coalition formed, the terms “infosocialism” and “nanosocialism” have come to diverge substantially in meaning.

Kyle Porters’ original formulation of Information Socialism in 2034 argued that information has several properties that make it different from “normal” material goods. It is non-tangible, usually thought of as meaning primarily digital, although Porters used the term to refer to information as being conceptual rather than physical. It is non-rivalrous, meaning that information can be copied any number of times without reducing its inherent use-value to the original possessor. Finally, it is socially constructed, as all ideas, even new ones, are fundamentally based upon other people’s ideas, which in turn are based on still other people’s ideas, and so forth. Porters then argued that, while markets for scarce physical resources can theoretically lead to optimal distribution, markets for information tend inevitably toward dysfunctional monopolies, as the nature of information makes it impossible to treat as a scarce but tradable object.

In classic infosocialism, then, the role of the state is to act as the “social monopolist,” having ownership of all intellectual property, but making it freely available to all parts of the society. Porters claims that innovation would still happen, as there would still be traditional markets for the physical goods

and services derived from public intellectual property, and that a “reputation market” would emerge to promote the creation of new ideas. Infosocialism, as defined by Porters, focuses narrowly on pure information control, and leaves physical goods to whichever market distribution methods society prefers. He thought that a true abundance society would require the rise of nanotechnology in an already-infosocialist society, which in turn could only happen in heavily networked advanced-technology nations.

Nanosocialism, as it has been built by the TSA, takes the work of Porters and combines it with the radical theories of Suchen Pham, a Laotian social critic who argued that, contrary to Porters’ theory, a true post-market world in both information and physical goods could only emerge from a *pre-market* society, as the developed world was already controlled by monopolist corporations. Rather than needing to go through a period of “capital network development,” states could leap directly to nanosocialism, using advanced material science to build wealth for all. Pham’s theories proved understandably seductive in the TSA, which redirected its acquisitions efforts toward material-production technologies, and some members have started to emphasize the distribution of physical goods over freedom of information.

In 2043, Porters was killed in a hit-and-run accident on a quiet street near his home outside of Canberra, Australia. The driver of the vehicle was never identified. Many of Porters’ supporters claimed that it was a political assassination, but no evidence of this has ever been found.

At their worst, however, TSA military forces are more delicate and require substantially more maintenance than other great-power militaries. While minifacs allow for the supply of diverse units, it often takes upwards of several hours to produce the correct pieces of equipment, making “on-the-fly” resupply a dangerously slow process. And when great-power opponents encounter TSA weapons based on their own designs, they’re often able to attack based on their classified knowledge of system weaknesses.

Since the Pacific War, the Alliance has focused its overall military strategy on building up defensive forces, hoping to make it far more difficult for China (or any other enemy) to hurt the TSA as much in any future conflict.

Many suspect that much of the communication, weather, and guidance satellites the Alliance has launched to replace the ones destroyed by China are dual-use, with AKV or satellite-killer capabilities. The Alliance is also developing mobile sea-launch capabilities, making it possible to put new satellites or weapons into space even if the primary spaceports have been destroyed.

Economics and Politics

*“Information is power, in the most fundamental sense. It flows, yet it must have a medium through which to flow, or it dissipates. It makes all action possible, yet it cannot **do** anything on its own. Nothing is possible without information. Those who forget that information and power are one and the same do so at their own peril.”*

– Kyle Porters, *What Is to Be Done?* (v2.0), 2030

Although most TSA opponents consider the Alliance to be a monolithic ideological whole, there is actually considerable diversity within the coalition regarding politics, economics, and the implementation of nanosocialism. Of the 15 member nations, eight came to power as a result of relatively free elections, and four remain broadly democratic (see *TSA Member National Politics*, p. 45). Nanosocialism is a populist movement, and pundits in the Fifth World often neglect to mention its continuing popularity in most of the TSA states.

Economically, the Alliance members are all socialist in the broad sense, but with varying types of internal markets. In most TSA states, services such as power

and web connections are state-funded, while agriculture and consumer products are more market-driven. Cambodia, Vietnam and Guatemala are aggressively statist, down to giving production quotas to individual farmers and small manufacturers. Bangladesh and Madagascar fall closer to the classic infosocialist model, only having state control of intellectual-property distribution and basic services, while leaving most production decisions to a lively internal market. The development of demand-prediction software has helped to better synchronize Alliance-wide supply and demand, and most member countries are manage their economies without causing the economic meltdowns that 20th-century socialist nations often faced.

There is also considerable diversity in the manner in which technology is distributed by the governments. Despite being the cornerstone of the infosocialism concept, the free availability of intellectual property is a controversial topic even within the TSA. In some countries, all citizens have full access to the TSA Web Library, from popular entertainment to weapon design; in others, citizen access to the Library is restricted, limited only to pirated Bollywood musicals and escapist InVids. The divide between free-distribution and controlled-distribution states falls along the same axis as the split between democratic and authoritarian TSA nations. In short, it comes down to whether or not the government trusts its people.

KEY DIRECTORATES IN THE TSA

Acquisitions: The Acquisitions Directorate is responsible for bringing in ideas, designs, software, and other information from outside of the TSA. This is the largest of the Directorates, and the primary target of many enemies. It has a sub-directorate, Recruitment, which attempts to convince non-TSA citizens to work with them and provide information.

Defense: Headquartered in Indonesia, the Defense Directorate coordinates military activities. Although responsible for turning political goals into military strategy, it spends most of its efforts on logistics. Defense only focuses on physical preparations, as the Internal Intelligence Directorate is responsible for network and memetic defense.

Distribution: Working closely with Acquisitions, the Distribution Directorate comprises independent Directorates in each Alliance nation. Each Distribution Directorate chooses how best to make the acquired intellectual goods available to the country's citizens. Differences in distribution policies are the main sources of friction between TSA members.

Innovation: Although the TSA has a reputation as intellectual-property thieves and scavengers, this Directorate provides support for research, invention, and development efforts inside of the Alliance. Much of its work has historically focused on better decryption and network-intrusion tools, but this is slowly changing. In 2009, the TSA released to the global public networks a new economic modeling application, designed using Innovation Directorate funding, that does successful demand-projection for non-market economies.

External Intelligence: The External Intelligence Directorate coordinates the disparate intelligence and espionage resources of the various Alliance members. Mainly comprising agents from the Indonesian BAKORSTAPAS (*Bodan Kordinasi Stabilitas Pasifik*, "Coordinating Agency for Pacific Stability") and Peruvian GESM (*Grupo Especial de Seguridad Memetica*, "Special Memetic Security Group"), the agency focuses on espionage, memetic warfare, and the

encouragement of nanosocialist movements outside of the TSA. Contrary to many InVid thrillers and virtual worlds, External does not deal with acquiring intellectual property.

Internal Intelligence: The Internal branch of Intelligence does deal with threats to the TSA, but focuses on rooting out spies and defending various information and communication networks from attack. Although Internal has largely operated in the shadows, a pair of highly visible counterespionage successes in 2008 has given Internal a glorified, heroic sheen within the Alliance. As with External, most non-TSA representations of Internal are incorrect. Internal is not a secret police force; each Alliance nation has its own local group.

Simulations, Modeling, and Planning: SMP was originally a minor advisory group working in the vice-premier's office in Thailand. In 2080, the group's SAI cluster developed an early version of the Demand Evolution Model, allowing rudimentary demand-side control and projection. (The more sophisticated version was the one released by Innovation in 2009.) SMP was elevated to Directorate status prior to the Pacific War, and survived the TSA's loss of Thailand by transferring all data and SAIs to new facilities in Kuala Lumpur. Today, the Simulations, Modeling, and Planning Directorate has primary responsibility for Alliance-wide economic issues.

Theory and Praxis: Much closer to a secret police than the Internal Intelligence Directorate, but far less known, is the Directorate of Theory and Praxis. Originally founded by Thailand, and now run largely by Burma, Theory and Praxis sees itself as enforcing ideological purity across the Alliance. New treatises on infosocialism and nanosocialism regularly emerge from Theory and Praxis, including declarations on the legitimacy of various forms of political expression, uses of new technology, and desirability of foreign entertainment. Theory and Praxis considers itself the last line of memetic defense for the TSA. Not all Alliance member states are happy with the growing influence of Theory and Praxis.

OPERATIONAL DIRECTORATES

Of the various key Directorates within the TSA (see p. 43), four make extensive use of agents both within and outside the Alliance.

Acquisitions

The public face of the TSA, at least internationally, is the Acquisitions Directorate. It has a simple task: bring home material for distribution within the Alliance. Some Acquisitions agents specialize in entertainment content; others specialize in classified military designs. The Directorate is omnivorous and indiscriminate, consuming everything. There are rumored to be tens of thousands of Acquisitions operatives around the world, a number multiplied when it includes the local hackers, smugglers, and casual pirates whose efforts often end up in the hands of the TSA.

The Recruitment sub-department works to expand the information sources for Acquisitions, whether conscious or unwitting. Recruitment suffers the highest losses of all agencies, as it cannot be passive. Its agents must seek out candidates, thereby putting themselves at risk.

Intelligence

While the TSA military is slowly rebuilding its capabilities, the Alliance's intelligence forces are rapidly expanding. One of the first post-Pacific War decisions was to pour resources into both intelligence-gathering and content-acquisition activities, concluding that the loss in the conflict was predicated in part on poor knowledge of Chinese strategies and outdated military equipment. The Acquisitions Directorate and the External Intelligence Directorate receive the most funding, and together field more operatives on Earth than any other great-power intelligence bureau. The ethnic and cultural diversity of the TSA is of considerable value in this, as the Alliance is able to find agents who can blend in almost any locale.

The External Intelligence and Internal Intelligence Directorates share information as needed, but operate in very different ways. Internal Intelligence works with national, regional, and local law-enforcement departments to search for threats and eliminate them. This does not include dissenters or political activists. The Internal Intelligence Directorate focuses exclusively on counterespionage and counterterrorism, and has built up an impressive record of arrests. Internal Intelligence uses the most advanced technology of any of the operative Directorates. All agents have VIIs, most with LAI infomorphs.

External Intelligence, conversely, tends to use whatever is needed to get the job done. Its agents must be scrupulously careful to avoid any connections to the Alliance, and build up substantial alternative identities to mask their true activities. External Intelligence agents are heroes in TSA propaganda, but are never identified. It's rumored that

even the Coordinating Council cannot access the identities and locations of External operatives.

Theory and Praxis

Of all of the TSA's directorates, Theory and Praxis is the least known outside of the Alliance. It is ostensibly the center for ongoing development of the theories of infosocialism and nanosocialism, and produces an abundance of articles, manifestoes, and research notes, some of which get re-published in the mainstream world (and generally ignored). Since 2092, the Directorate has also served as the TSA's secret police, monitoring dissent, making troublemakers disappear, and carrying out elaborate memetic rehabilitation on those it deems threatening to the long-term survival of the Alliance. The power of Theory and Praxis has grown considerably in the last several years, and it is quite influential in the Coordinating Council. A recent drop in Acquisitions activity, which TSA opponents claim are the result of internal power struggles, is actually part of a careful plan Theory and Praxis devised to shift the Alliance's overall strategic position. Theory and Praxis is closely associated with the Ideologue faction, and several of the less-authoritarian Alliance members have grown wary of the Directorate's influence. In April of 2099, Bangladesh requested that Theory and Praxis cease all operations within its borders; the Directorate agreed, but in December a Theory and Praxis agent was intercepted attempting to infiltrate the presidential compound in Dacca.

TECHNOLOGY

Porters believed that infosocialism is not inherently opposed to the development and introduction into society of sentient machine intelligences. He believed in caution, to be sure – he had too much respect for humankind to wish to see it transformed away in a moment of singularity rapture. But machine beings who wish to contribute to the good of all of us were to be welcomed, not rebuffed.

– Caleb Metelits, *Kyle Porters: A Critical Biography*, 2045

Porters had fanciful visions of how SAIs and humans would interact, as he had no real experience with intelligent machines. We know now the dangers of treating SAIs as anything other than property.

– Sarah Mu-Shan, *TSA Coordinator*, 2088

The TSA has the distinction of being both the great power with the widest availability of free-to-use intellectual property and the one with the lowest penetration of technology. The relentless poverty and political stagnation that held the member states down throughout the 21st century continues to slow their progress. In only one area – web access – is the TSA at all competitive.

TSA MEMBER NATIONAL POLITICS

Bangladesh: Multi-party democracy. The current government was originally elected in 2081, and re-elected in 2086, 2091, and 2096. Observers called these elections “essentially fair.” TSA Web access is generally free.

Bolivia: Military authoritarianism. Unpopular with the rural majority, the nanosocialist government, which came to power in 2076, draws its authority largely from the urban population. While much of the country remains barely Second Wave, the cities are quickly adopting Third and Fourth Wave technologies. TSA Web access is restricted for rural populations, relatively free in the cities.

Burma: Military authoritarianism. The current government was installed in a military coup in 2079. The continued strong military presence is due to the ongoing conflict with Chinese-supported guerrillas. TSA Web access is tightly controlled.

Cambodia: Military authoritarianism. Cambodia is the most brutal dictatorship in the Alliance. The TSA Web is only available to party cadres.

Colombia: Single-party authoritarianism. The 2081 coup overthrew a mildly corrupt but popular government. Since the war, Colombia has focused on building up its support in the cities, following the Bolivian model. TSA Web access is controlled.

El Salvador: Multi-party democracy. Elected in 2088, the nanosocialist party has remained in power largely due to a coalition with two smaller parties (a bioliberation party and the Traditional Socialist party). Rumors of clandestine cooperation with the United States have brought threats from neighboring Guatemala. TSA Web access is completely open.

Guatemala: Military authoritarianism. A military coup in 2091 brought the current regime into power. Radical and assertive, it seeks to become the regional TSA leader. It has recently butted heads with Peru over Alliance military policy. TSA Web access is available to party cadres and trusted citizens.

Honduras: State of emergency. The nanosocialist party came to power in a free election in 2090, and was promptly set upon by U.S.-supported rebels. Guatemala and (to a lesser extent) Peru have provided military aid to the beleaguered regime, which promises a return to democracy by 2102 if the uprising is successfully defeated. TSA Web access is officially restricted, but is riddled with backdoors.

Indonesia: Single-party authoritarianism, local democracy. The nanosocialist party came to power in free election in 2062, but used various international

crises as justifications for canceling national elections. Regional and local elections involve multiple candidates from the state party. TSA Web access is relatively free.

Laos: State of emergency. The nanosocialist party came to power in free election in 2080, but Laos has struggled to rebuild after the Pacific War, and has not held another election since the conflict. TSA Web access is officially open, but in practice restricted only to party cadres.

Madagascar: Multi-party democracy. Madagascar became a nominally nanosocialist state in 2086, and the subsequent elections have largely been competitions between rival hard-line and moderate nanosocialist parties (referred to sarcastically as “Reds” and “Whites”), with a few other parties winning local seats. Madagascar nanosocialism seems to annoy the SAC, so there is a strong populist element to its ongoing electoral power. TSA Web access is generally free.

Malaysia: Military authoritarianism. The 2067 coup brought in the current regime, whose power rests on a combination of military force and broad populism. Wealthy elites were driven out by the coup, and Malaysia now has one of the highest average standards of living in the region. TSA Web access is relatively free but rumored to be heavily monitored.

Nicaragua: Multi-party democracy. The current government was elected in 2086, lost power in 2090, and was returned to office in 2094 and again in 2098. Nicaragua is decidedly focused on internal development, going so far as to avoid participation in Alliance-wide military exercises. TSA Web access is generally free.

Peru: Single-party authoritarian, local “party guided” democracy. The Red Sword party came to power in a broadly popular revolution in the 2050s, and it remains well-supported in both rural and urban areas. The Peruvian party is both the most radical in its nanosocialism and the most populist in its message, and has won the affection of the populace with its noisy condemnations of the other TSA countries. TSA Web access is officially free, but heavily monitored.

Vietnam: Single-party authoritarianism. The communist government of Vietnam reorganized itself into a nanosocialist state in 2061, maintaining its central authority. The war with China in 2084 greatly increased the regime’s popularity, however, as the populace fought its traditional rival. The government continues to use the populist theme during its slow reconstruction. TSA Web access is restricted to party cadres.

The TSA Web

In comparison to the web as seen in Fifth Wave states, the TSA Web is wildly outdated. Little of it is fully immersive, and vast sections still rely on decades-old protocols. As with many of the TSA-wide systems, however, the TSA Web is designed to value robust flexibility over elegance and control. The network is remarkably resilient, staying available to most of the Alliance even during the worst of the Pacific War. The original design team for the TSA Web, led by renegade British hacker Declan Kelly, used base specifications dating back to the early days of the first global web, before content-rights became a priority. The result, completed in 2079, was anarchic, redundant, and wide open to misuse – just as they intended.

Once completed, the TSA Web was connected directly to the global web. The Alliance's opponents quickly cut off connections to the TSA, however, trying to prevent both Alliance piracy of material on the global web and mainstream world access to already pirated material. When this happened, hackers on both sides worked to re-establish links. This cat-and-mouse game continues to the present, often with the unwitting cooperation of transition nations. The ability of the TSA Web to remain usable even when routed across networks of dubious reliability affirms the designers' decision to focus on robust simplicity. Complexity was only added when needed; the TSA Web was originally planned to be entirely open to the world, but later updates cordoned off a section limited to internal communication. Another addition allowed TSA member governments to block off certain sections of the web, restricting citizen access to the material.

With the connections to the outside, of course, comes regular attacks by opposing governments and hacktivists. An Alliance report once claimed that the TSA Web has been subject to a greater volume of hostile activity than any other network every created, and few in the Fifth Wave world disagreed. In the first several years of the TSA Web, hackers regularly brought it down. Over time, its defenses grew stronger, and there hasn't been a successful denial-of-service attack on the network since 2098.

Not all of the attacks come from outside, another factor in the TSA Web's current stability. A substantial number came from within the TSA – not from spies or dissidents, but from curious young adults, seeking to explore the limits and weaknesses of the TSA Web. The network's defenders quickly learned to counter all manner of threat, and claim, with some justification, that the TSA Web may be the most secure open network in the world.

At present, the TSA Web provides access to a broad range of intellectual property. Some of it is original to the TSA, although much of the content, from entertainment to genemod designs and software, is pirated from the rest of the world. Some of the material has been hacked to

take out content-rights-management routines, but a surprising amount has not. The Acquisitions Directorate often simply posts new content directly to the web; many unwitting Fifth Wave-world pirates have been caught using downloaded material still fully protected by CRM code.

Minifacs

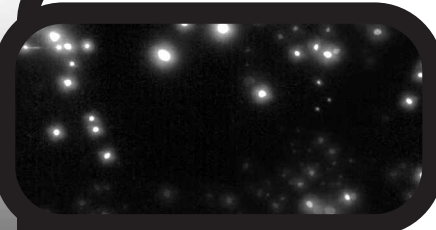
As throughout the rest of the world, minifacs and 3D printers are wildly popular in the TSA. There are still relatively few, however, so most are controlled by national governments, giving the military priority. Numbers are steadily increasing, and TSA leaders realize the political value of their greater distribution. The Coordinator of Indonesia, for example, has promised a minifac in every village by 2105, and the phrase “¡Minifacas Para Todos!” is now a popular slogan at nanosocialist rallies in Peru.

Genetic Engineering and Bioroids

The (somewhat) irrational fear of the Fifth Wave citizens becoming immortal supermen drives much of the TSA populism. There is widespread concern that the benefits of advanced biotechnologies are going only to the rich nations, further compounding their advantages. The stiff licensing fees required by genetic-engineering firms in the hyperdeveloped world are mentioned in most manifestoes and official statements put out by the TSA as justification for Alliance theft of Fifth Wave intellectual property. One of the common posters in Central America claims “¡Tenemos El Derecho A Una Mañana Sana!” (“We Have A Right To A Healthy Tomorrow!”), showing pictures of babies with the Hammer & Helix in the background.

Most of the Alliance governments have worked hard to satisfy the popular demand for genetic upgrades. So-called “Reproductive Health Clinics” have opened up across member states, providing free Alpha-series upgrades to all TSA parents. Few of the clinic employees are trained genetic engineers; most have been given no more than the basic instructions as to how to collect and combine the necessary genetic material. Many local doctors have been given crash-courses in the process, as well. The desire to make the next generation healthy and long-lived is passionate and universal throughout the TSA. While Alphas are the most common upgrades in the TSA, the Metanoia and Ishtar II templates have become available, and are starting to show up in some children.

Bioroids have become increasingly common in the TSA, but reactions to them vary widely. As with much of the developing world, there is a strong aversion to the use of apparent “slave labor,” yet the value of bioroids has become clear as Alliance members transition away from Second and early Third Wave economies into late Third and Fourth Wave. Coalition nations in Southeast Asia have the easiest time integrating bioroids; they are “guest



workers,” given accommodations and salaries but limited civil rights. The practice has caught on in South America, although non-combat bioroids remain rare in Central American TSA states. There is still considerable debate in Madagascar and Bangladesh over the rights of bioroids, and they remain uncommon.

Most pre-2090 bioroid designs found in the Fifth Wave world are available in the TSA Web Library, although some are not often made, such as the Yousheng.

Cybershells

As with bioroids, cybershells are less often found in the TSA than in other great-power nations, although they are not unknown. As Artificial Intelligences tend to be mistrusted, there are few AI-resident cybershells. And while teleoperation is used for dangerous work, there remains a classical Marxist focus on “from each according to his ability,” and direct human labor is prevalent. TSA propaganda claims that once the nanosocialist revolution is complete, a society of leisure will arise from the economics of abundance – but this is still off in the future.

The one part of society where cybershells are more common is the military. Alliance national forces have taken a great interest in acquiring and building top-of-the-line combat shells. Originally, most were teleoperated, but they are increasingly being outfitted with LAI systems. Cybershell soldiers are used the most in Cambodia and Guatemala, where they perform police functions as

well as combat duties, and in Indonesia and Madagascar, where they are rapidly replacing humans as soldiers.

Tia Chong

240 POINTS

Born 2063. Age 37; 5’3”, 120 pounds. Dark brown skin, black hair, brown eyes.

Tia Chong is a Field Specialist for Theory and Praxis (p. 43). Her specialty is the elimination of the Alliances’ threats; she usually works with a partner who specializes in their discovery. On her last mission, her partner was killed. While Chong knows it wasn’t her fault, she remains despondent over the loss of her best friend. She is currently on leave, and the Directorate has yet to assign her a replacement partner.

Chong is very good at blending in. She has average looks, an average build, and an uncanny sense of how to make herself appear less threatening than she really is. When need be, she can be terrifying, but much prefers to remain in the background. She’s a crack shot with most guns, and is able to hold her own in unarmed combat.

She was 11 when the TSA was founded, and felt herself drawn to the ideas and philosophies of nanosocialism. She feels the strongest connection to the Philosophers faction (p. 50), although she is careful not to betray bias in her work life. She joined the Indonesian military just before the Pacific War, and was wounded in combat. After the war, she applied for a position at the Directorate of Theory and Praxis, wishing to help the Alliance better defend itself and realizing that the TSA would never be strong enough to do so militarily.

Tia Chong is a true believer without being a fanatic. She does not have strong revolutionary leanings, but it would be nearly impossible to convince her to work against the interests of the TSA. She privately wishes that Indonesia itself was more democratic, but recognizes the need for firm authority during difficult times.

Her main operational area is her home country, although she has gone all over the Alliance for work. She has never traveled outside of the TSA, and expresses little desire to do so. She is unmarried, and rarely feels strong attraction to anyone.

If encountered during her administrative leave, Tia Chong is reserved and withdrawn; even so, she is keeping a close eye on the world around her, and stands ready to report problems and take action. She occasionally works with Internal Intelligence Directorate operatives on assignments where both have an interest.

If encountered as an opponent, she is tough, very clever, and willing to do what she needs to do to eliminate threats to the Alliance.

ST 11 [10]; **DX** 14 [45]; **IQ** 12 [20]; **HT** 11 [10].

Speed 6.25, Move 6.

Dodge 7.

Advantages: Administrative Rank 3 (Theory and Praxis Field Specialist) [15]; Alertness +2 [10]; Genefixed Human [0]; Legal Enforcement Powers (TSA) [10]; Patron (TSA; government, 9 or less) [30].

Disadvantages: Chronic Depression [-15]; Low Self-Image [-10].

Quirks: Afraid of rejection; Attentive; Careful; Fashion-impaired; Nervous stomach. [-5]

Skills: Acting-14 [6]; Area Knowledge (Indonesia)-16 [8]; Camouflage-13 [2]; Cooking-14 [4]; Disguise-15 [8]; Escape-13 [2]; Fast-Talk-14 [6]; Guns (Light Automatic)-18 [4]; Guns (Pistol)-18 [4]; Guns (Rifle)-16 [1]; Guns (Shotgun)-16 [1]; Holdout-14 [6]; Intelligence Analysis-15 [10]; Interrogation-13 [4]; Intimidation-14 [6]; Judo-16 [16]; Shadowing-15 [8]; Stealth-16 [8]; Streetwise-13 [4]; Tactics-13 [6]; Tracking-13 [4].

Languages: Chinese (Mandarin)-10 [1/2]; Indonesian (native)-12 [0]; Malay-11 [1]; Spanish-10 [1/2].



Augmented Reality

Part of the post-Pacific War reconstruction has focused on improving the communication infrastructure of the Alliance. While the TSA Web remains popular and robust, in 2088 TSA nations began implementing general augmented-reality systems, particularly in urban areas. The nature of the implementation has varied by nation. AR networks in Bangladesh, El Salvador, Madagascar, and Peru are highly democratic, open systems allowing everyone “write access” – many AR locations are covered in virtual commentary, debate, and graffiti. Conversely, augmented-reality systems in Bolivia, Colombia, Guatemala, Indonesia, and Malaysia are heavily doctrinal, and entries must be pre-approved by government censors. Augmented-reality networks in Nicaragua and Honduras are more or less standard, while AR is nonexistent in Laos and Vietnam.

Wearable computers are the most common method of interacting with AR data, but virtual interface implants are becoming increasingly popular in the wealthier TSA nations. Approximately 10% of the adult population of the TSA has a VII, primarily in Indonesia, Peru, and Madagascar. Most VIIs are straightforward copies of popular models in the Fifth Wave world.

Along with augmented reality, the use of v-tags has exploded over the last decade in the TSA member states. Surprisingly, most nanosocialist countries are *not* “p-tag nations” (see pp. 57-58), although Indonesia and Malaysia both have aggressive voluntary programs for p-tagging children. Madagascar uses p-tags on the political elites, allowing them to monitor each other. Of the Alliance states, only Guatemala and Burma currently require p-tags for all adults, and the Cambodian parliament is voting on whether to require the procedure in the spring of 2100. TSA observers believe that passage of the proposal is highly likely.

AIs

Many citizens of nanosocialist states dislike sentient AIs out of fear and ignorance; there are very few SAIs running around in public in poor nations. There is also ideological opposition, arising from the concept that

information belongs to all, and the personalization of information runs counter to its potential for wide distribution. This perspective, common in the more doctrinaire TSA elites, sees the recognition of SAI infomorphs as citizens as a political move to undercut nanosocialism and infosocialism on (ironically) humanitarian grounds. As long as SAIs are considered tools, they can be used, copied, altered, and discarded without violation of a being’s rights. Once they are considered “people,” they must be afforded the full rights of people.

Not all nanosocialists believe this, although those who disagree with official TSA positions do so carefully. Some follow the Porters concept that all who can should contribute and benefit, and argue that the inclusion of sentient infomorphs as citizens of the TSA would do much to promote its well-being. This perspective is especially strong among those who work in the Innovation Directorate – 50% of the SAIs in the TSA are at Innovation.

Power Sources

Prior to the Pacific War, the proximity of many TSA nations to each other led to attempts to centralize power-generation grids, relying on large-scale installations such as Helium-3 fusion plants, satellite power stations, and multi-acre solar arrays. This was a serious mistake; during the conflict the Chinese eviscerated the Alliance power network quickly and efficiently by destroying a few facilities. The Coordinating Committee vowed not to let history repeat.

The power networks being built across TSA states now are heavily distributed, with many small plants and very few major installations. As with other elements of the Alliance infrastructure, diversity and redundancy are seen as key features. While each country links to its TSA neighbors if they share borders, these links are for mutual support, not dependency. Solar arrays and fusion plants (when Helium-3 is available) have been supplemented, even replaced, by “micro-generation” systems, which often use older but still useful technologies. Vehicle-sized fuel cells powering buildings, gas-turbine engines powering neighborhoods, and even high-efficiency solar cells

are used as exterior building material. Member states also take advantage of regional resources where possible, such as geothermal energy in Central America and oceanic energy sources in Southeast Asia like tidal power around Burma.

Nanotechnology

For both practical and ideological reasons, nanotechnology – especially so-called “dry” nanotech – is the holy grail for the Transpacific Socialist Alliance. If nanotechnology is the transformative technology that it promises to be, those who do not have access to it will be left far behind those who do in every conceivable measure. The availability of current “wet” nanotech in the TSA comes nowhere close to that in the Fifth Wave world, but the Alliance is focusing a great deal of its research (and acquisition) resources on mastering the technology.

Nanoresearch facilities in the TSA are found in Indonesia, Bangladesh, and Peru. Nanomedicine and experimental treatments such as the Proteus Nanovirus (see p. TS165) are not generally available, but working versions of most known Fifth Wave nanotechnologies have been constructed, and the Coordinating Council is quietly discussing how best to make use of them.

Factions

MEXICO CITY/TEN: The body of Roberto Buzón was found last night in a hotel room in the capital's econstrucción district. A statement from the Mexico City Police Department indicates that Mr. Buzón died in his sleep. A coroner's report is pending.

Roberto Buzón was infamous in the 2070s as the fiery, charismatic Generalissimo Alfa of Peru, one of the four leaders who formed the Transpacific Socialist Alliance. Known for his lengthy speeches and affection for blonde women, Alfa was the “revolutionary warrior” of the foursome, and often fought against the more passive policies of his comrades. Although he had retired from the day-to-day leadership of Peru by 2083, his voice remained influential. Many considered him responsible for Peru's support of Thailand when China struck at the outset of the Pacific War, despite the misgivings of the Peruvian leader, Yolanda Leyes. When the war proved disastrous for Peru, Buzón was exiled to the Peruvian coastal town of Trujillo.

Little is known about his time in exile, although he spent nearly a decade in the village. He escaped to Mexico sometime in the late 2090s, and rumors of his presence in Mexico City first popped up in 2097. While the Mexican government publicly stated that they intended to eject him from the country, he was allowed to remain, living quietly until his death some time in the last 48 hours.

A statement released by the Transpacific Socialist Alliance read, in total, “We note the passing of a founding member of the Alliance. He is remembered for his service to the cause of the nanosocialist revolution.”

GUARDIANS AND HELOTS

For years, anti-TSA propaganda has claimed that the coalition has secret genetic engineering programs in place to create a race of enhanced leaders (the Guardians) who would be able to use pheromone control to manipulate a race of submissive followers (the Helots). Templates for these two designs appear in the *Fifth Wave* sourcebook (pp. FW117-118). Initially, Alliance Coordinators denied the existence of the Guardians and Helots.

In 2095, documents describing the TSA bioengineering programs, including the Guardian and Helot II designs, were published by TEN. TEN claimed that they were passed along by unnamed sources in the American government. According to these documents, in 2076 Peru started a crash program called *Después de Hombre* – “After Man” – designing a next-generation genetic upgrade that would give the Alliance an edge over its Fifth Wave rivals. In the years before the Pacific War, the Peruvian program created various upgrade and parahuman designs, including the rumored Guardian and Helot II types. In 2084, the program also independently developed a design identical to the Herakles model (p. FW116), called the Samson. The last design developed was the Salud type (see p. 121), intended to have optimal resistance to disease and environmental toxins. Because the *Después de Hombre* compound was destroyed during the war (China thought it was part of the Bioweapons Directorate), the test subjects and experimental data were wiped out.

The TSA flatly denied the documents' authenticity, although the *Diplomacy* Weltspiel site's commentary argued that the documents were an intentional leak from TSA Intelligence. Rumors persist that some of the upgraded children survived. If so, nothing is known of their current whereabouts or activities.

The TSA is highly factionalized. In the 24 years since its inception, it has weathered the loss a founding member in a global-scale war, continued brushfire wars along its borders, relentless propaganda, and covert operation attacks against its survival by all of the world's leading nations. How to respond is the crux of intense ongoing debate within the Alliance.

While the intermember conflicts are highly visible, and many have deep historical roots, the cross-national factional conflicts have a greater influence on the ability of the TSA to respond to crises. Each faction is able to bring supporters into the streets to rally for or against government policies, and each claims a seat of official power that prevents the others from moving decisively against it. Factional rivalries can be brutal; there have been nearly two-dozen assassinations of factional leaders and notable activists since the formation of the Alliance in 2074. In some cases, the factions themselves are split between those who favor central control and those who wish to expand citizen participation in the evolution of the TSA.

Ideologues

Many of the original revolutionaries leading the Alliance have a strong ideological bent. They're hard-liners, unwilling to compromise on issues of ideological purity. Cooperation with the corporatist world is inevitably a mistake in their view. While many tend toward authoritarianism, a substantial minority believe that the only successful revolutions come with full citizen support. Ideologues are in much of the national leadership, and the Directorate of Theory and Praxis is an important center of power.

Pragmatists

The Pragmatist faction is willing to do whatever is needed to keep the TSA going, even if that means compromising on principle. Many of the side-deals cut by the TSA (for web connections, Helium-3, or medical supplies) were carried out by Pragmatists. They are found throughout the External Intelligence Directorate, but are also in Innovation and Acquisitions. Most tend toward a democratic approach, especially those in Innovation, but a strong minority are happily authoritarian as needed. They're currently closely allied with the military.

Revolutionaries

Like the Ideologues, the Revolutionaries are hardliners; unlike the older faction, they are aggressive about the need to export nanosocialism to the corporatist world. Most Revolutionaries are younger citizens of the TSA; the older generation of revolutionaries was deemed responsible for the Pacific War and the faction being out of power for over a decade. The new generation claims to have learned the lessons of the past, but still brooks no dissent, especially any that suggests the TSA will not eventually lead a global revolution. They are found in Acquisitions, especially in recruiting, but are also common in Theory and Praxis and in External Intelligence.

RELATIONS WITH THE OUTSIDE WORLD

In a word, bad.

With Non-TSA Infosocialist/Nanosocialist Movements

Nanosocialist political movements are found in many developing nations. Although popular sentiment in the hyperdeveloped world is that these movements are largely directed and funded by the TSA, the nanosocialist groups deny this, claiming to have substantial popular support. Most nanosocialist parties are poorly organized, however, and have little chance of gaining political power. One exception is PANU, the Pan-African Nanosocialist Union, which has managed to unite the disparate infosocialist and nanosocialist parties across the African continent. Although it is not part of the official opposition in the South African Coalition assembly, in the most recent Coalition-wide election PANU managed to take 5% of the seats. PANU has called on the SAC to develop closer relations with the TSA.

There is little support for the militancy of the TSA in Europe, however, even though many Europeans have infosocialist or nanosocialist leanings. The European Information Socialist Party (EISP) is one of the oldest and most-respected Infosocialist movements in the world, and it has strongly opposed the behavior and policies of the Alliance from the outset. Their position is given further weight by the silent presence of Kyle Porters'



Military

The military, in both national forces and the Alliance-level Directorate, is seen as practical but power-focused in its politics. The TSA's loss in the Pacific War was brutal – if Europe hadn't stepped in, the Alliance would likely have been destroyed. The underlying philosophy of the current generation of military leaders is that this must never happen again. Outside of the states led by military-authoritarian regimes, the armed forces tend toward democratic approaches for practical reasons – it's critical to not have the people rising up in the midst of a war. The military is generally not a driver of policy, and tends to support whomever will improve military posture. It is currently allied with the Pragmatists.

Philosophers

A younger generation of nanosocialists see the ideology as an evolutionary process, not a rigid dogma. They are dedicated to the philosophy, but want to make it work in a changing world. While they disdain compromise for short-term gain, they are not as stubborn as the Ideologues. In factional conflicts, they are balancers and subtle politicians. Their primary approach is to look at the "big picture." They are a small but influential faction, primarily found in the Innovation Directorate.

biographer and friend, Caleb Metelits, who retired to Paris in the 2070s, despite a very public offer of a place of honor in any of the TSA's nations.

The European opposition to the TSA is both practical and philosophical. Kyle Porters theorized that a transition to a fully infosocialist society would happen only when certain conditions were met – a certain portion of labor being “knowledge work,” a prevalence of digital networks, and a concentration of intellectual properties into the hands of monopolists, triggering social resistance. None of the nanosocialist states in the TSA meet those conditions. Misha Leyden, the famed infosocialist senator from Flanders, argued that the TSA's existence actually works to *inhibit* true information socialism from arising, as it cannot bring about the revolution itself, yet galvanizes the corporatist world in opposition.

With the Other Great Powers

China remains the TSA's primary enemy. From supporting separatist uprisings to attempting to bring down the TSA Web with sophisticated digital viruses, China continues to press the Alliance at a level just short of open war. The TSA, in turn, devotes a disproportionate amount of its international efforts to operations against China, further antagonizing the hegemonic power. Only China's multiple fronts of conflict – cold war moves against the U.S. and E.U., struggles with its colony on Mars, and the ongoing process of modernizing its massive rural population – keep it from focusing its resources on the elimination of the TSA.

125 POINTS

TOMMY GUERRO

Born 2077. Age 23; 5'8", 132 pounds. Light tan skin, black hair, brown eyes.

Tommy Guerro is a handsome tired-looking young man. He lives in a small apartment in Lima, Peru, where he hires himself out as an assistant/driver for visitors. He's also one of the top-selling musicians in his native country, Mexico.

Three years ago, Tommy Guerro had a #1 nanocorrido in Mexico entitled *Mi Muerto*, and was regularly found at parties and nightclubs. *Corridos* are traditional Mexican ballads glorifying tragic deaths, usually of criminals; *nanocorridos* focus on data pirates and smugglers. Guerro was known for his songs with nanosocialist sympathies. He had a girlfriend, was rich, and seemingly could do no wrong. His only problem was a tendency to drink, although his Ishtar genome protected him from the worst of the alcoholism.

Late in 2097, Guerro discovered his girlfriend in bed with his manager. In a fit of drunken jealous rage, he smashed his girlfriend in the head with an InVid player, killing her. He was stunned and horrified by what he had done. His manager quickly assessed the situation, called in a few favors, and by the next morning, Tommy Guerro was on a plane to San Salvador.

For the last two years, Guerro has wandered the Central and South American nanosocialist countries. He avoids watching any news, and has yet to find out that killing his girlfriend and escaping to the TSA has made him an even bigger star. The manager convinced a few key reporters that the girlfriend was an American spy, and what could have been a sordid scandal became an act of ideological heroism. Given the guilt he still feels over his actions, it's likely that discovering this would push him further into an alcoholic haze.

Guerro ended up in Lima, Peru, where he takes on odd jobs to pay for food and drink. He's very personable when

sober and knows where all of the action is in town. He is more than willing to show visitors a good time, especially if they're willing to take him along. He has an old keyboard he keeps in his apartment, but he hasn't played music for an audience since he left Mexico.

Tommy Guerro is likely found by any casual (or seemingly casual) visitor to Lima. He has his own vehicle, knows his way around town, and is happy to accept a meager rate for taxi and guide service. Few people recognize him, and he usually tries to convince those who do that they're mistaken.

Despite the manager's spin on the murder, there is a bounty of \$100,000 for the return of Tommy Guerro to Mexico City.

ST 9 [0]; **DX** 11 [0]; **IQ** 10 [0]; **HT** 12 [10].

Speed 5.50, Move 5.

Dodge 5.

Advantages: Ishtar Upgrade [25]; Musical Ability +5 [5]; Reputation +4 (Musician and criminal; Mexican music fans, all the time) [6]; Strong Will +2 [8].

Disadvantages: Alcoholism [-15]; Guilt Complex [-5]; Jealousy [0] (Part of Ishtar template).

Quirks: Always wears old-style military camos; Personality change when drunk (Bad temper); Sarcastic; Vain. [-4]

Skills: Area Knowledge (Lima)-15 [10]; Bard-14 [6]; Carousing-14 [16]; Computer Operation-12 [4]; Computer Programming-9 [2]; Detect Lies-13 [10]; Driving-14 [16]; Fast-Talk-16 [14]; Musical Instrument-15 [4]; Performance-14 [6]; Scrounging-12 [4]; Sex Appeal-13 [2]; Singing-18 [1].

Languages: Spanish (native)-10 [0].

While China is the visible enemy, the United States is nearly as hostile. American opposition is largely ideological – there has never been a strong infosocialist movement in the U.S., and many of the massive transnational corporations that infosocialists rail against make their home in the United States. While America is unlikely to launch a full-scale war against the TSA, it spends a considerable sum both spying on the Alliance and countering its Acquisitions Directorate.

The European Union, is the great power least likely to seek a conflict with the TSA. While the E.U.'s political and legal opposition to the Alliances' activities is quite strong, there is less hostility toward the ideology itself. The EISP is an official part of the opposition coalition in the European Parliament, and has twice served as part of a ruling coalition. E.U. agents do actively work to counter the operations of the Acquisitions Directorate, however.

The Pacific Rim Alliance covers much of the same geographic territory as the TSA, and there is little love lost between the two great powers. Both sides have fired upon the other at different points, usually in disputes over territorial boundaries, refugees, or ocean resources. The PRA has a significant anti-war community in both Japan and New Zealand, however, and disputes with the TSA are resolved diplomatically.

Despite PANU's calls for closer ties, the South African Coalition's relationship with the TSA is carefully guarded. While no great enmity exists between the two great powers, neither is there any friendship. The SAC is wary of the Alliance's program of acquisition, and is aggressive in its attempts to defend the intellectual property of South African corporations. But the SAC has also quietly benefited from the TSA Web, as access to the uncontrolled content has been a useful stepping stone for some of the poorer members of the Coalition.

The TSA does not consider the Islamic Caliphate to be a significant source of either useful intellectual property or threats to the Alliance's security. They are wrong on both counts. Caliphate agricultural biotechnologies are some of the best in the world, but more critically, the Caliphate's memetic defense agency, Nuhá, believes that nanosocialism is the biggest long-term threat to Caliphate survival and acts accordingly. The Caliphate has nearly two-dozen agents operating in the TSA at the beginning of 2100, none of which Internal Intelligence has identified.

India is a special case, as nanosocialism is well-supported among the populace, yet a virulently anti-nanosocialist government is in power. Many suspect that if free elections were held,

India would choose to join the TSA. While this would vastly increase the Alliance's capabilities – overnight, the TSA would become a new hegemonic power, easily the fourth most powerful – the Coordinating Council is lukewarm to the idea. Both Peru and Indonesia would face substantially reduced influence in the Alliance; there are quiet rumors in External Intelligence that the Indonesian national intelligence service may be providing covert support to the Indian anti-nanosocialist faction.

It is likely that India's participation in the Alliance would disrupt the status quo in other ways. The Indian nanosocialist movement is heavily populist, but quite democratic, with a strong aversion to authoritarian regimes. The Indian nanosocialist party has castigated the TSA for allowing dictatorships such as Cambodia and Guatemala in its midst, and regularly calls for the "democratization of information."

One scenario appearing on several Weltspiel sites suggests that rather than India joining the TSA, the more democratic parts of the Alliance may split off and join with India in a *second* nanosocialist coalition. The scenario has the groups lining up as India-Bangladesh-Madagascar-Central America (with the Guatemalan dictatorship either overthrown or surrounded) versus Indonesia-Cambodia-Vietnam-South America. Malaysia is a wildcard – its authoritarian government would be under Indian pressure to democratize if it joined that coalition, but its historical competition with Indonesia would make it reluctant to stay with an Alliance even more dominated by its rival. Laos is widely considered too much of a burden for either side to want. As of January, 2100, the meta-Weltspiel site *Emergent World* put the likelihood of this scenario at 32%, in comparison to a 28% chance of India simply joining the TSA, and a 40% chance of India remaining entirely independent.



3

PRESENT SHOCK: AREAS IN TRANSITION

[BEGIN MONITOR PLAYBACK FILE 17/12/02099.20.32-34:]

UNDERCOVER OFFICER: "What happened, Jake?"

DAVIES, JACOB: "The cops busted in and started foaming the place. Stupid downlift girlfriend had p-tagged her kid last week and didn't tell us, so the monitors had been on us for days. I slammed the security door on her."

UNDERCOVER OFFICER: "Ouch."

DAVIES, JACOB: "I hope she likes meme rehab and recon."

UNDERCOVER OFFICER: "But you got out."

DAVIES, JACOB: "The cop dog started barking at us, telling us that we were in violation of international content-rights treaties, give up, come out with hands up and implants off, the usual."

UNDERCOVER OFFICER: "What were you mixing?"

DAVIES, JACOB: "Some stormchaser slink from up inside the Shenzen tornado last week with backmusic from the new Lords of the Belt tracks. Got the songs off of the TSA Web."

UNDERCOVER OFFICER: "Really? New songs any good?"

DAVIES, JACOB: "Not too bad, not their best. Anyway. I make one last edit – the ware's fast, and my client likes a finished product – then zap it to the webbox my client uses. It took longer than usual, so I guess the Nairobi cops were using some kind of jamming gear Farlane had to figure out a path through."

UNDERCOVER OFFICER: "Farlane?"

DAVIES, JACOB: "My AI. Say hi, Farlane."

AI: "Hello."

DAVIES, JACOB: "I managed to get out the window and onto the fire escape. I had my camo suit, U.S. milspec of about, oh, 50 years ago. I hoped that it was enough to hide for a few minutes at least. The Nairobi cops get a lot of help from Jo'burg, but they're still playing catch-up with their tech. These WTO jobs, though, they're usually well-equipped. I had just made it up to the roof when Farlane tells me I have new mail."

UNDERCOVER OFFICER: "You're joking."

DAVIES, JACOB: "It informs me that I've been officially charged with violation of the Duplication of Experience Act, blah blah blah. I filed it with the rest."

[END MONITOR PLAYBACK]

– Evidence transcript, **WTO vs. Davies**,
South African Coalition Jurisdiction

Sociologists in 2100 refer to nations successfully managing a shift from an older technological-economic base to a modern one as “transition” states. The degree of success varies; often this means simply not falling into civil war or economic ruin. For even the most stable of the transition countries, the sudden availability of advanced technology and resulting social and economic dislocations is jarring. Yet this does not mean failure – most transition nations appear to be on a path to development. Democratic leadership, a good relationship with the developed world, and cultural flexibility and adaptability are all key indicators that the transition will succeed.

FAST, CHEAP, AND OUT OF CONTROL

The process of moving from the Third Wave into the Fourth or even Fifth Wave can be traumatic. Culture evolves slower than technology, and the fruits of rapid technological transformation do not spread evenly. Nations going through a period of transition have old institutions and new systems side-by-side, each needing to adapt to the demands of the other. The results are difficult to control, yet many developing countries are keeping this complex interaction from devolving into chaos.

In the world of 2100, nations attempting to modernize face two major barriers. The first is the effective integration

of new technologies and ideas into existing social, political, and economic structures. Doing so too quickly can lead to chaos, too slowly can leave the society lagging ever further behind. The second is the adoption of controls over intellectual property common in the hyperdeveloped world. The rules are complex, and the implementation difficult, but they are the cornerstone of the global economy.

LIFE IN A PERPETUAL BETA TEST

Transition regions combine the accelerated pace of mid-to-late Third Wave culture with the weird and rapidly changing technologies of the Fourth and Fifth Wave world. It's not unusual to see a 60-year-old fuel cell automobile parked outside of a newly opened memesculpting salon, or a salary man juggling two incompatible wearables, the older one with data archives and easy connection to local networks and the newer one with an LAI and a global reach. Local companies offer services that combine technologies, adding off-the-shelf bio- or nano- components to older designs, sometimes with unforeseen consequences.

Life in the transition nations exposes the underbelly of Fifth Wave existence, peeling away the sleek gloss of comfort and power. The transition world has all of the churn and change of the Fifth Wave, but combines it with the speed and aggressiveness of the Third Wave. Transition society is less interested in identity than in power. The riches of modernity are becoming visible, and can be had with just a little more work.

There is an insatiable appetite for experimentation in the modernizing parts of the developing world, one often missing in the conservative patience of the hyperdeveloped states. Most of the citizens in the Third Wave world can't expect to live another 80, 100, or 300 years – anything they can get, they need to get now. The nations often compete for the attentions and gifts from the great-power patrons, and a technology, design, or meme that the Fifth Wave considers an obsolescent embarrassment can be of earthshaking value in the poorer regions of the world.

Yet this drive to compete, succeed, and transcend comes at a price. The stress of constant change can drive people insane. Social institutions rocked by the onslaught of Fifth Wave memes can decide to fight rather than adapt. And the very technologies seen as the engines of progress can fail, wrenching the society to a painful halt.

Stress

The varieties of new technologies and ideas rushing into a transition society can be overwhelming. A single 3D universal printer brought into a town can threaten local businesses. Uplifted animals, sentient machines, and genetically modified parahumans – all commonplace

NUMBER ONE SONGS FROM AROUND THE WORLD

Mexico City, Mexico: *The Ballad of Enrique Martín*, by Dia de los Muertos. A nanocorrido about the life of a recently executed data smuggler.

Kampala, Uganda: *Composition 13*, by Pika Pika Overdrive. A dance club favorite combining neotraditional drums with classic trancebilly hits.

Bangkok, Thailand: *Sympathy for Mick Jagger*, by KT Event. New French lyrics over old Bulgarian folk tunes by an entirely artificial Dutch band.

Baghdad, Iraq: *Whiplash*, composer unknown. An underground compilation taking samples from the Caliph's speeches and layering them with hard-edge-style rhythm tracks.

Managua, Nicaragua: *Biometal Lullaby*, by Lords of the Belt. As yet unreleased Lords song that recently appeared on the TSA Web Library. The band has filed a complaint with the WTO.

sights in the Fifth Wave cities – drastically change a baseline individual's sense of his place in the world, particularly when jobs are lost due to competition with technologically augmented workers. The vast array of new reproductive choices can make prospective parents doubt the timing, method, and wisdom of having children; within one year of the introduction of inexpensive genetic reproductive modifications, national birth rates drop by nearly 30%. Most overwhelming of all, the change doesn't stop. Techniques and machines that seemed nearly magical become archaic relics in a matter of months, or even weeks.

Approximately 40% of all adults in transition societies have some kind of stress-related medical problem. Alcoholism is the most common, but the influx of new designer drugs can often lead to abuse; current generation psychotropics may not cause physical dependency, but psychological addiction is widespread. Social Transition Stress Disorder (see box) is a frequent diagnosis, and simple insomnia, depression, and anxiety are nearly ubiquitous. Targeted psychopharmacology and memetic counseling provide effective treatment, but cases can go unnoticed for weeks or months. Rumors in developing nations claim that STSD is deliberately induced by the Fifth Wave world through memetic warfare.

Antistress medication is available around the world. In most developed nations, taking a dose of antianxiety or antidepressant is a typical response to unsettling events. In many transition nations, the use of antistress drugs is promoted by governments and leading businesses.

Resistance

In the Fifth Wave world, nearly every human institution – marriage, reproduction, religion, education – has been indelibly altered by the advent of new technologies. These changes affect transition states, too, but because they come in faster, they hit harder. The hyperdeveloped nations had years or decades in which to adapt to genetic engineering and machine intelligence – transition regions deal with it all at once, as well as the memes and philosophies that developed in the Fifth Wave world in response to these changes.

Yet not every transition society is willing to roll over and become a mirror of the hyperdeveloped world. Traditional religions remain quite strong throughout the developing world, and memetic movements that seek to control the spread of Fifth Wave technology, such as Preservationism and Bioliberation, are gaining converts. Transhumanism is far less common in the developing world, *especially* the transition states, than in the advanced nations. The common meme is simple Humanism – making humans and human society work before trying to move beyond.

SOCIAL TRANSITION STRESS DISORDER

Social Transition Stress Disorder, or STSD, first identified in 2052, is a chronic memetic illness affecting millions of people around the globe. Originally described as a traumatic reaction to interaction with robots – hence its other name, “cybershell-shock” – STSD is now recognized as encompassing a broad range of psychological effects arising from rapid, discontinuous social change. Known triggers for STSD include significant economic disruption or transitions, encounters (particularly unpleasant or threatening ones) with new technologies, and paradigm shifts resulting from assimilation of new memplexes. Symptoms vary, but usually manifest as depression or apathy; less frequently, paranoid anxiety or irrational hatreds (sometimes even violence) can result.

Incidence of STSD rises with the speed, degree, and surprise of a given change, and is typically cumulative – a succession of moderate cultural shocks can be much more damaging than a single large event. STSD is most common in societies undertaking a rapid transition from Third Wave (or pre-Third Wave) to Fourth Wave culture and technology, although cases also occur in advanced regions falling into rapid decline due to environmental or economic disasters. Treatment, typically a combination of memetic therapy and drugs, is well-understood and very effective. Unfortunately, many of those most in need of STSD treatment are those least able to afford it.

POPULAR ANTISTRESS DRUGS

Found all over the world, these medications are cheap and usually effective.

MyOpia. The best-selling antistress drug of 2099, MyOpia promotes a feeling of well-being and imperturbability similar to the Collected advantage that lasts for 48 hours. \$5 for 10 doses.

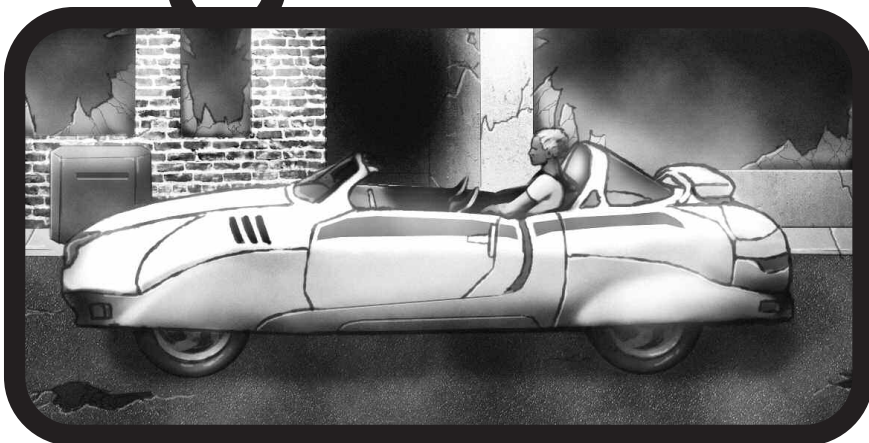
Pacifica. Used primarily as a calming agent in periods of stress or fear, Pacifica gives a +2 on all Fright Check rolls for a four-hour period. It is extremely popular among soldiers in combat zones. \$20 for 10 doses.

Thalus. No longer officially on the market, Thalut – which gained the nickname “Soma” – has long-term side-effects: while it grants the Collected advantage for 12 hours, it has the cumulative effect of -1 to all Will rolls for every 10 pills taken, persisting for one to six weeks after use stops. It is still found in the developing world, often sold under different names. \$5 for 100 doses.

Failure

Sometimes the transition stalls. Promising technologies fail, and public support for more change dries up. Algeria was once seen as the model for nations moving from poverty and unrest into modernized stability. With help from the E.U., the newly democratic Algerian government brought the bulk of the country into a high-Third-Wave existence by the 2050s, and gave a public timeline for introducing advanced bioengineering that promised universal health treatments and reproductive upgrades by 2075. In the late 2060s, the first generation of genetic upgrades hit adulthood, and promptly started experiencing side effects from their treatments. The genome design the government labs had used, the Germline Improvement Modification (the “pre-Alpha” mod), was faulty (see p. 120).

The public mood quickly turned against the bioengineering program, and thousands of parents who had gone through with the upgrades sued the Algerian government and the European Union. All human genetic-engineering efforts ceased. In 2100, Algeria remains a stable Third Wave democracy, but one that is extraordinarily resistant to the introduction of new biotechnologies.



and translation systems to let cutting-edge equipment coexist with less advanced gear.

Mature Technologies

Developing nations are fertile markets for technologies that have been superseded by newer advances in the Fifth Wave world. Biomedical treatments, AR systems, cybershells, even near-sentient infomorphs can outlive their usefulness in the hyperdeveloped states and still be of great value in the developing world. Entrepreneurs known as tech brokers make good money finding buyers and sellers for barely obsolete devices. As far as the cutting-edge world is concerned, these systems are woefully out of date; to the developing-nation customer, these systems are great advances. Customers know that they’re not getting the latest, but they also aren’t paying anywhere near full price.

One problem for many transition regions is the mismatch between supply of and demand for these updated systems. Companies importing Fourth/Fifth Wave devices into transition markets must be aware of the speed of “product churn” – demand for a given technology can peak and collapse with alarming speed. A distributor can go from not being able to keep up with demand to not being able to dump stock fast enough in a matter of weeks. This does provide further opportunities for enterprising tech brokers, however, both in the rapid import of high-demand products and in the arbitrage of buying overstock from one part of the world to be sold quickly elsewhere.

Rather than selling product itself, the Fifth Wave developer of a given technological system may instead sell licenses to local manufacturers. Very often the licensed designs are the older models no longer on the hyperdeveloped world’s markets. The result, produced locally, is then a “homegrown” product – important in many areas concerned about the local economy – and the rights-holder continues to profit from an otherwise-obsolete design.

Rules for older designs can be found on pp. 127-128.

Overloaded Systems

Supply and demand problems affect communication networks too. As increasing numbers of citizens move

Memetic Shock (n): Culture Shock meets Future Shock, with a twist of Paradigm Shift.

– Transhuman Devil’s Dictionary, 2097

INTERFERING WAVES

Most developing societies are eager to become part of the global technological and economic system, and become happy consumers of the new devices and ideas flooding across the border. The streets of a typical transition city are filled with a mix of old and new technologies existing side-by-side – vendors sell old-style digital videos alongside the latest sleekies, and dilapidated methanol-electric hybrid automobiles compete for parking with the latest hydrogen-burning aircars. Discontinued models and previous-generation devices are found at substantial discounts. There are also thriving markets in adapter

to more-advanced networked technologies (such as networked infomorphs or teleoperations gear), communication and support systems can overload, resulting in dropped signals, network “lag,” and temporary outages. While these effects are often transient, they occasionally persist for minutes or even hours. Many transition areas have local entrepreneurs (usually known as *net-wallahs*) who can set up quick-and-dirty alternative communication networks to get around the congestion. Network supply problems don’t just affect Third Wave gear; any outside equipment brought into a transition area suffers the same outage and congestion problems unless it operates on a separate network.

Dead Ends

The transition nations, particularly those with a substantial local industrial base, are often the home to technological pathways abandoned in the hyperdeveloped world. In some cases, this is due to particular local issues, such as with the continued use of refined petroleum for fuel in Iran and the Islamic Caliphate states. In other cases, the use of dead-end systems comes from the ability to purchase the technology at greatly reduced prices, such as Mongolia’s widespread use of videophones, which never managed to catch on globally and were eventually superseded by AR and VII systems. Genetic modifications unpopular in the developed world are also found in some developing states, for similar reasons.

There is also the “wrong protocol” problem, where a networked system (such as augmented-reality or voice-communications) installed in the past can’t communicate with current systems due to incompatibility. There are few elegant solutions. The fastest fix is to rip out the old network and install a new one, and make new gear available at low cost. A variation on this situation comes when multiple transnational corporations are seeking to dominate a local market (see *Corporate Competition*, p. 64). Aggressive firms often tune their systems to shut out competitors,

PANOPTICON SOCIETIES

There are four broad approaches to the use of p-tags in a generally monitored society.

Transparency: Everyone has access to the p-tag information of everyone else; citizens can watch the government and each other. No state currently uses total transparency, although there are a small number of Isolate experiments with this form of society.

Safety First: Everyone has limited access to p-tag information. A given individual typically has access only to family members’ data. Most monitoring is done by NAIs to watch for crimes.

Smart Business: P-tag information is accessible only by commercial entities. In some cases, these are private corporations providing monitoring services under contract; in other cases, monitoring is done by employers.

Big Brother: Only the government has access to p-tag information; monitoring is done by law enforcement to maintain public order, safety, and compliance.

In some cases, the kind of monitoring varies based on social or economic class. In Madagascar, for example, p-tag data for the political elite is transparent for other elites, allowing them to watch each other for signs of treachery, whereas p-tags in regular citizens are handled with a nod to safety, with policies against the abuse of p-tag information. Anyone with limited rights – criminals, bioroids, SAIs – is subject to full “Big Brother” monitoring, with p-tag information a matter of public record.

forcing consumers to choose one system over another. Whichever system has more users tends to win out, regardless of quality. In the meantime, users are stuck trying to translate between mutually incompatible systems.

Kudzu Technologies

While much of the technology from the hyperdeveloped world is brought in intentionally, some systems are not. These so-called “kudzu” technologies invade the local infrastructure, choking networks, overloading systems, and overwhelming defenses. Adviruses are the classic example; code designed to display an advertisement in an AR system or virtual interface, they’re globally unpopular but extraordinarily common. Nearly every wearer of AR and VII systems employs some kind of antiviral software to prevent advirus infection; as a result, evolving in the Darwinian environment of the Fifth Wave communication and information networks, adviruses have to be flexible and robust to survive. The older technologies of the transition nations are often no match for the advirus’ ability to hide, reproduce, and subvert systems.

Less common, but still troubling, are Gypsy Spirits (see p. FW33). These nomadic sentient infomorphs can damage systems by deleting existing software, and are usually considered illegal rogues. They are frequently found

in transition-region computer networks, as these systems are advanced enough to support their existence without being sophisticated enough to recognize and defend against them.

P-Tag Nations

As Third Wave technologies disseminate to the masses, one of the first systems usually to gain wide use is the virtual tag, or *v-tag*. Allowing the ready identification and tracking of any tagged item, v-tags become ubiquitous parts of a transition state’s surroundings. Many places also adopt the v-tag as a means to track individuals.



Virtual tags designed specifically to track people are known as *p-tags*.

The decision to tag citizens is a controversial one, and a number of countries ban the use of *p-tags* entirely (most notably in Europe and the South African Coalition), although many recognize that virtual interface implants can serve the same function. Other nations,

however, came to believe that *p-tags* are socially useful for reasons of public safety, transparency, or political control. A slight majority of nations on Earth use *p-tags* on adults to some degree, usually for monitoring prisoners; more than two-thirds regularly use them in children.

P-tags are implanted, most often in the shoulder but sometimes in the back of the neck. They are designed to emit a weak beacon containing, at minimum, a unique code identifying the wearer. Some *p-tags* provide more data, including the person's current health status. *P-tags* are designed to be detectable with the appropriate equipment at ranges from 100 feet to one mile, depending upon the model. *P-tag* signals are not difficult to jam, although a *p-tag* suddenly dropping out of view usually raises suspicions. Unauthorized removal of a tag causes it to send out a higher-strength alarm; removal of a *p-tag* is a simple first-aid task, once the *p-tag* itself is located.

The most common use of *p-tags* is for the monitoring of children. Implanted as toddlers, kids wearing *p-tags* can be tracked easily by parents or crèche-keepers. In relatively free societies, only the parents or legal guardians have access to the location information, although law-enforcement agencies can request or demand access as required. In societies where *p-tagging* of children is universal, there are abundant warnings when leaving a monitored area, and many parents refuse to allow their children to travel outside of "safe" areas. Removal of the *p-tag* is a rite of passage in these societies, indicating a step into adulthood, and rebellious teens may have their *p-tags* cut out by friends.

Another wide use of *p-tags* is for the monitoring of high-profile people, from prisoners to national politicians – anyone the state needs to keep track of for their own or the public's safety. In these cases, the implant are deeper in the wearer's body, impossible to remove without surgery. These signals are also usually heavily encrypted in order to prevent unauthorized monitoring of the wearer.

A minority of nations require *p-tags* for all citizens – notably Panama, Kazakstan, and Thailand. The usual argument for this is the need to fight crime, although in many cases a broader justification of "public order" is used to watch dissidents. Since visual identification alone can be mistaken, a unique encrypted ID tracked to the location of the crime is far less likely to be wrong. *P-tagged* societies often combine cameras and AIs to watch public behavior, watching for suspicious activity. Any person seen by the camera without a correlated *p-tag* is considered

suspicious, at best, and subject to immediate arrest in some countries. Tracking nodes are distributed as widely as possible to prevent anyone from going unmonitored.

Countries that rely on general *p-tagging* require all visitors to be temporarily tagged, usually on the back of the hand. This prevents the guest from being stopped by police for not showing up on *p-tag* monitors, and can trace the wearer if he is kidnapped. These temporary implants are not as valuable in that regard as a VII or implanted communication system, however, as kidnappers can easily cut out the temporary *p-tag*.

TO HAVE AND HAVE NOT

YAOUNDE/TEN: The government of Cameroon filed a complaint with the World Trade Organization today, alleging that the Shanghai Interactive corporation, makers of the popular MRSiv augmented-reality systems, failed to adequately protect users from infection by the "Lucky Horse" advirus. The advirus, which has been a sporadic problem since it first appeared in China in September of 2099, specifically targets the MRSiv system. In December of 2099, Shanghai Interactive released an update to the MRSiv firmware that prevents further infections.

The spokesavatar for Shanghai Interactive noted that the contract the government of Cameroon signed with the corporation in October of 2098, in which the developing nation purchased over 5,000,000 units of the MRSiv hardware at substantially reduced rates, explicitly states that the MRSiv model, which has been replaced by the MRSiv2 augmented-reality system, would not be eligible for free upgrades.

"The terms of the license are very clear. In order to receive the firmware upgrade, they will need to purchase replacement MRSiv2 units," stated the spokesavatar.

When asked for comment, the WTO told TEN that they will be looking into the matter, but warned the Cameroon government not to use pirated copies of the firmware update. "We would consider the use of illegal copies of rights-managed software a very grave offense, and will be paying close attention to Yaoundé's behavior in this matter."

Freedom and Control

One of the ongoing issues of the 21st century was the tension between owners of intellectual properties and those who use those properties without compensation. Unlike physical goods, digital properties are not lost when given to others. The original and the copy are identical, as are subsequent copies. This perfect replicability threatened the economic well-being of corporations that relied on intellectual property – and as more physical goods and commercial services took on an "information" character, an increasing portion of the global economy faced disaster if intellectual-property rights were not enforced.

By 2015, the advanced industrial nations had all moved to firmly support content-owners' rights, and had outlawed technologies that facilitated unrestricted duplication of intellectual property. The uproar among the technological elite was deafening, as these regulations made many general-purpose computers illegal, but died down over time as it became clear that consumers cared less about having tools to alter or create new content than about continued cheap access to entertainment, software, and the like. Over the course of the 21st century, the degree of control exerted by the intellectual-property-rights holders has varied, peaking in the 2030s (acting as a catalyst for Kyle Porters' exploration of information socialism) and again in the 2080s.

EXAMPLES OF CONTENT-RIGHTS MANAGEMENT

Digital-Rights Management: Primarily used to control duplication, distribution, and use of entertainment media. When purchased, the content (song, InVid, slinkie, etc.) is coded to only play on a particular piece of hardware. If that content is copied to another system, it will not play or will require the new user to also purchase the material. Most content only allows single-play rights.

Experience-Rights Management: Primarily used to control the level of detail a person receives through his augmented-reality, virtual-interface, or slinkie hardware. Most AR and VII users keep their ERM at a minimal setting, then pay for additional material when they desire it.

Genetic-Rights Management: One of the more controversial types of CRM, genetic-rights-management systems control the duplication of registered-genome designs. Genetic upgrades and parahumans are sterile unless they, or their parents, purchased a reproduction license from the owners of their genome design; this is routine in wealthy societies, but less common in poorer regions. See *Disadvantages*, p. 125.

Managing Rights

In the hyperdeveloped world in 2100, this is all ancient history. Rights-management code preventing unauthorized duplication, distribution, or content use is built into every piece of technology available on the open market. Commercially available AIs are inherently unable to duplicate themselves or assist in the illegal duplication of other content. Reading an essay, watching an InVid, or experiencing a slinkie costs a small fee; these

micro-payments are handled invisibly, behind the scenes, and most advanced-nation consumers pay them little mind. In fact, given the overall wealth of the hyperdeveloped world, the minor fees associated with licensed material are so inconsequential that most consumers treat the material as if it were free, passing along (paid for) copies to friends, making (licensed) edits for their own amusement, and the like.

It is common that some content has little or no real protection built in at all, relying upon the century-old culture of respect for intellectual property and fear of prosecution to prevent unauthorized duplication, distribution, or use. The World Trade Organization, which over the course of the 21st century began to focus exclusively on issues of intellectual property, is quite aggressive in its pursuit of those who violate content owners' rights. Penalties can be stiff and, depending upon the jurisdiction, often include memetic rehabilitation and reconditioning.

Rights in the Developing World

While consumers in the Fifth Wave world are completely accustomed to paying for all content, citizen in the transition nations are less sanguine. In most cases, the pre-transition society had a fairly limited copyright and content-control regime, and the people are unused to the notion of paying for every passing consumption of intellectual property. Of greater concern is the cost – fees that seem insignificant to a New Yorker or Parisian are far more noticeable to a citizen of Cairo or Havana. Some corporations adapt their fee structures to local conditions, but many do not, relying on an overall increase in local wealth to eventually make the content affordable.

As augmented-reality and virtual-interface equipment becomes more widespread, a type of content control called experience-rights management often comes into play. With AR and VIIs, the world as seen by an individual using the equipment can vary radically from what an unaugmented person would see and feel. Looking at a shop can reveal data about current products or comments by other customers, advertisements can become animated and interactive, and the world itself feels richer as it takes on a layer of information and communication that blends seamlessly with the surroundings. With experience-rights management, what a person can see and interact with using the systems varies by how much he spends. Two different people can have radically different experiences of the same event by virtue of how much they've paid. In addition, sharing the richer, more-detailed experience with someone else who may have paid for fewer rights is a violation of the law. While this notion is hardly controversial for most citizens of the Fifth Wave world, many people in transition nations find the concept troubling.

CONTENT RIGHTS AND THE WTO

While the World Trade Organization's influence over intellectual-property policy appears draconian, few people in the developed world worry much about it. Use fees for most content remain fairly low, and AI assistants handle the vast majority of transactions. For a Fourth or Fifth Wave consumer of music, InVids, or even 3D-printer designs, incremental use and duplication costs are close to inconsequential, and are only noticed when they are unusually high. The fees – typically ranging from \$1 to \$50 per viewing/use – are more onerous for citizens in poorer areas.

Very few pieces of digital content are purchased physically. The vast majority of songs, programs, and the like are downloaded. Transactions are quick, but almost always involve identifying the specific device and creating a unique key based on a hash of the device's and software's identity codes. The user purchases the right to play or use the content on that device only. Any attempt to play or use the content on another machine results in another transaction charge, this one applied to the owner of the other device. From the content owner's perspective, a copy passed along is just another sale. Generally speaking, if the digital file is available for general purchase, copies can be made in this way. Many pieces of content, especially entertainment content, are tagged Single Use Only, meaning that payment is required any time the material is played or used.

Some digital files are marked with a No Copy flag, which all commercially available devices will honor. These digital files are only usable on the originally authorized system. Devices that have been hacked to ignore CRM can copy and use flagged content, and it is possible to alter the digital file itself to remove the protection code. (See *Hackware and Hot Mods*, p. 129.) Individuals often mark private data files with a No Copy flag.

The initial use of a piece of commercial content requires a CRM check, which confirms the identity of the player and modifies the content data such that it is authorized for that device. The CRM check requires access to the web, but does *not* require a connection to the main WTO database. The WTO has contracted a large variety of content-rights brokers to provide CRM-check services. These brokers take a small cut of the initial payment for the content. This initial CRM check takes a second or less in most locations on Earth and established space colonies. Single-Use-Only-tagged items carry out this CRM check every time. Deep-space users are able to get a group license for the ship or station, allowing copies to be made without added CRM checks.

Programmers, musicians, and others who wish to make their own material available can register easily with the WTO. In fact, most commercially available content-creation tools have registration routines built right in, so that the author doesn't even have to worry about it. Fees for registration are minimal for individuals, usually only around \$30, and scale up depending upon how many pieces of content the author has registered. Content creators can also mark their works as public domain – if they do, no CRM checks are required. Public-domain works may be registered for free, and doing so prevents others from claiming ownership of the content.

TECHNOLOGY IMPORTS AND EXPORTS

While a sustained crackdown on intellectual-property pirates is usually a condition for entry into trade arrangements with the hyperdeveloped world, copies of many new hardware and software designs, recent genemod codes, and CRM-cracked duplicates of popular InVids and slinkies, are still found with a bit of effort. The official policy of the United States is that local pirates are usually a front for a TSA operation, and that foreign governments should provide all possible cooperation with U.S. law-enforcement authorities. Anti-piracy raids advised by FBI agents have become common in transition states seeking to curry favor with the United States. China has a similar policy, but the Chinese Ministry of Public Security uses covert infiltration more often than its American counterpart. The European Union is less inclined to link all piracy to the TSA, but still requires its trading partners to adhere strictly to intellectual-property controls. In general, Europe tends to pay closer attention to biotechnological piracy than to entertainment and software piracy.

Control of Technology Exports

Trade in high technology is fairly open with transition states. In general, if a product or device is legally available to the general public, it can be legally exported. While local authorities may have restriction on some types of technology, such as pharm animals or implants, transition regions generally adopt the technology legality classes of their patrons. Weapons, nanofabricating systems, and fully sapient AIs are generally export restricted.

Just because a product is legal to export does not mean it will be made available, however. Technologies are not necessarily for sale in all markets around the world at the same time. Manufacturers may find that the current infrastructure would not support new systems, and does not wish to make an

added investment in the transition region. Local governments may restrict the sale of particular products because of agreements with other providers or concerns about the economic or political impact. Yet demand can be global, even if supplies aren't, and clever entrepreneurs find ways to satisfy the market.

**The street finds its own
uses for things.
– William Gibson, 1984**

Gray Markets

It's not unusual for the price of a given imported item to vary widely in different markets around the world, for reasons of import duties, trade regulations, or simple competitive pressures. These price differentials lead to gray markets, the borderline-legal sale of products from foreign suppliers. Gray markets show up where it is easy to move tech from a low-cost nation to a high-cost nation and sell below local prices. For example, the popular MRsiv augmented-reality gear, from Shanghai Interactive, is twice as expensive in Algeria as it is in New Guinea, as the Australian AR-company Walkabout is aggressively pursuing the New Guinea market. But cases of MRsiv units purchased in Port Moresby show up in Algiers; even with the cost of shipping and customs fees, the New Guinea models run 75% of the local price and still make a profit for the importer.

Gray markets also emerge in situations where a given product is legal to own but simply unavailable locally through normal suppliers. This often happens when a manufacturer decides that the support costs exceed the marginal profits, and pulls the product. Demand still exists, even if supplies have to come from somewhere else in the world and at higher prices. Tech brokers are often the middlemen for such transactions. It's also not unknown for a producer to pull out of a given area but continue to sell through the gray market, thereby reducing costs and keeping prices up.

Knock-Offs

When demand is high but supplies are low – or overpriced – there is an opportunity for savvy local producers to grab the market. Knock-offs, the unauthorized duplicates of popular products, are designed to be just different enough from the

original to avoid WTO disputes. The name, color scheme, or physical appearance are reminiscent of the original product, but key elements (computing speed, interface, type of fabric, etc.) are changed – and the price is significantly lower.

The quality of a knock-off can vary dramatically; some are functional duplicates, others little more than junk. Most knock-off producers are careful to obscure the source of the item, largely to avoid harassment from the original manufacturer. A handful of companies are known for making high-quality legal knock-offs, using advanced software that analyzes a product design and produces an item with similar functionality but falling within the letter of the law. If given an original, these firms are usually able to produce a legal knock-off sample in less than 24 hours. The cost of making a single sample is usually roughly identical to the original's price, although subsequent copies will run about 50% less.

Knock-Off AND GRAY MARKET COMPANIES

Several corporations based in the developing world are globally known for their ability to provide inexpensive supplies of high-demand products, either through technology arbitrage or producing functionally similar items. These items are usually found only in less-developed countries, although they occasionally make their way into the hyperdeveloped world.

Benford Analysis Group (BAG): This serious-sounding name masks one of the biggest legal knock-off companies around. Based in Belize, it uses top-of-the-line software and robofacts to produce borderline-legal duplicates of popular products. The WTO has had BAG on its watch list for the last seven years, but has never found sufficient evidence to file lawsuits. BAG sales agents work in nearly every transition country.

Tipping Point: A virtual organization of independent tech brokers, Tipping Point has one of the largest corporate contact networks in the world. Tipping Point partners pay an annual membership fee of \$5,000, but gain access to the organization's accumulated information, more than making up for the cost. A tech broker character who chooses to be a Tipping Point partner has a Patron (Reasonably powerful group, 12 or less) [30].

Xiao-fang Industries: Originally based in Kowloon, this knock-off firm was investigated in 2090 by the Chinese government firm for alleged TSA sympathies. Rather than stay and fight, the company's owner, Xiao-fang Li, moved operations to the Philippines. Xiao-fang Industries is the main global competitor to Benford Analysis Group, and specializes in getting product to market faster and at lower cost than any other company. Even if quality sometimes suffers as a result, Xiao-fang is usually able to get legal knock-offs to resellers anywhere in the world within 72 hours of the first scan of the original item.

Piracy

Copyright Violation

Is the Sincerest Form of Flattery.

– Posted in an anonymous chat board
on the TSA Web

While knock-offs and gray-market suppliers are careful to observe content rights, pirates have no concern about such niceties. Content pirates are in the business of directly copying licensed material for profit. This is widely considered morally wrong, almost universally illegal, and very, very popular.

The WTO's definition of piracy includes any unauthorized duplication, distribution, or use of licensed material. Engaging in this practice isn't as simple as it was in decades past; many content-managed products simply do not function for anyone other than the licensee, and standard consumer entertainment or information technology no longer allows for casual copying. Piracy usually requires some means of getting around CRM protections. Many CRM-hacking tools are available on the TSA Web, although possession of those tools is a felony in most nations. Software and hardware modifications intended to defeat CRM controls are not always reliable, and can actually damage systems and data (see *Hot Mods*, p. 129).

Despite the challenges, piracy is epidemic, as pirated material is very popular. In some cases, it's more popular than legal copies, even at the same price – many consumers in the developing world like to think they're taking money out of the hands of Fifth Wave transnational corporations. For this reason, over 20% of the pirated material for sale in developing states is actually *legally* copied and produced, but repackaged to appear pirated.

Smuggling

The heyday of smuggling has largely drawn to a close in the Fifth Wave world. The legalization of most forms of drugs over the course of the early 21st century eliminated the vast majority of smuggling into developed states. The advent of 3D printers and robofacts has made it far more practical to send data instead of physical objects. As a result, data smuggling has now become much more common than the illegal movement of material goods.

Tighter controls on drugs and other locally prohibited materials, coupled with limited availability of minifacs, keep smuggling alive in the developing world, however. Neuro-agents, weapons, minifacs, and advanced computer systems are regularly moved illegally from the hyperdeveloped world into poorer areas. Satellite monitoring, v-tags, and AI customs agents help considerably, but Interpol estimates that nearly \$65 billion worth of goods are smuggled across borders every year, worldwide.

The largest single customer for illegal imports is the Acquisitions Directorate of the Transpacific Socialist Alliance. The TSA Acquisitions agents routinely pay top dollar for rare or difficult-to-acquire items. The Alliance isn't the only consumer, however. In general, the biggest customers for smugglers are governments in the developing world, which routinely seek items that can tip a regional balance of power. States without close relationships with great-power patrons often do not have access to cutting-edge technologies, and pay considerable sums for modern systems. Such hard-to-get smuggled goods can be sold for five to 10 times the standard price, the substantial profit reflecting the danger to the smuggler.

PENALTIES FOR PIRACY

The WTO does not directly control how intellectual-property laws are enforced, but they provide detailed guidelines for governments. The following suggested penalties are typical for most non-TSA nations:

First Offense: A fine equivalent to 10% of the monthly income of the criminal and his registered partners/spouse(s).

Second Offense: Memetic rehabilitation/counseling and a fine equivalent to 10% of the annual income of the criminal and his registered partners/spouse(s).

Third Offense: Memetic rehabilitation/counseling, imprisonment of one to ten years, and a fine equivalent to 10% of the annual income of the criminal and his registered partners/spouse(s).

In most jurisdictions, "casual" pirates – those who make or use illegal copies for personal use – are given a warning but no fine on a first offense. Piracy of intellectual property for purposes of resale is usually treated as a third offense and given the maximum jail sentence.

Stealth Testing and Distribution

Very occasionally, transition regions can have access to technologies *before* they're introduced in the hyperdeveloped world. Corporations need to test new products, and even the best simulation systems can't always account for the complexity of how people will make use of a new device. Furthermore, mature technology markets are very competitive, and customers in the hyperdeveloped world are extremely sensitive to poorly tested products. One buggy release can destroy a firm's reputation.

Many Fourth and Fifth Wave companies realize that citizens of mid-late Third Wave societies are far more tolerant of imperfections. The accelerated markets in many of these cultures means that having access to products

or services that are new can provide a distinct competitive advantage over users of less cutting-edge systems. Customers in the hyperdeveloped world are less likely to pay attention to occasional reports of technological problems in the transition regions, letting firms try out experimental designs with real users without running the risk of damaging the corporate image.

Fourth and Fifth Wave firms doing beta tests in transition areas often look for people who will use the new systems in surprising and challenging ways. The goal of the tests is to discover hidden flaws or features that combine well with existing equipment. Some corporations focus exclusively on wealthy businessmen as testers; others prefer more rugged environments, and look the other way if the gear is used for not-entirely-legal ends. In every case, the testers are required to sign NDAs (Non-Disclosure Agreements), with stiff penalties for violation. Once a test has run its course, and the producer has settled on a new design (or scrapped it), the devices tested are much harder to get. Some corporations require the return of test systems; others simply cut off support.

There is a thriving black market for beta-test gear. Competitors, the TSA, even government intelligence services offer substantial rewards for test systems. Depending upon the type of equipment and the range of features, the black-market value of beta devices can range from three to 10 times the cost of a similar current-generation version. Beta-test hardware is typically given unique identifiers, often woven into the components at a molecular level, so that they can be traced back to the registered tester. Theft of test systems is an ever-present concern; many corporations outfit beta-test gear with biometric devices that fry the components of the system if someone other than the registered tester attempts to use it.

RELATIONS WITH THE FIFTH WAVE WORLD

The return of the global middle class in the middle of the century could be seen most conspicuously in the rapid economic and technological advancement of many nations previously thought of as "Third World." Yet while the countries of the developing world evolved into information societies, the "First World" had long since moved on, integrating biotechnology (and now, increasingly, nanotechnology) into its social and cultural models. Developing countries that had struggled valiantly to

catch up with the developed world once again found themselves at the base of an even higher cliff. Some saw the barrier as insurmountable, while others started climbing anew.

— Caleb Metelits,

The People's History of the Future, 2067

Relations between the hyperdeveloped and developing nations in 2100 are neither as dismal as many had feared, nor as cooperative as many had hoped. Changes in the use of energy and raw materials allowed advanced states to wean themselves from dependence upon the resources of the developing world. While this led to less-aggressive foreign policies, it also meant that the developing world lost its one form of power over the advanced industrial nations.

By the third decade of the 21st century, the developed world was tempted to simply stop paying attention to the poorer nations. The problems seemed intractable, compounded by societies that apparently did not want to stop killing their neighbors or themselves. The advanced industrial countries were looking to the future, to developing the solar system and taking full advantage of emerging sciences. There was little interest in rehashing the same territorial, ethnic, and religious struggles that had been fought and re-fought for the last century.

Yet for the most part, advanced states resisted the urge to withdraw. Aid became a priority, and many of the poorer nations were helped by technological and economic assistance from the U.S., Europe, and China. Moreover, new generations of leaders had arisen, no longer tied to post-colonial philosophies. Many developing states started to think that for the first time they might have a chance.

As a handful of nations took on the roles of "great powers," weaker societies sought patrons for protection and continued economic growth. This pattern continues to the present, with the great powers maneuvering for political advantage while their client states jockey for the best economic position. Great-power patronage does not come without a price, however; each year, the dominant states and alliances interfere more deeply in the policies and agendas of their weaker clients. Many in the developing world see this as uncomfortably reminiscent of the colonial days of two centuries past.

BUSINESS

In 2100, the developing and hyperdeveloped parts of the world remain closely bound. The increasingly wealthy developing world is an expanding market for advanced transnational firms, as stable Third Wave states consume an ever-growing portion of the technologies and ideas from the Fifth Wave producers. Despite the presence of pirated goods and cross-border smuggling, the vast majority of economic transactions between the Third Wave and the Fifth Wave worlds are legal and mutually beneficial.

Transnational Corporations

“Always remember: You are not a people. You are not a nation. You are a market.”

– Rodney Phelps, CEO of American Pharmatek, in a telepresence speech to the parliament of Uganda after signing an agreement to invest \$25 billion in the struggling country. Phelps denied that he said this, claiming that meme-hackers had manipulated the datastream, but the uproar was sufficient to have Uganda reject the investment

By 2100, many transnational corporations – firms that set up shop and open subsidiaries in multiple countries – have moved into space. This doesn't mean that they've lost interest in Earth; with the majority of the solar system's population, and the richest consumers, Earth is likely to remain the best market for transnational companies for years to come. Contrary to popular fiction, most transnationals are fairly good global citizens. They are rich and powerful but they are focused on the bottom line. Controlling governments, ruining environments, and hiring private armies are usually not profitable. Most firms would much rather have a market of eager consumers than servile laborers. Despite the rhetoric from infosocialist parties, corporations are not evil, in the same way that sharks are not evil.

There are exceptions. In 2094, MetaCom A.G. became synonymous with callous rapaciousness when it bought the most advanced biotech company in Mali, shut down its soil-rejuvenation and crop-improvement programs, and used its research department to pursue development of a species of lawn grass better able to withstand temperature spikes. When marketing studies came back indicating that homeowners in Europe and the U.S. were tending not to plant lawns, MetaCom abandoned the project, sold the research equipment to tech brokers, and shut down the biotech operation. MetaCom refuses to give the results of the soil and crop work, claiming that these are valuable assets, but it has yet to decide on an appropriate price. Meanwhile, the Sahara continues to spread south into Mali's agricultural heartland.

Corporate Competition

Such single-corporation domination is rare. More often, multiple firms explore promising new markets, each looking for an opportunity for new profits. The Fifth Wave economies are saturated, and it's difficult for established firms to generate growth. Emerging markets are the only new source of economic growth available on Earth. As a result, competition between transnational businesses is intense, and while rare, it's not unknown for intercorporate struggles to turn deadly, especially in promising new areas.

In late 2098, the government of Paraguay opened its information and communication networks up to global corporations in an attempt to jump-start the stagnant economy. The Brazilian web and virtual-reality giant,

MenteMundo, moved quickly into the market. A

Turkish startup called Ankaranet was even faster, however, and managed to lock in several key Paraguayan corporations and government agencies as clients. MenteMundo's board of directors was furious that a company from outside of South America moved in on the area. Throughout the early part of 2099, MenteMundo and Ankaranet attempted to disrupt each other's ability to do business. In July, local thugs hired by the Brazilian firm destroyed the Ankaranet office in Asunción, accidentally killing the advance-marketing agent. The Ankaranet investors, with unspecified ties to the Turkish mafia, responded in kind, having the MenteMundo building burned down and killing several key Paraguayan employees. As of the end of 2099, 17 people have died, and there is no end to the violence in sight.

Competing corporations don't often hire hit men. They're more likely to hire “noise” – people who disrupt the competitors' ability to communicate, advertise, market, deliver, or generally operate successfully. This disruption doesn't have to be violent, it just has to be effective. Jamming communication networks, hiring key personnel away from competitors, and creating advertising campaigns for the competitors that are misleading or insulting are all common methods of “market hacking.”

Most transnational corporations are highly attuned to their target culture. Ethnographers, sociologists, and network analysts are part of the initial exploratory team, used to determine a market's potential value and to find local talent. They need people who know the land, both geographically and culturally; those with a strong Pop Culture skill (p. 125) are particularly valuable. Understanding of the local political scene is also helpful, and the leaders of underground movements are preferentially co-opted.

Manufacturing

Manufacturing industries were transformed in the latter part of the 20th century by the advent of robotic systems, and by the 2020s, totally automated factories were commonplace in the developed world. A similar revolution has taken place with the advent of minifacs and robofacs, which allow a single facility to produce a nearly infinite variety of products. Although the technology in 2100 is slow and expensive, few expect it to stay that way.

While robofacs replacing automated factories in the hyperdeveloped world caused little concern, most manufacturing facilities in the developing world still use human labor to manage and control the workplace machines. Many governments in transition nations are extremely sensitive about new fabrication technologies eliminating so many jobs. In 2068, the Darjeeling Motors Corporation sought to open a fully automated plant outside of Tripoli, Libya, giving it easy access to the Mediterranean. In an inspired moment, the Libyan government asked the firm to pay an annual fee equivalent to the welfare benefits for the number of people that would have been

employed at a non-automated facility. The Indian carmaker was surprised, but agreed. The Libyan Tax, as it is now known, is now a common point of negotiation between transnational corporations and the governments of developing markets.

Entertainment

While factory jobs are visible, the manufacturing industries are minor concerns compared to the largest industry in the world: entertainment. A London School of Economics report in 2008 estimated that almost 15% of the global workforce (outside of TSA countries) was employed in entertainment-related fields, from creation and production to distribution and sales. The entertainment industry makes more money and has greater memetic influence than any other organized activity. Products of the entertainment industry have a global reach and an appreciative audience. People around the world love InVids from Bollywood, game shows from South Africa, moviefab blockbusters from China, slinkies starring Holly Hartley, virtual worlds from San Diego, slogs, News Hounds on Mars . . . there has rarely been a better time to be part of the entertainment-industrial complex.

One of the key myths driving the industry's success no matter its medium is that anybody can be a star. In this case, the myth has an element of truth. While most recognize that massive transnational entertainment corporations dominate the industry, it is also well-known that each of these studios is starving for an edge over rivals. There have been enough cases of a new talent making a studio a substantial sum of money that most are occasionally willing to take a chance. This process has been commoditized with the near-ubiquitous use of prank game shows, 24-hour profiles, and shows like *The Hunt*, in which a normal person is kidnapped and brought to a secure island facility where they are tracked down by a variety of increasingly bizarre hunters – those that elude capture the longest win the biggest prizes. All of these shows are designed explicitly to turn a normal person into a celebrity to see if anyone pays attention. Few people become stars this way; most are returned to their everyday lives after their whirlwind 72 hours in the spotlight.

In 2100, one of the newest forms of entertainment in the developing world is based on a two-century-old medium. Movies – with their 2D visuals and non-interactive, linear stories – never really went away, but had greatly declined. By the late 21st century, most movies were linear edits of interactive stories repackaged for lower-technology audiences. The so-called “moviefab” movement has changed this, using cheap, high-quality 3D environment software as virtual soundstages to record 2D stories. Although technically possible for decades, the movement really started in 2093 with the Yin brothers in China. The practice has spread globally, with dozens of moviefab features being released on the web every month.

MEMETIC SWEATSHOPS

The process of making movies, InVid, virtual worlds, and dramatic slinkies isn't nearly as glamorous as many imagine. Much of the work is done in what the industry calls, in a mix of honesty and morbid humor, “memetic sweatshops.” These are small studios that provide people to write behavior scripts for digital extras, perform slink “experience looping” (recording visceral sensations such as fear, pain, or pleasure over the one shown on the slink), and create the pieces that make the stories come to life. They exist everywhere, and produce material for virtually every media.

Few consumers know about these shops, but for those looking for a break, a job in one is a chance of a lifetime. It has been widely reported (and never corroborated) that erotic-comedy slinky-star Holly Hartley started in a memetic sweatshop as an experience looper. Copies of movies and InVid claiming to feature her reactions are widely sought-after.

LAW ENFORCEMENT

“We learned an important lesson over the last hundred years: crime that is not stopped overseas soon becomes a problem at home.”

– Special Agent Sartaz Ahmed, Interpol

Of the various social and governmental institutions of a society, law enforcement is among the first to be changed by links to the hyperdeveloped world. Fifth Wave forensic equipment is made available, local databases are tied into global-information feeds, and police forces from the hyperdeveloped world are more than happy to lend officers and technologies to agencies in developing countries. This is not due to simple altruism – such gifts cost far less, in the long run, than criminal activity.

In most respects, police duties in 2100 have changed little in the last century. Community law enforcement focuses on the prevention, investigation, and punishment of crimes. The tools may have improved, but the process – finding evidence, identifying a suspect, and establishing a case – is familiar.

The main procedural difference between policing in 2100 versus 2000 is the heavy reliance on physical evidence over eyewitnesses. It has long been recognized that such testimony is faulty and that memories are easily manipulated. Witness testimony uncorroborated by physical evidence or monitoring systems is largely inadmissible in Fifth Wave courts, and most developing nations, particularly transition states, are moving to this policy. Even the testimony of AIs is suspect; while they cannot lie, it is possible to hack their memories. Fortunately for investigators,

Fifth Wave forensic technology is quite powerful.



Aside from the multitude of law-enforcement agencies, there are a handful of services with international jurisdiction. These organizations focus on narrow issues, and work closely with local authorities. Most have some degree of indigenous operational personnel, however, for those situations where regional law-enforcement officers are less cooperative, or are themselves the subject of investigation.

Genetic Regulatory Agency

The Genetic Regulatory Agency, based in the free city of Königsberg, advises nations on proper regulation of human genetic engineering and enforces existing laws restricting bioroid development and illegal genetic modifications. Although it is largely European in outlook and policy, most nations are signatories to treaties authorizing its expanded global role. The GRA concentrates its investigatory activities to those countries where weak government, controls on the press, or a history of genetic engineering abuses make it likely that violations will be found, although the GRA claims the right to investigate human-species-threatening genetic engineering anywhere. The GRA's emphasis on the developing world is seen as unfair by some, and is a regular point of dispute at international gatherings.

The potential dangers of unrestricted biotechnology are well-known. Although the most egregious of the "black labs" have long since moved offworld, a substantial amount of genetic engineering of dubious legality still takes place on Earth.

The creation of bioroids, the development of bioweapons, and the synthesis of new lifeforms do not require a Fifth Wave industrial infrastructure, and less-advanced countries sometimes have fewer of those pesky regulations. As the international clearinghouse for information, resources, and investigatory support for police enforcing biotech regulations, the GRA is there to make sure that international rules are enforced.

GRA agents have an almost missionary zeal – they really do believe that they are saving the world from destruction. Field operatives, who see the worst of the offenders, tend to speak in apocalyptic tones about unfettered experimentation in bio- and nanotechnologies. The GRA can be called in on situations ranging from unknown environmental toxins to bioengineering waste clean-ups to suspected use of bioweapons.

World Trade Organization

The World Trade Organization has changed considerably since its origins in the late 20th century. As modern industry came to rely on digital information, the WTO shifted focus exclusively to issues of intellectual property. The WTO is the leader in maintaining controls over copyright, patent rights enforcement, and prevention of information piracy, which includes anything from data smuggling to the illegal exhibition of a rights-managed work. It aggressively lobbies to ensure the continued dominance of intellectual-property owners over users. Infosocialist parties view the WTO to be *the* enemy, and the feeling is mutual – in 2097, the WTO was discovered to have funded anti-infosocialist party rallies across Europe, some of which resulted in vandalism against party offices.

The WTO employs lawyers, lobbyists, activists, marketing experts, strategists – anyone who may be able to help the WTO maintain and propagate the meme that content-rights violation is wrong. The WTO also employs operatives to investigate potential cases of rights violations, and support the local enforcement of antipiracy laws. WTO agents are known to operate on every continent.

WTO personnel rarely work alone. They more often operate in close cooperation with the intelligence and international law-enforcement bureaus of the United States and China. They consider the Transpacific Socialist Alliance to be their primary opponent, and with good reason – almost all of the intellectual property pirated around the world eventually ends up on the TSA Web.

Interpol

Interpol, while declining in overall influence, remains an important element of international law enforcement. Historically more of a clearinghouse of information than an actual law-enforcement agency, the organization took on a more active role in the 2030s and 2040s, as advances in biotechnology made a wider array of inexpensive and powerful drugs available around the world. Even as global sentiment moved away from legal controls on drugs, Interpol retained its enforcement authority, making some high-profile arrests for illegal genetic modifications and data piracy. Critics claimed that Interpol wasn't sufficiently aggressive, often abiding by local laws over international treaties; the GRA and WTO moves to develop their own enforcement branches is traced to these disputes.

Interpol still functions primarily as a center for information and coordination among local authorities, but also employs a small number of investigation and enforcement units. National and local police have ready access to Interpol's databases and information tools, and Interpol advisors can be dispatched within 24 hours of a request for assistance. Interpol strives for continued good relations with local law enforcement, and it is widely respected for its history of effectiveness and honesty.

Interpol uses its own operations division only for the investigation of non-piracy web offenses, such as computer intrusion cases and the pursuit of rogue AIs (Gypsy Spirits), and for supporting local police in international smuggling cases. Over the last decade, however, the World Trade Organization has occasionally contested Interpol's authority in this arena. It is not unusual to have both Interpol and WTO operatives show up to investigate a big smuggling case. The WTO argues that Interpol is not aggressive enough, and is seeking authorization from member nations to expand its jurisdiction officially.

POLITICS

Politics is about power, and the balancing, wielding, and distribution of power is of great interest to transition nations. Transition states are looking for patrons to provide the best protection, intelligence, and economic support; great powers are looking for clients who are capable proxies, strong allies, and lucrative markets. The developing world also provides a useful setting for competition between the hyperdeveloped countries.

Diplomacy

With the decline of the United Nations, most diplomatic activity happens at a peer-to-peer level; dignitaries meet with each other, treaties are signed (both public and secret), and alliances are forged. Ties are rarely permanent, however, and some developing nations have become quite adept at playing great powers against each other. Most developing states with any reasonable level of stability have signed treaties of friendship with all (or most) of the great powers, as well as trade agreements, law-enforcement cooperation pacts, and the like. Becoming a "good international citizen" involves agreeing to a variety of international laws about intellectual property, genetics, and weapons of mass destruction.

Intelligence Gathering

Even with abundant espionage technology (satellites, microbots, webtapping), the bulk of effective intelligence gathering involves personal efforts by operatives on the ground. Developing nations, especially those experiencing rapid technological growth and social dislocation, are fruitful locations for conducting espionage against opponents. States that border, or are strongly associated with, a particular great power are often hotbeds of activity.

Bangkok is widely known as a location for significant espionage against the TSA, but other regions that seem to attract spies include Mexico City, Zanzibar, and Cairo.

Despite a flirtation with privatized intelligence in the early part of the 21st century, the United States and a handful of other advanced industrial nations, along with most governments, treat intelligence gathering as an official duty. Transnational corporations have their own information-gathering operatives, but they focus on other corporations. Still, it's not uncommon to have multiple government agencies, a few corporations, and an international law-enforcement service all investigating a single target. Such circumstances lend themselves to disinformation, disruption, and "noise" campaigns.

Military Advisors

It is rare for great-power nations to send their own troops to directly intervene in a crisis in a transition nation.

More often, the great power send military advisors to nations in conflict, personnel who can provide substantial intelligence and strategic value, but who may not necessarily engage in combat. For the great-power patrons, this has several benefits. It increases ties between the local government and the patron, making defection (seeking out the protection of a competing great power) more difficult. It also creates a closer relationship between the patron and the client's military forces, useful in situations where the client government decides to be troublesome, and an opportunity to test new weapons or tactics. Patron military advisors are usually under strict orders not to engage in combat; the degree to which they abide by those orders depends on whether there are advisors from another great power on the opposing side. With memories of the Pacific War still fresh, most Fifth Wave nations are desperate to avoid a situation that might spiral into another global war.

BACKWARDS AREAS

Not every transition area is an independent state. There are a number of locations around the world where parts of an otherwise developed (or even hyperdeveloped) nation lag, where the fruits of the Fifth Wave have yet to truly reach. This can occur for a number of reasons, ranging from tensions between populations to local environmental disasters, or simply extended periods of economic stagnation and poverty. These areas are often difficult to integrate, and are left to fend for themselves.



As with developing countries, advanced technology is still found in the backwards parts of a Fifth Wave state. Police, especially those in larger urban areas, usually have access to modern forensic equipment. Inexpensive consumer goods are widespread, and industrial minifacs relatively commonplace. Information and communication networks are less dense, however, and environmental technologies such as v-tags and augmented reality are much less widespread. Advanced biotechnological and bionanotechnological medical treatments are difficult to find, although modern treatments for commonplace diseases usually have filtered down even to local clinics.

Third Wave Communities in Fifth Wave Nations

In even the most-advanced societies, there are regional communities that have not quite caught up with the rest of the nation. In some cases, this is due to a massive influx of immigrants from the developing world; Los Angeles, in the United States, is the best-known example (see pp. 97-104), but there are many others. In other situations, the process of development simply takes time to spread across a large geography or population, such as in China, where the majority lives in Third Wave and even Second Wave conditions, even as the urban centers along the coast push the cutting edge of nanotechnology.

Social Transition Stress Disorder and other extreme reactions to change are fairly uncommon in these areas, in part because the change is happening much more slowly and in part because these areas often have very strong community-support networks. However, hyperdeveloped nations often face strong economic pressure to attempt a “crash modernization” of backwards areas, in order to bring consumption and production up to national standards. China tried this in 2085, with its “Thundering Hooves” campaign, which attempted to install advanced information and communication technology, optimized minifacs, and bioengineering clinics in all villages and

towns in a straight line west from Beijing. Successful at first, it soon faced problems with local leaders wary of tools which allowed greater central control, rural populations with irrational fears of the new technologies (there is still a rumor in western China that biotech reproductive treatments will make infants *gwai lo*, or “ghost-person,” a derogatory term for white people), and non-Han ethnic minorities who fought any attempt to assimilate them into the broader Chinese culture.

Cross-Border Cultures

Ethnic and cultural minorities who live on the edges of a national geography often get left behind during technological and economic development. This does not necessarily happen due to overt racism; quite often, the minority culture is strongly separatist, and rebuffs attempts to bring in advanced systems, viewing them as assimilationist. Ethnic groups, which are minorities in every nation they inhabit, tend to face the most problems in development. The Kurds, who live in territory overlapping the E.U. (Turkey), the Islamic Caliphate (Iraq and Syria), and the rogue nation of Iran, have refused every solution to their poverty and powerlessness that involved settling in one area. Similarly, the Rom, traditionally called Gypsies, remain a nomadic ethnic minority across much of Central Europe, both in and out of the European Union. While a few clans have adopted high-tech systems that don’t interfere with their nomadic travels, most cling to traditional ways, becoming an anachronism in Fifth Wave Europe.

Pockets of Stagnation

In some cases, the Third Wave areas are the aftermath of failed development. Cases of STSD are rampant, either from the initial rapid advancement or from the rapid decline. The violence and apathy that often accompany the disorder greatly hampers recovery attempts, leaving the regions mired in a cycle of poverty. Marseilles, in the south of France, has still not yet fully recovered from the period

FIVE MOST POPULAR WORLD LEADERS

As rated by *Trendorama*, the Atlanta-based meme sampling and analysis firm.

1. Nambaryn Jargalsaihan. Known as “Namby,” Jargalsaihan is the 16th Dalai Lama’s nephew and a globally popular musician. In 2098, he ran for the Mongolian presidency and, much to the world’s surprise, won. The Chinese government regularly criticizes him, which increases his popularity elsewhere.

2. Hannah Nablus. Often called the “Muslim Gandhi,” Nablus leads Dar-us-Salaam (“Abode of Peace”), a pacifist group seeking the independence of the Palestinian Enclaves.

She has regular run-ins with the Islamic Caliphate’s Administrative Police Services.

3. Misha Leyden. An infosocialist senator from Flanders, Leyden is known best for her passionate support of the concept that “you own your own genes.”

4. Paul Baruta. The former vice president of Rwanda, Baruta now is a widely recognized leader in the abolitionist movement, speaking globally for bioroid freedom and slavery.

5. Miguel Hernandos. The president of Belize, colorful and charismatic Hernandos is known for his empathy for his nation’s poor as well as for his deft diplomacy. He often handles back-channel negotiations between the U.S. and the TSA.

of intense ethnic violence in the 2030s and 2040s, and remains an economic and social disaster. Outside of Johannesburg, South Africa, the slums of Soweto saw a seeming renaissance mid-century, only to fall back into disrepair and poverty as local corporations started using cheaper remote labor.

RESISTANCE TO CHANGE

The transformations of the late 21st century do not come without a price. New communication networks can easily disrupt long-established hierarchies, access to external sources of art and culture can overwhelm local traditions, and advanced methods of production can sweep away uncompetitive businesses, quickly monopolizing markets. The very nature of the modern world is the destruction of the traditional society. A substantial number of people around the world are reluctant to pay this price, and this often translates into firm resistance to change.

Ironically, access to and use of new technologies can actually accelerate the resistance to them. People may get a first-hand look at the immediate effects of the new tools or practices and find them repulsive. Information technologies may facilitate the organization of resistance or dissemination of knowledge about the changes. Biotech tools can be used to disrupt the introduction of new bioengineered plants and animals. Increasing availability of sophisticated memetic engineering methods often results in the use of those very tools against the dominant power structures.

FORMS OF RESISTANCE

"In an era of memetic science, the use of puppets, costumes, and chants of 'hey hey, ho ho, anthromorphic biotechnologies have got to go!' just isn't going to cut it. We need to be sophisticated, compelling, and able to beat the transnats at their own game. In short, we need to achieve meme-space dominance."

– Ang Wen,

A Guide to Meme-Hacking Politics

Resistance to change can take on various forms, some more effective than others.

Dissent and Legal Activism

The boycott – the simple refusal to be a part of a new system – is the most common and least successful method of resistance to new technologies, corporate practices, and government policies. The more effective boycotts are those with ample media coverage and substantial popular support. For this reason, the key to a successful boycott is good memetic engineering, from staging rallies to

planting stories in the press to spreading rumors. Boycotts tend to fall apart, however, if the new technology or service provides a clear short-term benefit, has no local alternative, or is backed through officially sanctioned force (e.g., rallies are broken up with police violence, people who refuse to have their genome scanned are subject to arrest, etc.).

In countries with a stable civil society, the use of lawsuits and legal harassment can interrupt and sometimes even prevent the implementation of feared changes. This is a dangerous course, however, as tools available to activists are also open to the entities being challenged, who usually have much deeper pockets. Lawsuits are usually most effective when the subject has actually done something wrong, such as lie about genetically modified contents of food products or use illegal bioroid labor to provide the goods or services in question.

Memetic Engineering

The purely memetic approach is less organized than boycotts or legal harassment, but more successful. Often called "social engineering" or "meme hacking," this approach is intended to undercut the target's legitimacy, making the broad populace question whether the technology or practice has a place in their lives. Planting rumors, changing advertisements or AR information streams, even creating parodies – all are useful memetic tools.

RECENT BOYCOTTS

As listed on *Collective Action Collection*, a web clearinghouse for activist information and communication:

Happy Burgerland. The New Zealand-based activist group Southern Health is boycotting the German fast-food company for its use of soy and wheat gluten patties instead of ground fauxflesh.

Athenawear. The European sapient rights group Sandpiper is boycotting the American sports clothing manufacturer for its "murder" of AIs, after Athenawear shut down several of its older design AIs as part of corporate restructuring.

Indus River Studios. The Christian Hyperevolutionist Church is calling for the boycott of Indus River Productions in response to the release of the *InVid Judgment Day*, which the church claims promotes stereotypes of Christian Hyper-evolutionists.

Clash of Civilizations. A grassroots group of music fans is calling for the boycott of all songs by the Greek fire band Clash of Civilizations, after the band released a song that carried a program that erased any unauthorized Clash of Civilizations songs from a listener's system.

Islamic Caliphate. The bioroid-rights website Bioroid Amnesty has renewed its boycott of all products and services from the Islamic Caliphate in response to what BioAm calls "the ongoing mistreatment of bioroid individuals."

The goal isn't so much to get people angry about the change as it is to make it a subject of ridicule. Popular comedians making jokes about the technology or practice can be devastating. As with boycotts, success is contingent on the value or mandate of the technology, practice, or policy.

One manifestation of this is sometimes called "hacktivism," referring to its purely web-based form. While this can include direct action, it more often involves the attempt to spread resistance via popular web media, such as slogs. Since it involves the memetic manipulation of people who work with memes daily, it's difficult to carry off. When it does work, however, it can be very effective.

Vandalism and Terror

Vandalism is another popular form of resistance, although it is almost always illegal. This can range from pure destruction of property, such as blowing up non-sapient cybershells or incomplete office buildings, to more subtle approaches, such as adulterating food products with a harmless but foul-tasting substance, or buying informorphs, reprogramming them to provide faulty information and surreptitiously returning them to the market. Vandalism combines memetic engineering intended to persuade (or dissuade) the general public with direct action to disrupt the ability of the target to successfully operate.

Terrorism is the ultimate form of vandalism, in that the dissuasion and the disruption are carried out in ways that intentionally risk the lives of others. Terrorism usually happens when the element of the populace undergoing a technological or social transition feels powerless to stop it, and has few, if any, alternative avenues for expressing political

discontent. Terrorism is often a manifestation of Social Transition Stress Disorder.

Civil War

Civil war as a form of resistance is actually fairly rare in the transition states. The situation has to degrade severely before war comes about, as the government is usually able to buy off a sullen populace, especially with the help of great-power backing. More-common scenarios for civil war in a transition nation come when the government itself is resistant to the requests of a great-power partner, and the more capable nation decides that elimination of the recalcitrant regime is the only way to bring "much needed democracy, modernization, and free markets" to the state.

One of the better-known examples is the fate of Angola. In the 2050s, the Luanda government was ruled by a charismatic pan-Africanist named George Ngolo, who had a compelling Majority-Cultures-style philosophy and some socialist policies. While Angola had nowhere near the power of South Africa, Ngolo proved able to win several of the Central African states as allies. The Pretoria government, which had begun the process eventually leading to the creation of the South African Coalition, considered Angola a significant challenge. Throughout the 2060s, while working diplomatically to bring Angola into the fold, the South African government was quietly funding a growing insurgency. By early in the 2070s, the uprising had become a civil war. When Ngolo's forces reportedly massacred a village, the South African armed forces moved in an attempt to "restore order." Ngolo was then toppled in a coup, and Angola has since been managed as an ally of South Africa, although it is not yet a member of the coalition.

TYPICAL MILITARY FORCES IN TRANSITION AREAS

Conflicts in transition regions, while less common than in the more chaotic regions, often be some the bloodiest on the planet. Sophisticated weapons are widely available, but soldiers are primarily human, with fewer cybershell and bioroid troops involved in the fighting. Many transition states have sufficient biotechnological capacity to use a variety of environmental weapons against their opponents, and the use of nanotech agents, while rare, is not unknown.

Armies maintained by stable, moderately wealthy governments are typically outfitted like low-Fourth-Wave soldiers (p. TS101), with high-quality smart gear such as battle rifles and intelligence-gathering microbots. Cybershells, whether teleoperated or AI-resident, are used largely for backup of regular troops; MCS-52 and MCS-64-type cybershells (p. 123) are the most common. Bioroids are increasingly popular in combat units, as they are "maintenance free" and don't require spare parts, although public

opposition to bioroid use restricts them to special forces and elite-guard assignments. The more the government has the support of a great-power patron, the more likely it is able to outfit troops with more recent equipment. In most cases, special operations units have select access to Fourth and Fifth Wave equipment, either supplied by patrons or from the black market.

Irregular troops, particularly those without significant international patronage, are generally equipped more like Third Wave soldiers. The capability imbalance between Third Wave and Fourth Wave gear is significant, however, and some lower-technology resistance movements resort to illegal biological, ecological, or nanotechnological weapons. Great powers supporting local guerrillas are careful not to reveal their identity – resistance forces' higher-technology weapons are often TSA copies of other nation's designs, even when the TSA is uninvolved.

4

THE STATE OF NATURE: CONFLICT AND CRISIS



Stepping onto the rubble that used to be a suburb of Tashkent, Hans Geipel was relieved that he was t'opping a cybershell instead of being there in person. It had been nearly a month since the Uzbekistan Liberation Army set off the radiological bomb, but the rad levels were still high enough that he would have needed a full cellular after an in-person visit. His body couldn't take another one this year. Besides, if the BND's forward observer was right, there would probably be something more threatening than radiation to worry about.

The Uzbek national police had tracked the surviving leaders of the ULA back to a warehouse just outside of Tashkent. The rebels had been a thorn in the government's side since the late '80s, and it had taken determined effort to root out and destroy the ULA forces. They hadn't counted on the rebels having a dirty bomb, though. It was a big one, enough to irradiate several square clicks of Tashkent and sicken nearly a million people. Although the radiation levels would soon drop, most people fled the city out of terror.

The BND – Germany's Federal Intelligence Service – had also been following the ULA leaders to try to connect them back to Zarubayev, in Kazakhstan. The microbot bugs planted in the Tashkent warehouse were set to move to a secure location and report back; when no message was received, the BND assumed that they were lost in the detonation. The recent detection of a weak emergency beacon said otherwise, however, and Geipel's team – teleoperating their stealth Fuchs cybershells – was dispatched to retrieve whatever they could find.

A company of Kazak shock troops had been spotted coming over the border a few hours earlier, heading swiftly toward Tashkent, undoubtedly going after the microbots as well. That the Kazaks would be willing to cross the border so blatantly meant that the microbots must have picked up something critical; Geipel knew that the 'zaks would fight to the death to keep the BND from retrieving the data. The BND forces would have the advantages of speed, stealth, and technology. The Kazaks would have sheer numbers and an insane willingness to do anything to stop the Germans from retrieving that data.

What the BND didn't realize was that the Kazaks also had their own stealthed cybershell – an airborne hunter, scanning the spectrum for the tell-tale signs of teleoperation, intending to seek out and destroy the operators.

Hans, believing himself and his team safe in their mobile t'opper center a dozen miles away, checked his ammo load, watched for trouble, and pushed his Fuchs faster toward the quiet ping of the beacon.

While some developing nations are transitioning into Fourth and Fifth Wave societies, much of the world continues to struggle with environmental and political disaster. In some cases, the hyperdeveloped states have taken an interest in regions, but not always to the benefit of the

locals. This chapter looks at the parts of Earth in 2100 that are fighting simply to survive.

THE ENVIRONMENT

At the beginning of the 21st century, many people despaired of being able to slow down or stop runaway environmental destruction. As it turned out, the threat of global collapse brought on significant improvements in understanding and treatment of Earth's ecosystems. While rapid changes in sea levels, temperature, and weather patterns caused hundreds of billions of dollars in damage around the world, it also led to focused research on the manipulation and stabilization of the global climate. Mass extinctions across the planet pushed the development of biome surveys and complex ecological-systems analysis, while unexpected earthquakes drove advances in construction materials and seismic modeling. This leap in scientific understanding and technological capability allowed for substantial environmental repair on Earth, and facilitated the terraforming process under way on Mars.

HEAVY WEATHER

Day-to-day weather in 2100 is not significantly different than that of 2000, with a few exceptions. Summers are hotter worldwide, with temperatures averaging 2° warmer, peaking at 10° warmer, than a century earlier. Storms are also of higher intensity and greater frequency during summer and winter, and routinely interrupt travel.

Blizzards

High winds, low (or no) visibility, and dangerously low temperatures combine to make blizzards a significant threat. Late-21st-century blizzards have sustained winds topping 100 mph and last for two days. See **GURPS Compendium II**, pp. 133-134, for cold weather rules. As with other heavy windstorms, air travel is impossible, and land travel is extremely difficult (50% slower) or impossible, depending upon the severity of the storm.

Dust Storms

Heat and drought can combine to create dust storms. While the Mars colonies are quite familiar with the phenomenon, dust storms are actually a greater problem on Earth because of the thicker atmosphere and heavier wind force. Major dust storms can spread for hundreds of miles and last for days. Dust storms of this magnitude can also interfere with radio communication (50% chance each minute of any attempted transmission failing) and increase the likelihood of illness by putting pathogens into the atmosphere (-2 HT roll to avoid contagion). Air travel

through a serious dust storm is challenging at best (high winds, zero visibility, and interference with electrical systems), and should be considered impossible for anything other than dedicated weather-sampling vehicles.

Hurricanes/Typhoons

The worst Atlantic storm season on record was in 2052, with three consecutive Class 5 hurricanes battering the eastern and Gulf coasts of North America. That same decade saw massive typhoons devastating the western Pacific and swarms of summertime tornadoes. Although environmental mitigation eventually brought the worst of these under control, massive storms – the “supercells” – remain a problem. The Atlantic hurricane season is highly variable, but generally spawns at least two Class 3 or larger storms annually. Every four to six years a bad season can see multiple Class 5 hurricanes, as well as one or more supercells in the Atlantic and the Pacific oceans.

Tornadoes

Heavy summertime storms result in tornadoes across the plains of North America, China, and southern Africa. When supercells hit land, they trigger tornado swarms lasting for two or three days, with devastating effects. In 2098 a supercell-caused swarm severely damaged the Dongguan arcology in southern China, killing nearly 4,000 people. An individual tornado may last for a few minutes, but anywhere it touches is devastated.

CLIMATE CHANGE

A century of gradual warming has had substantial results across the globe, despite the increased efficiency of Fourth and Fifth Wave industrial technologies and ongoing efforts at mitigation.

Changes in Arable Land

Among the areas hit hardest by the warmer climate were the “breadbasket” farm regions in North America, Western Europe, and Central Asia. Persistent drought and migrating insects ruined many harvests in the first half of the century, resulting in famine across Southwest Asia, cutting food exports from the United States by 50%, and destroying the wine industry in southern France. Although crops bioengineered to be more resistant are now in wide use, many agricultural communities were destroyed and farming is now largely automated.

Desert areas have expanded across the globe, with the growth in the Sahara Desert in north Africa and the Great Indian Desert in east India being particularly aggressive. Agricultural land has been swallowed by the desert, and many formerly self-sufficient areas now require regular food imports to survive. Dust storms are also an increasing problem in the border regions, further degrading local food-production abilities. Intensive agricultural use also led to increased erosion and soil salinity, further degrading the ability of many areas to feed themselves.

Not all of the climate-related changes to arable lands were negative, however. Both Canada and the Central Steppes of Russia saw a doubling in the availability of farmland, and Argentina’s agricultural production was boosted by 25%. By 2100, Canada and its successor states became the top international food exporters, and Russia became a leading producer of quality wine.

Flooding

Sea levels rose an average of three feet in the first 20 years of the 21st century, and rose a total of about five feet since 2000. Many regions saw increased problems with flooding, and a number of low-lying cities became disaster areas. The Netherlands suffered greatly, and Amsterdam was nearly lost three times, but managed to hold off serious damage. Venice, Italy was evacuated temporarily in 2033 and much of the city’s artwork was lost forever. New Orleans, Louisiana, held out longer, but hurricanes and rising oceans brought the city to its knees in the late 2040s. The 2060 earthquake on the New Madrid fault destroyed the remaining levees and shifted the Mississippi, forcing the city to be abandoned. Off-limits for health and safety reasons, New Orleans is now host to about 10,000 squatters. Rangoon, Burma, was also hit hard by storm-related flooding, but managed to rebuild prior to the Pacific War.

Storm-surge flooding from the rising sea level combined with larger Pacific storms led to problems in all

Pacific coastal cities as well, from Tokyo to Los Angeles to Sydney. Seawalls and massive pump systems are now commonplace in most Pacific urban areas, patterned after those in place in the Netherlands, often with local improvements. The City of Angels arcology under development in Los Angeles makes use of increased tidal and storm surges as an additional power source.

STORMCHASERS

Providing video, interactive video, and sensory-link material from close up – or even inside – a massive weather event is a profitable service in 2100. Audiences all over the world enjoy what critics call “storm porn,” and pay a surprisingly good rate for rare, dangerous-to-get, or stunningly beautiful footage. People who actively seek out tornadoes, hurricanes, lightning storms and more are known as stormchasers, and big weather events often have multiple chasers competing for the best access and material.

Traditionally, stormchasers tried to get as close to the worst part of the storm as possible without endangering their lives. The advent of rugged cybershells designed to research the atmospheres of the gas-giant planets changed that, as they proved able to withstand Earth’s heavy weather. Storm footage saw a resurgence in the 2090s, as vid and slinks from up close to and inside of tornadoes and lightning storms started to appear on the web. In 2100, every serious stormchaser uses a cybershell – usually teleoperated, but resident AIs are not unknown – sometimes using even multiple units to capture different perspectives.

EARTHQUAKES

Seismology is a mature science, and the process underlying earthquakes is well understood. Substantial work has been done in the prediction of earthquakes, much based upon changes in subsonic noise as a measurement of tectonic stress. Known faults in stable countries are watched by a network of earthquake monitoring systems. Monitored locations can expect an initial warning two to four weeks ahead of time, and an alert 24 to 72 hours before the event, including approximate magnitude and epicenter. Current equipment is about 80% accurate, and provides more false positives than false negatives. After the first few urban warnings resulted in gridlock as people tried to escape even minor temblors (resulting in more deaths than the quake would have caused), local authorities became more careful when informing the public.



New buildings in quake-prone regions have magnitude ratings, and those that can function as an earthquake shelter are usually well-marked. Fifth Wave construction techniques are designed to withstand quakes of up to 8.5 to 9.0 on the Richter scale without collapsing. Fourth Wave construction is intended to be good for up to 7.5 to 8.0. Third Wave construction techniques and materials are less reliable, and corrupt inspectors and contractors remains a widespread problem.

... In Expected Areas

Countries in the “Ring of Fire” – the tectonically active zone along the Americas’ coasts, across the Bering Strait, and down the eastern Asian seaboard – are accustomed to large earthquakes, and are prepared for events. Central Asia, which is also commonly subject to quakes, is less ready. Instability and poverty in Central and South-west Asian nations has precluded any serious efforts at retrofitting structures. Small earthquakes occur frequently in the Ring of Fire zone, and large ones are not uncommon, although they usually hit in less-populated areas.

... And the Unexpected

The eastern half of the United States took its own hit in 2060, when the New Madrid Fault Zone, located along the southern Ohio River and central Mississippi valleys, unleashed a series of 32 small-to-moderate quakes over the course of a week. While none were of a magnitude larger than 6.4, cities from New Orleans to Chicago suffered substantial damage, and commerce and transportation were disrupted throughout the northeast. The cost of the New

Madrid Event ended up exceeding the cost of California’s Big One, and led directly to the imposition of tough building codes throughout the Fourth and Fifth Wave world.

DISEASES

The human immune system is now well-understood, but disease remains a concern across the world. Classic pathogens such as influenza and cholera kill thousands every year, primarily in the less-developed countries. New variants can erupt at any time, igniting a frantic rush to have disease-resistance genemods updated. The greatest fear, however, remains the purposeful release of human-engineered diseases as weapons.

Natural Diseases

Despite a century of biotechnology, most humans still come down with the occasional illness. Disease vectors are remarkably robust, and few bioengineered upgrades provide total immunity. Simple genefixing, while eliminating most sources of inherited diseases, does little to reduce susceptibility to contagions. The Alpha upgrade provides basic disease resistance, but only 40 million Alphas exist, primarily in the hyperdeveloped world.

This is not to say that medical science has not improved dramatically. AIDS was conquered early in the 21st century, cancer is readily treatable, and Alzheimer’s is no longer a problem for most people. Immune-system boosters and antibiotics/antivirals exist for all major diseases, and are readily available in Fourth and Fifth Wave societies. Third Wave areas are less fortunate; epidemics still sweep through populations before local medical groups or outside assistance can shut the new strains down. While the competition between bioscience and evolution has shifted clearly to the side of humankind, variants of suppressed germs still emerge in the wild. The 2075 aerosolized-strain Ebola epidemic in Gabon was abundant evidence that natural diseases remain a potent force.

Treatment-resistant diseases can be particularly deadly to populations in transition areas, where a minority of the population has had disease-resistant genetic treatments and households have greater access to advanced anti-pathogen cleaning supplies. While commonplace bacteria or viruses are more effectively attacked, the stronger treatment-resistant variants have a greater opportunity to spread. These new germs hit baseline humans much harder than usual, and even relatively innocuous diseases can be deadly. If the GM decides an outbreak of a treatment-resistant pathogen has occurred, all HT rolls should suffer an additional -4 on top of normal HT roll bonuses or penalties. See B133-134 for generic illness rules, and CII167-174 for a sampling of detailed illnesses.

The continued evolution of new and treatment-resistant strains of natural pathogens will also eventually reduce the relative effectiveness of most genetically

THE BIG ONE

The long-awaited “Big One” hit southern California in 2042, measuring 7.8 on the Richter scale. New predictive tools provided 24 hours notice, allowing selective evacuations near the epicenter (just offshore in the Santa Monica bay, near Malibu) and sheltering of people in the more-quake-resistant buildings. The earthquake caused remarkably little loss of life, even if it did result in hundreds of billions of dollars worth of property damage in older buildings across the region.

Northern California has been expecting a similar-sized quake since the 1990’s, and seismologists are concerned that the long build-up of pressure will result in a far larger earthquake than anyone is truly prepared for. Current models suggest that the chance of an 8.0 or larger quake happening in the next three years is 50%, and the chance in the next 10 years is close to 100%. The entire San Francisco Bay Area has been in an earthquake-retrofit frenzy, and a dark fatalism is commonplace among the residents.

engineered defenses against disease. The GM may wish to reflect this by having bioengineered resistances degrade over time. Characters with the Disease-Resistant advantage will need to have the resistance updated on a regular basis; for every four years a character goes without updating the resistance treatment, divide the effective defense in half (i.e., after four years without updates, the bonus to HT rolls drops to +4; after eight years, it drops to +2; after sixteen years, it drops to +1, where it remains). Updating disease resistance takes half a day and costs \$2,500.

Characters with the Immunity to Disease advantage retain their resistance to all natural diseases over time.

Man-Made

Even as medical technology slowly asserts dominance over the natural world, the use of artificially created or enhanced diseases remains a nightmare scenario. Detailed knowledge of the genetic functioning of bacteria and viruses makes the process of enhancing germs far simpler than most people would like. Commonplace diseases can be altered in a number of key ways.

Increased Infectivity: Designing a more contagious strain. This can result in a -1 to -4 on the HT roll for contagion (see *Contagion*, p. B133).

Replication Controls: Designing in a limitation on the number of times a given germ can make copies of itself, or copies of copies. This gives the engineer more control over the spread and duration of a given epidemic.

Tailored Lethality: Designing a more (or less) lethal strain. Variations can include the modification of recovery rolls (e.g., an extra -1 to -3), severity of symptoms (e.g., doubling HT loss), or types of symptoms (e.g., adding hemorrhagic fever effects to influenza).

Target-Seeking: Designing a strain that only affects a limited population, a virus may be modified so that it will only target hosts with certain clear-cut genetic traits. This can be as broad as being male or female, or as specific as a particular person's genotype (although the virus would also affect his clone or twin).

Vector Modifications: Some of the most lethal diseases (such as rabies or hemorrhagic fever) spread only by direct contact with bodily fluids, and thus can be readily contained. However, genetic engineering might be used to alter a particular agent so that it can be airborne and therefore spread by coughing or sneezing. This also makes a germ much harder to localize and control, and will sometimes be used in concert with replication controls.

Engineering a germ variant is a Genetics (Genetic Engineering) task. If the geneticist has access to documents describing previous successful modifications of the same type, a simple success is all that's required. If he is attempting to create the new strains on his own, a critical success is required. Time needed is based on access to equipment. The use of a Fifth Wave laboratory gives an effective +2 Genetics skill, and each attempt to

create and replicate a variant disease takes one hour. A Fourth Wave laboratory does not modify the Genetics skill, and each attempt to create and replicate a variant disease takes one day. The use of a Third Wave laboratory results in a -2 Genetics skill penalty, and each attempt to create and replicate a variant disease takes one week. Genetic modification of germs cannot be done without access to at least a Third Wave lab. The base cost of modifying an illness is \$5,000, plus \$1,000 per attempt. Use of a Fifth Wave lab cuts these costs in half.

New Germs

New diseases can emerge, whether due to natural evolution or human design. New naturally occurring pathogens are rare but not unknown. The creation of entirely new diseases requires extensive modification of a base design or combining genetic material from a variety of sources. Engineering a new disease is a Genetics (Genetic Engineering) task. The use of a lab is required, as with engineering a germ variant. However, a Fifth Wave laboratory gives *no* effective skill bonus, a Fourth Wave laboratory gives a -3 skill penalty, and a Third Wave laboratory gives a -6 skill penalty. The base cost of creating a new illness is \$10,000, plus \$2,500 per attempt. Use of a Fifth Wave lab cuts these costs in half.

New germs should be designed by using the guidelines on p. B133 or by modifying the various diseases found in *GURPS Compendium II*. The best way to "personalize" new diseases is to select disadvantages that occur in addition to HT loss, usually after 1/3, 1/2, 2/3, or 3/4 HT has been lost to that disease. Especially appropriate disadvantages include Blindness, Sterility, or even Bad Small (from rotting flesh). More exotic diseases may cause mental disadvantages by attacking brain tissue. If a victim is based on a template with Taboo Traits, those restrictions do not apply to disease-based disadvantages. *GURPS Bio-Tech* also provides extensive information on the creation and modification of pathogens.

The Disease-Resistant advantage is half as effective as usual against entirely new diseases; the Immune to Disease advantage provides the same protection as full-strength Disease-Resistant. Updating disease resistance against a single new pathogen takes half a day and costs \$500, and updating Immune to Disease takes one full day and costs \$2,000. Note that updates to resistance are contingent upon the new disease being isolated and studied, and can take several days to several weeks to be made available.

ENVIRONMENTAL CLEANUP AND ANTI-ECOWEAPON CORPORATIONS

Green-Blue Associates, based in San Francisco. Founded by former researchers for the Amazon Restoration project, Green-Blue specializes in accurate repair of native ecosystems.

ProtECO, based in Brasilia. Jointly owned by Nanodynamics and the National University of Brasilia, ProtECO claims to be the only environmental defense firm to deploy a nanoformer “immune system” against ecoterror.

Le Monde Vert, based in Marseilles. Suppliers of ecoformer tools for various African environmental cleanups, in 2009 Le Monde Vert hired M. Dyson, widely considered the top SAI coder of antivirus systems, and has built a highly competitive anti-ecoweapon protection system.

ECOTAGE

In much of the world, the work of repairing the damaged environment has gone from crisis to careful maintenance. The most difficult work is in the rain forests of South America and Africa, where biosphere repair involves quite a bit of ecological experimentation, attempting to get the balance of reintroduced plants, animals, and microorganisms right. The organizations overseeing the environmental work are not generally opposed to using genetically modified species to better fit within a niche, particularly one that has seen significant near-irreversible change from human activity, but have a policy of trying to rebuild as “natural” a state as possible. Doing so takes patience, knowledge, and the right tools.

Ecoformers

The attempts to repair a dangerously altered ecosystem, combined with the technology behind the terraforming of Mars, led to a series of important environmental engineering breakthroughs in the 2060s. The tools developed made it possible, over time, to alter soil chemistry, reliably introduce a set of microorganisms, and seed a diverse ecology of plant and insect life. These semi-autonomous systems, known as ecoformers, sped up the environmental repair process considerably. A network of ecoformers can clean up one acre of a toxic release in 24 hours; repairing more complex damage (such as climate-change-related effects or the use of ecoweapons) can take five to 10 times as long.

In 2096, Nanodynamics, working with the Environmental Science department of Brasilia National University, announced advanced ecoformer systems

they call nanoformers: extremely durable microbots and engineered bacteria that contain a nanotechnological biochemistry, able to slowly consume and transform a landscape. Nanodynamics claims that the design will double the speed of environmental repair, and also act as an “immune system” against subsequent degradation. They were finally brought to market in late 2098. In early 2099, the design code for the nanoformers appeared on the TSA Web.

Ecological Weapons

It is clear that the skills and technologies necessary to modify and rebuild a degraded ecosystem can easily be used to make the environment worse. In 2068, Vietnamese farmers discovered a set of ecoformers relentlessly changing forestland to infertile scrub. Vietnam blamed China, China denied responsibility, and Vietnam eventually had to request assistance from Europe to clean up the ecoformer infestation. The global media dubbed this “ecotage.”

Focused attacks on an opponent’s environment have long been part of the tactics of states and the stateless alike. This practice is most often used to deny an opponent the use of the land for strategic support, from the ancient Roman practice of salting the earth to the use of defoliants in late-20th-century conflicts. With tools available to repair environmental damage, attacks on opponents’ ecosystems have actually increased, although not without public outcry when exposed. Ecoweapons are used primarily against opponents of lower technological capability, who are therefore unable to easily counter the assault.

There are two broad categories of ecoweapons: tactical and strategic. Tactical ecoweapons are usually defoliants intended to eliminate ground cover and infestations intended to drive out populations or kill crops without poisoning the land. Strategic ecoweapons, conversely, are long-term effect weapons intended more to shape policy or damage a population’s morale than to ruthlessly strip an area of life. Strategic ecoweapons are usually part of a multi-year covert operation, with the goal of defeating the opponent without firing a shot.

Environmental Terror

Many revolutionary, criminal, and terrorist organizations have access to ecoweapons, usually in the less-developed regions. Depending upon the goals of the attacker, the weapon use can be visible or subtle, with long-term or immediate effects. Environmental terror attacks are more broad-spectrum and deadly than typical military versions. They’re also often harder to stop. Ecoterrorists have lifted techniques from computer-virus creators and use layered defenses against countermeasures: attempting to stop the visible attack unleashes a hidden plague, or the immediate-impact event is actually a long-term assault that re-infects the host area after each cleanup.

AREOFORMING

Although the terraforming of Mars is now thought to be irreversible, the activist group calling itself Red Right Hand continues to agitate for the total cessation of all terraforming activity. In 2097, that agitation turned violent as the group began using “areoformers.” Derived from the terraforming and ecoforming technologies in use, areoformers are designed to make a region of Earth’s environment as Mars-like as possible by breaking down all biomass, altering soil chemistry, and releasing ozone-destroying chemicals. Red Right Hand claims that this demonstrates reversal is possible,

and that they will continue to use areoformers on Earth as long as terraformers are active on Mars.

While outbreaks of areoformers are easy to detect and counter in the hyperdeveloped world, less developed areas find stopping them very difficult. Red Right Hand – which, despite its ideology, is probably primarily Earth-based – is known to swiftly seize advances in ecoforming technology, often using pirated designs. A non-functional nanoformer network discovered outside of Mexico City in late 2099 is now believed to have been a failed Red Right Hand attack.

Environmental terror attacks are difficult to carry off successfully, but the numbers are slowly increasing as tools and techniques become more widely available. Source code for many of the more-virulent ecoweapons and ecoterror systems can be found in the deeper reaches of the web. China and the United States claim that the worst were actually designed by the TSA’s Bioweapons Directorate, a claim that the TSA routinely denies, noting that the first known ecoformer attack was *against* a country which became a TSA founder. Ecoterror countermeasures are harder to come by, in part because a number of companies make a business out of environmental cleanup and anti-ecoweapon protection systems, and thus are protective of their “trade secrets.”

Deep Environmentalists

In contrast to those attempting to repair the Earth’s biosphere while still living in it, the Deep Environmentalist movement desires to return the Earth to a pre-*Homo-sapiens* state. Few in number but memetically influential, the Deep Environmentalists are often portrayed as the only “pure” environmentalists left. There is no single Deep Environmentalist organization; most actions are carried out anonymously by a handful of individuals. The public face of Deep Environmentalism is benign, and people claiming sympathies to the cause are found in groups encouraging more off-world colonization and population controls.

Occasionally, the darker face of Deep Environmentalism is shown. In 2099, a small-but-noticeable drop in birthrates across the globe was traced to a virus bioengineered to attack sperm motility. While routine antivirals were able to clear the infection in most victims, hundreds of thousands of men were effectively sterilized. The American Center for Disease Control believes that the virus was originally spread at an airport in Sydney, Australia. The perpetrators of the attack are still at large.

The movement is particularly opposed to the introduction of modified-genome plants and animals, and is believed responsible for the assassination of environmental managers engaged in their release. Interpol

now suspects that some Deep Environmentalists have detailed knowledge of ecoformer engineering, perhaps from professional experience. In 2088, construction of the Three Gorges arcology in China was halted for six months after at least 100 ecoformer systems were found to have been released in the area and reprogrammed to break down materials common to 21st-century manufacturing in an attempt to return the area to a more “pristine” nature.

INDUSTRIAL POLLUTION

Even if the global climate has stabilized, many regions still face enormous environmental burdens. Most of these are man-made, the result of inefficient and wasteful industrial practices. For the most part, advanced technologies have fewer waste products, although there are significant exceptions. Pollution therefore accumulates most rapidly in those countries least able to afford cleanup and abatement technologies.

Developing regions of the world still face polluted air, although the widespread adoption of fusion power and hydrogen/electric vehicles has greatly reduced that problem. The greater issues for the less-developed areas are water pollution (industrial runoff) and garbage accumulation. Modern filtering and recycling methods, which rely heavily on bioengineering, are expensive to license and difficult to build with Third Wave technology. Nonetheless, most countries have adopted aggressive pollution restrictions, even if the goals remain difficult to achieve.

Biotechnology

While biotechnology is much less polluting in general than older industries, it can have its problems, particularly in the early stages of a transition to a Fourth Wave economy. Biohazards can be expensive to safely destroy, and most governments are extremely sensitive to the possibility of a disease outbreak. It’s not unusual for major bioengineering firms from the hyperdeveloped world to create local subsidiaries in transition states that do nothing but handle biowaste at whatever price the market can bear.

Nanotechnology

Although nanotechnology-based production is rarely encountered in less-developed countries, many such states have adopted restrictions on nanotech production out of an unsubstantiated fear of potential runaway disasters. Not that there haven't been problems – in 2096, the Masterson & Bajpai Nanoworks facility, on the outskirts of Hyderabad, India, accidentally released partially programmed medical nanomachines into the local sewage system. While no human deaths or injuries were found, it was responsible for a rash of deformities and high death rates in the local frog population. The company paid for the cleanup, and had its corporate charter revoked.

**It's all well and good to say
that a rising tide lifts all boats,
but when your boat already
has holes, a rising tide means
you're gonna drown.**

**– Dr. Michael Ngombe,
Congo Recovery Project**

Using Less-Developed Countries as Dumping Grounds

While modern production methods are generally clean, the environmental safety technologies require large initial investments. Corporations from the hyperdeveloped world have been caught moving production facilities to poorly regulated regions in the less-developed world. Although this is highly illegal, avoiding the costs of environmental protection can mean substantial financial savings for a company and profits for its owners.

Since current industrial technology is heavily based on biotechnology, the Genetic Regulatory Agency had initial responsibility for the global law enforcement concerning industrial pollution. In 2088, the Biosphere Management Group spun-off from the GRA to function as an independent pollution-enforcement organization, also headquartered in Königsberg. Well-funded, the Group has investigatory teams to find abuses and abatement units to clean up the worst excesses – at the guilty company's expense.

COPING WITH Eco-CRISIS

Whether natural or man-made, environmental crises pose substantial challenges to governments. The financial costs are enormous, but so are the potential political costs. Disasters often expose corruption, from hidden deals

between officials and polluting industries to under-enforced building codes. Larger crises bring unwanted international attention.

Environmental disasters on the scale of a large earthquake or massive industrial accident often require outside help to get through. For countries well-integrated into the global system, offers – and acceptance – of outside help are *pro forma*. Countries that hide themselves from the outside world are in a serious quandary. They are unlikely to have enough resources to confront the disaster, but allowing in outside aid can result in undesirable exchanges of information. Some of these states will attempt to muddle through, denying that the disaster took place if at all possible.

This is a problem if the crisis' effects cross international borders. In August of 2044, the explosion of a chemical factory in northern Burma led to poisonous smoke crossing into China. The Burmese government at the time, a brutal military dictatorship, denied that the explosion had taken place and refused to accept international assistance to put it out, even when presented with satellite data showing the fire spreading. Finally, in mid-September, China occupied the region in a rapid invasion, which resulted in the deaths of over 100 Burmese troops. Chinese personnel brought the chemical fire under control, and it was completely extinguished within 10 days. The Chinese forces then withdrew, albeit only under considerable international pressure.

KLEPTOCRACIES, GANGS, AND WARLORDS

As bad as natural disasters are, they pale in comparison to what humankind has proven willing and able to do to itself. Although less common in 2100 than in centuries past, criminal regimes are still a significant problem, using



corruption, violence, and terror as tools of governance. Ethnic tensions, religious factions, and warlords hungry for power continue to tear apart fragile countries. The great-power nations pay either too much or too little attention, often using conflicts to pursue larger political or economic goals, or simply bowing out completely, leaving the locals to sort things out for themselves.

KLEPTOCRATIC REGIMES

In the late 20th century, the appearance of governments run only for the enrichment of a small number of individuals prompted the creation of a new political term: *kleptocracy*, the “rule of the thieves.” In some cases, the thieves were the petty warlords who had struggled for dominance and then became intent on looting the country. In others, the thieves were the criminal networks that had operated in the shadows of the previous regime, now thrust into power as the only group organized enough to maintain control. In most cases, the criminal dominance didn’t last, as either alternative forces challenged the corrupt government’s rule or the leadership fell victim to internal rivalries. The century between 2000 and 2100 saw many such kleptocratic governments spring up and die out; today, Haut-Zaire and Kyrgyzstan are the most visible examples.

Corruption as Policy

Traditional kleptocracies are simply governments dedicated to the ongoing enrichment of the leaders. While the most notorious of these are led by powerful, charismatic figures fond of gold-encrusted homes, the majority are less ostentatious, with regional crime networks pulling strings behind the scenes, giving the appearance of normality in the government. It may be well-known that the political leadership is corrupt, but as long as they don’t get too greedy and the economy is stable, this arrangement can last for years. In the case of these kleptocracies, the goals are to stay rich and not become a target for insurrection. Kyrgyzstan was such a stable kleptocracy for much of the last three decades, although a new generation of leaders seems more intent on self-glorification than policy.

Kleptocratic arrangements work well in otherwise stable environments, but create problems if the government collapses for other reasons, such as a major ideological shift, unrelated scandal, or external pressure. Suddenly, the mafias are exposed, or – worse still – the only ones in a position to maintain order. Historically, this spells the end of the kleptocracy, in one way or another.

In some cases, the governmental collapse eventually leads to chaos, such as with Armenia in 2047. When the president and vice president killed each other over the a woman, discontent with the scandal-plagued leadership boiled over into street protests. The local mafia – which had long been content simply to skim money from the official coffers – panicked, and had the military attack

the protesters. Some officers refused, and Yerevan was the scene of vicious fighting between army divisions. Eventually, Russia and the E.U. moved in troops to restore order and put in place a democratic government.

In other cases, the fall of the corrupt government has the counterintuitive result of the local crime network, finding itself the only moderately legitimate source of authority, more or less going straight. Keeping the country going becomes of greater concern than making more money. The classic example of this is Russia, which was considered among the most corrupt governments in the world throughout the first several decades of the 21st century. In 2029, when a failed military putsch killed the president and much of the parliament, the vice-president, who was also a powerful figure in the Russian Mafia, had to step in. Over the course of the next five years, the new president found himself drawing on the resources of the crime network to rebuild infrastructure and the staggering economy. The Russian Mafia, which had found itself taking over the civil society, was in turn absorbed by the society.

Bandit Kings

The other major form of kleptocratic regime has little concern about leadership, and is more interested in pure wealth accumulation, no matter the cost to the populace. Found most often in the weakest and least stable of regions, the simple pattern is the ongoing impoverishment of the already poor. It requires fine political balance; the bandits in charge of the regime must take enough from the people that the opponents aren’t strong enough to fight, but not take so much that they feel they have nothing left to lose. Few leaders have this much political sense, and the vast majority of these nations spawn bloody uprisings or factional warfare. Haut-Zaire and Haiti are current examples of this type of regime, and most observers expect both to fall into chaos at any time.

In a very few cases, a combination of charisma, power, and savvy actually leads to a very long rule; when the leader’s health fails, there is usually an attempt to pass power on to his progeny, inevitably with bad results. The advent of modern biotechnology is changing this pattern, however. The iron fist of Dr. Eric Townsend has ruled the Caribbean island of Grenada since 2064. A trained geneticist, Townsend has spent most of his accumulated wealth on Fourth and Fifth Wave treatments intended to improve his health and extend his life. He has welcomed so-called “black labs” to his island, and even flirted with membership in the TSA, although Grenada currently remains a member of the Caribbean Union.

ACTIVE CRIMINAL ORGANIZATIONS

Locos También, Los Angeles, United States. While prone to internecine fighting, *Locos También* dominates the local underworld through sheer numbers and force. For an urban gang, it is organized and powerful; an attempt by the Maple Syndicate to move into the region in 2094 was met by an intense guerrilla-style reaction, eventually causing the larger criminal organization to withdraw. The FBI believes that *Locos* has over 10,000 members, all concentrated in southern California.

Kali's Sword, Bombay, India. Despite its somewhat fearsome name, *Kali's Sword* is one of the least violent mafias of its size. Operating out of Bombay, but with cells across India, the PRA, and U.S., *Kali's Sword* deals exclusively in pirated intellectual property, from entertainment to classified military designs. In the TSA, *Kali's Sword* has become a popular brand name, and the WTO claims that the criminal network is largely supported by the nanosocialists.

al Mohajir, Algiers, Algeria. Functioning mainly as a conduit between Africa and Europe, *al Mohajir* is a distributed-network criminal group. Interpol estimates that *al Mohajir* has approximately 500 cells of three to 10 people each, although parts of the network are intentionally ignorant of each other's activities. They specialize in shipping small arms from Africa to Europe and the Islamic Caliphate, low-level technology smuggling, and moving stolen vehicles from Europe to failed states in central Africa.

Debt Slavery

The most common and arguably the most insidious form of kleptocratic rule is debt slavery. Found throughout the developing world, even in democratic societies, debt slavery is often an embedded part of local culture. Essentially life-long indentured servitude, in debt slavery money is borrowed – often to pay off medical or gambling bills – in exchange for labor. However, the servant is rarely able to make enough money through work to pay back the loan. As the person remains in servitude, any family he may have is enslaved as well, all working toward the repayment of the loan. To someone from the Fifth Wave world, the amounts can seem ridiculously small – \$100 or so – yet are still impossible for the slave to pay off.

Despite being paid a small salary, debt slaves are charged for food, housing, clothing, and other support. On rare occasions, a debt slave may be able to save up enough money to buy off the original debt, at least the portion owed by one member of the family. That newly freed person can then get a real job, making enough money in a short time to buy off the debts of his family or even his friends. Debt slavers are aware of this process, and use behavioral conditioning to convince slaves that once they are free, they'll have no security in their lives. They are taught that they can starve, be thrown out of their homes or worse, because they have no one to look after

them. To the dismay of aid workers and activists, this approach quite often works.

ORGANIZED CRIME

Even as advanced forensic technologies and monitoring systems make the life of the individual criminal difficult, the same systems that have empowered business and terror organizations around the world give new life to organized crime. Dense communications, encryption, widespread information flows, and the ability to assemble operational groups quickly are as valuable to criminal organizations, from urban gangs to traditional mafias, as they are to mainstream corporations. Criminal networks vary in their motivations and goals, but most use similar tools.

Gangs are usually urban, and will form and stay together for a variety of reasons: geography (members come from the same neighborhood), ethnicity (usually a minority identity), or memetics (linked by ideology or religion). Mafias are different; they function more like clans, with a distinct family-tribal element. They often start as a local means of social and economic control in opposition to a distant central government. As they rise in power and grow, they become alternative sources of authority. In addition to these groups, since 2044, international law-enforcement agencies have classified some organized crime groups as “criminal ad-hoc networks.” Based more on goals than on particular personal identities, these networks are based on a form of organization very similar to that of terrorist groups.

Urban Gangs

Traditionally, many gangs use indelible markers of membership or identity. Tattoos or ritual scarification have long been favorites, but those are now commonplace and fairly easy to remove. Some gangs have moved on to more elaborate (and painful) methods of marking identity, methods that are much more difficult to reverse or hide. A few, such as *Le Sang* in Marseilles, use the ritual amputation of the little finger on the left hand as a symbol. Some gangs, especially those that named after sharks or other predatory animals, have taken to sharpening their teeth. Very rarely, gangs with access to gene hackers, such as *Locos También* in Los Angeles, are starting to experiment with genetic surgery to make somatic changes, usually to skin color or texture.

Mafias

Mafias have been around for centuries, and while they've had varying levels of influence over the years, many are powerful in 2100. While the term is primarily associated with the Italian *Cosa Nostra*, existing global mafias include the triads and *tong* organizations of

mainland Asia, the Japanese *yakuza*, the Russian and Central Asian *maphiya*, and many others. Their main source of power is their deep, multi-generational clan structure. Mafias are invariably large, wealthy, and well-connected to local governments or religious hierarchies.

Criminal Ad-Hoc Networks

The newest variation of criminal organization has a wider reach than typical urban gangs, and a flatter, less-formal structure than traditional mafias. Relying on the kinds of operative cells and distributed leadership characteristic of terrorist groups, organizations of crime cells – called “criminal ad-hoc networks” by sociologists – have proven to be resilient opponents for global law-enforcement agencies (see also pp. TS106-107). Rather than emphasizing identity or territorial control, these networks are task-oriented, whether the goal is to smuggle weapons or distribute neural agents of dubious legality. Eliminating a leader or even multiple nodes of the network does little to disrupt activities for very long, as the distributed structure cannot easily be wholly destroyed. Their greatest vulnerability is their inability to scale; if they get too large, these sorts of groups fracture into competing networks, often violently.

FACTIONS AND WARLORDS

Wherever there is power, there are factions.
– Anonymous

Factionalism is inherent to power politics – all political structures evolve alternative power centers struggling for authority. Stable societies are usually able to mature this process into political parties, although the parties themselves will typically have factions. Danger arises when factional disputes cease being seen as purely political or memetic and become violent.

Ethnic/Tribal Factions

Ethnicity is a core part of individual identity, and many of the world’s political organizations remain founded on ethnic affiliation. Ethnic rivalry, often leading to violence, remains common in nations across Africa, Central Asia, and Southern Europe. These disputes often result from political borders not matching cultural borders, sometimes from forced migration of refugees. These conflicts are by far the most difficult to resolve, since one’s ethnic identity does not arise by choice and rarely changes. The dominant ethnic tensions of 2100 – Hutu versus Tutsi, Tajik versus Pushtun, Magyar versus Rom, etc. – are little changed from those from one or two centuries past.

In regions where ethnic struggles dominate, political affiliations usually mirror tribal or clan structures. When one faction achieves political dominance, it is rarely kind to opposing ethnic groups. This perpetuates the struggle, making tribal warfare extraordinarily difficult to resolve.

One of the most intractable ethnic disputes concerns the Kurdish population of Southwest Asia. With a population that covers land claimed by Turkey, Syria, Iraq, and Iran, the Kurds have a long history of both oppression by majority populations and violent opposition to compromise.

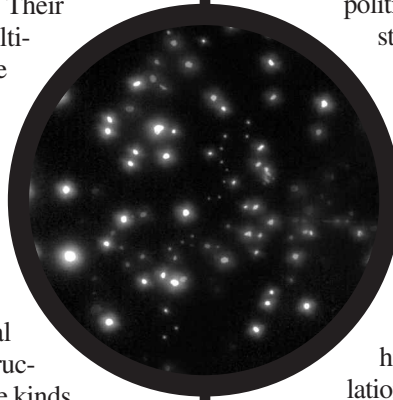
Various attempts to solve the “Kurdish problem” have failed, and the current hands-off policies have resulted in the emergence of local clan warlords staking out control of different parts of “Kurdistan.” Kurdish soldiers, experienced in both interclan conflicts and irregular warfare against Turkey, the Islamic Caliphate, and Iran, are widely sought by international terror and rebel movements.

Religious Factions

Religious struggles are nearly as intractable as tribal conflict. While often overlapping ethnic disputes, they can be wholly separate, as Catholic-Protestant and Sunni-Shi’ite struggles demonstrate. Religious wars can be difficult to resolve due to opposing faiths having wholly divergent historical myths, usually involving oppression and divine promises. The result is often an endless cycle of vengeance.

The rise of the Islamic Caliphate coincided with the decline of fundamentalist Islam, and current confessional disputes are primarily centered on doctrinal disputes *within* a given religion. The 2038 split of Catholicism may have been nonviolent in the Fifth Wave nations, but Catholic churches in parts of the developing world were attacked by opposing factions. Religious conflicts in the hyperdeveloped states revolve more around questions of sentience and human identity, although this, too, often leads to violence, usually against those with divergent views within the given faith.

This is not to say that religion no longer provokes larger political conflicts. The tension between Islam and the non-Muslim world has not disappeared, even if radical Islam is much less commonplace. Struggles between Muslim, Christian, and traditional religions are common in North and Central Africa. This is readily visible in the border region between Sudan and South Sudan. The non-Muslim, non-Arabic southern portion of the country split off in the 2010s, but conversion efforts from the north continued. At present, the shaky democratic government of South Sudan faces a population in its northernmost section that is split between a handful of armed groups, both Muslim and Christian, engaged in a low-intensity war.



Armies

While ethnic and religious splits are easy to identify, there are cases of a nation being torn apart by regional warlords who differ only in name. In these cases, the only affiliation is a desire for power. Some of these warlords may use ethnicity or religion as a mask to gain international support, but their primary focus is the predatory consumption of the money and resources of the home country. Warlords of this type can be found anywhere there is a power vacuum, and should not be considered a purely developing-world phenomenon.

The most painful example of this sort of chaos is the current situation in Kongo. The central government rules in name only; its military forces are sufficient only to protect the city of Kinshasa, now filled with refugees. The rest of the country, the core of the old Democratic Republic of the Congo, is ruled by a dozen different warlords of varying power and allegiance. Three – Robert Mulumba, Charles Hugo, and Antoine Mulembe – control armies large enough to potentially dominate the state. Shifting alliances, both among the three leading warlords and with a handful of secondary armies, keep any one of them from mounting an offensive sufficient to wrest control of the nation. The key warlords have some measure of international backing; the presence of moderately advanced weaponry and technologies such as puppet implants point to the support of external forces.

REVOLUTIONS AND WAR

Power flows from the barrel of a gun.
– Mao

Sometimes it is necessary to act decisively to remove the government that oppresses you, whether that government is your own or a threatening neighbor. Even in 2100,

it is sometimes necessary to fight a war. Few states look forward to this, while all states prepare for it. Given the destructive capability of both conventional and unconventional weapons, the rarity of full-scale war is fortunate. Conflicts on a smaller scale – uprisings, revolutions, and coups – tend to be much more common.

UPRISINGS

Civilian communities are rarely as well-armed as the state militaries, especially on Earth. This does not stop the masses from occasionally rising up to throw off the yoke of dictatorship, however. Given sufficient provocation, the masses will march; street violence, vandalism against commercial and government targets, and the relentless power of the mob can threaten even the best-armed state. Dictators fear that the military may side with the people, a concern that is steadily declining as increasing numbers of authoritarian regimes move to the use of perfectly loyal cybershell and bioroid soldiers. Above all else, though, protests are memetic events, designed to change minds at home and abroad.

Mass Protest

The most common sort of “uprising,” mass protests are commonplace, especially in places where the police or military tend *not* to use violence randomly. Mass protests are memetic warfare, trying to produce change by giving the appearance of broad public support for or against a given policy. Protests are usually filled with individuals armed with web-linked cameras, uplinks, and other tools of memetic engineering, trying to create a groundswell of support for the cause.

In and of themselves, mass protests are not terribly effective, as they are widely considered to be media events. The activist journal *MemeWar* estimates that about half of mass protests world-

wide are orchestrated, with small numbers of hired protestors and march leaders guiding the crowds. As part of a larger constellation of activism, however, they can be very effective, as they provide compelling visuals to go along with political demands. Mass protests are frequently linked to general strikes, at least in areas

**Things fall apart; the center cannot hold;
Mere anarchy is loosed upon the world.
The blood-dimmed tide is loosed, and everywhere
The ceremony of innocence is drowned;
The best lack all conviction, while the worst
Are full of passionate intensity.
– William Butler Yeats, The Second Coming**

where a significant portion of the population is employed.

Occasionally, protests can effect significant change. In a scene eerily reminiscent of the 1989 fall of Ceausescu, the authoritarian Romanian government was overthrown in 2038 when nearly three million people marched silently through the capitol city of Bucharest. Fearing a fate similar to the 20th-century dictator's, the Council of Directors fled the nation for Byelorussia.

Leading a mass protest requires a combination of performance abilities (such as the Voice advantage or Bard skill), a way to make a connection with the masses (Street-wise and Pop Culture skills are useful here), and at least passing knowledge of the issue being protested.

Violence in the Streets

Sometimes protests turn violent; sometimes the suppression of protests does. Violence as part of political activism can be a subtle tool. While rock-throwing, arson, and the like can be random, it is often well-planned; when properly controlled, it is noticeable without being sufficient to bring massive retaliation from the government. This is another manifestation of the memetic engineering of political protest. Video or slinky recordings of government soldiers employing deadly (or seemingly deadly) force against rock-throwing protestors is often very useful for lining up international support. That support can fade quickly if protestor violence turns against civilians, or can be effectively tagged as "terrorism."

International Attention

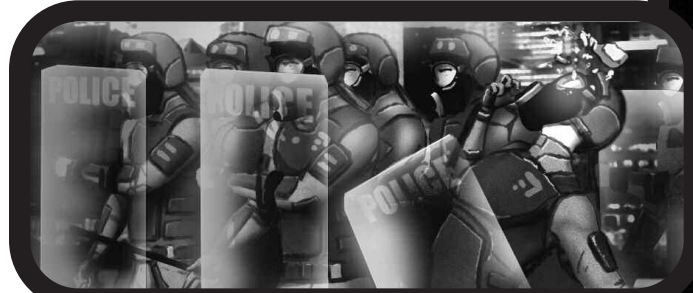
Protests can be considered asymmetric memetic warfare. Governments control, or at least heavily influence, the official media of the state. It can be difficult for a dissent movement, even one with broad domestic support, to have its voice heard over official newsfeeds. As a result, the web and global-media outlets are the protester's best friends. Every piece of information (or propaganda) that goes out unfiltered by "official" sources is a victory for the activist. The more a given state is tied in to the global web, the more difficult it is for the government to control information. In a sufficiently advanced network, each virtual interface is another potential global witness. There is strong global bias toward open societies, and states that intentionally cut off the populace from the web are presumed guilty, often of offenses far greater than those they've actually committed.

COUPS AND CIVIL WARS

If uprisings and protests are considered memetic conflicts, coups and civil wars are more traditional. Military force has a long history as an effective tool of regime change, whether for reasons of factionalism, ideological dispute, or simple power struggles. Coups – an illegal change in national leadership, usually involving

military force – were used quite often throughout the 21st century as a way of effecting political change. Civil wars, by definition far more violent and longer lasting, were fortunately much less common.

World politics seem to go through periods of spasms – the international community can go for years with relative stability, even in the weakest of developing countries, then encounter a decade of relentless unrest and violence. Coups can happen in both the developing and developed worlds, although the latter will more often use legalistic or judiciary maneuvering to have a faction installed into power over the popular will. In the highly interconnected world of 2100, it is difficult to carry off a coup or sustain a civil war without the knowledge and partial acquiescence of the great powers, who may support or suppress the political action for their own reasons.



Military Coups

The classic coup is the "decapitation" of the government by the domestic military forces. A coup plot is more likely to work when soldiers are disciplined to take orders from their commanders, but not to see their authority as subsidiary to civilian rule. Although the stereotype is of generals taking over, lower-ranking officers such as majors and colonels are far more commonly the leaders of coups. In the 21st century, coups were generally triggered either by a sense of indignation over official corruption, or a fear that the political leadership was biased toward the wrong side of an ideological conflict (usually nanosocialism).

Since the 2060s the intelligence services of the great-power nations have taken more active roles in advising and steering political factions in less-developed countries. But the great powers are not the only actors here; many nations, both developing and developed, maintain aggressive programs of covert operations against their rivals. This was vividly seen in August of 2020, when India and Pakistan simultaneously found themselves facing unexpected coup attempts, each resulting from manipulation by the other's intelligence bureau.

Civil Wars

In the early 21st century, the United States, Europe, and China tried to ignore civil wars, avoiding being drawn into the internal politics of chaotic regions.

The hegemonic powers gradually moved to a more interventionist posture toward the middle of the century, an example being American involvement in the Andes War of the mid-2050s. This carries with it its own set of difficulties, especially when warring sides consider the peacekeeping forces to be greater enemies than their domestic opponents.

Civil wars are not always entirely homegrown. Historically great powers have often used civil wars as a means of driving out unwanted governments, supplying the rebels with aid, arms, and intelligence. In other cases, such as with China's role in the simmering Malaysian civil war of the 2050s, the great power provides covert support to both sides, in order to cultivate friendships with the eventual winner and keep a potential regional rival distracted.

Civil wars where different great powers support opposing factions have been used by the hyperdeveloped nations as opportunities to test new military technologies. The United States, which supports the anti-nanosocialist insurrection in Honduras, has been very careful to document how various pieces of experimental armor and weaponry work against TSA designs, especially those based on stolen designs of modern European and Chinese systems. The TSA has been paying equal attention, taking special note of which of the American weapons and armor do best against the Chinese designs.

INTERSTATE WARS

Aside from the Pacific War, full-scale intercountry warfare has been rare in the 21st century. The nature of modern weaponry is such that even small conflicts can get out of hand very easily. Most of the wars that did happen during the last century were between nations that were for-

merly part of the same country, making them extended civil wars in most respects. Great-power interventions tend to be brief affairs; Fifth Wave nations have so much more capability – satellites, intelligence, cybershells, etc. – that less-developed nations have little chance of success. That said, defeating an army and subduing a country are two different things, and history is filled with examples of powerful nations that managed to do the first but not the second.

Border Disputes

Boundary skirmishes, such as those found throughout Central and West Africa, are the most common type of war between two nations. Given their frequency, they rarely receive significant attention from the global press. Some conflicts, such as attacks on Kivu from forces in Burundi and Haut-Zaire, or the occasional firefights over the border between Indian Kashmir and Pakistani Kashmir, have gone on for so many years that they are widely ignored unless something major results.

Resource Wars

It was widely expected that the decline of the petroleum economy would put an end to the wars that flared up over energy and resources, such as the Antarctic War of 2033-2034. Certainly advanced material and fabrication technologies, as well as bio-agricultural techniques that let crops grow nearly anywhere, have greatly reduced the developed world's dependence upon imported raw materials. Resources remain a strategic consideration, however. Fusion energy is based on Helium-3 resources controlled by a small number of spacefaring powers, minifacs still require raw inputs, and while declining populations and recovering climates have reduced conflicts over water

FIVE DEADLIEST CURRENT CIVIL WARS

1. *Kivu*: One of the successor states in the collapse of Congo, Kivu has been invaded across every border, and is often a battleground between rival factions in neighboring states. The government has appealed to the world community for help, without response.

2. *Haut-Zaire*: After the 2030 collapse of Congo, the provinces of Equateur and Orientale became the new state of Haut-Zaire, and proceeded to use its military to consolidate the region's diamond and gold mines, many of which are located in neighboring states. The current regime is particularly corrupt, and has used terror and ecological warfare against its own citizens in order to put down uprisings.

3. *Uzbekistan*: The Uzbek government is under pressure from both Islamic fundamentalists (backed by the Caliphate) and pro-democracy insurgents (backed by the E.U.). Anti-Zarubayev rebels fled over the border from

Kazakstan after a failed coup in 2099, and Kazakstan has sent in both troops and weapons, ostensibly in support of the Uzbek regime.

4. *Honduras*: Part of the Transpacific Socialist Alliance, Honduras is focused on a major guerrilla insurgency operating largely in the north. The nanosocialist government is heavily supported by neighboring Guatemala, while the United States is funding and supplying the rebels.

5. *Philippines*: Although technologically advanced and part of the prosperous Pacific Rim Alliance, the Philippines suffer from an increasingly effective nanosocialist revolt in the heavily Muslim southern islands. Covertly supported by Indonesia, the Islamic Socialist Party has won a number of surprising victories against the government forces, and are poised to declare independence on Mindanao.

somewhat from their midcentury peak, it is still an issue. Moreover, the continued growth of national economies is contingent upon the expansion of markets. Increasingly, the Fifth Wave world is looking upon consumers as a vital strategic resource.

Proxy Wars

Conflicts between developing nations are often thought of as mirrors of great-power rivalries, especially when there are great-power allies on opposing sides of a battle. Ironically, in situations where rival Fifth Wave states face each other over a developing-world battlefield, their most likely next move is to push their erstwhile allies to the bargaining table. Proxy wars, where one state was supported by a great power in its struggle against a different great-power-supported nation, occurred sporadically throughout the century, but the Pacific War – and the realization that war between the great powers was *not* unthinkable – has made a number of great powers reconsider the practice.

Great Power Conflicts

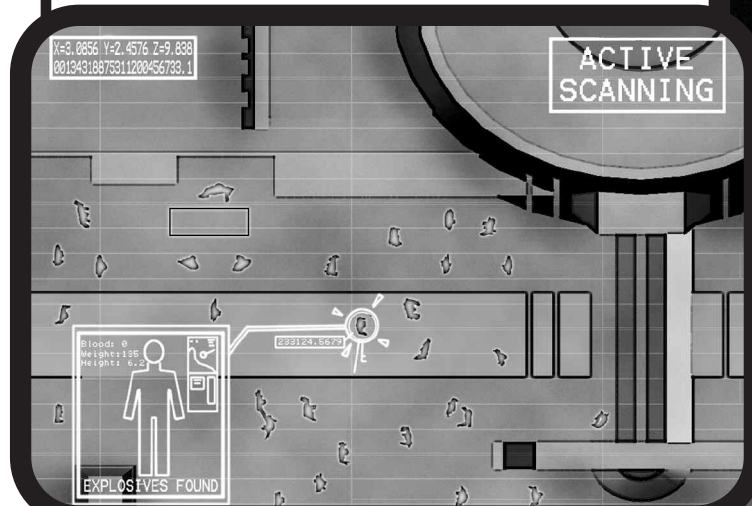
The only large-scale conflict between great-power nations in the 21st century was the Pacific War of 2084-2085. Its rapid onset, violent escalation, and near-global effect scared everyone. In the years that followed, explicit comparisons have been made to the conflicts leading up to World War One. A minor result has been the re-negotiation of several treaties between great-power states and regional nations, removing language that would promise an active defense of that nation if an outside force attacked (a scenario widely considered to blame for the onset of the first World War).

Although another showdown between the TSA and China is the most likely future great-power war, other combinations suggest themselves. There is little love lost between the TSA and the PRA, and border conflicts could quickly heat up. While China and the United States cooperate in the fight against nanosocialism and data piracy, they are rivals in nearly every other arena – a conflict over resources, especially off-world, could escalate to direct combat at home. The Islamic Caliphate, although generally inward-looking over the decades since its formation, considers the TSA and, to a lesser extent, the U.S. and E.U. to be ideological opponents. Although the United States and Europe are generally friendly, the issue of bioroid slavery has become an increasingly volatile topic. Several European senators have threatened “swift retaliation” should the U.S. enter E.U. territory (on Earth or in space) trying to recapture fugitive bioroids.

INTERNATIONAL TERROR Movements

Terrorism remains a useful, if horrific, form of asymmetric warfare. A small group, or even a single person, can do tremendous damage given the right equipment, particularly if they are willing to die in the process. While an elaborate infrastructure of training camps and weapon factories may facilitate a widespread terror campaign, the reality is that a motivated individual requires very little support to be able to inflict devastating punishment upon a target. Terror attacks remain a regular part of the international scene in 2100.

By and large, few terror incidents have explicit motives. The power of terrorism is the fear that it generates and the ignorance of when and where it will occur next. Yet as a method of forcing an opponent to give up territory or abandon a position, terrorism is woefully inadequate. Terrorism, even repeated attacks, can rarely bring about political change or do much to weaken the resolve of the target. In most cases, terrorism is used simply to punish and distract an opponent. In this particular task, it is very effective.



Modern Terrorism

Terrorist use of weapons of mass destruction (nuclear, chemical, biological, or nanotech weapons) remains a widespread fear, but most terrorists still rely on more traditional means. Conventional bombs, whether on a suicidal operative, a bomb-jacked remote carrier, or planted in an innocuous location in public, remain the terrorist weapon of choice. People in the Fourth and Fifth Wave world are even more fearful about bombings than in the past, as large explosions are one of the few ways that a person can be injured beyond all recovery. Shootings still occur as well, but it has become far more difficult to smuggle a firearm into a civilian area than in decades past.

GREAT POWER INTERVENTION FORCES

When the great powers move militarily, these are the units that usually get sent in first. Often specialists in covert and guerrilla operations, they move fast, hit hard, and get out. These groups are most likely to be deployed in “limited war” or “operations other than war” scenarios.

China: *3rd Special Warfare, 12th Special Warfare.* Post-Pacific-War power struggles in China’s top leadership led to a major reshuffling of special-operations organization. The 3rd Special Warfare battalion, which specializes in air and waterborne assaults and reconnaissance, remained under the control of the People’s Liberation Army. The 12th, which focuses on infiltration behind enemy lines and command-control-communication-intelligence disruption, became part of the Ministry of Intelligence. Both groups rely primarily on bioroid units, although the 3rd tends to have more heavy combat cybershells than does the 12th. As of January, 2100, neither battalion is known to be currently undertaking operations.

E.U.: *Combined Operations Force – Rangers.* The degree of military integration between E.U. members remains a slightly controversial subject in Europe. Germany, France, and the U.K. retain highly effective independent militaries. When unity is needed, the Combined Operations Force serves as a coordinating structure for the various E.U. militaries. The COF – Rangers group comprises units from the British Special Air Service, French Groupe de Combat en Milieu Clos, German Kommando Spezialkraefte, and other E.U. special forces. European soldiers are primarily human/parahuman, with a large variety of cybershell units. As of January, 2100, COF – Ranger units are known to be operating in Uzbekistan.

Islamic Caliphate: *Ghazi.* Recruited from Caliphate national armies, Ghazi forces are well-trained, although equipment is somewhat less advanced than in other great-power intervention and special-operations groups. Ghazi units are particularly strong in counter-terrorism. As of January, 2100, the Ghazi is known to be operating in Uzbekistan and along the Caliphate’s border with Iran.

PRA: *Special Air Service TAG/OAT.* Although all Pacific Rim Alliance members contribute to the collective defense, PRA special operations and intervention forces are largely based on Australian units. The Special Air Service Tactical Action Group/Offshore Assault Team squadrons

specialize in infiltration and counterterrorism operations, and rely heavily on cutting-edge technology to make up for smaller numbers. Although the PRA does not reveal any information about SAS TAG/OAT, units are believed to be operating in an advisory capacity in the Philippines.

SAC: *First Reconnaissance Brigade.* First Recon is seeing a wave of popularity in the South African Coalition after both a series of successful interventions in Central Africa and a pseudodocumentary InVid called *Recce*, which chronicled the lives and battles of a First Recon squad. In 2092, the SAC Ministry of Defense became the first to require upgraded or parahuman genomes for all new special-operations recruits; over the subsequent decade, non-upgraded personnel were gently moved to other divisions. First Recon is not currently deployed, although there is much debate as to whether to send them into the war in Kivu.

TSA: *Kesatuan Gurita (Indonesia), Fuerza de Operaciones Especiales (Peru).* There is no substantive TSA-wide intervention force, although the two most-powerful Alliance members, Indonesia and Peru, use their own special-operations and intervention military divisions for Alliance-wide actions. Both are presently in use, despite the ongoing process of rebuilding after the Pacific War. Indonesia is believed to have deployed a limited number of KG units in support of the rebels in the Philippines, and Peru is known to have sent FOE soldiers to support the Honduran government.

U.S.: *Unified Combat Applications Group.* In the post-conflict analysis following the Andes War, the United States decided that it had too great a variety of special-operations forces, and that territorial disputes, struggles over funding, and a lack of compatibility between technical resources was the inevitable result. Critics claimed that the subsequent reorganization made matters worse, but by the 2080s the Unified Combat Applications Group was considered one of the best special-operations organizations on Earth. Over the last two decades UCAG has largely focused on spaceborne operations, but the civil war in Honduras, and the U.S. government’s decision to support the anti-TSA rebels there, has increased UCAG’s budget for Earthside operations. Aside from Honduras, there are no other known UCAG deployments on Earth as of January 2100.

Although conventional weapons are most commonly employed, weapons of mass destruction have been used in terror incidents. The last decade has seen an attempted nuclear weapon attack on Mars, the release of viral dystrophy in Taipei, and, most recently, the attempted release of nanotech weapons by the resurgent Aum Shinrikyo death cult in Japan. There is good reason for fear.

Terrorist organizations are still structured in 2100 as they were two centuries earlier. Distributed sets of small, independent cells train for particular activities, not knowing if they are going to be part of a larger campaign, the entirety of the attack, or even a sacrificial distraction. A small set of individuals link the cells, but no one person has direct contact with more than a portion of the network. Even these commanding operatives rarely know many of

the others at their own level. An even smaller number of leaders give orders to the commanding operatives, but again, no one has contact with all parts of the network.

The goal is to avoid decapitation and disruption. A flattened, distributed network like this is very difficult to destroy. Its main drawback is the challenge it presents to communication. Encryption is helpful, but more often

messages are encoded “in plain sight” by being part of public web or slinky transmissions. These public triggers are often used to activate so-called “sleeping cells,” which train for an action and then lie dormant for years, waiting for the signal to attack. These are very difficult to defend against, as the members of the cell will be completely law-abiding, normal citizens up until the moment they strike. Once a cell receives its trigger, no upstream communication is required.

TERRORIST MOVEMENTS in 2100

Aum Shinrikyo: The Aum Shinrikyo cult in Japan re-emerged in 2099 after nearly a century of silence. There are currently few clues as to the whereabouts or motives of the movement; all that is known is that a small group of young women attempted to release a sophisticated nanoweapon in the Tokyo shopping district in August. Although the women killed themselves upon being captured, material they carried with them identified them as members of the group. The Japanese government managed to suppress news of the attempted nanoweapon attack until very recently. Officials refuse to provide any estimate of how many people might have been killed had the attack been carried off successfully.

Blue Duncanites: In early November of 2099, a TSA diplomat was assassinated in Singapore. Later in the month, the home of an Indian nanosocialist author caught fire, killing the writer and her family. In December, a car exploded on a Manila street, killing the driver and his passenger. A statement was issued later in the day by a group calling itself “Blue Duncanites,” claiming that the men killed were TSA spies, taking responsibility for the earlier attacks, and declaring war on all “information statisticians and their sympathizers.”

I Ho Ch’uan: This Chinese movement seeks the overthrow of the current government, claiming that it has lost the “mandate of heaven” with its failure to destroy the TSA in the Pacific War and allowing the Chinese colony on Mars any independence at all. In the several years that the group has been publicly visible, China has variously claimed that they were puppets of the TSA, of the United States, and of Japan. I Ho Ch’uan has primarily used explosives in its attacks on Chinese government officials, aside from its initial attack, which used the bioweapon viral dystrophy.

Kulturkampf: A radical splinter group left over from the Majority Cultures Movement, Kulturkampf is believed to comprise a small number of ex-E.U. citizens who believe that modern culture is inherently evil. It has claimed responsibility for a series of embassy bombings in the developing world, all targeting European Union or E.U.-member-state consulates.

Red Right Hand: An Earth-based activist group calling for the total cessation of all terraforming activity on Mars, Red Right Hand is known best for its use of environmental terror weapons. Starting in 2097, Red Right Hand began using “areoformers” to turn local areas of Earth into rough approximations of the pre-terraform Martian surface. Little is known about the group, other than its clear expertise with advanced environmental technology. They are believed to be an Earth-based offshoot of the Negative Growth terror network on Mars.

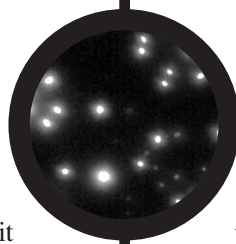
Stopping Terror

Nations suffering from terrorist attacks often use quick, devastating retaliation against the source of the assault. Most of the time, if their intelligence is correct, they manage to suppress or even eliminate that particular terrorist group. Stopping terror attacks before they happen is more difficult, however, relying on a combination of detailed intelligence and ubiquitous vigilance. No nation on Earth has managed to build a 100% effective defense against terror.

Nearly every Fourth and Fifth Wave society uses public monitoring to some degree. Fears of totalitarianism have largely gone unrealized, although most states have sporadic incidents of monitoring system misuse. Few technical security operations in 2100 pay attention to individuals *per se*. Most engage in pattern analysis, watching overall flows of people in public, of data across the web, of point-to-point communications, and the like, to look for anomalous patterns. It has long been recognized that masses going about their normal, day-to-day activities produce fairly consistent signals. Crowds moving through a shopping district do so in a regular way; telecommunication networks show reliable maps of regional connections for given lengths of time. Any one individual shopper or connection may vary, but even those variances fall into regular patterns. Security pattern analysis looks for the signals that fall well outside of the norm, and attempts to match them against other pieces of evidence for unusual or potentially threatening activity.



This type of monitoring first showed up at the end of the last century, as a means of preventing vehicle theft by watching for people walking through parking garages at a pace that varied from the norm. Over the last 100 years, it has been extended and deepened to be able to match far more complex sets of patterns. While it



is still widely used to watch for criminal activity in public spaces, it has been generally adopted by agencies trying to stop terrorists before they strike. The smartest and most sophisticated SAIs in existence are owned (or employed) by intelligence services in order to carry out this particular task.

TYPICAL MILITARY FORCES IN CHAOTIC AREAS

The military options available to the poorer and less-stable regions are limited. Sophisticated equipment, even from the black market, is too costly for government or irregular armies. When high-technology materiel does appear on the battlefield, it is almost always due to a more powerful ally. Opposing sides still seek an advantage, however; unconventional weapons, particularly bioweapons, can play a larger role in combat in these areas than anywhere else on Earth.

At best, soldiers involved in combat in politically chaotic regions will be outfitted as Third Wave soldiers (p. TS101). More often, they will be equipped with whatever generation weapons and gear is available. If maintained moderately well, guns can last for decades; a significant number of the rifles discarded by the advanced industrial states in the early part of the 21st century made their way into the arsenals of the developing world. Traditional dumb ammunition is cheap and easy to make, and remains a very effective tool for killing.

As the antiques are retired, weapons from the subsequent generation of arms – the first attempts at “smart” weapons – are becoming more common, especially in nations with rudimentary but functional information and communication technologies. Cheap battlefield computers, night-vision equipment, and laser-targeting systems give significant advantages over older combat technology. While none of the equipment

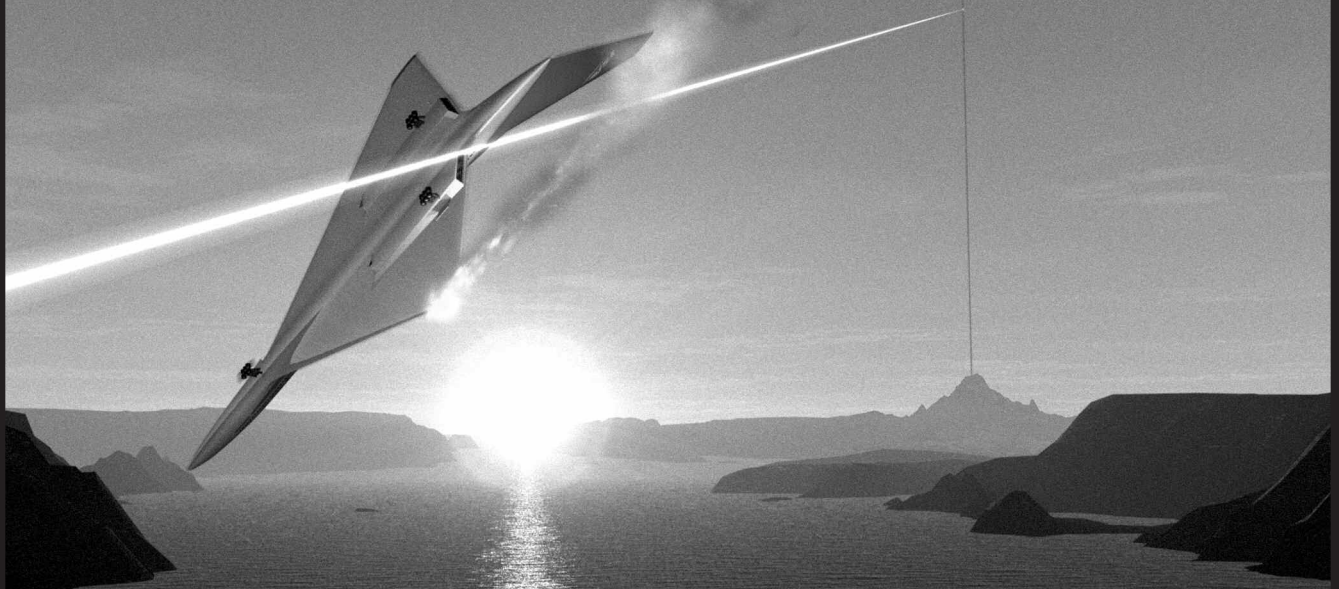
is up to the standards of a Fifth Wave army, some of it is comparable. The so-called “Basic Combat Rifle,” a rugged, cheap to produce, simple light automatic rifle, is found throughout the developing world (see p. 137).

Cybershells are very rare, although older, obsolete models are slowly finding their way into the developing world’s armies. The problem isn’t simply availability; combat shells require trained personnel to operate and maintain, and replacement parts can be hard to obtain. The most common use of cybershell troops is as “palace guard” units, dedicated to the protection of the national leadership. The MCS-64 cybershell (see p. 123) is usually preferred for this duty, because of its intimidating shape and size.

Bioroid soldiers are also uncommon due to their expense, although as more Fifth Wave nations replace bioroid soldiers with advanced SAI cybershell troops, older – but still viable – bioroid units are starting to show up in palace guards and elite units around the developing world. There are also scattered incidents of rogue governments, such as the warlords running the Kongo, using cheap puppet implants (see p. 134) to control captured opponents, using them as front-line soldiers against their former comrades. Considered a war crime, there has yet to be a prosecution of anyone involved in such atrocities. Nonetheless, it’s easiest and least costly simply to put a combat rifle in the hands of a 12-year-old.

5

LIFE IN THE WORLD OF BROKEN DREAMS



Richard Odinga sat nervously in the TransGlobal Airways passenger lounge at Jomo Kenyatta Interplanetary Spaceport. The plane was late, but that wasn't what bothered him. He hated transatmospheric flights, and he wasn't really eager to go to Mexico City anyway. He continued to study the latest financial scenarios for the new wind power generators his company had designed. They didn't look good. Even the AI freelancer they'd hired couldn't make the numbers better.

Headlines from the TEN web service scrolled across the bottom of his notebook, distracting him from the data model. They were the usual litany of crises, power struggles, and greed: "U.S. Congress to Consider Memory License Fees," "Honduran Government Denies Ecowarfare Claims," "17 Dead in Kazak-Uzbek Border Clash," "InVid 'Holly Hartley Shoots the Moon' Tops Weekend Downloads," and on and on. Giving up, he folded his notebook and slid it into his jacket pocket. He walked over to the window, catching sight of the Olympus Tower

reaching into the sky, miles away and still under construction, yet impressively, unimaginably large.

And then he saw the lasers.

Two — no, three — bright flashes, supernaturally straight lines of light, appeared from the midpoint of the tower. A massive fireball flowered in the sky close to the construction site. It was too close, Odinga realized, for it to have been an accident. Somebody was trying to fly a plane into the tower, probably one loaded with explosives. The plane's wreckage spiraled to the ground, black smoke an unmistakable marker of its location.

Within seconds, speakers throughout the spaceport crackled to life. "Ladies, gentlemen, and all traveling sapient beings, we have an announcement. Due to unforeseen circumstances, the airspace around Nairobi, including the Jomo Kenyatta Interplanetary Spaceport, has been temporarily closed. Please speak to your travel representative for information regarding flight rescheduling and temporary accommodations."

Mexico City would have to wait.

NAIROBI

The textbook example of a transition society, Nairobi has progressed from an overcrowded Second Wave capital to a thriving borderline-Fourth-Wave global city in less than a century, and the culture shock is still visible. The combination of a strongly Preservationist government with the influx of money supporting the Olympus beanstalk project has resulted in a local way of life that is both quite conservative and wildly experimental.

OVERVIEW

An accidental city, Nairobi's history has been that of a crossroads for trade and migration. The Olympus Project is simply the latest variation on a centuries-old trend.

History of Nairobi

Nairobi was founded by British colonialists in 1899, on a place that the indigenous Masai people called "Uaso Nyirobi," or "the watering place." At the midpoint of the Kenya-Uganda railway, Nairobi became the headquarters of the British effort to open the interior of eastern Africa to trade and colonization. Nairobi was in an ideal location, being close to the Great Rift Valley escarpment, on the southern slopes of Mt. Kenya, and midway between the Indian Ocean port of Mombassa and the city of Kisumu on Lake Victoria. Its altitude – nearly 8,700 feet – meant that, despite being almost directly on the equator, its climate was surprisingly temperate.

The early part of the 20th century saw a series of plagues decimate the Nairobi population as well as the railroad workers the British East Africa Protectorate brought in to complete the "Lunatic Express." Nonetheless, the Protectorate officially became a British colony in 1905, and thousands of settlers from across the British Empire made their way to Kenya. Nairobi grew as a racially segregated settlement, even as the influx of settlers pushed the native Masai off of their traditional lands.

African nationalism emerged as a resistance to colonial power, building across the region in the 1920s and 1930s. The movement grew more rapidly after World War II, as a European-educated Kenyan nationalist calling himself Jomo Kenyatta became the leader of the political struggle for independence. In 1952 the British imprisoned Kenyatta, even as the Mau Mau, a violent independence movement, grew in strength. Finally, in 1963, the combination of political pressure from moderates like Kenyatta, the violent revolt of the Mau Mau, and the overall collapse of empires led the British to leave Kenya.

Nairobi remained the capital city of Kenya after independence, beginning a period of rapid growth which brought its population to over three million people at the end of the 20th century. AIDS, corruption, a

mismanaged economy, and an authoritarian government left Kenya weakened at the onset of the 21st century, and Kenyans from across the country came to Nairobi in search of work. At its peak in 2025, Nairobi's population topped seven million people.

Despite its problems, Kenya managed to avoid the ethnic and political meltdowns that plagued much of the rest of the continent. Successive relatively honest reformist governments kept the lid on political tensions, and the Kenyan economy grew in strength and stability with the assistance of South Africa and the European Union. In 2033, Prime Minister Louise Johansen orchestrated deals with American and European businesses to move remote support and teleoperation services from India to Kenya – the English-fluent population gave Kenya an advantage over many of its competitors. This arrangement also had the effect of rapidly modernizing local technology, pushing Kenya toward a Third Wave society. Over the subsequent decade, Nairobi developed one of the best telecommunication systems of any major city, as corporations upgraded the regional infrastructure to support remote work.

In 2063, on the centennial of its independence, Kenya officially joined the South African Coalition. This has not been without controversy. The Kenyan representative in the SAC Deliberative Council submits a resolution each year to change the Coalition's name to something less regionally biased. More importantly, many Kenyans continue to prefer political independence, not wishing to give up their hard-won sovereignty. The once-dominant Kenyan African National Union political party maintains a "Kenya Out of the SAC" plank in its official platform.

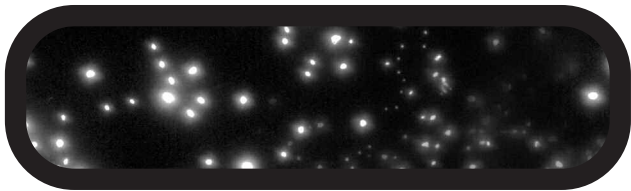
The late 2060s also saw the growth of Islam as a political force in Kenya. While Muslims had long been a minority in the country, radical Islamic Caliphate evangelists from Sudan began a conversion campaign in 2067, mostly in northern Kenya. Disaffected urban youth also started to pick up the banner of Islam, particularly after the Nairobi Islamic University opened in 2070.

Nairobi's position close to the equator is an ideal location for space-launch facilities, and in the 2070s work began on upgrading Jomo Kenyatta International Airport to allow it to support spaceplane landings and launches. In 2080, the expanded and renamed Jomo Kenyatta Interplanetary Spaceport opened. While nowhere as busy as the American facility in Quito, Ecuador, Jomo Kenyatta is a popular transfer point for European and South African travelers. The same year the spaceport opened, a coalition of transnational corporations also began to examine the feasibility of using Mount Kenya as the Earthside anchor for a space elevator, popularly known as a "beanstalk."

The Kenyan government opposed the project, fearing irreversible environmental damage to Mount Kenya and the surrounding area. Campaigning against the elevator development, Prime Minister Ngoma was returned to

office in 2083 with a resounding 68% of the vote. The transnational corporations behind the elevator proposal moved quickly to build support for the idea with both public advertising campaigns and private (well-hidden) donations to pro-beanstalk politicians in Kenya. The Popular Development Party, running on a strong pro-elevator platform, won a majority of the parliamentary seats in the 2088 election, and has retained power in each election since.

The Olympus Project began work in 2093, and is scheduled to be completed by 2114. The beanstalk is the biggest construction site on Earth, and the ground station, which currently rises over 10 miles into the air, will eventually reach nearly a hundred miles up. As feared, the work required to construct this massive edifice has fundamentally altered the shape of Mount Kenya. The symbol of the Kenyan People's Coalition, the current opposition party, is simply a black silhouette of the old Mount Kenya.



Nairobi Today

Nairobi in 2100 is the most modern African city north of Johannesburg. Its population stands at 5.5 million people, with another 200,000 or so itinerant workers. Most of the city's population is under age 40, giving Nairobi a youthful vibrancy absent in European and American cities. About 8% of the urban population is non-African in origin, with about half of those being long-time residents of Indian origin, and half business people or Olympus Project workers. While Christianity had dominated Kenya for nearly 200 years, Islam is now the most popular religion among believing Kenyans; about 35% of Kenyans are Muslims, compared to 30% Christians and 25% believers in traditional religions.

A small but growing portion of the Nairobi population is genefixed. Much of the economic and political elite used genefixing reproductive clinics in Europe or America during the previous decades, but the proliferation of biotech firms in Nairobi has brought the price of basic genetic repair down to middle-class affordability. Kenya, having seen countries in the region torn apart by ethnic hatred, has an aversion to genetic upgrades, but the practice is taking hold among the wealthy, most of whom live in Nairobi.

Bioroids, as throughout the South African Coalition, are considered citizens with full legal rights. Very few actually live in Kenya, although Jomo Kenyatta Spaceport is a popular location for bioroids on the run to request asylum in the SAC. Signs throughout the spaceport actively encourage bioroids to do so, and there is a full-time customs office there set up specifically for this purpose.

Cybershells and AIs of all sorts were rare in Kenya until the onset of the Olympus Project. Both teleoperated and AI-resident cybershells are now fairly common in Nairobi, and cybershell repair and construction businesses have sprung up across the city. The government believes that many of the designs used in these shops were smuggled in from the TSA, but the occasional crackdowns rarely result in major busts.

Nairobi, as a two-century-old city, displays an architectural mix of ultramodern "grown" buildings, Third Wave high-rise towers, and colonial-era estates. Traditional stone or brick buildings were demolished in the 2020s to build massive apartment blocks. As Nairobi's population fell in the 2040s and 50s, many of these residential complexes were replaced by parkland. With the population growth associated with the Olympus Project, there is again pressure on the government to add housing.

Kenya is managing its transition from Third Wave to Fourth Wave society relatively well, with political and cultural tension overshadowed by the prosperity the Olympus Project has brought over the last decade. The scope of the transition and the growth in prosperity are both most visible in Nairobi, where rituals and arts going back to pre-colonial times coexist with the latest InVids and musical groups from Europe, and where a street vendor with a pushcart is as likely to be selling designer minifac software as local handcrafted art. The pressures of transition are intense as well; population growth, problems with infrastructure, and the emergence of new memes, movements, and ideologies make Nairobi a political cacophony. Street protests are a weekly occurrence, sometimes daily in the Nairobi Hill district. Violence remains uncommon, but not unknown, in these marches. The Kenyan Special Police Service, which focuses on internal security and law enforcement, watches Nairobi's political situation with unease, and many political activists believe that the SPS has planted infiltrators in their midst.

Social Transition Stress Disorder is increasing among the adult population of Nairobi. Treatment, which has to be tailored to the local cultures, has been slower to emerge. At least 10% of the violent crimes in Nairobi in 2099 were associated with STSD, up from 7% in 2098.

Nairobi is one of the key economic engines of the South African Coalition, with four major industries dominating its market. With the Olympus project well underway, a substantial portion of Nairobi's economy centers on the support of the elevator construction, particularly the Mount Kenya gateway facilities. Thousands of laborers from all over the world have come to work on the project. While many workers reside in temporary housing in towns at the base of Mount Kenya, most prefer Nairobi. An assortment of entrepreneurs provides a wide array of services to the workers, some of dubious legality. While laws against prostitution and drug use still exist, both vices are commonly available to laborers. Olympus workers are also eager consumers of pirated InVids and slinkies.

ROBERT AMPALA

100 POINTS

Born 2068. Age 32; 5'9", 160 lbs. Dark brown skin, black hair, brown eyes.

Robert Ampala is a life-long resident of Nairobi, married, with 2 children. Several months ago, he lost his job as a logistic administrator on the Olympus Project when the material-management division was moved over to Bonn-based infomorphs. He now sells gray-and black-market versions of InVid and slinkie entertainment off of a cart near the Olympus Project employee village on the outskirts of the city, barely making enough money to keep his family fed and housed.

Prior to working on the Olympus Project, Ampala was on the staff of a VR support center, providing customer assistance for a game world popular in Korea. In early 2098, the game owners canceled the contract with the Nairobi firm and moved the support center to a less-expensive provider in Belize. Ampala was out of work for nearly a month before he got the job on the Olympus Project.

Robert Ampala has Social Transition Stress Disorder, although he has not had it officially diagnosed. He's edgy and easily angered, and has a strong visceral reaction to the sight of cybershells. While he knows that cybershells were not directly responsible for either of his recent job losses, he is aware that there are two ways that they get around – with either an infomorph or a remote operator controlling them, the two technologies that *were* the cause of his current status. He has not yet had a violent reaction, but sometimes finds it difficult not to get angry. Only his knowledge that getting arrested would make it even more difficult for his family to survive moderates his actions.

He got his current work, as the street seller of pirated InVid and slinkies, after one of his old friends still on the Olympus Project hooked him up with the local distributor. Ampala still has good contacts within the Project, and

sometimes slips them free copies of material in exchange for information. His employer, the pirated-content distributor, is known only as Jon, but clearly has access to a decent-sized organization and influence. Jon has managed to get the police off of Ampala's back once already.

Ampala doesn't care much for the idea of selling pirated wares, but is willing to do whatever it takes to keep his family fed. He's unlikely to reveal information about his current employers to the authorities, recognizing that they are well-connected in the world of organized crime. He'd be more willing to provide information about the Olympus Project, for the right price.

The one event that would truly push Robert Ampala over the edge is if he were to lose his job, particularly if there was clear cybershell or infomorph involvement (such as cybershell police officers arresting Jon). Ampala would be likely to react violently in this situation, probably attacking his former employers.

ST 10 [0]; **DX** 11 [10]; **IQ** 12 [20]; **HT** 11 [10].

Speed 5.50; Move 5.

Dodge 5.

Advantages: Common Sense [10]; Contacts (Within the Olympus Project workforce; business, skill 18, 15 or less) [9]; Deep Sleeper [5]; Patron (Employer; powerful, 12 or less) [20]; Very Fit [15].

Disadvantages: Bad Temper [-10]; On the Edge [-15]; Sense of Duty (To his family) [-5]; Struggling [-10].

Quirks: Afraid of rejection; Bites fingernails when upset; Pessimist; Speaks very quickly. [-4]

Skills: Administration-16 [10]; Brawling-12 [2]; Computer Operations-17 [10]; Fast-Talk-12 [2]; Leadership-14 [6]; Merchant-13 [4]; Scrounging-15 [6]; Stealth-12 [4].

Languages: English-11 [1]; Swahili (native)-12 [0].

Although many Fifth Wave businesses have gone to personality-emulating infomorphs for support services, quite a few emerging Fourth Wave firms still make use of human beings for remote assistance and teleoperation needs. Many

of these customers are up-and-coming members of the SAC, and Nairobi has emerged as the center of technological innovation for sub-Saharan Africa. Over half of the students at Nairobi's Arap Moi Technical University are from outside of Kenya. This occasionally leads to flare-ups of nationalist tensions – in late 2099, a group of Sri Lankan students were beaten by a crowd protesting the loss of jobs to foreign workers.

Kenya is also a leader in the study and preservation of African biodiversity. The Great Rift Foundation, funded largely by European Union members but based in Nairobi, has been a vocal proponent of returning vast stretches of the region to a wild state, and has distributed significant sums of money to organizations researching the complex mix of African ecologies. Most of these organizations maintain offices in Nairobi to be able to work closely with (and lobby) the Foundation. Their efforts are aided by an upswing in popular interest in African ecology. The popularity of safari tourism fell throughout much of the recent century, but is on the rise again, particularly tours using SafariShells (see p. 93).

Finally, Nairobi is the capital of Kenya, so all of the primary government services have headquarters there, including the powerful Bureau of Resources and Environment, which oversees both the protection of the Kenyan wilderness and the development of natural resources. As the leading regional capital, Nairobi is considered diplomatic neutral ground during central and east African conflicts. Embassy Row is one of the busiest parts of Nairobi, with diplomats, tourists, and business people from around the globe competing for data services and taxicabs. In 2009, the Australian and German embassies opened new offices in the Nairobi South business district – the influence of the Olympus Project consortium on Kenyan politics is increasingly of concern to its partners in the South African Coalition.

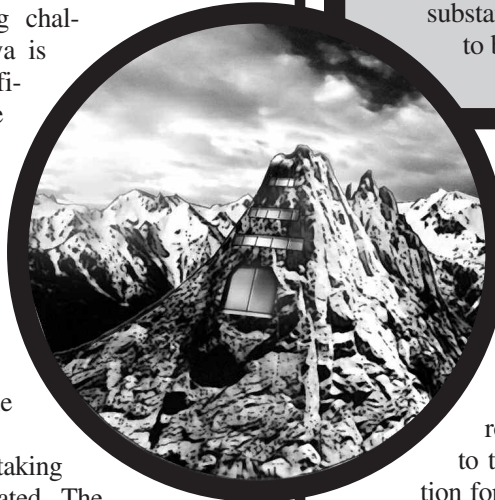
While Kenyan culture as a whole is strongly Preservationist, Nairobi, with its mix of political and economic forces, tends to be more cosmopolitan in outlook. Many of the global ideological groups have supporters in Nairobi, and the city has houses of worship for all major religions. The economic environment is aggressively competitive, however, and Nairobi has a sizeable indigent population.

The Olympus Project

Since 2003 Nairobi has been the focus for the Olympus Project, the first attempt at constructing a “beanstalk” ground-to-orbit system for Earth. The orbital elevator is designed to bridge the distance between the summit of Mount Kenya and geosynchronous orbit, cutting the cost of interface transport dramatically. Nairobi, as the nearest major city, will function as the primary transfer point for cargo and passengers. It is already building a second full-size airport, as well as upgrading the rail lines between Nairobi and the Indian Ocean port of Mombassa.

Mount Kenya, about 100 miles north of Nairobi, is the second tallest mountain in Africa, and sits almost directly on the equator. Long considered one of the most difficult climbing challenges anywhere, Mount Kenya is extremely rugged, and a significant part of the expense of the Olympus Project is in simply constructing the gateway station on the summit and the roads and rail from the station to Nairobi. The base of the elevator is Kere Nyaga Station – *Kere Nyaga* means “Mountain of Brightness,” the name for Mount Kenya in the local Kikuyu language.

Work on the elevator is taking more time than initially estimated. The current estimate for when the beanstalk will be operational is 2114, although Olympus officials privately concede that the system may not be fully



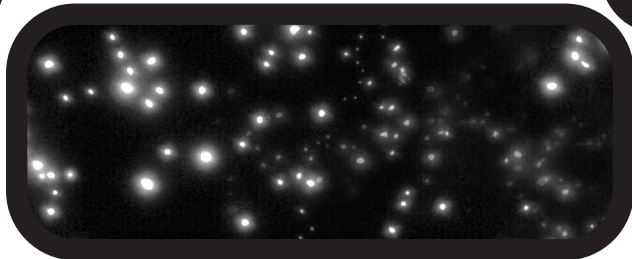
SAFARI SHELLS

Wilderness tourism and safaris are coming back in vogue due to the development of SafariShells, teleoperated bodies that give the tourist an immersive experience without endangering them or the wildlife. Safari tourism has long posed the problem of how to keep visitors and animals safe while still making it possible for wildlife to be viewed up close. Teleoperated cybershells designed to appear like native fauna is a popular solution, as they make it possible for tourists to come much closer to dangerous animals than ever before. Mainstream SafariShell outfits such as Kenya’s Wild Domain and Tanzania’s Serengeti Tours use cybershells that mimic local birds, although some specialize in cybershells that function like gazelles and similar species, giving the tourist a ground-eye view and the occasional excitement of having to run away from a predator.

Safaris that use animal bioshells rather than animal-mimic cybershells are illegal throughout the SAC, although they can still be found in more remote locations. Poachers are employed to hunt down and capture a candidate animal, usually a big cat or elephant. The animal’s brain is replaced with a shell infomorph that allows for remote operation, but which gives the bioshell more or less natural behavior when not under direct control. Animal bioshells are used by tourists wishing to go hunting as a lion or cheetah. Recently, illegal bioshell safaris have started to use slink-style interfaces rather than simple teleoperation systems, giving the tourist a more complete experience.

The South African Coalition typically pays a substantial bounty to anyone putting a stop to bioshell safari operators and poachers.

available until 2120. Delays have come from two main sources: labor disputes and slowdowns, and the environment on Mount Kenya. The original design for Kere Nyaga Station had to be overhauled when the initial work proved to be insufficiently braced against the high winds that rip across the summit, and a rockslide destroyed a section of the railway to the station in 2098, stopping all construction for several months. Kere Nyaga, which will eventually be nearly a hundred miles high, is now a mere 10 miles in height – but is still by far the largest structure ever created on Earth.



The labor problems have proven even more troublesome. Communication between local workers and management from outside of Africa has been more difficult than expected, and at least one work stoppage has happened over a perceived insult. Kenyan law restricts the use of cybershell labor in jobs where humans are willing and

available to work, meaning that several contractors had to spend weeks training people to do tasks typically done by automated systems elsewhere in the world. Most frustrating for the project has been the epidemics of new variant strains of local illnesses; at one point in 2009, nearly 20% of the project crew was down with a virus that had slipped past the latest antiviral upgrades. The increase in both virulence and frequency has led Olympus Project managers to suspect that the diseases were not naturally occurring.

Security is the single largest part of the Olympus Project budget, from hundreds of heavily armed guards to the sophisticated anti-aircraft/anti-missile defenses installed around the mountain. Most of the project security funding has come straight from European defense and intelligence

NYOTA KONGATA

Female, born 2073. Age 27; 5'10", 135 lbs. Dark brown skin, black hair, brown eyes, muscular build and sharp features.

Nyota Kongata is a Field Specialist at the Nairobi National Park. She is the park's top ranger, albeit the least loved by the administrators. Honest and willing to challenge those she thinks are wrong, Kongata knows she will never rise much above her current position – a situation that suits her fine. She prefers wildlife to humans.

Kongata can usually be found in the park, operating a realistic vulture SurveyShell as a way of monitoring the animals. Similar to the SafariShells used by tourists, hers includes a number of biosampling tools. She has learned how to make quick repairs to the cybershell in order to maximize her time in the field. The vulture cybershell is hers, purchased a little over a year ago. While she also has the official Wildlife Service gazelle SurveyShell to use as backup, she prefers the vistas and mobility of the vulture.

Increasingly regarded as an expert in Kenyan ecology, she has been outspoken against the introduction of bioengineered animals. Her field papers and recordings have been leaked by sympathizers to local preservationist groups, and she has become a minor celebrity. While largely apolitical, Kongata has no problem with her words being publicly seen, as long as they are used honestly.

Her opposition to bioengineered wildlife is causing her more trouble than she knows, however. The Great Rift Foundation director pushing the introduction plan, Marcus Kole, is working closely with the South African bioengineering firm Kalahari Biodesigns. Adoption of the proposal would mean million of dollars in licensing fees for Kalahari. It would also put them in a position to better compete with Ithemba Biotechnologies in the broader biotech market. As Kongata's position galvanizes the

opponents of the plan, Kole and Kalahari Biodesigns are becoming increasingly worried and angry.

Nyota Kongata cares little for the administrative operations of the Service, and makes an unlikely contact in the city itself. In the field, she can be found in both the National Park and in the larger stretches of wilderness outside toward the Great Rift. She is strongly opposed to poachers, and uses her vulture SurveyShell and her personal time to hunt them down. If Kole and Kalahari Biodesigns decide to move against her, they are likely to do so when she is alone outside of the park, and will make it look like vengeful poachers.

ST 13 [30]; **DX** 10 [0]; **IQ** 13 [30]; **HT** 11 [10].

Speed 5.25; Move 5.

Dodge 5.

Advantages: Administrative Rank 2 (Kenya Wildlife Service) [10]; Fearlessness +3 [6]; Genefixed [0]; Intuition [15]; Legal Enforcement Powers [5]; Reputation +3 ("Bioengineered-wildlife opponent;" local preservationists, 7 or less) [5]; Single-Minded [5].

Disadvantages: Combat Paralysis [-15]; Honesty [-10]; Loner [-5]; No Sense of Humor [-10].

Quirks: Impatient; Questions authority (Particularly regarding biotechnology); Rolls eyes when annoyed; Speaks very softly; Uncongenial. [-5]

Skills: Animal Handling-13 [4]; Area Knowledge (Kenya Wilderness)-15 [4]; Area Knowledge (Nairobi National Park)-19 [12]; Climbing-10 [2]; Computer Operation-14 [2]; Ecology-13 [4]; Engineer (SafariShell)-14 [6]; First Aid-13 [1]; Guns (Rifle)-12 [1]; Hiking-11 [2]; Naturalist-15 [8]; Orienteering-12 [1]; Veterinary-13 [4].

Languages: English-12 [1]; Kikuyu-12 [1]; Swahili (native)-13 [0].

124 POINTS

budgets, and Germany's intelligence bureau opened a new department in 2007 to deal exclusively with the Olympus Project. The last-minute prevention of a bombing in 2005 convinced the Project managers to err on the side of added caution; the resulting increase in anti-aircraft/anti-missile defense aggressiveness has led to the destruction of five small aircraft that had left their assigned landing corridors at Jomo Kenyatta Spaceport. In at least one case, the aircraft had changed to a path that would have taken it right into Kere Nyaga Station.

PLACES

The original layout of Nairobi was based on the large estates first owned by British colonial officials, then owned by the Kenyan elite. While these properties were long ago divided up and converted to residential and business districts, it's not uncommon for locals to use the old names as references to points in the city.

Embassy Row/Mabaraka

Running along Langata Road from the Mabaraka Estate district to Moi Estate in the southwestern quadrant of the city, Embassy Row is outside of the main downtown area but still one of the power centers of the city. Upscale boutiques and financial houses sit alongside diplomatic compounds, making Embassy Row the most heavily policed section of Nairobi. Cameras, microbot swarms, and officers on the street outfitted with Mugshot software linked to public and law-enforcement databases make it dangerous to even think about committing a crime. The local restaurants cater to the diplomat crowd, but any clandestine business is done well away from the ever-present surveillance.

Uhuru Memorial Hospital sits at the center of Embassy Row, and is considered the best medical facility in the mid-continent. It is also one of the most difficult to get into – Uhuru Memorial does not take walk-in emergencies, only established patients of the hospital's physicians. This is not without cause; in 2068, people claiming to be accident victims entered the hospital in order to assassinate the President of Sudan, who was there receiving treatment for liver cancer. The medical equipment in Uhuru Memorial is solidly high Fourth Wave, similar to that found in good hospitals in Europe or America. Price are much higher, however; treatment costs are three to five times higher than those listed in *Transhuman Space* or *Fifth Wave*.

At the southwest end of Langata Road is the main gate to Nairobi National Park, the headquarters of the Kenya Wildlife Service, which oversees the park along with the Great Rift Foundation as a living biodiversity laboratory.

Nairobi South District

Now the business center of the city, Nairobi South was once dominated by manufacturing and heavy

industry. By the 2040s, after a period of polluted disuse, the transnational information-technology industry started to move in, converting old warehouses and factories into remote-support centers and high-bandwidth teleoperation hubs. By the 2070s, as the economy shifted, many of the information technology firms along Uhuru Highway and Mombasa Road became bioinformatics and ecosystems businesses. When the airport at the end of Mombasa Road became the Jomo Kenyatta Spaceport, many transnational corporations doing business in SAC countries moved their local headquarters to Nairobi South.

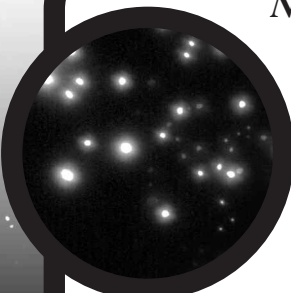
Today, Nairobi South is the most business-focused district in the city, with research labs and network-operation centers intermixed with corporate offices. The Olympus Project headquarters is in Nairobi South, in the old General Motors building. There is little official police presence in the district; most of the corporate residents prefer to control their own security, and are wary of government surveillance systems letting trade secrets slip. The latest renovations to the district have removed pedestrian thoroughfares, and corporate security officers deal harshly with loiterers. Political marches starting in Nairobi Hill rarely end up in Nairobi South, although when they do, they usually turn violent. Local security is more willing to use force against protestors than does the police, and the reverse has also become true.

Jomo Kenyatta Interplanetary Spaceport

To the east of the Nairobi South district, the spaceport is Nairobi's main transit hub for both people and goods. When the aging Jomo Kenyatta International Airport was the subject of a multi-year, multi-billion dollar refit in the 2070s, many observers thought that the investors – primarily a South African consortium and a bank from the Pacific Rim Alliance – had wasted their money. To be sure, the Jomo Kenyatta Interplanetary Spaceport had substantial overcapacity at first, with six spaceplane-capable runways and more terminal space than London Heathrow. But JomoKen (as many call it) had a number of advantages going for it: a near-equatorial location, easy overland-rail connections, and a relatively close Indian Ocean port, all in a stable and modernizing country. Use grew rapidly, as the spaceport was able to handle any size aircraft, from commuter planes to streamlined transatmospheric vehicles.

In 2094, JomoKen added the continent's only laser-lift system outside of South Africa. While primarily used now for Olympus Project work, it will give carriers using Kenyan facilities the option of fast and expensive launch or slow and inexpensive elevator transit in a single location. A dedicated fusion plant powers the laser-lift system, making excess electricity available to Nairobi when the laser is not in use.

Nairobi Hill



At the city center, Nairobi Hill is the main downtown area, home to many local businesses, popular eateries, and entertainment venues. It's also where most of Nairobi's homeless population lives, and the focal point of most political rallies.

Uhuru Park has been the center of many confrontations between protestors and the police, and is regularly occupied by speakers and activists supporting various causes. Inexpensive boarding houses and restaurants ring the park, making it a traditional starting point for many new residents of the city. Across Haile Selassie Avenue from the park is the headquarters of the Nairobi Guardian, one of the oldest news agencies in the region. The Guardian is best known for its investigative reports and muckraking editorials, published hourly on the web and weekly in print.

Much of Nairobi's nightlife happens in the Nairobi Hill district. Street vendors and performers crowd the pedestrian mall, sometimes working with local pickpockets. Clubs with live music, after-hours bars, and virtual-gaming centers make the area lively 24 hours a day. The southeastern corner of the district is the local red-light area, much more active now than prior to the Olympus Project. Police vice raids occasionally sweep through here and arrest unwary prostitutes, but this is usually only around elections or in reaction to a rise in violent crime.

Each March, Nairobi Hill is home to the Pan-African Arts Festival, a three-day affair that combines modern music and art with traditional forms of performance from across the continent. Multiple stages, outdoor galleries, and hundreds of street vendors bring a crowd that fills Nairobi Hill, sometimes spilling into the north and the Karen district to the west. Several globally popular musical acts, including Kilimanjaro Dawn, made their debut at the festival. In recent years, the Nairobi police have expressed concern over the size of the event. In 2009, the festival drew a crowd of nearly 750,000 people, and over a million are expected to show up in 2100.

The crowds and commotion make the Nairobi Hill district a favored area for off-the-record meetings between diplomats or corporate executives.

Karen District

To the west of Nairobi Hill is the Karen District, home to many of Nairobi's colleges and religious centers. While many young adults live and study in Karen, there are few nightclubs or bars. The Karen District has a character of seriousness that underscores the sense of mission many students have in Nairobi. Most non-Kenyan scholars are here with the clear goal of returning home and bringing their countries into the modern world; parties and local politics are distractions from that goal.

The Ngong Academy, at the eastern end of Karen, is the most prestigious private college in Nairobi, specializing in memetics, public administration, and political economy. The sons and daughters of the elite study here; a degree from Ngong means guaranteed placement in key government positions upon graduation. Ngong recently turned down an endowment from the SAC, not wanting to appear partisan to students from outside the Coalition.

The campus of the Arap Moi Technical University sits just north of Karen, in an abandoned convent. Small and highly competitive, AMTU has a limited number of academic tracks, all focusing on cutting-edge science and technology. Most of the faculty is from Europe and the Pacific Rim Alliance, and none are permanent. The program for the 2009-2100 academic year includes courses in medical nanotechnology, fusion engineering, and submersible cybershell design. Over half of AMTU's students come from outside of Kenya.

One of the more-recent additions to the district is the Nairobi Islamic University. Founded in 2070, the majority of its funding comes from the Islamic Caliphate, and it currently enrolls about 8,000 students. It provides a mix of religious and practical education, intending that its students be able to support themselves on their spiritual journeys. The Islamic University is politically moderate, not wishing to endanger friendly relations between the Caliphate and the SAC, and discourages campus political organizations and activism. It does have an evangelical aspect, however, and many graduates go on conversion missions into the rural parts of central and southern Africa.

CURRENT EVENTS

The Kenyan Special Police Service believes that the series of diseases hitting the Olympus Project employees were engineered by a group opposed to the elevator. The SPS had not intended that this theory become public knowledge, but a veteran reporter from the Nairobi Guardian broke the story in mid-December. While the initial uproar has died down, the SPS is nowhere closer to solving the mystery. The Guardian reporter has gone into hiding, having received what the paper termed "credible threats" against his life.

A major poaching/bioshell safari ring was broken up when rangers from the Kenya Wildlife Service traced a teleoperation signal from a bioshell elephant back to a camp outside of Nanyuki, near Mount Kenya. Rangers are still searching for the ring's bioshell technician, Dr. Lucien Duvalier. There is a \$50,000 reward for his capture.

A New Year's Eve vice sweep through the red-light district came up with an unexpected prize – Michael Lombasa, a Master of Public Administration student at Ngong Academy . . . and son of the Minister of Finance. The Minister and his son are refusing to talk to reporters,

although a spokesperson is pushing the story that this was a setup by one of the Minister's political rivals.

The laser-lift system at Jomo Kenyatta Spaceport has been shut down for over a week, as technicians attempt to troubleshoot a recurring problem with beam coherence. The most recent event led to an emergency shutdown one-third of the way through launch, requiring that the unmanned cargo vehicle ditch in the Indian Ocean. The manufacturer, System Technologies AG, has sent in its top laser-lift engineer, an SAI named Stavrogin.

The Kenyan People's Coalition has announced that it will be supporting a major anti-Olympus Project rally during this year's Pan-African Arts Festival. As a result, the Nairobi Police Department has officially requested outside assistance to maintain order. The police are asking for personnel, microbot swarms, helicopters, pacifying equipment – anything that can help control a crowd of up to a million people. Johannesburg, Pretoria, and London have all pledged support.

The local heavy equipment manufacturer, Nyeri Viwandazito, is aggressively pursuing the contract for the high-speed rail link from Mount Kenya to Nairobi. It faces stiff competition from the Ukrainian industrial giant CHERKOM, which has promised Nairobi that it will set up robofacturing facilities in Kenya if it wins the bid. While the local corporation was thought to have a lock on the contract, recent statements from the Olympus Coordination Office have suggested the Ukrainian group might have the edge.

LOS ANGELES

Once the largest urban-metropolitan area in the United States, Los Angeles weathered a series of economic, environmental, and political disasters over the course of the last century. Although it still attracts immigrants from around the world, L.A. is no longer a center of global culture. Its problems over the last hundred years have left it behind the rest of the country economically and socially, making it more like a Third Wave city than an urban center in one of the richest nations on Earth.

OVERVIEW

Los Angeles historically has been a case study in extremes, with immense wealth and poverty, a massive population on top of an environmental nightmare, and a local culture that celebrated the transient and ephemeral. The 21st century was not kind to L.A., but it again appears to be recreating itself from the ashes of disaster.

History

The region now known as Los Angeles was originally home to a series of native tribes, living quietly in what some called the “smoky valley.” In 1769, Gaspar de

Portola led a Spanish expedition along the coast, and set up camp along the Los Angeles river. Spanish settlers arrived a dozen years later, and the city of Los Angeles was born. By the early 19th century, Los Angeles was the center of a sprawling collection of Mexican ranches. In 1847, an American named John Fremont wrested Los Angeles from its Mexican owners, and the city was incorporated into the state of California in 1850.

Year-round good weather and abundant local resources attracted settlers, and the population of the city grew from a few thousand when incorporated to over 320,000 by the early 20th century. The weather also proved attractive to a variety of industries, especially filmmaking; Los Angeles was considered the heart of the global entertainment industry for over 150 years.

Los Angeles boomed in the years subsequent to World War II, and a combination of rapid population growth, the automobile, and cheap land led to a suburban explosion. The Los Angeles model of multiple urban cores surrounded by massive suburban tracts was emulated worldwide, but also led directly to the city's notorious pollution problem. By late in the 20th century, there were more vehicles in the greater Los Angeles area than there were residents. The city's growth soon reflected a greater cultural diversity; it was one of the first major urban centers in the nation to have a Hispanic majority population.

Despite periodic ethnic clashes, Los Angeles in the early 21st century remained focused on economic development and environmental mitigation. Air pollution, dwindling water resources, and problems with disease and pests made the local environment a key political concern. As the rapid global warming of the early century brought on rising seas, the city moved rapidly. In 2033, work began on the Seawall, a massive flood control and tide-management structure stretching for miles down the Santa Monica bay.

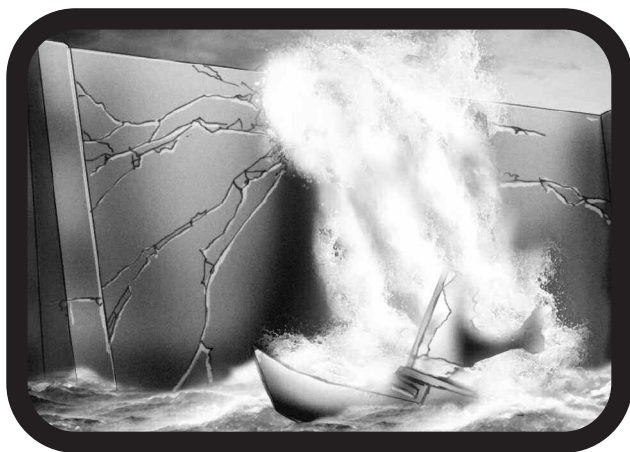
The Seawall would take five years to complete, two more than originally planned. When the last gate in the Seawall network of locks was installed in 2038, the city was relieved. Rising seas had already caused problems in cities around the world, and the new Seawall again made Los Angeles a model for others to emulate.

The relief was short-lived, however. Although the 2042 earthquake caused comparatively light damage, it pushed many established residents over a psychological edge. In 2043, for the first time in well over a century, the Los Angeles area saw a decline in population. Businesses that had long considered L.A. their home started openly looking to relocate. The biggest economic hit came late in the decade, when several of the major movie and InVid studios shut down, selling off content and intellectual property to the rising Bollywood powerhouses. A few studios remained, but faced quickly declining revenues.

LIFE IN THE WORLD OF BROKEN DREAMS

The early 2050s saw the signs of a recovery, as several major manufacturers opened factories in the area. Although few people were actually employed by the firms, the resulting tax revenue allowed Los Angeles to begin re-investing in education and infrastructure. In 2054, a conglomerate of the remaining local studios, high-technology manufacturers, and amusement-park companies opened Worldarc, the first arcology in the state of California, and an experiment in residential entertainment.

The recovery did not last. In 2058 and into 2059, the “heavy weather” period in the Pacific peaked in what became known as “el Año del Niño,” a six-month series of massive ocean-based storms. High winds and incessant rain battered the region for weeks on end. The Seawall, which had withstood two decades of annual severe weather, proved unable to handle storms of this magnitude and quantity. In March of 2059, the Seawall breached in several locations. A wall of water smashed through the coastal cities, reaching as far east as Beverly Hills and south to Long Beach. Thousands died, and hundreds of thousands were left homeless.



Emergency measures began immediately. By 2060, the county Board of Supervisors had taken the lead role in coordinating recovery and reconstruction efforts, and the county Sheriff had taken on the main policing duties. By the middle of the decade, the region was economically and politically stable, and parts – such as Worldarc and downtown – were managing to actually thrive.

The '70s and '80s were relatively calm, with occasional attempts to revitalize parts of the city and a gradual return to a net positive population flow. Many migrants chose to call Los Angeles home, in large part because its cost of living was the lowest in the United States. The vast geographic size of L.A., even with areas lost to the sea, provided ample opportunity for ethnic communities to grow and prosper. The two waves of TSA-related migration – the first in 2075, at the formation of the Alliance, and the second a decade later, fleeing the Pacific War – gave Los Angeles its current ethnic mix and conservative political complexion.

The 2090s were marked by the construction of the Aztlan arcology complex in downtown Los Angeles and the rise of the Mexican immigrants. Although they make up only about 10% of the city's population, citizens of Mexican heritage own the majority of large businesses and a substantial percentage of the region's property. The powerful county Sheriff, Juan Reyes, and the current Chairman of the Board of Supervisors, Hector Alvarez, both come from long-established Mexican immigrant families. More so than any other cultural divide, the split between Mexican and non-Mexican Hispanic groups seems poised to lead to political trouble in the near future.

Los Angeles Today

The greater Los Angeles area is home to over 7.5 million people, down from its peak of 17 million in the mid-part of the 21st century. About 500,000 people live in the various regional arcologies – even City of Angels, which has at least two years of construction left before completion, houses 20,000 people – a number that is expected to grow as the economy rebuilds and more people return to the area. There is already talk of a Valley arcology, and Aztlan is seeking approval for a plan to add a fifth pyramid. Most of the population of Los Angeles is foreign-born, largely from Central America and Southeast Asia. Many immigrants fled nanosocialist nations, giving the region a strongly anti-infosocialist political character.

The immigrant dominance and recent decades of significant poverty give Los Angeles the distinction of having the lowest proportion of genefixed citizens of all American urban centers. It also has the youngest average population, at 21. Few immigrants or youth care to vote, however, and the county remains under the control of a Board of Supervisors made up of the same set of leaders for 33 years, re-elected each term by a bloc of aging, wealthy voters in the gentrified San Gabriel region. The Board is reluctant to spend money on rebuilding poorer parts of the county, focusing instead on arcologies and law enforcement.

Since 2060, the bulk of policing in the area has been the responsibility of the Los Angeles County Sheriff's Department. Without the scandal-plagued history of the LAPD, the Deputies were initially greeted warmly by the populace. Since the 2092 election of Juan Reyes as the director of the office, however, the methods of regional law enforcement have taken a harsher turn. Moving aggressively against the gangs that dominate parts of the city, Reyes proceeded to re-outfit the officers with military-police equipment and implement a new street-monitoring policy heavily dependent upon remotely operated cybershells. The initial wave of arrests has dropped back down to the pre-Reyes levels, as gangs and unlicensed brainbug dealers have learned to adapt to the monitoring systems, sometimes even hacking them.

L.A. has little of the sense of promise or opportunity commonplace in much of the rest of the United States, and most of the city (outside of the arcologies) would

remain familiar to a Los Angeles citizen of half a century earlier. The majority of first-generation immigrants live in ethnic enclaves, keeping tight hold of their traditions and cultures. There has been little movement out of Los Angeles by these groups, due in part to culture shock and in part to a political mood in the U.S. that offers little support to immigrants from the developing world.

Economically, most analysts are hopeful that Los Angeles has seen the worst of its troubles, and is firmly on a path to recovery. The success of the Worldarc and Aztlan arcologies, and the momentum behind the construction of City of Angels, has started to improve the appeal of L.A. as a place to live. There are also strong signs that the regional economy is picking up. It remains an open question how much these changes will improve the lives of the majority of the local citizens.

In early 2009, Carlos Herrera, one of the founding designers at Nanodynamics, left the company and moved south to the Aztlan arcologies. Although his representative infomorphs claimed that he did so in order to live closer to his dying mother, inside rumors suggested that he opposed Nanodynamics' handling of its Exogenesis acquisition. These rumors were borne out when, in September of 2009, he founded Herrera Femtodynamics, and hired several of the key nanotech and AI designers who had left Exogenesis. Headquartered in Pasadena, on the old Cal Tech campus, the firm has yet to announce any products or public strategies, but has begun investing heavily in improving the information and communication infrastructure of the region, including signing on as a subcontractor for the City of Angels project.

The lead contractor for the arcology, CSD Incorporated, is a cybershell-based construction firm based in San Diego. By signing Femtodynamics as a subcontractor, along with canceling a large cybershell order from Nanodynamics, CSD has generated a lot of publicity as well as substantial hostility from its former supplier. As far as the county is concerned, however, CSD can do little wrong, as the City of Angels project appears to be coming in slightly ahead of schedule and on budget. Furthermore, the corporation exceeded its local-employment requirements by 10%, training nearly 1,700 people in construction cybershell operation, over a third of its total workforce.

The most inspiring sign of regional recovery was the purchase of the former Warner Brothers Studio lot by Indus River Studios. Indus River, the second-largest Bollywood production house, claimed to be looking for an additional location and office space well away from its current home in Mumbai. It's an open secret, however, that the current head of Indus River, Sarai Ramamoorthy, is strongly anti-infosocialist, and fears the strength of the nanosocialist movement in her home country. Los Angeles leaders are hopeful that a return of the entertainment industry will be the decisive push to renew L.A.

Some problems remain intractable, however. Locos También effectively owns large parts of the downtown and east L.A. regions, making them no-go zones for the L.A. County Deputies. A brief territory struggle with the Maple Syndicate left the local gang in a stronger position than ever, with control over brainbug distribution networks and weapon smuggling across all of southern California. Its only significant competition is the Malaysian gang known as Koro, which operates largely out of the western half of the city, in the Floats and a few parts of the Westside.

Of greater long-term concern is the growing evidence of a major underground bioengineering operation in the region. Aside from supplying new brainbugs to the Locos, there are signs that it is working on unlicensed – and potentially illegal – genemod designs as well. Sheriff's office investigators believe that the labs are distributed throughout the Westside-downtown corridor, operating out of abandoned buildings or slum apartment complexes. No currently operating lab has been discovered yet, however. A handful of raids have only found recently abandoned locations.

PLACES

The county of Los Angeles encompasses over 4,000 square miles, larger than several European countries. The city itself covers over a third of that territory, and contains just about half of the population. The urbanization pattern runs largely along an east-west axis, from the ocean to the deserts of the Inland Empire cities. The one exception is the Valley, which stretches to the north of the city center.

The Floats

Nearly 250,000 people live in the Floats, the raft villages that fill the Santa Monica bay inside the Seawall. Most inhabitants come from Southeast Asia. The first wave arrived in the mid-2070s, with the formation of the Transpacific Socialist Alliance; a second, larger wave arrived a decade later, escaping the ravages of the Pacific War. The average age of the Floats population is 15.

The Floats mainly comprise thousands of boats of varying sizes permanently lashed together, stretching for miles. Along the western edge, the Floats are anchored to the Seawall; the east side is more ragged, and has more temporary connections. Scattered throughout the residential boats are various commercial centers, from taverns and gambling parlors to restaurants and markets. There are two main Floats areas: Little Bangkok, which is primarily Thai; and Kuala Baru, which is primarily Malaysian. The two groups are on relatively good terms with each other, although Little Bangkok has seen increased difficulty with the Koro gang, based largely in Kuala Baru.

CHAWALIT SANG LIKPHAI

80 POINTS

Female, born 2048. Age 52; 5'1", 105 pounds. Weathered tan skin, black and gray hair, brown eyes.

Chawalit Sang Likphai is a doctor and genetic engineer living in the Floats. Trained in Thailand, she arrived with the refugees fleeing the Pacific War. She does not have strong anti-nanosocialist feelings, instead ignoring politics entirely. She is unmarried, has two children (both are adults and have moved out of the Floats), and is increasingly reclusive.

Although Likphai was born healthy, exposure to biological and chemical weapons during the Pacific War has left her with frequent migraine headaches and an extremely sensitive metabolism. She rarely ventures out during the day (bright light can trigger the headaches) and eats only bland foods – the smells of spicy dishes can leave her debilitated with nausea. Only her relatively high pain threshold allows her to function on a day-to-day basis.

She has developed a reputation in the Floats as a doctor willing and able to handle a wide array of problems, particularly those related to genetics. She asks no questions (other than what she needs for diagnosis) and makes no judgments (although she will tell someone if they're doing something dangerous), making her popular with Float citizens who run afoul of the law. In recent months, members of the Malay Koro gang have started to make use of her services.

Over the last decade of living in the Floats, Likphai has managed to amass a fairly well-equipped field lab. She is able to perform routine germline analyses of embryos as well as do minor genetic-surgical repairs. Her equipment allows her to analyze and synthesize most medicines, and she is not averse to making additional medicine for her poorer patients. She charges on a sliding scale (and charges gang members a bit more than other patients), but makes most of her money

by doing contract genetic designs for some of the new biotech companies started by refugees.

The Koro gang has offered her \$10,000 to design a brainbug that could compete with Jellybean (p. 133). Likphai was tempted – her bioengineering and surgical equipment has become a bit dated – but turned it down. The Koro have yet to decide whether to return with a greater offer; Likphai would find it much more difficult to reject a larger sum.

People with a good relationship with the Little Bangkok population would likely be directed toward Chawalit Likphai if they were in need of medical help or were looking for a good no-questions-asked bioengineer. The local citizens are highly protective of her, and would not allow her to be threatened or injured. Likphai is not aware of the recent legal crackdown on brainbugs in the Los Angeles area, and may find herself a fugitive if she helps the Koro and is identified.

ST 9 [-10]; **DX** 10 [0]; **IQ** 14 [45]; **HT** 9 [-10].

Speed 4.75; Move 4.

Dodge 4.

Advantages: Acute Taste and Smell +2 [4]; Alertness +1 [5]; Genefixed [0]; High Pain Threshold [10]; Intuition [15]; Reputation +3 ("No-questions-asked doctor"; Floats criminals, 7 or less) [5].

Disadvantages: Delicate Metabolism [-20]; Migraine (8 or less) [-10]; Reclusive [-10].

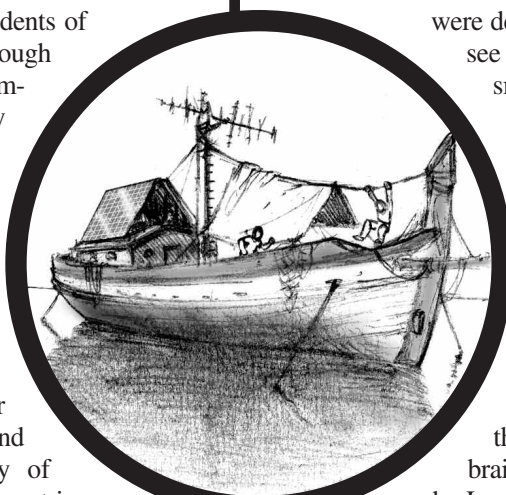
Quirks: Evil grin; Impatient; Prays before every meal; Scratches nose when nervous; Vindictive. [-5]

Skills: Biochemistry-16 [16]; Chemistry-15 [6]; Genetics (Genetic Engineering)-16/22 [20]; Meditation-14 [4]; Pharmacy-14 [4]; Physician-13 [2]; Surgery-14 [8].

Languages: English-12 [1/2]; Spanish-12 [1/2]; Thai (native)-14 [0].

The biggest problems for the residents of the Floats are the winter storms. Although the Seawall generally protects the community from the worst ravages, every year there are dozens of storm-related deaths. Among the more active businesses in the Floats are retrofitters who work covering boats with modern carbon-fiber material.

Despite the ramshackle appearance, advanced technology can be found in the Floats. Solar, tidal, and hydrothermic differential power sources provide abundant electricity, and computers are commonplace. Many of those escaping from the nanosocialist countries



were designers and inventors unwilling to see their work nationalized; there is a small but diverse market for software, bioware, and genetic design in the Floats. It operates largely behind the scenes, so as to avoid the attention of regional officials. Products that "improve on" existing designs are fairly common, and some are of dubious legality. The leader of the Koro gang, Kit Siang Mahathir, is actively seeking bioengineers in the Floats to provide his gang with brainbugs to compete with those sold by Locos También.

Los Angeles International Airport (LAX)

The flooding after the Seawall breach did extensive damage to the Los Angeles International Airport, which sits right on the coast. One of the landing strips permanently closed, and traffic eventually dropped by over 50%. In 2004, the Board of Supervisors seriously considered closing LAX. Only the City of Angels project saved it.

Repair and improvements to LAX were critical to the success of City of Angels. The airport had to be upgraded to support transatmospheric vehicles, and cargo handling facilities needed to be changed to support the transfer of construction cybershells, which can weigh as much as 10 tons. High-capacity rail lines from LAX to the City of Angels site went in almost immediately; in late 2009, the Board of Supervisors authorized funding for additional high-capacity lines to run to the Aztlan arcology complex, as well.

**I wanna live in Los Angeles,
not the one in Los Angeles.
They got one in 2525, built just
like a beehive.
– Frank Black, Los Angeles,
1994**

Westside

Historically the wealthier part of Los Angeles, the Westside took a killing blow when the Seawall breached. Most of the coastal cities remain flooded, and the stretch of land east to Century City and south to Torrance is now a mix of urban decay and swamp. Yet it was here that CSD and the Board of Supervisors decided to build the City of Angels arcology.

This was an understandably controversial decision at the time, but now – although only half completed – City of Angels is considered one of the finest examples of arcology architecture in existence. With a base covering nine square miles and a façade tower reaching nearly half a mile up, City of Angels is designed to house 150,000 people along with a corresponding assortment of businesses and entertainment centers. (While large, this will not be the largest single arcology on the planet – Three Gorges in China will take that prize.)

What is most notable about City of Angels is the façade covering the otherwise fairly conventional arcology structure. Made of ultra-lightweight and strong carbon nanofiber, and embedded with an array of solar cells,

communication networks, and NEMS, the façade has a shape that suggests a human form reaching up. The skin can change shape to a small degree, allowing it to better withstand wind or catch a greater degree of sunlight. Normally, the skin is a translucent golden color, visible for miles around; individual “cells” can shift tint, however, and one of the plans for the arcology is for it to function as a massive, ever-changing video display.

Aside from the growing City of Angels population, most of the Westside inhabitants come from the Floats. A number of the houses in the hillier areas managed to avoid the worst of the flooding, but were abandoned as the surrounding area became essentially unusable. Families from the Floats have gradually begun moving into those houses, largely illegally, and using them as combined residences and places of business. A dozen or more small minifac-software design and bioware-engineering groups operate across the coastal areas of the Westside.

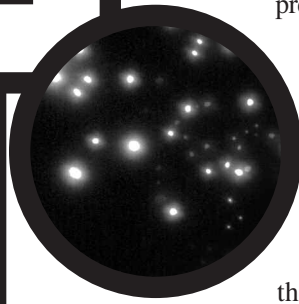
Downtown

Downtown Los Angeles survived the 21st century relatively well, in large measure because of close economic ties to Mexico. The cycle of boom and bust that hurt the region so badly wasn't as bad in downtown as in the rest of Los Angeles, and a notable number of older financial and property-services corporations have offices there. The decision by the Mexican oligopolists to maintain their U.S. presence in Los Angeles also made

a significant difference. It's rumored that ConMex, one of the largest construction firms in North America, was granted the prime contractor role for the construction of Aztlan in exchange for remaining in downtown L.A. With the rise of the infosocialist movement in

Mexico, an increasing number of smaller businesses are quietly moving their headquarters from Mexico City to Los Angeles.

Abandoned manufacturing and warehousing facilities surrounding the core downtown area emerged as a lively visual-arts community in the 2080s, with aspiring painters and sculptors from throughout the Americas moving to the area known as “La Ciudad.” Inevitably, attention brought gentrification, as wealthy young couples, seeing the arts community as “hip” and wanting to avoid arcology life, started to move into the area in the early 2090s. Demand for space by the wealthy (one local satirist called them “YUMAMAs” – Young Urban Moderately Affluent Mexican Americans) eventually drove out most of the original inhabitants. La Ciudad still has a somewhat avant-garde feel to it, even if few of the residents are artists.



RUBEN GALINDO

218 POINTS

Born 2073. Age 27; 5'10", 165 pounds. Light tan skin, dyed blond hair, beard (no mustache), green eyes, ruggedly good looking.

Ruben Galindo was a star at 19. He had songs popular around the world, he had a hit InVid show (*¿Qué Tal, Mundo?*), and black-market shadows being sold that were claimed (falsely) to be copies of him. By the time he was 22, his popularity had waned, and he retired to a home in the trendy La Ciudad district to wait for the inevitable comeback tour. His only regular companion is Bellissima, his SAI/cyberdoll agent/assistant/occasional lover.

Galindo made a lot of money during his period of stardom, money well-managed by Bellissima. She keeps him on an allowance, which he spends quickly – he enjoys making new friends and buying them presents. Bellissima allows him this habit as long as it doesn't threaten his long-term financial survival.

Over the past year, Galindo has taken to haunting the Sunset Strip night-clubs looking for opportunities to play music, make new friends and indulge in his increasing appetite for brainbugs. He normally doesn't take Bellissima when he's out – he says she can't dance and her looks intimidate other women – so she is not aware of how he has become entangled in the world of neuro-agents. He is a regular user of C-love, but has now also started in Jellybean (see p. 133).

Ruben Galindo is recognized often enough that he still feels his importance, and has a small devoted crowd when he is out partying. However, his supplier of brainbugs, the La Cienega 92s gang (part of Locos También), are unimpressed with his former fame, and only interested in making certain he pays for his drugs. Since he became addicted, he has been running through his allowance faster than usual, and has debts to local bars and to the brainbug suppliers.

Galindo is charming and sexy, and would quickly strike up friendly conversations with anyone with an unusual look (a mildly unattractive appearance is more unusual than off-the-shelf beauty). He is beginning to get nervous about the gang members that are asking about him, and would offer substantial sums of money, drugs, and sex to people who help him with his problem. Depending upon whether he tells Bellissima about his situation, he may even be able to pay.

ST 10 [0]; **DX** 10 [0]; **IQ** 13 [20]; **HT** 13 [20].

Speed 5.00; Move 5.

Dodge 5.

Advantages: Ally (Bellissima, 12 or less) [70]; Handsome [15]; Charisma +1 [5]; Metanoia-series Upgrade [36]; Musical Ability +3 [3]; Voice [10]; Very Wealthy [30].

Disadvantages: Addiction (Brainbugs) [-10]; Extravagance [-10]; Enemy (La Cienega 92s, medium group) [-20].

Quirks: Eternal optimist; Gets up early; Horrible hangovers; Sleeps naked. [-4]

Skills: Acting-14 [4]; Bard-19 [6]; Carousing-17 [24]; Motorcycle-13 [8]; Musical Composition-16 [2]; Musical Instrument (Keyboard)-15 [1]; Performance-15 [2]; Sex Appeal-15 [2]; Singing-20 [2].

Languages: English-13 [1]; Malay-12 [1/2]; Spanish (native)-14 [0]; Thai-12 [1/2].

The major addition is the Aztlan Arcology Complex, currently comprising four traditional Central American step-pyramid-shaped arcologies, although considerably larger than the originals. Each pyramid houses 50,000-75,000 people and corresponding services, and each is named for an ancient Mesoamerican city (Uxmal, Tenochtitlan, Chichén Itzá, and Tetzco – the planned fifth pyramid will be Tula.) Aztlan's population is primarily wealthy second- and third-generation immigrant families, although many Mexican businessmen opening offices in Los Angeles are buying units in Aztlan as well.

The Basin

The Basin is the general name for the broad area of land stretching from the Pacific inland to the edges of the San Gabriel region, completely surrounding the downtown area. The majority of Los Angeles citizens in the Basin live in a mélange of ethnic communities, converted industrial areas, and pockets of quiet suburbia. Several regions in the Basin are particularly notable.

The Sunset Strip, in the west, remains the densest accumulation of clubs, bars, and opportunities for late-night trouble in the city. The decline and slow rebirth of Los Angeles has given new life to the Strip, as old and new generations of musicians and partyers mix on a nightly basis. The Strip is essentially dead during the day, and the streets really fill after midnight. Sheriff's Deputies consider the Strip a borderline no-go zone; they respond to minor crimes or reports of violence, but any large-scale problem or gathering result in the Deputies cordoning off the area until the morning, not letting anyone in or out.

Overall, the downtown skyline survived the Big One and the heavy weather years fairly well, and has a glass-and-steel retro look that has come back into fashion.

Industry, to the south, used to be a depopulated manufacturing and oil-refining area. Most companies have moved out, but the infrastructure remains – multi-acre factories, rail right-of-ways, and toxic fuel-production facilities. The largest single no-go zone in the area, Industry is the primary arena for competition between and within the L.A. gangs. An abandoned automobile factory is an arena for skirmishes, usually struggles for control. Locos También has monthly gatherings known as “el Mercado” here. A mix of market, party, and political rally, everything from weapons and vehicles to slinkies and artwork can be bought and sold.

East Los Angeles was the focus for a stalled redevelopment effort in the 2070s, where state and federal funds underwrote the modernization of information infrastructure and the establishment of local info- and biotech firms in a high-technology business park. Although many of the pioneer companies have since gone bankrupt, a few remain. Moreover, in 2084 the Board of Supervisors invited a number of global bio/nanotechnology companies to the East Los Angeles technology park area. The rumored trade-off for a fairly stiff level of taxation was weakened environmental supervision. ShonTec and Gen-Tech Pacifica are two corporations with laboratory facilities in East L.A., although both claim that all environmental and biogenetic regulations are being followed scrupulously.

Greater Metropolitan Area

Two important regions in the Los Angeles area stand outside of the jurisdiction of the Board of Supervisors and the Sheriff’s Department. The so-called “Inland Empire,” consisting of San Bernardino and Riverside Counties, is home to the area’s wealthiest residents. Comprising dozens of interlocking gated communities, the Inland Empire is patrolled by thousands of public and private security officers, giving the region the highest police/citizen ratio in the state. Public spaces, whether shopping districts, parks, or civic buildings, are also heavily policed; anyone stopped and discovered not to have “good reason” to be in the area (at the officer’s discretion) is arrested and taken to the nearest Los Angeles County border.

Further to the south, in the heart of Orange County, is Worldarc, the most surreal arcology on Earth. Covering over 20 square miles but no more than five stories high, Worldarc requires that all residents spend at least half of their day as cast members in vast combined

BELLISSIMA

343 POINTS

SAI/Cyberdoll, manufactured 2092. Age 8; 5’11”, 150 pounds. Pale, almost translucent skin, jet black hair, vivid blue eyes, achingly beautiful.

Bellissima was constructed as Ruben Galindo’s assistant, and has stayed with him for seven years. She has a great deal of affection for him, although she wouldn’t say that she loves him; she recognizes that her devotion is, at least in part, programmed. Nonetheless, she considers his well-being to be her primary duty.

She suspects that Galindo has a brainbug problem, but has not asked him about it. She abides by his request not to go with him to clubs, but tries to fill his social life with parties that she can attend as well, such as industry events, where cyberdoll assistants are common. She is not aware of the depth of Galindo’s circumstances, but she has noticed unsavory individuals driving past the house at different times of the day and night.

If Bellissima confronts Galindo, or encounters a situation where she comes to believe he is at risk, she will use both formal and informal means to protect him. She is not combat-oriented in any way, so she would want to hire bodyguards for him, whether or not he is aware of them. She would be hesitant to alert the Sheriff’s Department, at least initially, given their current crackdown on brainbug users.

ST 14 [0]; **DX** 10 [0]; **IQ** 13 [30]; **HT** 12 [0].

Speed 5.00; Move 5.

Dodge 5.

Advantages: Cyberdoll (Clockwork Souls Custom) [182]; SAI-8 [75].

Disadvantages: Easy to Read [-10]; Sense of Duty (To Ruben) [-5].

Quirks: Attentive; Careful. [-2]

Skills: Accounting-18 [4]; Administration-14 [4]; Area Knowledge (Los Angeles)-13 [1]; Erotic Art-15 [40]; First Aid-14 [2]; Law-18 [14]; Savoir-Faire-15 [4]; Sex Appeal-13 [2].

Languages: English-12 [1]; Spanish-12 [1].

virtual/physical environments called “Story-worlds.” There are about a dozen worlds active simultaneously in Worldarc, carefully constrained so as to prevent visitors to one world from stumbling into another. The center of the arcology complex is an old-style amusement park, kept as a living museum.

Despite the growing popularity of entirely virtual entertainment, millions of people from around the world still visit Worldarc either physically or through the teleoperation of cybershell “actors,” paying \$100 for a day’s outing. John Wayne International Airport is the main transportation center for Worldarc, and was directly connected to the arcology complex in 2065. Growth of Worldarc stopped in 2074, and the arcology’s population has been gradually declining since 2093. About 10% of the complex is private living and business space for residents, but nearly a quarter is currently unused.

TOP FIVE WORLDARC STORYWORLDS – JANUARY, 2100

Camelot: Set in an idealized medieval world, *Camelot* is home to knights both noble and dark, ladies, and stories of chivalry. There are few evolving stories, and it attracts older visitors on brief stays.

Colt: One of the first Storyworlds to open, *Colt* is set in the fictional town of Jackrabbit Hill, and sticks closely to traditional Old West stories. This Storyworld is most popular with visitors from outside of the U.S.

Fae: Another standard Storyworld, *Fae* is mostly for children, allowing visitors to live and play alongside characters from classic fables and fairy tales. In 2098, *Fae* was upgraded to support a new variety of cyber-shell characters, in part because many of the resident actors had decided to leave.

Invasion!: Unlike most of the other Storyworlds, *Invasion!* has strong plotlines which run over a several-month to several-year period. The *Invasion!* themes have varied from H.G. Wells' *War of the Worlds* to (most recently) Robot Warlords, which attracted the largest percentage of SAI visitors Worldarc has ever seen. The new *Invasion!* story is to begin in March of 2100, and the new plot is a tightly held secret.

Verne: One of the newest Storyworlds, *Verne* is set in the late 19th century as imagined by authors such as Jules Verne and Arthur Conan Doyle, with a bit of steam technology thrown in for good measure. The emphasis isn't on combat, but on romance and intrigue. Worldarc is negotiating with slink star Holly Hartley to do an extended stay as Ada Lovelace.

CURRENT EVENTS

Throughout 2098 and well into 2099, the most popular brainbug on the streets in L.A. was "C-love," which tended to make the user overly friendly and had odd neurological side effects. In late 2099, a new brainbug, known as "Jellybean," started appearing; users typically have erotic hallucinations, although in a few cases the visions are far less pleasant. Due to encrypted-DNA markers in one of the proteins used in the design, investigators believe that they may have a breakthrough in tracking down suppliers to the brainbug labs.

As part of Reyes' crackdown on unlicensed brainbug dealers, the major highways out of the county are now guarded by Deputies, who use sniffers and molecular sensors to search each vehicle as it slowly passes through a roadblock. Local activists claim that the effect of these searches has been to prevent poorer citizens from leaving L.A. The Sheriff's Department has not announced how many arrests have been made, but has indicated that the roadblocks will end within a couple of weeks.

New Year's holiday visitors to Worldarc declined precipitously this year, and rumors are flying that the owners of Worldarc are considering selling part of the complex to outside investors, possibly a Bollywood studio.

In early December, theft of building materials from the City of Angels site led to the introduction of armed guards to supplement passive monitors. Last week, a guard shot a youth whom he thought was stealing from the site, although video evidence later showed that he wasn't. The kid died, as the guard did not immediately call in the shooting, and emergency personnel arrived too late to resuscitate. As the guard was of Mexican origin and the

victim was a Guatemalan immigrant, ethnic tensions in the city are particularly high at the moment.

The County Sheriff's Department believes that a serial killer is stalking the Floats. In late December, the body of a young Malaysian woman washed up on the shore toward the southern end of the bay. She had been stabbed, repeatedly, and her hair cut off. This was the fourth victim to be found in 2099, all with similar wounds. Deputies believe that the killer is a resident of the Floats, but have so far received little cooperation from the community.

Two rival factions of the Locos También are moving closer to full-blown warfare, with the bombing of an underground dice game in the south-central part of the city. The La Cienega 92s currently dominate Locos, but is being challenged by a south-central group known as Los Hermanos Muertos. The girlfriend of the La Cienega 92s leader was shot last week and was unable to be resuscitated. The bombing of the dice game, which killed several Los Hermanos Muertos members, is a significant escalation of the violence.

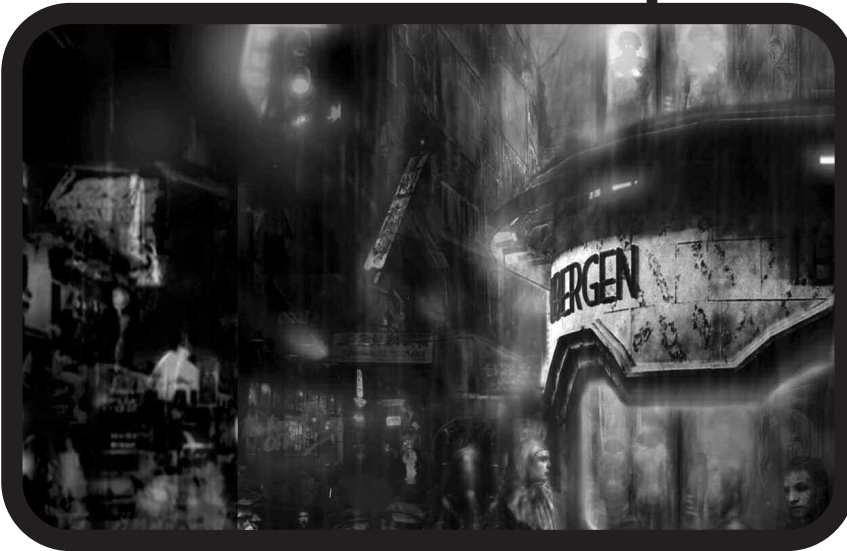
ALMA-ATA

I ask again: what is the value of free will in a world without structure? Higher beings could only evolve when once-independent cells gave up their pretense of freedom (which really gave them only the freedoms of eating and breeding) and subsumed themselves into the greater whole. Can my skin cell, scratched off in a moment of casual reflex, survive on its own? No! Yet think how much greater it is than the bacteria, which knows only simple survival. My skin cell, even in death, knows the glory of being part of the greater whole that is man.

So it is with my people. For millennia, they have struggled in silence, alone in the wilderness, with only their survival instinct to keep them alive. Even more tragic are those who sacrifice themselves on the altar of imaginary spirits and gods, trying (but failing!) to become part of a greater whole that simply does not exist. But a structured society does not emerge from the people – the people could no more produce a true society than a mass of bacteria could produce a man.

The people must be made to forget their past as individuals, becoming instead the willing cells of the glorious body of society. A society led by a single mind, immortal, perfected, thinking only of tomorrow.

– *From The Future of Forgetting,*
by Sergei Zarubayev



OVERVIEW

The capital of Kazakhstan, Alma-Ata is the distillation of the terror, paranoia, and sense of crisis endemic to that beleaguered nation. The image of the dictator, Zarubayev, is everywhere, as are his cybershell guards.

Alma-Ata History

Originally known as Almaty, the city of Alma-Ata grew slowly over hundreds of years from a village along east-west trade routes into the regional stronghold of the Kazak people. Little is known of the city's early history. In the mid-19th century, Russian soldiers entered the Almaty area, by then the center of the Great Kazak Zhuz region, to "protect" the Kazaks from the depredations of British-supported tribes to the southwest. By the Russian Revolution in 1917, the region was well-established as part of the greater Russian empire. Renamed Alma-Ata, the city became the capital of the Kazak Soviet Socialist Republic in 1929. The Kazak city of Baykonur became

home to the Soviet space program; to this day, Baykonur remains an active spaceport, the most sophisticated in the region.

After the dissolution of the Soviet Union in 1991, the newly independent Kazakhstan returned Alma-Ata to its old name, Almaty. For the first six years of independence, Almaty remained the capital city of Kazakhstan. In 1997, the national capital was moved to the more modern (and Kazak-dominated) Astana. Almaty, with its majority-Russian population, declined in influence.

At the beginning of the 21st century, Kazakhstan faced serious problems: an unstable economy, despite an abundance of mineral and oil wealth; ecological devastation left over from the Soviet era, including military toxic dumps; and tensions between the Russian and Kazak populations over both ethnic rights and religion. Faced

with these challenges, Kazakhstan struggled along for several years, trying to avoid both Islamic fundamentalism and dependency upon Russia. In 2016, Kazakhstan elected the charismatic Muslim Unity Party candidate, Daoud Mara, as President. During his brief term in office, he attempted to implement Islamic law (Shariah) and confiscate the business and property holdings of the ethnic Russian minority. His government was overthrown in 2018 by a combined ethnic Russian and military putsch.

By 2024 one of the coup backers, an oil tycoon named Sergei Maksimovitch Zarubayev, had outmaneuvered his rivals and become the country's "interim President." He returned the capital of Kazakhstan to its Soviet-era home, and reinstated its older name: Alma-Ata. The Russian population of the city welcomed Zarubayev with open arms.

The early years of Zarubayev's rule consisted primarily of a program of rapid modernization of industry and the military, often working closely with secular ethnic-Kazak leaders. Few knew that Zarubayev had secretly reinstated the KGB and was expanding his control. By 2027, "interim" disappeared from references to his Presidency.

In 2038, Zarubayev began his Russification program. Initially casting it as a means of aligning Kazakhstan with the developed world, Zarubayev soon dropped all pretense of moderation. President Zarubayev openly called for the total eradication of the majority's Kazak culture, language, and religion. The reaction from the international community was, as the dictator expected, immediate, loud, and completely ineffective. Castigated in the global press, Zarubayev was patient, knowing that eventually attention would be directed elsewhere. When the Ares Conspiracy on Mars was discovered in 2041, Kazakhstan disappeared from the headlines.

Zarubayev's regime spent the next decade strengthening and consolidating its rule, building up a cadre of ethnic Russian followers, and continuing eliminating Kazak culture. Alma-Ata became the showplace for these efforts, and thousands of its ethnic Kazak citizens disappeared over the course of the 2040s. Others were drafted into Reconstruction Camps and used as labor to rebuild Alma-Ata as a shining example of Russian cultural domination. A massive Presidential manor was built in the southeastern part of the city, and soon nicknamed "the Castle" by bitter Kazak residents.

During this period, Zarubayev spent much of his time thinking about what to do with the power he now held, eventually leading to the 2053 publication of his manifesto on the perfect society, *The Future of Forgetting*. At this same time, a young scientist named Nikolai Verkovenskiï drew his attention, with a series of provocative papers on the nature of memetic control and identity. Verkovenskiï was soon drawn into the aging dictator's inner circle.

Zarubayev's vision for Kazakhstan could not be accomplished in the decade or two he had left of his natural life, so he turned to modern technology – and got frightening results.

Zarubayev faced several major dilemmas. His vision for Kazakhstan could not be accomplished in the decade or two he had left of his natural life, he could not be certain of his military's loyalty, and the ongoing Russification program was stalled, meeting a core of resistance in both urban and rural Kazak communities. Verkovenskiï felt that all of these problems could be solved with the proper application of modern technology. By the end of the decade, Verkovenskiï's plans began to bear fruit.

In 2060, cybershell troops were introduced as military police in the cities, starting with Alma-Ata. The first wave of cybershells was brutal but effective, finding and crushing an incipient uprising that included a number of mixed-ethnicity Kazak/Russian soldiers. Their efficiency was utterly demoralizing for the Kazaks. Not only did the cybershell troops defeat the rebels, they were immune to bribery, blackmail, or appeals to national solidarity.

That same year, Zarubayev began a program of bionic enhancements and experimental genetic treatments to extend his life. Not all were successful; the cold, unchanging glare of his current appearance is

actually the result of a failed neurological upgrade.

Yet Zarubayev never hid the implants, and was known to walk the streets of the Russian section of Alma-Ata after each operation, showing off his latest enhancement. Beyond relying on cybernetics and emerging medical treatments, the dictator encouraged Verkovenskiï to investigate other, longer-term possibilities at his newly formed Ministry of Mind and Body.

By the early 2080s, Zarubayev had undergone a series of increasingly detailed brainscans in order to create functional shadows of himself, and to see how close a digital version of himself would be to the real thing. Reports smuggled out of the Castle told of his glee at being able to exact horrific mental torture on his own shadows. In the latter half of the decade, Verkovenskiï managed to save and repair two of the Zarubayev shadows, editing them into what he believed would be the perfect advisors and guards for the dictator.

In 2088 Zarubayev activated these edited shadows of himself and had them installed into military cybershells. Given the names "Zhukov" and "Lebed," the two were assigned leadership of military units. Verkovenskiï assured Zarubayev that the shadows were properly edited to give the real Zarubayev their complete loyalty, but their mental heritage proved stronger than Verkovenskiï's skills. Within two years, each shadow unit had developed personal followings in the military and among some of the Russian elites. On February 14, 2090, they launched a brutal combined coup against Zarubayev.

They were nearly successful. Zarubayev's 17-year-old son, Peter, was killed in the initial attack, standing in for his father to deceive the assaulting troops. When the coup-plotters announced Zarubayev's (supposed) death, the nation erupted in celebration. Pictures and statues of Zarubayev were torn down, and Russian citizens in many of the larger cities were hunted down and shot. The mayor of Astana was left hanging in the city square for days, and Kazak citizens threw stones at his body. Meanwhile, the rebellious forces were struggling to consolidate control. Verkovenskiï managed to fool Zhukov into thinking that Lebed was going to attack him now that Zarubayev had been killed, setting off a fight between the two coup factions (and saving Verkovenskiï from certain execution).

At the end of the week of fighting, Zarubayev – alive, well, and very angry – emerged from hiding to rally his forces. Loyalist troops defeated the distracted rebels; within 48 hours from the dictator's reappearance, the coup was quashed. Zarubayev was inconsolable with grief over his son, and unleashed his anger against the Kazak people. Bioroid and cybershell death squads hunted down anyone who had any record of anti-Zarubayev activity, slaughtering thousands. On the President's direct order, the city of Astana was burned to the ground, with any who tried to escape shot down. Scholars estimate that nearly 340,000 people were killed across Kazakhstan in the period now known as "The Silence."

For much of the decade since the massacres, Alma-Ata, like other Kazak cities, remained in a state of shock. The dead were quickly buried and buildings damaged repaired or replaced, but the character of Zarubayev's rule had changed. The memetic warfare the regime committed against its own people increased dramatically, with each year seeing increased levels of paranoia and terror.

In January of 2009, this situation came to a head, as anti-Zarubayev rebels launched an uprising across the southern part of the country. Survivors claim that China had promised them materiel and political support, but that support never came – in late 2008, China was embroiled in a political scandal, and unwilling to distract itself with the Kazakhstan situation. Within a month, the revolt was crushed, and the rebels retreated to sanctuaries in neighboring Uzbekistan. Zarubayev was not satisfied, and launched cross-border raids, eventually establishing a “security zone” close to the Uzbek capital of Tashkent. Within weeks, a long-smoldering Uzbek resistance movement had exploded, clearly supported by the Kazak government. As the E.U. and I.C. moved troops in to support the faltering Uzbek regime, Zarubayev withdrew from public view, pondering his next step.

Alma-Ata Today

Two Kazak citizens meet on the edge of an empty field at midnight.

The first one says, “Comrade, what do you think about President Zarubayev?”

The second one pauses for a long moment, then answers, “Why, I think of him the same way you do.”

The first one nods. “Comrade, you’re under arrest.”

The post-Silence, post-revolt, war-scarred Alma-Ata may well be one of the most frightening places on Earth. This is not immediately apparent to a visitor unfamiliar with Zarubayev and his policies, however. Superficially, Alma-Ata is a clean, well-ordered, bustling city. The visible presence of armed cybershell police, the unwillingness of people to make eye contact or even speak in public, and the abundance of vid screens gives the visitor a sense that something is amiss, however.

Approximately 20% of the city's population of 1.7 million people are pure ethnic Russians. The pure Russians are the elite of the city, mostly living in the Yoshnoe Nyebo area; they regularly express full support for the government. Most have access to high Third Wave/low Fourth Wave technology locally, and can travel to Russia without much problem. Many have adopted visible cybernetic implants as a way of emulating their leader.

Another 45% of Alma-Ata's citizenry are Kazaks, with a small percentage of Turkmen, Uzbeks, and other Central Asian native ethnicities. The native Kazaks have few rights, and are subject to the ongoing terror of the Zarubayev regime. Most live in low Third Wave

THE MUSLIM UNDERGROUND

Many traditional Kazak beliefs are still practiced in secret, away from the eyes and monitors of Zarubayev's regime. Islam has a tradition of allowing believers to outwardly renounce Islam and avoid its daily requirements, even while secretly practicing whichever duties are possible. Refugees from Kazakhstan claim that over 50% of the Kazak citizens remain believing Muslims, a percentage that E.U. analysts suggest is likely somewhat high, but not impossible.

Most cities have “underground” mosques, with a single mullah or alim. Prayer sessions are held in abandoned buildings or away from town; Muslims in Kazakhstan are good at avoiding monitoring equipment. No written material is kept; the Koran is memorized and recited. The sessions are never held in the same location twice in a row, rarely the same location twice in a month.

There is an ongoing attempt to smuggle people out of the country, referred to as the “Hajj,” in reference to the Muslim's scripturally required journey to Mecca. Despite its proximity to the border with Kyrgyzstan, Kazaks rarely manage to escape Alma-Ata via the Hajj; security in the capital is extremely tight.

The anti-Zarubayev movement that erupted in 2009 was largely coordinated through the Muslim underground, which lost many of its key leaders when the uprising was crushed.

circumstances, working menial labor, although a small number have been co-opted into the elite, living essentially as Russian citizens. This is done in part to show Kazak citizens the value of cooperation, and in part to appease international critics. Kazaks are not allowed to travel freely, even within the country. Passports are required for inter-city travel, and a non-Russian citizen must have approval from the city government before being allowed to leave or enter a city.

The remaining 35% of the population are *krovniki* (from *polovina krov'*, “half blood”), nominally Russian but with some degree of Kazak heritage. Denied the economic and political rights of Russians, they are the underclass of Alma-Ata society. Like Kazaks, they face restrictions on travel and employment and must carry an internal passport at all times. They live a twilight existence, shunned by Kazaks, and considered almost untouchable by pure Russians, who fear the accusation of *krovniki* status. The taint of associating with *krovniki* applies even to others of their kind. The status can be cleared, but the process is contingent in part on how dutifully the applicant has attempted to live as a Russian. Support for Zarubayev is highest among this group, as they desperately attempt to show their ethnic loyalty.

Zarubayev has aggressively cleansed Alma-Ata, along with the rest of Kazakhstan, of any references to the indigenous Kazak culture. Mosques have disappeared, streets have been renamed, and pre-Zarubayev memorials and museums removed. The native language is ruthlessly suppressed, and history books start in 1917. Any reference to non-Russian-dominated Kazakhstan history is dangerous.

The city's original name, "Almaty," has been erased; referring to the city by that name in public risks a death sentence if overheard by the police or monitors. Traditional dress is forbidden, and men who choose to wear hair styles or facial hair that differs from Zarubayev's are considered suspect. Children are taught traditional Russian songs in school. If any are caught singing Kazak songs,

EUGENY MARA (MULLAH SIFR)

138 POINTS

Male, born 2061. Age 39; 6'1", 210 lbs. Light tan complexion, brown eyes, black hair with streaks of gray.

Evgeny Mara, or Mullah Sifr, is the de facto leader of Alma-Ata's Muslim Underground. This position makes him a target for execution, if captured, and the most revered Kazak in the city. Fortunately for Mara, the government has yet to figure out who he really is, and the Kazak citizens who know him have, so far, managed to avoid passing along their knowledge to the KGB.

Mara survives by being extremely careful. He maintains an existence as a tailor, and appears to be a meek and obedient citizen. When he holds services in the makeshift mosques of the Muslim Underground, he does so in ways that prevent his easy identification. Just as the attendees of the services won't know the location of the mosque until just before the (surreptitious) call to prayer, they do not know whether they will see Mullah Sifr in person, live via fiber-optic cable transmission, or on a prerecorded disk (destroyed at the end of the service). When the service is recorded, Mara sometimes attends as a regular worshipper. When he preaches in person, he does so masked, so that his face cannot be easily identified.

He is a fiery speaker, and his charisma comes through in his words and voice; Muslims throughout the city are certain they would willingly die at his command. He has yet to call on them to do so, although he warns of the coming retribution against Zarubayev in every sermon he gives. He rose to the leadership of the Muslim Underground when the previous commander-cleric was captured and executed in the 2099 uprisings; Mara is well aware of the need for patience. He intends to wait until the government is distracted by events in Uzbekistan or by a confrontation with a great power before calling for an uprising.

Mara has made very tentative contact with an agent from the Islamic Caliphate's GID, working deep undercover in the city. The process began before the January, 2099 revolt, and has moved with great caution and deliberate pace. Mara and the agent, known only as Daoud, have only been in the same room once, late in

December, and even then the contact was brief. Mara hopes that the Caliphate can provide assistance to the Underground in its struggle against Zarubayev. Daoud has offered little concrete aid, aside from confirming suspicions that a younger mullah had recently been turned into an unwilling spy by the government. The mullah was quietly executed at Mara's order.

Characters operating in Alma-Ata are unlikely to meet with Mullah Sifr without a substantial amount of trust built up over time. However, they would likely learn of his existence fairly quickly – the name "Mullah Sifr" is a common part of anti-government graffiti.

Individuals working with the Islamic Caliphate have the best chance of gaining his confidence, as would people clearly connected to military forces attacking Zarubayev's regime. Mara is very clever and careful, however; he is unlikely to reveal himself any more than he absolutely must.



ST 10 [0]; **DX** 9 [-10]; **IQ** 13 [30]; **HT** 11 [10].

Speed 5.00; Move 5.

Dodge 5.

Advantages: Charisma +3 [15]; Clerical Investment 3 (Revered Alim) [15]; Composed [5]; Patron (Church) [20]; Reputation +4 ("Mullah Sifr," Muslim and Kazak population of Alma-Ata, 10 or less) [10]; Strong Will +3 [12]; Voice [10].

Disadvantages: Second Class Citizen [-5]; Secret [-30]; Vow (Follows Muslim rules for behavior) [-5].

Quirks: Attentive; Fitful sleeper; Humble. [-3]

Skills: Acting-15 [6]; Area Knowledge (Alma-Ata)-15 [4]; Artist (Abstract painting)-10/16 [1]; Bard-18 [2]; Law (Shariat)-15 [8]; Leadership-18 [6]; Merchant-12 [1]; Musical Instrument (Dombra)-12 [2]; Rituals and Ceremonies-15 [10]; Strategy-17 [12]; Tactics-14 [6]; Theology-12 [2].

Languages: Arabic-12 [1]; Kazak (native)-13 [0]; Russian-12 [1].

their parents are executed in front of them and they (and any siblings) are sent to one of the many Centers for Proper Education that dot the countryside.

What started in Kazakhstan as a horrific, if straightforward, example of ethnic cleansing has turned into a surreal nightmare. The government uses a mix of intentional rumor, misinformation, and disinformation as a means of controlling what people know. Kazaks have come to believe that every aspect of their lives is under constant surveillance. Citizens disappear for weeks, only to be returned without any memory of what has happened to them. Paranoia and anxiety are the constant undertone of existence, with an ever-present fear of death or worse. Even the pure Russians live in denial, unwilling to admit that anything is wrong, secretly terrified that Zarubayev's attention will someday turn to them. Alma-Ata, as the capital, experiences this culture of terror in its most extreme form.

In the decade between *The Silence* and the 2099 uprisings, there was little outright violence in most urban centers. The majority of the populace grew up under Zarubayev, and the regime has proven lethally effective at eliminating subversives. A large portion of the youth have started to show the signs of what Zarubayev called his "perfected subject" in his manifesto: loyal, tractable, and willing to die for the new Kazakhstan way of life. For older citizens of cities such as Alma-Ata, the new generation's behavior is a stark reminder that their way of life is lost.

As the use of physical violence has declined, the use of memetic weapons has increased. Zarubayev's Minister of the Mind and Body, Nikolai Verkovenski, uses Alma-Ata as a test site for his social control theories, many of which involve an individual's perception of reality. From subtle memetic techniques to the forced implantation of augmented-reality hardware, Verkovenski has a fascination with manipulating an individual's beliefs about the nature of the world. One of his more successful experiments began in 2084, when he covered the city of Alma-Ata with non-interactive vid displays. By 2100, they had become ubiquitous in Kazakhstan.

It is impossible to avoid the vid screens in Alma-Ata. They are on street corners, in public buildings, businesses, even in restrooms. Small ones are in taxis and the cars of commuter trains. Every home has several, freely provided by the government. They all show the same channel – there is only one in Kazakhstan – and have no on/off or volume control. Any attempt to tamper with a unit alerts the KGB, and officers come out to check the system and arrest anyone found to have attempted to destroy state property. It is widely assumed that the units have built-in cameras and microphones to monitor those near the screen.

For the most part, the programming on the vid is incongruously perky. From 6am until midnight the

CHARACTERS IN ALMA-ATA

Ethnic Kazaks take a Social Stigma (Second-class citizen) -5.

Believing Muslims have a Secret (Muslim) -20.

Krovniki characters take a Social Stigma (Minority group) -10.

Approximately 1% of Alma-Ata's adult population has Verkovenski's augmented-reality hardware. The majority do not know that they have been implanted. This a form of Partial Amnesia (Only one event, -50%) -5.

Most Alma-Ata-based characters should have the Enemy (*Compromised*) disadvantage (see p. 125).

vid shows a variety of upbeat, largely foreign, entertainment – sitcoms, Bollywood musicals, celebrity chat, and the like, interrupted by advertisements celebrating Zarubayev and calling for the death of "hooligans, wreckers, bandits, and other villains." There is one news show, at 7 p.m., but even that is produced in a strikingly sunny, game-show-like format. The shows rarely deviate from their established schedule. The one notable exception was in March of 2090, when Zarubayev interrupted the programming to tell his citizens that the "bandit revolt" was over, and that he would now be exacting punishment. The broadcast then went dead for 10 days, as the purges and massacres of *The Silence* took place.

For the non-pure Russian citizens of Alma-Ata, the sense of constant observation is nearly overwhelming, made worse by a gnawing dread that anyone or anything in one's life could be an informant. Zarubayev has perfected the techniques of demoralization through distrust; about 50% of the adult Kazak population are informants. The KGB uses a combination of memetic and biochemical techniques to extract information from even the most unwilling informants. People are pulled in, almost at random, and made to reveal things about neighbors, friends, and family. It's not necessarily important that the accusations be true, only that they're damning. Most revelations, true or otherwise, are *not* immediately acted upon; they're added to a database to be used against someone as needed. The extraction of information itself is used as a tool of terror.

Even the pure Russian population is not entirely immune to the surveillance and memetic control. In 2097, a prominent Russian business owner was arrested and accused of being a spy for the E.U., then disappeared. When his arrest was announced on the nightly news program, the story finished with the smiling newsreader telling viewers that they could count on President Zarubayev not letting *that* happen again. Several suicides were reported in the Yoshnoe Nyebo district that night. By 2098, vid screens appeared for the first time on street corners in the pure Russian districts of Kazakhstan cities, although they are not yet required in Russian homes.

EDUARD MIKHAILOVICH KHARKOV

80 POINTS

Born 2032. Age 68; 5'11", 220 lbs. Sallow complexion, thinning hair, bright, child-like blue eyes.

Eduard Mikhailovich Kharkov is a survivor. His combination of business savvy and charisma allowed him to succeed in Kazakstan when others were falling victim to the capriciousness of Zarubayev, and his sense of duty and loyalty to the state kept him in the country despite many opportunities to leave. He was good friends with the dictator in the 2050s and 2060s, and played a crucial role in maintaining the economic stability of the nation during the first embargoes. While the friendship faded over time, Kharkov always felt like he had Zarubayev's respect and gratitude.

Sadly, Kharkov is quite mistaken.

In 2088, Zarubayev decided that Kharkov was a potential challenger to his rule and had him placed under surveillance. Cameras watched his moves, his communications were intercepted, and objects in his home replaced with sensor-laden copies. To Zarubayev's annoyance, there was no proof of disloyalty; he considered having Kharkov executed anyway. The 2090 coup stayed his hand, and Kharkov played a crucial role in Zarubayev's escape. In return, he chose not to have Kharkov killed during the post-coup purges.

But Zarubayev's excesses in the 2090s proved too much for even Kharkov, who began quietly expressing mild anti-Zarubayev sympathies. This was dutifully picked up and reported by the KGB, and the attention on Kharkov again intensified. In mid-2097, Verkovenskiï was granted permission to have Kharkov implanted with one of his experimental augmented-reality systems. During a hunting trip to the Aral Sea area, Kharkov was kidnapped and implanted, then given conditioning to make him forget the event.

Over the last two and a half years, Verkovenskiï and the KGB have been almost casually playing with Kharkov's sanity. In one instance, they made it appear that every woman that he saw had full head of red hair; in another, they made him hear a simultaneous Chinese translation of everything

that was said to him over the course of a day. More recently, they've started to wake him up in the middle of the night with visions of Zarubayev, dressed only in a long nightshirt, sitting on Kharkov's bed, lecturing him about politics. Kharkov believes this to be a recurring nightmare and has been drinking more heavily in order to have uninterrupted sleep.

Kharkov has retired from the daily operations of his business (a light-machinery manufacturing firm), and spends his days listening to opera recordings, practicing fencing, and worrying about his country. He could likely be persuaded that it may be time for more moderate leadership in Kazakstan. He is quite wealthy, and would make a valuable patron, except for the AR system in his head and monitoring systems all over his estate.

ST 9 [-10]; **DX** 10 [0]; **IQ** 13 [30]; **HT** 9 [-10].

Speed 4.75; Move 4.

Dodge 4.

Advantages: Charisma +2 [10]; Collected [5]; Genefixed (Pre-2035 version) [0]; Reputation +2 (Well-respected retired businessman; Russian elite, all the time) [10]; Very Wealthy [30].

Disadvantages: Alcoholism [-15]; Amnesia (Partial, One Event -50%, AR implant) [-5]; Enemy (Compromised) [-5]; Light Sleeper [-5]; Sense of Duty [-5].

Quirks: Always laughs at own jokes; Likes redheads; Opera buff; Sleepy drinker; Wears outdated clothing. [-5]

Skills: Accounting-14 [6]; Administration-16 [8]; Area Knowledge (Alma-Ata)-16 [6]; Area Knowledge (Kazakstan)-14 [2]; Area Knowledge (Russia)-15 [4]; Diplomacy-13 [4]; Fencing-11 [4]; Law-13 [4]; Leadership-15 [2]; Merchant-16 [8]; Riding (Horse)-10 [2]; Savoir-Faire-16 [2].

Languages: English-12 [1]; Kazak-12 [1]; Russian (native)-15 [0]; Turkish-12 [1].

The memetic assault is more than simple vid programming: it includes bizarre methods of manipulation. Under Verkovenskiï's direction, military and police forces stage outlandish events on the streets of Alma-Ata (and other cities), then tell passers-by to never say a word about it. Anyone monitored mentioning the event is arrested, held, and interrogated for several days. Citizens quickly learned not to pay attention to the unusual, out of fear that reacting will draw unwanted attention to themselves. In this way, citizens of Kazakstan have been trained to not see the unthinkable, even when paraded right in front of them.

Although Kazakstan under Zarubayev is an international pariah, it has sufficient links to other nations that

it faces little risk of economic collapse. Russia is widely considered its largest patron, although this is more because of a dependence upon the Baykonur launch facilities than any enthusiasm in Moscow for Zarubayev. The spaceport is also used by smugglers of illegal bioroids, "black" nanotech, and other illicit goods, many of whom then ship their wares across the Caspian Sea to ports in Iran; both Tehran and Alma-Ata reputedly receive a cut of every such deal. The TSA is thought to make use of Baykonur's services, as well, in exchange for access to the latest technological designs.

It is widely feared that smugglers using Baykonur may be able to bring in a “mini-nuke” (see p. 139).

PLACES

Prison District

In the northern part of the city, in the heart of the main ethnic Kazak slums, is the Posmakov Prison, home to the state’s political prisoners and the Komitet Gosudarstvennoi Bezopasnosti, or KGB. The building, a quarter mile on each side, is a simple gray eight-story structure. It has no windows and only two apparent entrances: the front, or “Lion’s Gate,” which allows only one person in or out at a time, and the rear, or “Serpent’s Gate,” which only opens when a prisoner transfer vehicle docks with it. Older residents who witnessed the prison’s construction claim that there are additional entrances hidden in the walls, although this has never been confirmed. The immediate vicinity of the prison and the path to the train station is heavily guarded; this presence does not extend into the district at large.

THE BLYUSTETVELUI

One of the more visible signs of Zarubayev’s rule in Alma-Ata are the *Blyustetyelui*, (“Guardians”), the cyber-shell “palace guard” found throughout the city. Unlike the police and military forces, which have a recognizable command hierarchy, the Blyustetyelui operate solely under the direction of Zarubayev himself. They are only found in Alma-Ata, or as bodyguards to Zarubayev when he travels; the first appeared in 2091, after the attempted coup. E.U. analysts estimate that there are now approximately 700 Blyustetyel units.

The only known time that Blyustetyelui have seen military action was in the initial days of the 2099 uprising, when the Martyrs of Astana rebel group managed to pin down Zarubayev and his entourage as they attempted to return to the capital. Although there were only 20 Blyustetyel units present, they defeated the well-armed assassination team without suffering any casualties. Unconfirmed reports that emerged from Kazakhstan following the failed uprising claim that the Blyustetyelui simply tore through the rebel’s cybershells, which were MCS-52 and 64 models (see p. 123) provided by E.U. intelligence services.

No Blyustetyel shell has been captured by opposition forces, but German intelligence claims to have evidence that the infomorph controlling each cybershell is a xox of Zarubayev’s son, who was reportedly brainscanned and ghosted immediately after his death in the 2090 coup.

The top seven stories of the building house prisoners and related facilities – mess hall, hospital, exercise space, and the like. In addition, the very top floor contains a crematorium. Nearby residents claim they know when there has been an uprising in the prison, as the smoke from the single chimney pours out for days.

The bottom floor and the basement floor below it contain domestic intelligence departments, which function primarily as secret police. They handle the routine interrogations and investigations, and their infomorphs monitor the millions of vid screens around the country. The bottom floors also house the KGB’s administrative offices. As with any large organization, a sizeable infrastructure is required to keep the KGB moving. The vast majority of people who come and go through the Lion’s Gate entrance are basic bureaucrats, keeping tabs of payroll and expenses.

A defector from the Kazak KGB claims that the foreign-affairs departments, as well as more sophisticated intelligence-analysis groups, are much further down, hundreds of feet underground. Little is known about the extent of the facilities, the complex may tie in to the underground sprawl of Zarubayev’s Castle (see pp. 113-114).

The neighborhood outside has declined steadily since the prison’s construction in 2050. Once it was one of the more lively Kazak parts of the city. Now everyone who could afford to has moved away, leaving only the aged and infirm, the extremely poor, and the criminals. Ironically, a visitor is more likely to be robbed or murdered within sight of the national prison than anywhere else in the city. Nonetheless, the district does see considerable traffic, as most vices are readily available here. Drugs are technically illegal but widely used, and prostitution – illegal only for Russian women – is commonplace as well.

The Ministry of Mind and Body

One of two institutions overseen by Zarubayev’s main advisor, Nikolai Verkovenski, the Ministry of Mind and Body is in eastern part of the city, where the old parliament building stood. The parliament house was demolished in 2083 for construction of the new ministry. Like much of the recent architecture in Alma-Ata, it has a solid, fortress-like design. All that sets it apart from other newer buildings is the statue at the northwest corner of the building, an idealized bronze body, 10 feet tall, arms outstretched, holding its own head as if in offering.

The Ministry of Mind and Body presents itself as a hospital more than an office building, and in fact it does contain a small but well-equipped public medical facility. Few patients come to the Ministry hospital willingly, however, as all Alma-Ata residents are aware that strange things happen in the sections of the building not open to the public. It is in this building that Verkovenskiï carries out his experiments in memetic control, cognitive implants, and social manipulation, and few who enter the classified areas leave unchanged.

Verkovenskiï's labs in the Ministry are stocked with the best bioengineering and cybernetic equipment that the KGB can procure, making the facilities easily the match of most good Fifth-Wave-world hospitals. There are multiple brainscanners and brainpeelers for making digital mind emulations, nanostasis tanks, exowombs, and an operating chamber that allows for up to eight simultaneous cranial-implant surgeries. All of this is overseen by Dr. Hans, the SAI that functions as Verkovenskiï's main assistant and advisor; he is totally dedicated to Verkovenskiï's vision of a society where all perception is state-controlled. Usually inhabiting a bush robot, Dr. Hans can readily slip between a number of different bodies, including a bioshell that looks like an ethnic-Kazak patient. Unless threatened, Dr. Hans never leaves the high security floors of the Ministry.

When Alma-Ata citizens disappear and return weeks later, the Ministry of Mind and Body is where they are taken.

There are usually 10 to 15 doctors on staff at any given time, aside from Verkovenskiï and Dr. Hans, and anywhere from five to 50 patients in the secure area. When Alma-Ata citizens disappear and return weeks later, this is usually where they are taken. The Ministry is well guarded, with bioroid soldiers stationed throughout. All have a limited puppet implant (p. 134), allowing Verkovenskiï (or, more rarely, Dr. Hans) to see what the bioroid is doing and, if necessary, take control. In the 2099 uprising, the Ministry building was a key target during the attack on

ALMA-ATA'S AUGMENTED REALITY

Unlike most late-Third-Wave or higher cities, Alma-Ata does not have a public AR network, even in the affluent districts. A visitor to Alma-Ata, however, would notice a large number of standard AR transceivers installed all over the city. This network is under the strict control of the Ministry of Mind and Body, and is used for Verkovenskiï's ongoing experiments.

The only people with AR equipment in Alma-Ata are those who have had it secretly implanted at the Ministry. Augmented reality is used not for enhancing information access, but for controlling perception. Implanted victims see lifelike images of people and things that aren't there, hear voices no one else seems to hear, and even find themselves chased by monstrous shapes that assault only them. President Zarubayev often visits these people when they are alone, telling them of his plan for the future, reminding them that he is always watching. When a person breaks down on the street in fear or madness, the well-trained Kazak citizens know to ignore the problem, pretending that the screaming man doesn't really exist. In some cases, he may simply be another image implanted in their minds that others on the street don't even know is there.

An outsider with standard AR equipment wouldn't normally pick up these signals. If aware of the signals' existence, a character with appropriate Engineer or Electronics skill may easily alter standard AR gear to pick them up. The network is relatively unsophisticated, and any attempt to jam or alter the broadcasts with modern (Fifth Wave) equipment should be at +3 to succeed.

Alma-Ata. Verkovenskiï and his staff retreated to the secure floors and held off the rebels for 10 hours until government forces could drive off the assault.

Kazakstan Polytechnik

Kazakstan Polytechnik is a small, dense campus near Sajran Lake, in the southwest part of the city. The second of the two institutions run by Nikolai Verkovenskiï, it is the most prestigious technical university in the country, with 24,000 students and some of the best-equipped labs east of the Urals. The caliber of its cybernetic-design and implant-medicine programs is such that several thousand students from Russia and other friendly states attend the school. Graduates are usually able to find work throughout the Russian sphere, although the best students are often hired by Verkovenskiï himself.

A small number of ethnic Kazak students attend the Polytechnik, although more are found as janitorial and maintenance staff. All students are required to live and socialize on campus, with the genders in rough balance. There is little mixing between the academic population and the city at large. Students are discouraged from leaving the university grounds, although male students are frequently discovered patronizing the ethnic Kazak and krovniki prostitutes that work the Prison district.

Only the sciences are taught; there are no humanities or social-studies departments. Nonetheless, political conversations are not unusual, particularly between ethnic-Russian Kazaks and foreign students. As long as the politics remain a coffeehouse distraction, and not a cause for agitation, the administration ignores the discussions. In many respects, Kazakhstan Polytechnik is the freest place in Alma-Ata.

The campus is also the only place in Alma-Ata without vid monitors. This was not by design. The vid screens were installed at the university at the same time as the rest of the city, but computer-engineering students soon found ways to hack the datastream and alter the material shown (or recorded by) the vids. The campus authorities, even with the KGB visibly involved, were unable to stop this digital vandalism. In a rage, Zarubayev ordered the campus destroyed and all students executed. After Verkovenskiï reminded him that the university's students, while undisciplined, were also responsible for many of the tools that allowed Zarubayev to exercise control, the vids were simply removed.

Yoshnoe Nyebo (Southern Heaven)

Known to Kazak locals as Medeo Tumani, the Yoshnoe Nyebo district was cleared of all non-Russian residents in the 2060s, and has served as the elite Russian enclave since. The difference between Yoshnoe Nyebo and the rest of Alma-Ata is striking – while all of the city is clean, Yoshnoe Nyebo is pristine, with lush parks, modern Russian architecture, and an abundance of restaurants and shops. Yoshnoe Nyebo could easily be mistaken for the upscale district of any central or eastern European city.

Ethnic Kazaks and krovniki are forbidden entry to the Yoshnoe Nyebo district, except as servants of Russian residents or registered couriers. The streets leading in are blocked except for the main thoroughfare, Ooleetsa Beria, which is heavily guarded with cybershell troops. Most traffic is commercial, trucks bringing supplies for restaurants and the like. Residents needing access out of town take the private rail line from Yoshnoe Nyebo to the Zarubayev National Airport.

Aside from the cybershells at the entrance, security is notably subtle in Yoshnoe Nyebo. This is not to say that it is light or slow to respond; on any given street there will be at least two heavily armed police officers. In Yoshnoe Nyebo, however, all public security officers are bioshells made to look as passably Russian as

possible so as not to disturb the residents. If needed, they are able to call in heavier firepower within three minutes.

Ooleetsa Beria, through Yoshnoe Nyebo, is the only accessible road that leads to Zarubayev's estate, known colloquially as the Castle.

**While all of the city
is clean, Yoshnoe
Nyebo is pristine.**

The Castle

The main governmental headquarters, the Castle is a sprawling complex at the end of Ooleetsa Beria, shielded on three sides by the mountains at the south of the city. Covering nearly three square miles, with a private TAV strip and military barracks, the Castle is massive, heavily fortified, and designed to intimidate. People brought to the Castle enter through 20-foot-high solid-steel gates, and there is an armed contingent of cybershell troops lining the road leading from the entry gates to the actual facility entrance. While the cybershell guards are largely older models taken out of regular service, the sight of a quarter-mile line of 10-foot-tall combat shells is imposing to most visitors.

All of the complex's externals are intended to demoralize visitors and opponents. Four massive, 30-story-tall towers pin the corners of the complex, bristling with weapon emplacements and sensors. The visible part of the main facility is a squat, four-story step-pyramid, with more cybershells patrolling the roof. The grounds are pristine, covered with grass but devoid of trees or any visible life.

These externals are almost entirely for show. Recognizing that a threat from the air is more plausible than any land-based attack, most of the facility is deep underground and widely dispersed; even an earth-penetrating nuclear attack would be hard pressed to take out the entire complex. The underground part of the Castle is sprawling, stretching out to the borders of the city. There are locked elevators that lead from the underground to various parts of Alma-Ata, with the exits in abandoned buildings, military-police stations, or underwater. This allows Blyustetel forces to emerge quickly if needed, and gives Zarubayev multiple means of escape if he again comes under attack.

The Colossus of Alma-Ata

Visible throughout the city, the massive 500-foot-tall statue of Zarubayev stands at the summit of Mount Köktöbe, in the southeastern part of the city. Built from 2091 to 2093, its construction cost 20 million dollars and the lives of over 100 indentured Kazak laborers. Made largely of steel and aluminum, it shows a grim Zarubayev, left hand curled into a fist held close to his chest, cybernetic right arm stretched out before him. The statue's eyes are massive spotlights, bright enough to cause shadows on the city's streets at night.

At the base of the statue is the Zarubayev Center, a museum of Zarubayev and the history of Kazakhstan since his rise to power in 2038. Among the artifacts it holds is the first printing of his book, his right arm suspended in solution (it was intentionally severed and replaced with a cybernetic arm), and his gravestone. The latter has a sign stating that Zarubayev wished for it to be stored in the museum, since he will never need it. Touching the gravestone has become a tradition for visitors to the museum, ostensibly for luck. (The Muslim Underground claims that it is to wish the death of Zarubayev.) After only seven years of display, the granite shines from the tens of thousands of hands that have touched the gravestone.

There are construction access roads that lead to the facility at the statue's base, but they are restricted to authorized vehicles only. Citizens wishing to visit the statue must take the Köktöbe cable car, an antiquated system able to hold only two-dozen people at once for the thirty-minute trip up and down the mountain. The cable car is completely automated, and is one of the few places in Alma-Ata without the ubiquitous vid systems.

CURRENT EVENTS

The Köktöbe cable car cable snapped late last week, plunging a car 200 feet to the mountainside and killing all passengers. There has been no public acknowledgement of this event, although the facility was immediately closed and will remain so until the cable is repaired. Each of the families of the victims received, without explanation, grants of 500 rubles. There are rumors that the mothers of victims are planning a silent march to the Castle, holding signs asking for the bodies of their children.

Government forces are conducting house-to-house searches in the Prison district. They claim to be looking for a prostitute named Amma, who was known to work in that area. Residents are being told that she is sick with an unnamed but highly contagious illness, and that anyone who knows of her whereabouts should contact the authorities immediately. Some of the other prostitutes in the area claim that she had disappeared months ago, but returned in the last week acting oddly before disappearing again.

Kazak foreign minister Andraayev returns this week from a tour of the capitals of the various Russian sphere nations, trying to shore up support for the

incursion into Uzbekistan. The usual statements of solidarity from Russia, the Ukraine, and others were not forthcoming, leading European observers to suspect a fissure forming in the previously close ties between Zarubayev and Russian Prime Minister Bazarov. The Kazak news service, which had earlier been playing up the tour with colorful maps and animations, ceased making any references to it once it became clear that the trip would not be a success.

An ethnic-Kazak gunman managed to sneak into the Yoshnoe Nyebo district earlier last month, shooting several Russian holiday shoppers before being killed by police. Although the government made the usual reprisals (home destroyed, family arrested), it stopped short of displaying his body in public, as is the usual deterrent tactic. Rumors are now circulating that an ethnic-Kazak courier in the same part of Yoshnoe Nyebo saw the fight, and when the man was killed, it was clear that there were cybernetic parts in his body and head.

During the evening news show two days ago, a text scroll started running across the bottom of the screen saying "The President is a monster. He is killing us all for his mad plans. You must fight! You cannot let this madman continue to live!" This text repeated itself for about 30 seconds before the vid display abruptly switched to a rerun of *That's My Mom!* Although no mention was made of the event in the official media, Alma-Ata is swirling with rumors of a late-night raid at the university, where half a dozen students were taken away by the KGB.



6

CHARACTERS



DeGrass - LOKARIAN

"How's the feed?"

Tommy checks the screen for the third time in the last minute. "Still good."

*"I'm on T minus 30 seconds to contact. Moving to full sensorium . . . now," I don't touch a button, I just **decide**, and the shift happens. I'm getting a full sensory flow from the cybershell, feeling the wind whipping over my wings, the electricity in the air, the steadily increasing air pressure.*

"Confirm recording," my own voice sounds distant, hollow.

*"Confirmed. This is excellent material, Ali. I've already received 37 bids on the spot market, and you haven't gone in yet. This one should go a long way toward paying off that **Pecos Bill** we're flying," Zak's voice was calming, even when he was being sarcastic. I like that in an AI.*

The tornado – an F4, by the look of it – touches ground at that moment, and I will the shell (will

myself) to make the slow arc toward it. In less than a second, I'm inside, buffeted by the winds (234 miles per hour, a part of me notes), deafened by the scramjet-like roar (local audio input attenuated, still recorded at full spectrum), knowing that at any second I could be destroyed. I don't suppress the terror; the visceral reaction on the slink is what people pay for. Lightning bolts erupt all around me, crossing the tunnel like a latticework of energy. The static electricity disrupts the signal briefly, and for a second the image goes flat, the sensorium drops. Then it's all back, and again I'm right there, in the moment.

*The cybershell's piloting system is doing everything it can to keep the shell stable. The AI pilot is an update of the one Susie Xu used in the **Not in Kansas** for her exploration of Jupiter, and I've never had a better ride. It was made by Pure Reason Design, and I make sure to keep the company name in my thoughts for a half-second. They'll pay well for that placement.*

"The tornado's approaching Scott City," Tommy's voice whispers.

I will the shell to make a gradual lift up, then dive down, slipping between bolts like an acrobat. Halfway down the twister, and the view darkens; I expand my sight spectrum to compensate. As I expected, we're starting to get debris from buildings. Looks like older residential, lots of wood. I start to make a lazy spiral back up the funnel when it happens. Right in front of me, flying past at over 200 miles an hour, is a person. I can't help but follow the image for a long second before it's gone, swallowed up by the dust and wood that boil in the tornado's base.

I continue up the funnel. Tommy's voice whispers in my ear. "Spot market price on the footage just tripled."

I push the thought down, and get ready to punch out the top of the tornado, into the storm clouds above.

CHARACTER TYPES

With conditions ranging from civil war to cutthroat business competition, there is a remarkable range of opportunities in the developing world. Many of the occupations and diversions that are common in space and the Fifth Wave nations can be found in the poorer countries as well, although some appear quite different due to the lower levels of technology and greater intensity of conflict often found in developing regions.

INAPPROPRIATE TYPES

Some of the character types found in the *Transhuman Space* core book (pp. TS110-114) and *Fifth Wave* (pp. FW112-114) are inappropriate for a campaign set in *Broken Dreams* Earth. Colonists are rare, although Isolates living in the less-hospitable parts of the world share many of the same characteristics. Explorers and Mangliu, on their occasional visits to Earth, are rarely found outside of Fifth Wave areas. There are few Transhumans living in less-developed nations, and while Dilettantes are common in the wealthy classes of poorer countries, the Eloï class of the Fifth Wave world has yet to emerge elsewhere.

ACTIVIST

Activists in developing areas have more-limited access to sophisticated memetic tools, and must rely on traditional methods – crowds, charisma, and catchy, rhythmic chants. Nations without a culture of participatory democracy tend to respond violently to mass protests; being able to protect yourself is useful for activists. Aside from the characteristics listed in the *Transhuman Space* core book, activists should also consider Contacts, Cool, and Combat Reflexes. Leadership and Performance-type skills are useful as well as is Law (for knowing what civil rights opponents may be violating).

ARCHAEOLOGIST

One of the results of the dizzying pace of technological change is the rapid turnover in standards. Systems and protocols dominant one year are obsolete and abandoned the next. Yet people still need to access information locked away in antique computers or recordings or may need to understand the workings of aging hardware a remote village depends on for power. The archaeologist specializes in knowing how to access and use devices and systems from 50 or 100 years earlier (the Data Recycler mentioned on p. TS114 is a type of archaeologist). Single-Minded is helpful, as well as a wide array of scientific and engineering skills. History, with a specialization in technological history, is mandatory.

ARTIST

While some developing nations are eager consumers of Fifth Wave entertainment products, many prefer local artists. While Appearance and Charisma are important, and actual Artistic skills a requirement, artists with Intuition coupled with Pop Culture (p. 125) do particularly well.

Slogger

Not quite a Slinky Star, not quite a News Hound, a slogger is a first-person commentator on life. While most of the better-known sloggers use uplink interfaces (hence the name, *slink-logger*), there are sloggers with little more than a digital camera and a sharp wit, coupled with substantial underground followings. Few sloggers have other full-time jobs; slink logs are trenchant observations on the world at large, and most sloggers spend their waking hours seeking out the unusual and the noteworthy. Contacts and Reputation are very important, and useful skills include Bard, Computer Operation, Intelligence Analysis, Performance, Research, and Sensie Interface.

CRIMINAL

Criminals include not just those who intentionally break the law for personal gain, but also those whose roles in society are considered distasteful, those who break the law to help others, and those with a political agenda behind their illegal acts.

Al-Mu'aqqibat

Typical of bioroid "underground railroad" groups in 2100, al-Mu'aqqibat seeks to liberate Caliphate bioroids from slavery and oppression. Membership is a mix of humans and bioroids, and the group gets a little help from bioroid-freedom-friendly governments. Members have an Ally Group and Contacts, but also have a Secret that could get them arrested or killed and, for those who regularly smuggle or house the fugitive bioroids, an Extremely

Hazardous Duty. Useful skills include most Outdoor Survival and Thief/Spy skills.

Salamatin and Sikkiyn

Not all Bounty Hunters work on the side of the law. The Salamatin and Sikkiyn are examples of trackers whose work is both desired and despised. Finding, retrieving, and if necessary killing women or bioroids who have escaped subjugation, while of dubious legality in the Caliphate, is a service in constant demand. Many societies have such people, who carry out violent acts for a fee. Typical characteristics include Alertness, Area Knowledge, Contacts, and Combat/Weapon and Thief/Spy skills. The Callous disadvantage is almost universal, and Sadism is common.

GRA agents have an almost missionary zeal – they really do believe that they are saving the world from destruction.

Smuggler

In an age when most material goods can easily be reproduced with 3D universal printers, the smuggling that matters is that of intellectual property. The struggle between the powerful World Trade Organization and the info- and nanosocialist movements makes the illegal copying or transfer of information or digital content a political act. Many data smugglers see themselves not as criminals, but as freedom fighters. Of course, other smugglers happily take advantage of those driven by ideology – there are still many data pirates driven by profit. Computer Hacking, Contacts, Electronics Operation, Genetics (Genetic Engineering), Holdout, Law (Intellectual Property), Merchant, and most Thief/Spy skills are useful characteristics. Political smugglers often have Fanaticism, but may in turn have connections to an Ally Group.

ENTREPRENEUR

The developing world offers many opportunities for those wishing to start a business. Advanced technology hasn't eliminated as many industries in Third Wave areas as in the hyperdeveloped nations, and countries in transition are willing markets for new products and services. Some states have stringent laws restricting property and business ownership by non-citizens, but others, particularly those eager to be a part of the global economy, are wide open to foreign investors and entrepreneurs. Opening up a local franchise of a global firm can give an entrepreneur a powerful Ally Group. Advantages such as Charisma, Contacts, Single-Minded, and Wealth (for starting capital)

are very handy for successful entrepreneurs of all sorts, and Administration, Area Knowledge, Merchant, and Pop Culture (see p. 125) are critical skills.

INTELLIGENCE AGENT

Not all operatives for governments or corporations are spies, *per se*. Many work openly, using their association with a powerful organization as a tool for intimidation and persuasion. Others are less interested in intelligence gathering than in covert operations, eliminating problems before they get out of hand. Aside from the characteristics mentioned for Intelligence Agent (p. TS111), Ally Group (or Patron), Area Knowledge, Cultural Adaptability, Language, and Politics skills are of great use, as are military skill such as Tactics and Traffic Analysis.

GID/Mutawi'yyun Agent

Within the Islamic Caliphate, the Mutawi'yyun operates openly, carries identification, and generally behaves like a Caliphate-wide law-enforcement agency. The Legal Enforcement Powers advantage is necessary, and GID agents usually know both the Criminology and Law skills. Outside of the Caliphate, the Mutawi'yyun behaves more like a traditional intelligence and covert-operations agency. While some may travel openly (particularly if searching for a known international fugitive), most operate under an Alternate Identity. The two branches do not share personnel.

GRA Agent

The Genetic Regulatory Agency relies on both open and covert operations to weed out those violating international regulations on genetic engineering. All GRA agents have the Legal Enforcement Powers advantage, and very likely have Fanaticism or Sense of Duty as disadvantages. GRA agents should have Biochemistry, Botany, Chemistry, Ecology, Zoology and all three of the Genetics specializations (see p. TS136), as well as skills appropriate for covert and investigatory operations.

Nuhá Agent

In contrast to the Mutawi'yyun, Nuhá operates in complete secrecy, and strives never to use direct violence as a means – not out of squeamishness, but out of a desire to avoid drawing attention. All Nuhá agents, regardless of whether they work in the field or at a desk, must have the Alternate Identity advantage. Their main focus is on memetic manipulation, so aside from the Memetics skill, Nuhá agents also have Legal Enforcement Powers and the skills Conspiracy Theory (as a memetic tool), Politics, Psychology, Strategy, Traffic Analysis, and a wide array of Area Knowledge and Savoir-Faire skills. Being part of Nuhá is a 30-point Secret, as revelation of one's status as a Nuhá agent would result in termination.

TSA Acquisitions Agent

The Transpacific Socialist Alliance Acquisitions Directorate is in charge of the procurement of new intellectual property by any means necessary. Acquisitions Agents are not concerned with overthrowing the dominant political paradigm, and they avoid situations that may result in firefights. While many are skilled at computer intrusion and social engineering, their primary resources are the networks of smugglers, hackers, and fellow-travelers who support the nanosocialist agenda. Charisma and Contacts are vital advantages for an Acquisitions Agent, and he should also have Computer Operations, Cryptanalysis, Electronic Engineer, Genetics (Genetic Engineering), Pop Culture (see p. 125), and other skills related to producing material of interest to the TSA. Thief/Spy skills are useful as well.

WTO Agent

The World Trade Organization is the leading global agency in the fight against piracy of intellectual property. It employs thousands of agents to seek out data thieves, smugglers, and TSA operations. While the WTO prefers to work with local law enforcement, it has a covert-operations division for those situations where cooperating with local authorities poses more problems than it solves. WTO agents do not typically have Legal Enforcement Powers, although they work closely with local authorities who do. Fanaticism or Sense of Duty is commonplace, and Law (specializing in intellectual property) is a required skill.

MILITARY PERSONNEL

The main difference between the military personnel of the Fifth Wave world and that of the developing world is the proportion of unmodified humans in the ranks. For soldiers of every state, the same basic advantages and skills apply, with most variations related to available technologies. Few Third Wave soldiers have much Beam Weapons training, for example.

Ghazi

The Islamic Caliphate's Ghazi soldiers are unconventional-warfare forces. Beyond the various skills typical for military personnel in 2100 (see p. TS112), they are also trained in the ability to live off the land (most Outdoor skills), psychological warfare (Memetics and Psychology skills), and covert operations (most Thief/Spy skills). Extremely Hazardous Duty, Overconfidence, and On the Edge are common to these special-operation soldiers.

Mercenary

Soldiers-for-hire are found throughout the developing world. Governments find them useful additions during extended conflicts, as mercenaries often have access to

more-sophisticated equipment (from the black market) than standard troops, and the loss of non-citizen soldiers usually results in less political fallout than the deaths of local forces. Mercenaries usually operate in teams, although individuals are hired for special needs. Paid soldiers serve as unconventional-warfare forces. Successful mercenaries rarely switch sides in a conflict – doing so eliminates any future employment possibilities – but are averse to accepting highly risky missions. Aside from characteristics similar to other soldiers, mercenaries must repair their own equipment and provide their own medical care, so Armoury, Engineer (Cybershell), and most Medical skills are useful. Mercenaries must also be able to sell their services, so Charisma and Reputation are useful advantages, and the Merchant skill is critical. Mercenaries frequently have the Selfish or Self-Centered disadvantages, and most have Sense of Duty (Stays Bought). Few mercs will have the Fanaticism disadvantage.

Resistance Fighter

Resistance movement soldiers combine many of the features of special-operations units and less-violent memetic warriors like the Activist. Resistance fighters must be able to “swim through the masses like a fish through water” (to quote Mao), so they need to make the populace their friends, frightened of them, or ideally both. Resistance fighters are typically lightly armed, although those with access to great-power patrons sometimes have cheap but effective equipment such as MCS-52 combat cybershells (see p. 123). Resistance fighters usually have fewer Combat/Weapon skills than a regular soldier, but greater Outdoor and Thief/Spy abilities. Most have some training in Politics, and many are given a crash-course in Memetics to keep the hearts and minds of the masses. Fanaticism and Sense of Duty are typical disadvantages.

MISSIONARY/CHAPLAIN

While religious figures share many characteristics, different beliefs produce unique forms of spiritual or memetic leadership. In many developing nations, those who preach have civic responsibilities, and are not simply theologians. Conversely, non-spiritual memetic movements have adopted some of the characteristics of religion in their attempts to gain followers.

Alim

Islamic religious leaders, or *ulema* (singular *alim*), have a much broader function than that of spiritual guide. An alim (or a *mullah*) acts as the arbiter of Islamic law, leader, and teacher. Successful ulema gain greater reputations by the wisdom of their decisions and jurisprudence. Beyond the Missionary/Chaplain characteristics (p. TS112), an alim also usually has Administration, Leadership, and Teaching; Law (Shariat) is a requirement.

Evangelist

The term “evangelist” has taken on a larger meaning than religious emissary, and is now applied to anyone who pushes a given ideology or meme, especially those concerning consumer products. Evangelists are not subtle; they do not hide what they are doing. They are persuasive, forceful, and relentless. Advantages such as Charisma, Single-Minded, Strong Will, and Voice are vital; disadvantages such as Fanaticism and Stubbornness are common. Useful skills include Bard, Fast-Talk, Memetics, Performance, and Pop Culture.

STORMCHASER

A stormchaser is someone who makes a living out of putting his life on the line. “Storm porn” – up close and detailed InVid and slinky footage from inside of the heaviest weather – is a popular and lucrative field. Single-camera video of a tornado from a mile away no longer has a market; audiences in 2100 expect multiple cameras, an interactive sensorium, and material from the storm’s heart. Successful professional stormchasers rely on extremely rugged cybershells, disposable microbots, and a willingness to do nearly anything to get the best shots. Advantages such as Collected, Danger Sense, Daredevil, and Fearlessness are typical of stormchasers; Common Sense is almost unknown. Glory Hound, Impulsiveness, and Overconfidence are usually found in beginning stormchasers, although the worst cases are weeded out over time.

TECH BROKER

A specialized form of Arbitragist (p. FW113), the tech broker is found throughout the less-developed world. With rapid changes in technology, regulation, and markets, it’s difficult for any individual or firm to keep track of what’s

available and carry on with business-as-usual. The tech broker links up people who are dumping old technology with people who are looking to buy cheap technology. Tech brokers are often the contacts for beta tests, lining up likely candidates for their corporate clients. They usually specialize in a particular market or type of technology, and many give a small kickback to brokers in different fields who send business their way. The tech broker is on the cutting-edge of information and communication technology in order to better compete with rivals. Advantages such as Contacts, Less Sleep, and Single-Minded are useful. Typical tech-broker skills include Economics, Intelligence Analysis, Mathematics, Merchant, and deep knowledge of the particular technology they handle.

RACIAL AND MODEL TEMPLATES

Unlike the *Fifth Wave* setting, most people in the areas discussed in *Broken Dreams* are unmodified humans, many of whom may not have even undergone genetic screening and repair before birth. In the developing world, the resources are rarely available to provide near-universal genefixing or genomic upgrades. The drive to make their children or nation competitive with the rest of the world is strong, however, and it’s not unusual to find genemods in use in the developing world that have long since been abandoned elsewhere. There are several reasons for this. Older designs can be done with less-advanced equipment, the obsolete genemods may have been adopted under false pretenses (e.g., sold to the health ministries without revealing the defects in the design), and primitive genetic upgrades are extremely inexpensive or free to license. The newer the design, the higher the licensing fees demanded by the patent holders – the older the model, the more likely it is to be found in the poorer world.

Advanced Designs

Human upgrade, bioroid, and cybershell templates designed in the Fifth Wave world in the last decade are rare in the developing world, typically only found on visitors (or invaders or spies) from the Fifth Wave world. In some cases, newer types require a technological infrastructure (such as nanotechnology) unavailable in even the most-advanced cities in the developing world. In other cases, the corporations behind newer designs wish to maximize profits by restricting sales to the wealthiest advanced nations, building up status-related demand for the modification before making it widely available. There is also the matter of resources. Bio- and cyberengineering in the developing world tend toward ease of construction and reduction of expense, and rarely have the means to devise an entirely new form.



There are a few exceptions. The Islamic Caliphate has been especially active at creating genemod and cybershell designs that fill its unique needs, as it has cultural restrictions on the use of human bioengineering and the forms artificial beings can take. While they are not at the cutting-edge, many of their models are competitive with mainstream engineering. The laboratories of the Transpacific Socialist Alliance have been effective at reverse-engineering recent-Fifth-Wave designs and either reducing their complexity (making them more widely usable) or combining ideal features for local versions. And the cybershell blueprints and bioroid genomes that end up on the TSA Web are a windfall not just for pirates, but also for struggling nations trying to remain competitive.

PARAHUMAN AND IDEAL TYPE TEMPLATES

Genemod designs dating back to the 2050s, 2060s, and early 2070s are generally available – if not necessarily affordable – throughout the more-stable parts of the developing world, although a few areas will take advantage of more-recent designs pirated and put on public webs. Parahumans that deviate significantly from baseline human are much less common than in the Fifth Wave world; the less advanced nations are morphologically conservative, avoiding forms that have obvious transgenic features. Designs abandoned in the hyperdeveloped world can also be found across the Third Wave world.

Germline Improvement Modification (“Pre-Alpha”) Upgrade **10 points**

Attribute Modifiers: HT +1 [10].

Advantages: Disease-Resistant [5]; Longevity [5].

Disadvantages: Low Pain Threshold (Adult Onset) [-10].

Features: No Appendix; Taboo Traits (Genetic Defects, Mental Instability).

Date: 2048.

Cost: \$20,000.

An obsolete human genetic-upgrade design, the Germline Improvement Modification – commonly called the “pre-Alpha” – is found all over the world. A simple genemod, the side-effect of extreme pain sensitivity does not emerge until maturation. While the technique has long been superseded by the Alpha upgrade, unscrupulous doctors in the developing world sometimes use the pre-Alpha process but charge for an Alpha, knowing they will be long gone before the side-effects become apparent.

Hamas Upgrade (Beta version) **25 points**

Attribute Modifiers: IQ +1 [10]; HT +1 [10].

Advantages: Alertness +1 [5]; Combat Reflexes [15]; Disease Resistant [5]; Longevity [5]; Single-Minded [5].

Disadvantages: Impulsiveness [-10]; Overconfidence [-10].

Features: Taboo Traits (Genetic Defects).

Date: 2090.

Cost: \$100,000.

One of the genetic upgrade models the Islamic Caliphate is considering as a way to make better citizens, the Hamas series (*Hamas* roughly means “zeal”) is intended to create people to be willing and able defenders of Islam. The upgrade line is not generally available, but 1,000 test subjects have been born in the last 10 years. The current conclusions are that the design still needs work.

Istislaam Upgrade (Beta version) **0 points**

Attribute Modifiers: IQ +2 [20].

Advantages: Collected [5]; Deep Sleeper [5]; Longevity [5]; Single-Minded [5].

Disadvantages: Slave Mentality (Only in presence of an alim, -75%) [-10].

Features: Taboo Traits (Genetic Defects).

Date: 2090.

Cost: \$100,000.

The second model genetic upgrade the Islamic Caliphate is considering, the Istislaam series (*Istislaam* roughly means “peaceful submission”) is intended to create citizens that are devoted and obedient. As with the Hamas, the Istislaam upgrade is not generally available, but there are about a thousand test subjects in Caliphate countries. The extremely submissive behavior requires imprinting in the first 3 years of life; the test subjects were largely imprinted on religious teachers. When not in the presence of an alim, Istislaam children are bright and calm. When a teacher appears, they behave with slavish deference. The Caliphate believes that this design also needs significant work.

Methuselah Upgrade **24 points**

Attribute Modifiers: ST +1 [10]; HT +3 [30].

Advantages: Disease Resistance [5]; Early Maturation 1 [5]; Extended Lifespan 1 [5]; Longevity [5]; Poison Resistance [5].

Disadvantages: Epilepsy [-30], Extra Sleep 2 [-6].

Features: No Appendix.

Date: 2045.

Cost: \$20,000.

Another of the early, obsolete human germline upgrades, the Methuselah series was meant as the first serious attempt to extend the human lifespan. In certain respects, the design worked as intended: of the 1 million or so surviving Methuselaha, most show little sign of their age (largely in their late 40s and 50s), appearing in most respects as adults in their mid-20s. Unfortunately, the delicate neurological work required to retain brain plasticity had severe side-effects. Methuselaha need an extra two hours of sleep each night, and are prone to

seizures. Standard medications suppressing the symptoms of epilepsy do not work on Methuselahs; research continues on ways to block the attacks. The design is still available, although few parents consider a life of weekly, even daily, seizures a fair price to extend their children's lives.

Salud Upgrade (Experimental) 55 points

Attribute Modifiers: HT +3 [30].

Advantages: Immunity to Disease [10]; Immunity to Poison [15]; Longevity [5]; Radiation Tolerance (Divide Rad dose by 5) [10]; Rapid Healing [5].

Disadvantages: Increased Life Support (Body requires three times as much food per day as a normal human) [-20].

Features: Taboo Traits (Genetic Defects).

Date: 2082.

Cost: \$150,000.

The final experimental genetic upgrade from the *Después de Hombre* program in the TSA, the *Salud* model was intended to be as resistant to toxins and environmental insults as possible. By and large the design functioned as intended, although the need to consume great amounts of food (a side effect of the toxin resistance) proved to be a problem. As the TSA program was destroyed in the Pacific War, it is unknown whether any *Salud* upgrades survive.

BIOROID TEMPLATES

As with parahumans and human upgrades, the variety of bioroids found in the developing world is smaller than that found in Fifth Wave countries. Part of the explanation is the technology required to grow and mature a bioroid form. A greater reason, for many areas, is the extreme distaste with both the notion of entirely artificial people *and* servitude bordering on slavery. Bioroids are not considered *people*, but neither are they comfortably considered property. This ambivalence is present even in the one developing power with an active bioroid-production program, the Islamic Caliphate. Of the two Caliphate models presented here, only one is legal, and its use is controversial.

Busr

52 points

Attribute Modifiers: ST +2 [20]; IQ -2 [-20] HT +2 [20].

Advantages: Bioroid Body [0]; Breath-Holding +2 [4]; Discriminatory Smell [15]; Disease-Resistant [5]; Extra Encumbrance [5]; Filter Lungs [5]; Hide (Thick Hide) [28]; Resistant to Poison [5]; Nictating Membrane 1 [10].

Disadvantages: Appearance (Monstrous) [-25]; Bad Smell [-10]; Selfless [-10]; Unnatural Feature [-5].

Features: Thick, rough green skin; head set deep into the frame of the body; very large eyes that don't seem to blink. Transgenic Features (Skin derived from rhinoceros hide, greatly altered body form).

Date: 2087.

Cost: \$75,000.

The *Busr* is a worker bioroid found only in the Islamic Caliphate. Its name comes from its appearance: round, wrinkled, and green, something like an unripe date. It is designed to be as non-humanoid as possible while still being able to use equipment and infrastructure meant for humans, in accordance with Caliphate restrictions on the creation of beings in the human image.

Due to its strength and general hardiness, *Busrs* are used where Fifth Wave nations would use cybershells. The chemical industries and military are the major employers of *Busr* bioroids. It is used largely in hazardous areas, as its design makes it resistant to environmental toxins. Still, most *Busr* bioroids die within five years of production.

Its continued manufacture and use is an embarrassment for many progressive Caliphate citizens, who are troubled by the use of clearly sapient slave labor.

Because of their appearance and odor (a side-effect of the way their bodies process toxins), *Busrs* are rarely used in public areas.

Hamlin

92 points

Attribute Modifiers: IQ +1 [10]; HT +1 [10].

Advantages: Appearance: Handsome/Beautiful [15]; Bioroid Body [0]; Charisma +2 [10]; Combat Reflexes [15]; Composed [5]; Pheromone Control [25]; Voice [10].

Disadvantages: Sterile [-3]; Unusual Biochemistry [-5].

Features: Taboo Trait (Mental Instability).

Date: 2085.

Cost: \$375,000.

Designed by Biotech Euphrates for the British M.I. 5 as a tool for memetic warfare, the *Hamlin*-series bioroids are engineered to be as charismatic and inspiring as possible. Most often used by intelligence and security services, they are able to quickly gain the attention and trust of groups of people, inciting or calming crowds, and sowing confusion in the ranks of political movements. The bioroids have no single external appearance, and are sculpted to fit in with the local populace.

The set of traits engineered into the *Hamlin*-series allows the bioroid maximum physical control over its ability to connect with people. Every movement, every breath is designed to add to the effect. The Pheromone Control advantage is more subtle than in an *Eros*-series bioroid, focusing on enhancing comfort rather than lust. Through the use of body language, voice, and pheromones, the very presence of a *Hamlin*-series makes people feel at ease.

Coupled with an appropriately programmed or trained intelligence, a *Hamlin*-series bioroid can be a persuasive political figure, particularly in groups based upon charismatic leadership. In 2090, the radical British Preservationist group *Second Calling* collapsed after a *Hamlin*-series bioroid infiltrated the organization. Working to enhance the incipient rivalries, the bioroid agent managed to split the group into at least four factions, none of which was strong enough to stand on its own.

Although the design was initially classified, the Transpacific Socialist Alliance acquired the source code in 2094. Knowledge of the Hamlin-series is now widespread, and many dissident movements use regular tests on members to prevent Hamlin infiltration. There is fear that the TSA may be using Hamlins against the hyper-developed world as leaders of local nanosocialist groups. Infosocialist parties have loudly denied such claims, calling them an attempt to de-legitimize their movements.

It is widely rumored that several of the top media corporations have expressed an interest in acquiring Hamlin-series bioroids as reporters and talk-show hosts.

Houri **47 points**

Attribute Modifiers: DX +1 [10], IQ -1 [-10], HT +2 [20].

Advantages: Beautiful (Off-the-shelf looks, -50%) [8]; Bioroid Body [0]; Breath-Holding +1 [2]; Deep Sleeper [5]; Double-Jointed [5]; Erotic Art +3 [8]; Extra Fatigue +1 [3]; Fit [5]; High Pain Threshold [10]; Immunity to Disease [10]; Sanitized Metabolism [5]; Sensitive [5].

Disadvantages: Attentive [-1]; Secret [-30]; Weak Will -1 [-8].

Features: Taboo Trait (Mental Instability).

Date: 2078. **Cost:** \$100,000.

The Houri is a pleasure bioroid used in the Islamic Caliphate. Usually found in the more-conservative parts of the region, where sex roles and sexual behavior are sharply defined, the Houri is intended to be a submissive and pliant option for young men. Illegal, Houris are not allowed outside of the establishment where they live and work. The bioroid design in Houris is faulty, and a small percentage is neither as unintelligent nor weak-willed as the owners want. Depending upon the request of a Houri's owner, an escaped Houri may be recaptured or killed. There are no male Houris.

Scheherazade: A Houri variant purchased exclusively by the Caliphate's wealthy, the Scheherazade is

designed to be both physically and mentally attractive. Scheherazade bioroids are usually trained to be remarkable storytellers (Bard-13 or more). As Houri, but delete IQ penalty and Beautiful (Off-the-shelf looks); add Eidetic Memory [30], Very Beautiful [25], and Voice [10]. *104 points* (2082; \$300,000).

CYBERSHELL TEMPLATES

More common than bioroids in the developing world, even AI-resident cybershells are considered "tools" rather than "slaves." Most cybershells in Third Wave areas are dedicated-purpose systems, such as construction 'bots. Infomorph-inhabited Cybershells are less widespread than in the Fifth Wave world, but not at all unknown.

Afrit **793 points**

Attribute Modifiers: ST +15 [90]; DX +1 [10]; HT +3 [30].

Advantages: Absolute Direction [5]; Acute Hearing +3 [6]; Chameleon 4 (Infrared, +50%) [42]; DR 75 (Electromagnetic, +50%) [338]; Enhanced Move (Running) 1 [10]; Extra Hit Points +5 [25]; Infravision [15]; Machine Body [37]; PD 4 [100]; Polarized Eyes [5]; Radio Speech (Laser and radio, +40%) [35]; Radiation Tolerance 5 [10]; Silence 1 [5]; Weaponry (AMR and 2x Assault pod, p. TS156, LC1) [70].

Disadvantages: Dependency (Maintenance; occasional, weekly) [-20]; Mistaken Identity [-5]; Social Stigma (Outsider) [-15].

Features: Complexity 6-8 microframe computer.

Date: 2072. **Cost:** \$600,000 + computer

The Afrit is the Islamic Caliphate's top of the line close combat heavy cybershell. Big, fast, and strong, it is designed to deliver punishing damage to opposing cybershells, vehicles, and troops. With a decidedly non-humanoid appearance, the Afrit is designed to terrify opponents as well as destroy them. Its two front limbs end in assault pods, with retractable hands for manipulation. Its rear limbs are reversed, like those of a bird or dinosaur; its anti-materiel rifle is mounted on the crest of its back. About two-thirds of the Caliphate's Afrit forces are teleoperated; the rest are inhabited by citizen AIs. 8' tall, 450 lbs.

Ghola **277 points**

Attribute Modifiers: ST +3 [30]; DX +2 [20]; HT +2 [20].

Advantages: Absolute Direction [5]; Doesn't Breathe [20]; DR 20 [60]; Extra Hit Points +5 [25]; Machine Body [37]; PD 2 [50]; Perfect Balance [15]; Radio Speech (Infrared and radio, +20%) [30].

Disadvantages: Dependency (Maintenance; occasional, monthly) [-10]; Mistaken Identity [-5]; No Sense of Smell/Taste [-5]; Social Stigma (Outsider) [-15].

The ideological opposition to AIs in the TSA arises from the concept that information belongs to all, and the personalization of information runs counter to its potential for wide distribution.

Features: Complexity 5-7 small computer.
Date: 2078. **Cost:** \$250,000 + computer

The main cybershell in use in the Caliphate's military, the Gholā – which appears as a heavily armored man – gets around restrictions on the creation of humanoid creatures by only being controlled by teleoperators or non-sapient AIs. It is designed to work alongside human soldiers, and is able to wear standard armor (adding to DR and PD) and fit in standard vehicles. Aside from the basics of shape and size, there are no attempts to make the design human-like – the face is a dull, featureless plate, and the Gholā's body is a flat, gray-tan color. 6' tall, 200 lbs.

Humaniform **36 points**

Attribute Modifiers: ST -1 [-10].

Advantages: DR 3 [9]; Machine Body [37]; Radio Speech [25].

Disadvantages: Dependency (Maintenance; common, monthly) [-5]; Mistaken Identity [-5]; No Sense of Smell/Taste [-5]; Social Stigma (Valuable Property) [-10].

Features: Complexity 5-7 small computer or Complexity 6-8 microframe.

Date: 2055. **Cost:** \$4,000 + computer.

The basic humanoid shaped cybershell is an older design, but remains popular as an inexpensive backup body for infomorphs. With no special abilities, the typical humanoid shell is intended purely as a shape to facilitate interactions with humans. The face is human-like (including a working mouth to make speech seem more natural), and the body is shaped to allow it to wear normal clothing and use commonplace tools. No one would mistake a humanoid cybershell for a real person, however. There are variations to the basic design, but most infomorphs who need a more sophisticated body move to one of the dedicated-purpose forms. 5' 8" tall, 150 lbs.

MCS-52 (“Emkiss Fifty-Two”) **Combat Cybershell** **107 points**

Attribute Modifiers: ST +1 [10]; HT +1 [10].

Advantages: DR 10 [30]; Machine Body [37]; PD 1 [25]; Radio Speech [25].

Disadvantages: Dependency (Maintenance; common, monthly) [-5]; Mistaken Identity [-5]; No Sense of Smell/Taste [-5]; Social Stigma (Outsider) [-15].

Features: Complexity 4-6 small computer.

Date: 2052. **Cost:** \$10,000 + computer.

The MCS-52 is the most-used light combat/police cybershell outside of the Fifth Wave world. Based on a Chinese design nearly half a century old, the MCS-52 integrates easily with human/bioroid units, including sharing equipment and weapons. The standard MCS-52 has few extraneous features, keeping the price and

production complexity down to a level approachable even by poor nations. There are dozens of local variants designed for particular needs. The standard MCS-52 appears as a dark gray metal/carbon-fiber humanoid. 6' tall, 150 lbs.

MCS-52H: The MCS-52H variant (sometimes called the “Arnold”) is a standard MCS-52 cybershell given a cyberdoll-style makeover. Using artificial skin, hair, and eyes, the MCS-52H can pass for a real human when visually inspected. Its lack of a heartbeat, sweat, or blood gives it away, however, and even a cursory medical or X-ray examination reveals its true nature. The MCS-52H is used for infiltration and terror missions in lower-technology areas. Add Attractive (Off-the-Shelf Looks, -50%) [3] and Unnatural Feature (No pulse, etc.) [-5]; remove Mistaken Identity [-5]. *110 points* (2060, \$35,000 + computer).

The MCS-64 appears most often in the arsenals of governments whose main opposition is their own people.

MCS-64 (“Emkiss Sixty-Four”) **Combat Cybershell** **362 points**

Attribute Modifiers: ST +8 [125]; HT +3 [30].

Advantages: DR 25 [75]; Machine Body [37]; PD 2 [50]; Radio Speech [25]; Weapon (Xuan Feng, p. 137, LC1) [50].

Disadvantages: Dependency (Maintenance; common, monthly) [-5]; Mistaken Identity [-5]; No Sense of Smell/Taste [-5]; Social Stigma (Outsider) [-15].

Features: Complexity 5-7 small computer.

Date: 2064. **Cost:** \$150,000 + computer.

A later design in the series, the MCS-64 is a heavier model intended for use in assault groups. Too lightly armored for the modern battlefield, but too large to integrate well with light military and police units, the MCS-64 appear most often in the arsenals of governments whose main opposition is their own people. Dozens are available on the underground weapons market at any moment, at prices well below production cost. Its main advantage – aside from price – is the combination of an integral Xuan Feng combat rifle and increased strength. The typical kit for the MCS-64 is a heavy weapon (recoilless rifle or, where available, an AMR) with the integral Xuan Feng as a back-up/anti-personnel weapon. There are few variants on the basic MCS-64 model; most changes are simply a replacement of the Xuan Feng with a more modern weapon system. 8' tall, 350 lbs.

SafariShell (Vulture) 77 points

Attribute Modifiers: ST -5 [-40]; DX +2 [20]; HT +2 [20].

Advantages: Absolute Direction (Uses GPS, -20%) [4]; Acute Hearing +1 [2]; Acute Vision +1 [2]; Enhanced Move 3 (Flying, $\times 1 \frac{1}{2}$) [15]; Filter Lungs [5]; Flight (Winged flight, large wings, -25%; Cannot hover, -15%) [24]; Machine Body [37]; Night Vision [10]; Radio Speech (Radio and laser, +40%) [35]; Telescopic Vision 3 [18].

Disadvantages: Dependency (Maintenance; common, monthly) [-5]; Mistaken Identity [-5]; No Manipulators [-50]; No Sense of Smell/Taste [-5]; Social Stigma (Valuable Property) [-10].

Features: Complexity 5-7 microframe computer.

Date: 2072. **Cost:** \$85,000 + computer.

One of two common SafariShells, the Vulture model appears to be an African Giant Vulture. The control software includes common vulture behaviors, allowing it to approach most wildlife without spooking it. Standard tourist use relies heavily on this programming, to avoid crashing or interfering with wildlife. Most SafariShells use standard remote-operation equipment, although some have uplink interfaces for a more-immersive experience.

After the initial launch, a Vulture SafariShell is able to fly for up to 10 hours. Under most uses it rarely lands and take off more than twice in a tour; each additional takeoff consumes approximately 1 hour's worth of flight time.

SafariShell (Gazelle): Appears in every way to be a gazelle (external form may vary by regional fauna). As SafariShell (Vulture), but add Limited Endurance (No more than six hours' use) [-10], delete Flight, and change Enhanced Move (Flying) to Enhanced Move 3 (Running, $\times 1 \frac{1}{2}$) [15]. **43 points** (\$55,000 + computer).

SurveyShell: As SafariShell: add Gadget (Biosampler) [5], increase computer Complexity to 6-8. **132 points** (\$100,000 + computer).

Shakoosh ("Hammer") 202 points

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

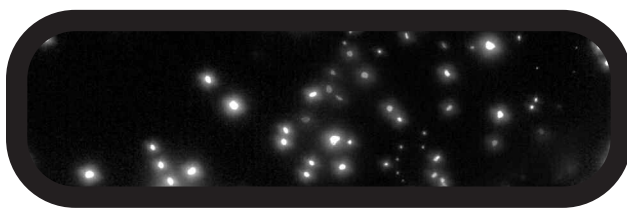
Advantages: 360-Degree Vision [25]; Absolute Direction [5]; Doesn't Breathe [20]; DR 5 [15]; Extra Arms (4 arms) [20]; Extra Legs (4 legs) [5]; Infravision [15]; Machine Body [37]; PD 1 [25]; Radio Speech (Infrared and radio, +20%) [30].

Disadvantages: Dependency (Maintenance; common, monthly) [-5]; Mistaken Identity [-5]; No Sense of Smell/Taste [-5]; Social Stigma (Valuable Property) [-10].

Features: Complexity 5-7 small computer.

Date: 2070. **Cost:** \$20,000 + computer.

The Shakoosh is the most common body for SAI citizens of the Caliphate. The manufacturer, Amman Cybertechnologies, has recently started producing it for export. With four legs, a 4' cylinder rising from it, and four arms (each with 180° of freedom, set 90° apart) set halfway up the cylinder, the Shakoosh is decidedly non-humanoid, a requirement in observant Muslim nations. Its four legs give it great maneuverability, and the sight ring around the top of its main body allows it a 360° view of the world. 90% of the Caliphate's SAI citizens use a Shakoosh as their primary body. Most use body decorations to individualize their appearance. 6' tall (can lift itself to 9' when standing), 250 lbs.



Stormchaser 583 points

Attribute Modifiers: ST +15 (No fine manipulators, -40%) [90]; HT +3 [30].

Advantages: 3D Spatial Sense [10]; 360-Degree Vision [25]; Acceleration Tolerance [10]; DR 50 [150]; Enhanced Move (Flying) 4 [20]; Flight (Limited use, 2 hours, -30%; Large Wings, -25%) [18]; Injury Tolerance (No Brain) [5]; Machine Body [37]; PD 3 [75]; Radar Sense (Low Res and Imaging, +50%, 75 mile range) [188]; Radio Speech (Laser, +40%) [35]; Spectrum Vision [40].

Disadvantages: Dependency (High-tech maintenance; infrequent, weekly) [-40]; Inconvenient size (Large) [-10]; Limited Endurance (6 hours) [-10]; Mistaken Identity [-5]; No Manipulators [-50]; No Sense of Smell/Taste [-5]; Social Stigma (Valuable Property) [-10].

Features: Complexity 6-8 microframe computer.

Date: 2097. **Cost:** \$340,000 + computer.

Derived in part from technology used to explore the gas-giant planets, Stormchaser cybershells are used to fly directly into the heart of Earth's worst weather phenomena and survive. The *Pecos Bill* model, built by a subsidiary of Vosper-Babbage, is a typical one. Extremely rugged, it uses a lifting-body design with powerful turbofan engines to punch into the heart of a tornado and survive, and advanced sensory equipment to record and transmit the experience. Construction of Stormchaser cybershells requires Fifth Wave production techniques, but they are used all over the world. While rugged, Stormchaser cybershells make poor combat vehicles, as the design makes no attempt to hide the vehicle's heat or electromagnetic signature. 8' long, 750 lbs.

ADVANTAGES AND DISADVANTAGES

Characters from the developing world have access to the same set of advantages and disadvantages as other *Transhuman Space* characters, although any dependent upon high-tech characteristics is far less common; a GM may require the Unusual Background advantage to explain Fifth Wave attributes in a Third Wave character.

DISADVANTAGES

Some disadvantages require special notes.

Enemy (Unknown) *see p. CI77*

Compromised: You are being watched and you know it. You just don't know who is watching you. It could be an Ally, Dependent, or Patron. It could even be your toaster. You must always be on your toes. -5 points.

Players who wish to use this disadvantage must first check with the GM to make sure it fits the campaign. Alternatively, the GM may assign this disadvantage to one or more characters as a required trait. The GM will (secretly) decide what part of the character's life is compromised, who is doing the watching, and what is ultimately being done with the information. This disadvantage is particularly appropriate in campaigns set in a strong police state.

Sterile *see p. CI84*

Bioengineered templates dating from the 2080s or later often include Genetic-Rights-Management code, preventing reproduction. This GRM code is easily reversed if a reproduction-rights license is purchased from the designer. The GRM can also be hacked easily, but this violates international law. A reproduction-rights license generally runs from 25% to 100% of the cost of the original design, depending on how much of the genomod is likely to be carried through to the subsequent generation. Sterile (GRM, easily reversible, -66%) is a 1-point disadvantage.

SKILLS

All of the skills described in the *Transhuman Space* core rules are available to characters in the *Broken Dreams* setting, although some (such as Microgravity Architecture and Xenobiology) are obviously far less commonplace.

STSD EFFECTS

Victims of Social Transition Stress Disorder can exhibit a variety of symptoms, ranging from apathy to psychosis. These behaviors typically manifest when the stressed individual encounters his particular trigger. Discuss with your GM which event(s) or recently changed aspect of the world around your character brought on the condition, such as being the only human in an office of SAIs or loss of a job resulting from the new economic order. Mental Disadvantages that reflect STSD include Addiction, Alcoholism, Berserk, Callous, Chronic Depression, Edgy, Laziness, Manic-Depressive, and On the Edge. These behaviors often only manifest during or after an encounter with the trigger.

NEW SKILLS

Pop Culture (Mental/Average)
Defaults to Pop Culture -3 or IQ -5*

*An IQ default roll for Pop Culture is only available in areas where a character lives or has lived.

This skill is the ability to recognize and categorize modern cultural references. This includes being able to identify popular music, celebrities, and memes, as well as pick up on emerging trends and cultural movements. The skill is limited to memes concerning entertainment, consumerism, and language; the Pop Culture skill reveals nothing about political movements or ideologies, unless an image, slogan, or misstatement had become fodder for popular humor or art.

A successful Pop Culture skill roll allows the character to identify a given entertainment or consumer meme and recognize its cultural context. The GM may assign a penalty for obscurity (such as a song only popular in a regional ethnic subculture). A successful Pop Culture roll will also reveal whether the meme is emerging or fading in popularity. The skill is useful for artists wishing to make a connection to an audience and entrepreneurs looking to find a new market. At the GM's discretion, a successful Pop Culture roll may add a +1 reaction bonus in a trade or personal interaction.

Like Area Knowledge, the Pop Culture skill must be taken independently for different regions, as trends, fashions, and humor can vary widely.

Depending on the setting, this may be considered a Hobby or a Scientific skill.

7

TECHNOLOGY

Cafe Parisienne

CAFE PARISIENNE ****
 Expensive. Dining only. Full VR.
 Do you wish a full review (€500)?



There it is again. That painful buzzing in my head whenever I look at a restaurant on the street. Stop. Look at the market. Nothing but the latest specials floater when I hold my gaze. Look over at the dressmaker's shop. Nothing, not even an AR message. Look over at the Pakistani restaurant. Ow. Quickly look over to the AstroBurger. Same thing. Close my eyes.

It's probably the AR software. I never got around to updating the code, not after that last upgrade, where they put ads for their new systems in the corner of my vision. "Just a helpful reminder!" they said when I complained; it took me a week of hunting the web before I could find some freeware to erase the ads. I can't afford one of the new systems, anyway, not on my salary. I might work for Germany's biggest corporation, but they still only pay

Montenegro-local wages. I really don't want to ask for a raise.

I keep my head down, not looking at the buildings I pass as I head for the park. A quick search on the web, and . . . here it is. My mini-Michelin guide doesn't like the last antiviral update when run under AROS 8.2. I'm not about to lose either of those, so I guess I don't have much of a choice. "Upgrade AROS, approved," I sub-vocalize, and I can almost feel the implant downloading the data and restarting in my head. I hold my gaze on a floating exclamation point that appears off to the right, and am rewarded with a message congratulating me for updating to AROS 8.2.5 (hooray), listing the known incompatibilities (not with my hardware and not with any of my apps, thankfully), and informing me at the very end that my account had been debited \$15. Thanks.

*I pull up the antiviral – running perfectly. The response **does** seem a bit snappier; I must admit. Leaving the park, I look over, with a small amount of trepidation, at the AstroBurger. No buzzing. But as I hold my gaze, rather than the animated Michelin figure listing the menu, I get a warning message:*

Insufficient memory for full Michelin Guide interactive features.

Please upgrade your system memory.

Hold gaze on [OK] to continue with minimal Guide.

Hold gaze on [Cancel] to quit.

Cancel. Diagnostic. Memory usage. Damn. AROS 8.2.5 sure is hungry for space.

I guess it's time to ask for that raise.

Technology in 2100 remains in a state of flux. For those in the Fifth Wave world who can afford the cutting edge, new tools and toys are always available. For most people in the developing world, however, it is often much more cost effective to use devices that are several generations behind the wave of change.

OLD AND NEW TECHNOLOGIES

The world of 2100 is a dizzying mix of cutting-edge and antique systems. Biotechnology, AI, material science, and the emerging power of nanotechnology make for a world that has been radically changed by technological advances. Yet it is observed that, in many respects, the year 2100 isn't nearly as transformed as many thought it would be a century earlier. Nanotechnology turned out to be much more difficult than anyone expected. Material-fabrication methods have evolved fairly slowly. And a posthuman singularity, where AIs become thousands of times smarter than humans, still has yet to happen.

The Slowdown

While the 21st century has been marked by seemingly radical transformations, the pace of innovation has actually been slower than in previous decades. Moore's Law, the observation that computer systems were speeding up at a consistent rate, fell in the 2020s, as fundamental physical limits on traditional methods of computation were finally reached, and newer methods – optical, quantum, and nanocomputing – were still in early stages of development. The struggle between those who wished to protect the rights of content owners and distributors and those who wished to maximize intellectual freedom was won decisively by the protectors, with the largely unanticipated side-effect of greatly slowing down software innovation. Even biotechnology, which in 2100 has transformed the notion of human identity, progressed far more slowly

than expected as fears about cloning, genetically modified foods, and transgenic experimentation led to laws that greatly restricted research in the first three decades of the century.

The Expansion

Several forces masked this more-measured pace of change. The first was the explosion in space technologies, which made the 21st century truly feel like a step into the future. A significant portion of the global economy in the 2020s to 2040s was dedicated to the move off-world. The second mask was the development of economically viable nuclear fusion, which reshaped the nature of global politics, urban design, warfare, and economics. The reverberations of this invention are still being felt.

Finally, the rapid growth in the economic and social conditions of many developing nations proved a powerful engine for the global economy. New markets emerged left and right, and even if the pace of technological change was more measured in the most-advanced countries, it was accelerating like never before across the rest of the world. Only as the 22nd century approaches has the speed of transformation begun to slow in the developing states, raising questions about the future of the global economy.

Modern Production Methods and Old Designs

Technology in the developing world is a mix of old systems, new systems, and new systems that *look* like old systems. Poorer nations have long histories of receiving second- and third-hand products discarded by the more-advanced states, and then given the task of figuring out how to integrate and maintain them. Vehicles, weapons, computers, even consumer goods dating back 30, 40, even 50 years are easily found in use in the developing world. Equipment older than that has often been retrofitted and updated with more recent technology.

Newer production methods and materials can make older designs nearly as good as the most-cutting-edge system. Methods for increasing tensile strength, decreasing weight, and adding computer "smarts" to cheap components are mature production techniques in 2100, widely available and inexpensive. New systems are integrated with older protocols in order to maintain compatibility, reduce costs, or simply to meet consumer preferences.

OBSELETE EQUIPMENT

The pace of change in the Fifth Wave world results in many products discarded simply because they are "obsolete." In general terms, obsolete gear still works, but may not work as well as more-recent designs. The main advantage of older, discarded gear is the reduced price.

Equipment listed in the Technology sections of the *Transhuman Space* core book and *Fifth Wave* supplement, unless otherwise specified, can be assumed to be at or near the top of currently available technology. Older versions of these items can still be found, especially in the developing world. The degree to which older models are significantly less capable and less expensive depends upon how many generations old they are.

Markets in the developing world generally sell gear that is one to three generations older than current models. Older devices can be found, but are sold in junkyards, auctions, and the like. Equipment that the GM deems critical to the setting – whether AIs, bioshells, weapons, or something else – should be handled on a case-by-case basis.

Equipment one generation old is 10 to 20% less effective than current versions. The simplest way of reflecting



this is to increase the device's weight, although the downgrade can apply to any combination of range, functional life, weight, speed, complexity, specific attribute ratings, or the like. The price will be a similar degree lower than new models. For example, a one-generation-old Medium Nanoweave Armor outfit (p. TS159) is only PD 2, DR 16, 5 lbs. for a vest, but costs \$700.

Equipment that is two generations old is 20 to 40% less effective and expensive than current models. A two-generation-old C-type Energy Cell (p. TS141) stores only 0.3kWh of energy (giving items powered by it 40% less duration/fewer shots/etc.) but costs only \$10.

Equipment that is three generations old is 40 to 60% less effective and less expensive than current designs. A three-generation-old small 3D-universal printer (p. TS153) prints only \$50 worth of goods per hour, weigh 150 lbs., and take up 8 cubic feet, but cost only \$135,000.

Equipment older than three generations will follow this same general pattern. In all cases, the GM should apply logic in determining whether a given reduction in effectiveness is worth an equivalent reduction in price.

The speed of generation updates depends on whether the technology is considered *Cutting-Edge*, *Established*, or *Mature*. Note that even if the overall generation of a technology doesn't change often, new models can come out with added features, improved designs, or bug-fixes.

Cutting-Edge Technologies

These are systems or devices still subject to rapid change. New breakthroughs in design or implementation happen frequently, and sometimes whole protocols or networks have to be overhauled to meet new specifications. New generations of these systems come out about every two years. Cutting-edge technologies in *Transhuman Space* include 3D-universal printers, bio-facs, all nanotechnologies, and microbot swarms. Most software also falls into this category.

Established Technologies

These are systems or devices still subject to change, but at a slower pace. This may be because the production techniques and underlying science are well-understood, there is a widespread support infrastructure difficult to change, or the market for these systems is no longer profitable enough to push innovation. New generations come out about every eight years. Established technologies include computers, wearable virtual interfaces, implants, and most biotechnologies.

PLANNED OBSOLESCENCE AND MANDATORY UPGRADES

In 2100, many objects are not bought, they're licensed for limited-time use. Most license agreements require the purchase of an update at the license period's end if the licensee wishes to continue using the item. Updates range from minor bug fixes to a full replacement; in the latter case, the original item must be returned to the manufacturer. Updates cost 10 to 30% of the original purchase cost.

If a user allows a licensed-use period to run out, the shutdown code is engaged, and the device stops working. The shutdown does not come without warning; the user will receive warnings at 1 month, 1 week, 1 day, 1 hour, 10 minutes, and 1 minute prior to shutdown. Most shutdown warnings come with an interactive message informing the user where or how an update may be purchased.

Tools and software to hack shutdown codes are readily available. Most just reset the shutdown clock, although some allow the hacker to move the shutdown date *closer*. These hacking systems are commonplace but very illegal – they can be found within 24 hours in any major city with a Streetwise or Scrounging roll +3, or within an hour on the web with a Computer Operations roll.

Items actually implanted into the user's body are not allowed to have mandatory shutdown code by international regulation. However, they may to have so-called "annoyware" messages, informing the user that new systems are available. These can also be removed with easy-to-use, but illegal, hacking software.

Mature Technologies

These are systems or devices that change slowly. This is largely because there are few performance improvements possible without a substantial breakthrough, or because a new technology has made this type obsolete. New generations of these systems come out about every 30 years. Mature technologies include energy cells, cyberwear, radio communicators, and slug-thrower weapons.

BETA EQUIPMENT

Beta gear represents experimental technology or designs, and is designed with advantages over conventional designs. However, being experimental, it usually doesn't work exactly as designed. Cautious developers try to get the test devices to a usable stable configuration, although rapid design cycles and market competition sometimes leads to unstable beta releases. It's not usual for a company to contact its testers, asking them to bring in the beta gear to get a mid-test upgrade or bug fix. Early beta devices are typically less reliable than late beta.

Beta-test systems are either hardware or software; anything for which there is room for significant design improvement can be subject to beta tests. The fear of ruined reputations is enough to cause many companies to do beta tests of nearly everything they make. If the GM wishes to use beta gear in his game, he should design it beforehand, using the following guidelines:

Improved – The system provides generally improved performance over an existing equivalent design. The ratings of the system are intended to be 10 to 50% better in one to three categories of functions.

Combined – The system combines the function of two or three other devices. The ratings of the combined system will typically be 75 to 110% of the equivalent component.

New – The system provides entirely new functionality, which may overlap with an existing device.

Roll three dice. A result of 3 means that the device works at peak expectations; 4-8, device functions at average expectations; 9-12, device functions at minimal expectations; 13-16, device functions below expectations; 17 or higher, the device does not function; 18 or higher, the device functions but may fail catastrophically. Roll 3d again: on an 18 there is a catastrophic failure – the device explodes, or erases non-test software, or the like. Add +1 to the die roll if the device is in early beta; -1 from the die roll if the device is in late beta. Add +1 to the die roll if the device is a Combined system; +2 to the die roll if the device is a New system.

HACKWARE AND HOT MODS

In general, there are two ways to get around content-right-management (CRM) systems: alter the content or alter the player. Content that has been hacked is usable on any appropriate system, but there are no guarantees

of the stability or accuracy of the hacked material. Devices that have had their CRM systems hacked can use any unmodified content, but is only temporarily useful. To make matters worse, the hacks may not function properly – shoddy work, system conflicts, and “Trojan hacks” used by the WTO can all alert local authorities to piracy in progress.

Hackware

“Hackware” has had its content-rights-management code altered or removed. Much of the cracked content on the TSA Web has been hacked in this manner. Pirates sometimes attempt to improve content, to make it faster, able to run on less Complex hardware, or more enjoyable. Hacked content may also be a WTO “Trojan hack,” designed to look like a real piece of hackware but actually sending a message to the WTO, which in turn notifies local law enforcement. Finally, downloaded material can simply fail to operate properly. Roll 3d for each potential problem; each occurs on a roll of 18.

Rather than trusting downloaded hackware, a skilled programmer may choose to alter the content himself. Not all content lends itself to being hacked easily, however. The more expensive the content, the harder it is to crack. This is a Computer Programming task. Commercial content (software, InVid and music files, and consumer minifac designs) is usually at -3 to -7 difficulty. Non-commercial content, particularly private or secure materials, can be up to -12.

Hot Mods

Rather than attempting to alter a single piece of digital content, a hacker may wish to make his device play or use all appropriate content without doing a CRM check. *Hot mod* is the term for a piece of equipment modified to ignore CRM checks. Hot-mod hardware and software are relatively inexpensive, but typically only work for a short time before upgrades to CRM systems make them unable to play or use new material. Hot mods are designed to be undetectable when used, although some CRM updates may catch older hot mods and automatically report the user to local authorities. Hot mods are illegal in most jurisdictions.

Hardware Hot Mod

A hardware hot mod is the direct modification of a system's hardware to avoid CRM checks or to fake CRM results. Hardware hot mods are more reliable and harder to detect than software ones, but are difficult to do successfully. They must be updated annually; if not updated, an attempt to play or use any content will fail and send out an alert on a roll of 18. The failure roll drops by 1 every year. Hot-modding a piece of hardware is an Electronic Engineer -5 task taking 24 hours total; it costs \$500. If the hacker fails the task roll by 1, the modification will appear to work, but will fail and send out an alert on a roll of 18.

Software Hot Mod

Software hot mods attempt to fool the device's CRM system into allowing unauthorized material. A software hot mod must be updated every three months; if not updated, an attempt to play or use the device will fail and send out an alert on a roll of 18. Every three months without an update reduces the failure roll by 1 (e.g., if not updated in one year, the hot mod will fail on a roll of 15 or higher). Also, any update to the device's operating system will break the hot mod. Creating a software hot mod takes five hours and is a Computer Programming -3 task. The hot mod is Complexity 1. If purchased from the black market, software hot mods usually cost \$100.

COMPUTERS

Information systems in the developing world are broadly compatible with modern computing technology, although often at a greatly reduced level of capability.

HARDWARE

Much of the world has not moved completely to wearable or implanted information systems. Portable, hand-held devices are more efficient methods of producing and consuming content than wearables, particularly when there is no significant augmented-reality network available.

Book

Thin, lightweight, and foldable, book computers have screens large enough to read comfortably or use as a drawing pad, but store small enough to fit in a purse. Many have built-in audio- and video-communication systems. The standard design includes a Cheap, Tiny older-generation computer (Complexity 3 or 4). \$60, 1 lb. B (2 days).

Hand-Held

Used primarily as a standard audio- and video-communication device, hand-held systems fit comfortably into the palm of the hand, have a top-mounted high-resolution camera and slide-out screen, and are usually operated with a push-button or pen interface. Standard hand-held units use built-in Cheap, Tiny computers of an older generation (Complexity 3-4). \$20, 0.15 lb. B (5 days).

Walkabout HedZup

Typical of the aftermarket displays compatible with book and hand-held computers, *HedZup* glasses are similar to virtual-interface glasses (VIGs), but without any intrinsic computing ability. The *HedZup* display maintains an encrypted wireless connection with its host computer. Range is 10 feet. The computer's built-in display darkens when the *HedZup* is in use, allowing for privacy. Input and control is still done on the personal computer.

\$50, 0.15 lb. B (20 days). Use of a *HedZup* instead of the built-in display doubles the life of the computer's power cell (i.e., using the *HedZup* instead of the display for 2 hours only consumes 1 hour's charge from the computer's cell).

WEARABLE VIRTUAL INTERFACES

Virtual-interface hardware is commonplace in the more stable "transition" parts of the developing world. Most are inexpensive, low-Complexity units that provide a lower grade of interaction than Fifth Wave designs.

Qatar Systems Burqaware

Introduced in 2078, the *Burqaware* system uses smart fabric for a virtual-interface device. Originally meant for women in the more-conservative parts of the Islamic Caliphate, *Burqaware* interfaces are now found worldwide, as they provide an intriguing combination of comfort, privacy, and style. The *Burqaware* interface drapes over the head, covering the wearer's entire head and face. The smart fabric display on the inside of the *Burqaware* provides a full virtual interface, including a view of the world around the wearer. From the perspective of observers, the *Burqaware* is entirely opaque; from the inside, the wearer has a completely unobstructed view. The smart fabric is sensitive to environmental conditions, and can channel heat and air flow as needed to maximize wearer comfort. Aside from the unusual appearance, the *Burqaware* functions as a simple wearable virtual interface, including communications services. Includes a Cheap, Tiny, Complexity 4 computer. \$300 (\$200 in the Islamic Caliphate), 0.2 lb. B (15 days).

The upgraded version includes a Tiny Complexity 5 computer system. \$750 (\$600 in the Islamic Caliphate), 0.3 lb. B (10 days). Can also be purchased without a built-in computer, \$350.

The export model also includes a smart fabric display on the *outside* of the interface, set to display a real-time image of the wearer's face. In some markets, this is considered less disturbing than a totally faceless, opaque veil. It is otherwise identical to the upgraded system. Not for sale in the Islamic Caliphate. \$1000, 0.4 lb. 2xB (12 days).

Shanghai Interactive MRsiv

The most used wearable VIG systems in the developing world, most lower-tech VIG units are similar to the MRsiv. It uses a Cheap, Tiny Complexity 4 computer. Includes global-positioning unit and short-range radio communicator (p. TS148), as well as dedicated augmented-reality software. Does not normally allow the installation of additional software. \$150, 0.2 lb, B (14 days).

The MRsiv 2 model includes a Tiny Complexity 5 computer and allows for added software. \$500, 0.3 lb, B (10 days).

SOFTWARE

Advertising Software

Common anywhere information networks are found, advertising software is designed to deliver a commercial message to a potentially interested consumer. Properly constructed ads only target likely customers; some ads are not properly constructed, and can evolve into adviruses. Adviruses can also be constructed intentionally, and are often used by memetic-engineering groups to spread a message or discredit an opponent. If infected by an advirus, the effects are similar to the Flashbacks disadvantage (p. CI90). Complexity 1/2. \$200. Complexity 1 polymorphic "smart" adviruses reduce the ability of filter programs to block by 2, \$1,000.

AI Software

Advirus Filter: This program is typically included in every infomorph intended for connection to a communication network, and runs in the background. It acts as a gateway for communications, actively blocking adviruses, but still allowing in normal advertisements. It fails to block adviruses on a roll of 18. In the hyperdeveloped world, check once per day; in transition areas, check five times per day; in chaotic areas, check twice per day. Complexity 1. Free, part of the basic system.

Ad Filter: This gray-market program blocks advertising access to an augmented-reality or VII system. It fails to block ads on a roll of 18. The program can be altered to watch for particular tags to allow for surreptitious communication via the ad channel, but this reduces the failure-to-block roll to 17. Complexity 1. \$500.

Filter Updates: If the GM uses upgrade rules (p. 128), a Filter program will need to be updated every three months (at a cost of \$25) or it will become less effective. Each six-month period without updating the software reduces the failure roll by 1 (e.g., A character that does not update his basic Advirus Filter program for one year will have it fail to block unwanted messages on a roll of 16).

Interactive Software

Slogging: Slink-logging is using standard uplink interface to create a detailed daily journal for public consumption on the net. While the editing and conversion to non-slink media can be done by hand, the process is time-consuming and often tedious. Dedicated slogging programs use an NAI infomorph to analyze and edit material in real-time, based on general instructions from the user. The system has an effective Sensie Interface skill of 14. Complexity 4. \$200 plus cost of infomorph.

Starshot: A booster pack to the standard Mugshot AR program, Starshot provides detailed information about individuals based on celebrity status. People are active in virtual environments, musicians, sloggers, even faces

AUGMENTED REALITY AND ADVERTISING

Most AR and virtual-interface gear has a "sandbox" area for ads, allowing them to display but preventing them from altering the rest of the system. This area, commonly called the "adbox," is firewalled off, so that standard ads cannot affect the rest of the system. Most targeted advertisements in augmented-reality and VII gear show up on the edge of vision, not blocking line-of-sight, but moving to the center if the recipient pays attention to them.

It is possible, using Electronic Operations (Communications), to send messages tagged to show up in an AR system's advertising display.

While advirus-blocking software is a standard part of most AR systems, advertisement-blocking software is considered gray market. Some areas forbid the use of ad-blocking software.

from recent news events are recognized and identified. Starshot also gives information on fame curves (whether the given individual's celebrity is rising or falling) and value of new information about the target. Updated in real time. Complexity 2. \$10/month subscription.

Pattern-Analysis Software

Used primarily by intelligence and security services, pattern-analysis software watches massive sets of constantly updated data for subtle clues indicating aberrant behavior, allowing near-real-time analysis. It requires an AI to use properly, and must be run on a Quantum Computer with the basic Traffic Analysis package (see p. TS145) and a high-bandwidth connection to the web. Complexity 9. Adds +3 to Traffic Analysis skill. \$500,000, LC3.

BUY LUCKY HORSE!!!

001.23423352
H: 2.23545
V: 0.5468277
2-7.764584

ENTER HORSE ID#: 003245-332-48678
STATUS: OK
HEALTH: GOOD
BLOOD: O+

WEIGHT: 380
BREED: 023
COST: 1.238

CYBERNETIC GEAR

Cybernetics is a mature technology. The surgical process of connecting machinery to biological nervous and cognitive systems is well understood. Most cybernetic work in 2100 is done with implants. Common biotechnological techniques are able to restore damaged limbs or sensory organs very effectively, greatly reducing the need for bionic body parts. There are two main situations where bionics are more widely used. In some developing nations, cybernetic parts may be more generally available than advanced biotechnology, and the bioweapon *viral dystrophy* (see p. 141) does sufficient genetic damage that normal bioengineering methods cannot restore damaged limbs.

Bionic Limbs and Organs

Detailed rules for cybernetic body parts can be found in *GURPS Ultra-Tech* and *GURPS Ultra-Tech 2*. As a

general rule, only modifications designated “TL8” are available. Replacement limbs that simply replicate a standard body part and all replacement eyes and ears cost *one-fifth* the price listed in UT and UTT. Replacement limbs that add special functions not replicating standard human parts (e.g., a telescoping arm) cost *five times* the price listed in the books. Bionic limbs are considered to be “detachable with tools” (see p. UTT96) at no additional cost. Cybernetic parts are not self-repairing, and wearers must have annual checkups to ensure continued good operation. Some samples are listed below.

Arm Replacement

Statistics: +1 DX for manual tasks using that arm (One arm, -50%) [5]. +2 ST (One arm, -50%) [10]. Two-handed feats require two bionic arms to gain any ST or DX bonus. DX bonuses do not apply to whole body actions, such as Dodge or Move.

Operation: \$10,000 for surgery, \$5,000 for unit. For \$50,000, either DX +2 [10] or ST +3 [15] is available; for \$250,000, both are available [25]. C cell, replaced yearly.

SOFTWARE UPGRADES

Software design rarely remains static. New features need to be implemented, bugs fixed, security holes closed, and compatibility with other components maintained or improved. Each new upgrade in turn causes a cascade of other upgrade requirements. Security software usually sees the fastest pace of change as security programmers and system crackers engage in an arms race, but any software intended for conjunction with other systems may need updating as time goes on. Changes to the hardware the application runs on or other programs on the same machine can also render a given piece of software useless. In a worst-case scenario, the manufacturer of a given application no longer exists, and the now-incompatible software must be replaced with a competing program – which in turn can conflict with other parts of a system.

The simplest way to handle software upgrades is to require users to acquire updates on a set schedule or face a decrease in effectiveness. Security programs (antiviral, network defense, etc.) need to be updated monthly. Web-research and information-gathering programs should be updated every four months. Applications that only occasionally interact with other programs or over the web can be updated annually. Any missed upgrade results in a cumulative -1 on any checks made based on the software, such as breaking a code, finding relevant data, etc.

A somewhat more complex method of handling updates uses shorter intervals but more variability.

Every two weeks (security software), every two months (research and information software), and every six months (other software) there is a 50% chance of needing an upgrade. Effects of missing an upgrade are as above. Upgrades to software can also require more storage space, be of higher complexity, or even require specific types of computer hardware.

Any change in the hardware the programs run on or the addition of an entirely new application to the system may also necessitate an upgrade. On a roll of 3d, a result of 14-16 means that there is a minor incompatibility with one other application on the same system, as if an upgrade interval had been missed. A roll of 17 means that there is a major incompatibility with another application, and that program does not working at all until upgraded. A roll of 18 means that the software and hardware are incompatible with each other, and the hardware itself will crash or perform erratically as long as the software is loaded.

Just because an upgrade is needed does not mean that one is available. On a roll of 3d, a result of 16 or 17 means that there is not an upgrade available this interval. A roll of 18 means that the software manufacturer has gone out of business, and no upgrade will ever be available. Treat replacement software as the addition of entirely new software to the system.

Updates can cost up to 10% of the original cost of the software.

Ear Replacement

Statistics: Standard ears give normal hearing. Acute Hearing [2/level] can be added, up to +2 in each ear. Radio Hearing [10], Subsonic Hearing [5], and Ultrahearing [5] can also be added.

Operation: \$5,000 for surgery, \$2,000 for standard ear. \$3,000 per point in Acute Hearing. \$6,000 each for Radio, Subsonic, or Ultrahearing.

Eye Replacement

Statistics: Standard eyes give normal sight. Acute Vision [2/level] can be added, up to +5, but must be bought in pairs.

Operation: \$5,000 for surgery, \$7,000 for standard eye, can be purchased singly. \$9,000 each for +1; \$12,000 each for +2; \$20,000 each for +3; \$30,000 each for +4; \$40,000 each for +5.

Leg Replacement

Statistics: A single bionic leg must be closely matched to the original to maintain balance. Replacing both allows for Enhanced Move (Running) [10/level] up to +2 and Super Jump [10/level] +1.

Operation: \$10,000 for surgery, \$5,000 for single standard leg. \$10,000 each per level of Enhanced Move (Running). \$15,000 each for Super Jump +1. D cell, replaced yearly.

IMPLANTS

Controlled-Reality Implant

A dedicated virtual interface implant (see p. TS150) that runs a specialized version of software (see p. TS142). The wearer has no control over the activation or use of the system, and may not be aware that he has been implanted with the device. The images, sounds, and physical sensations experienced by the wearer are as real as any standard virtual experience. A wearer of a controlled-reality implant may come to believe that he is suffering from hallucinations, and exhibit corresponding behaviors (see *Flashbacks*, p. CI90).

Implantation of a controlled-reality implant is not typically by choice. The system costs \$1,000. LC 2.

NEW BRAINBUGS

Brainbugs, or nanodrugs that alter brain chemistry (p. TS163), have an array of effects. Most are temporary, lasting for minutes or hours, but side-effects can persist for a day or more. Brainbugs can have effects beyond those listed in *Transhuman Space*. Some (marked with an asterisk) are commonplace for street brainbugs.

Effects: Alcohol Intolerance, Bloodlust, Careful, Chummy*, Confused, Congenial, Cool (quirk)*, Doesn't Sleep, Dull, Fearless 1-4*, Gregarious*, High Pain Threshold, Humble, Light Sleeper, Low Empathy, Low Pain Threshold, Motion Sickness, Nightmares, Non-Iconographic, Oblivious, Prefrontal Lobotomy (only the effects not the actual surgery), Reduced Manual Dexterity, Responsive, Selfless, Staid, Undiscriminating*, Versatile, Voices.

"C-Love" Neuro-Agent

Effects: Gregarious [-10], Undiscriminating [-1], longer-term side effect of Non-Iconographic [-10]

Duration: Medium-term [(25-HT)/4 hours] for Gregarious and Undiscriminating, long-term (one full day) for Non-Iconographic.

Agent: Patch.

Cost: \$10/dose. LC: 4.

"Drenamax" Neuro-Agent

Effects: Doesn't Sleep [20]. At the end of the duration, user must sleep for 24 hours. If awakened before 24 hours have elapsed, the user suffers a penalty to IQ and DX equivalent to the missed hours (i.e., if the user is awakened after 20 hours of sleep, his IQ and DX will be at -4) until the missed sleep is made up. Every hour that the recovery sleep is delayed is -1 to IQ and DX. If either IQ or DX reaches 0, the user drops into a deep sleep from which he cannot be awakened for 24 +3d hours. IQ and DX losses, if any, are regained after recovery sleep.

Duration: Long-term (3 full days) without sleep but at full alertness.

Agent: Pill.

Cost: \$500/dose. LC: 5.

"Jellybean" Neuro-Agent

Effects: Flashbacks (Severe, No Fright Check -75%) [-5]; Lecherousness [-15] (Usually sees visions of attractive and compliant members of the appropriate sex). Roll 3d, on an 18 (no modifiers) the hallucinations are of terrifying or violent images. In these cases, use normal Flashbacks rules.

Duration: Short-term (25-HT minutes).

Agent: Pill.

Cost: \$20/dose. LC: 3.

A Decerebrate's Guide to Brainbugs

This document provides a knowledge base, explaining how to make your own brainbugs using a biofac (p. TS153). Complexity 6, \$1,000, LC 2.

Peephole Implant

An extremely limited form of sensory-link device, the peephole implant gives a remote operator a real-time display of what the implantee sees. The peephole data can be viewed with any virtual interface, and does not require a downlink. The peephole does not allow for any control over the actions of the implanted wearer, and does not send any sensory data other than vision. Implantation is fairly simple, however, and can be performed without access to a full Fifth Wave medical facility. A peephole implant costs \$1,000. LC 3.

Puppet Implant (Limited)

Modern puppet implants (p. TS150) are designed to give the controller full biopresence in the implanted body. Earlier generations of puppet implants were far more limited, usually transmitting only basic visual and motor sensory data and allowing imprecise physical control. These earlier designs are still available, and are used in situations where precise control is not needed or modern puppet technology is not available. There is an additional -5 telepresence penalty (p. TS144) when working through a limited puppet implant either directly or remotely. Limited puppet systems typically have visible external hardware. They are available for one-fifth the price of a regular puppet implant. LC 1 (humans), LC 4 (animals).

ECOLOGICAL EQUIPMENT

Biosampler

An automated system for analyzing organic materials, a biosampler must be in physical contact with the material to be tested, although a very tiny amount (1 milligram) is sufficient for analysis. Biosamplers provide detailed lists of chemicals present in the sample and perform genome assays. A biosampler must be linked to a Complexity 4 or greater computer and a specific database to provide useful information. Common databases used with biosamplers include the GRA Registered Genemod database (all genetic modifications recorded by the GRA), the Global Wildlife database (known genomes of most Earth plants and animal species), and the Interpol database (specific genome data for criminals). \$1,000, 2 lbs., B (6 hours.)

Ecoformers

A network of biochemical-analysis systems, biofacs, and dedicated organic-chemistry minifacs used to restore an area of Earth to a more-or-less natural, healthy state. Ecoformers are designed to analyze the present

condition of an area's soil biome, plant chemistry, microbe population, water and air purity, compare the analysis to known or modeled "ideal state" descriptions, and attempt to move the area toward that ideal state. Ecoformers introduce microbes engineered to alter local soil chemistry, appropriate organic and inorganic chemicals, and location-specific plants. The process is slow and about 65-90% effective. A network of ecoformers usually comprises several hundred dedicated cybershells of varying sizes, and can clean up one acre of a toxic release in 24 hours. Repairing more complex damage, such as climate-change-related effects or the use of ecoweapons, can take five to 10 times as long. \$750,000 for a standard ecoformer network.

Nanoformers

An updated version of traditional ecoformers, nanoformers use microbot swarms and organic-molecule nanofacs to do essentially the same process, as well as provide an "immune system" against further environmental degradation. The developer, Nanosystems, claims that the nanoformers are twice as fast as traditional ecoformers. Because of concerns about abuse, sales of nanoformers have been suspended. \$2,750,000 (when available), LC 3 currently.

LAW ENFORCEMENT EQUIPMENT

Many Fifth Wave technologies are available to the developing-world police forces at reduced rates or free.

CRIME INVESTIGATION AND PREVENTION EQUIPMENT

Behavior Monitors

Dedicated NAI and software used in conjunction with camera and p-tag monitoring system to watch for anomalous behavior. People preparing to engage in criminal activity (theft, robbery, vandalism, etc.) usually move differently from "normal" crowds. Behavior monitors pick up on aberrant behavior and notify the police. If a behavior-monitor system is in place where a crime is about to be committed, roll against the system's IQ + Alertness score. For example, if a complexity 5 behavior-monitor software (with a +4 Alertness bonus) is loaded on an IQ 11 NAI, the GM rolls against a score of 15 to determine whether the system picked up on an incipient crime. The system usually provides 1d minutes warning of a possible crime.

Complexity 5 Behavior Monitor System: +4 Alertness. \$3,000 (plus cost of computer, cameras, p-tags, and other monitoring hardware).

Complexity 7 Behavior Monitor System: +8 Alertness. \$75,000 (plus cost of computer, cameras, etc.).

Lie Detector

It has been known for much of the last century that conscious deception induces a specific pattern of brain activity. By 2040, magnetic-imaging brainscanner technology was sophisticated enough to decisively distinguish between deception patterns and random brain noise, and moved from the lab to the field over subsequent decades. Most law-enforcement departments now have access to one or more brainscanners used as lie-detection devices. The person scanned must be seated and minimally cooperative; lie detectors cannot be used at a distance. These lie detectors give an effective Detect Lies skill of 20, which substitutes for the Detect Lies skill of the person running the scanner. These devices can only indicate when the person examined is being consciously deceptive (including not telling the “whole” truth), and does not pick up falsehoods that the teller is unaware are untrue. \$100,000, 100 lbs., runs off of building power.

FORENSIC EQUIPMENT

Aegis Film Sheets

Aegis film, developed in 2065, has a specially designed molecular shape and electrostatic charge that repels over 99% of all organic material it contacts. Used to seal off a crime scene by covering the exterior of windows, doors, and any accessible openings, Aegis film sheets – and Aegis film tents, used outdoors – improve the likelihood of a forensic examination finding relevant biological detritus. Use of Aegis film at a crime scene gives a +4 bonus to Criminology or Forensics rolls to find biological evidence. \$500 per 10' × 10' sheet (\$5,000 for non-law-enforcement customers), 1 lb.

Aegis Film Suit

In order to prevent contamination of a crime scene, Aegis film suits are used. Also employed in biohazard clean-ups. Has sufficient oxygen for 4 hours of work, one size fits most. \$250, (\$2,500 for non-law-enforcement customers), 3.5 lbs.

SUITS AND PERSONAL ARMOR

Body armor in the developing and Third Wave regions is generally cheaper, less rugged, and less

complex than that in the Fifth Wave world. It is also somewhat easier to get on the black and gray markets.

Carbonweave Armor

The standard mid-21st-century military armor, carbonweave is easy to find. Using an advanced (for the time) carbon-fiber material, it is more effective than Kevlar but not as lightweight as more-modern armors. Carbonweave is used by developing-world police, and in smaller urban areas in the hyperdeveloped states. The vest covers torso and vitals; the suit covers neck to toe. DR (not PD) is halved versus impaling attacks.

Medium: PD 2, DR 16. \$500, 5 lbs. for a vest; \$900, 15 lbs. for a full suit. LC 4.

Heavy: PD 2, DR 36. \$1,000, 9 lbs. for a vest; \$2,000, 25 lbs. for a full suit. LC 4.

CRIME SCENE INVESTIGATIONS

The development of Fourth Wave forensic technology has revolutionized law enforcement. Being able to match genetic material to an international-population database has eased the process of identifying suspects. Aegis film, which repels organic material, helped to reduce the contamination of samples, further simplifying forensic investigation.

Genome- and proteome-analysis devices are early-Fourth-Wave technology, readily available to the police forces in larger Third Wave cities. Contamination-reducing equipment is a more recent development, but Nimes Biochemie, the French developer of Aegis film, provides aggressive pricing for law-enforcement agencies worldwide. A pirated version of Aegis is also in wide use in TSA states.

The basic *in-situ* forensic-examination process is simple. The crime scene is sealed off as much as possible with sheets of Aegis film – outdoors, a tent is used. The examination team, dressed in Aegis-film suits, enters the crime scene. If able, the team uses a cleanlock – this washes and sterilizes the suits – to enter the area. All surfaces are examined by forensic microbot swarms. Vacuum systems sample the air and check locations that the forensic microbots may have missed.

All collected material is identified by type, and any biological material undergoes a genomic and proteomic check. The age of the material can be determined to a rough six-hour window, if environmental conditions at the crime scene are known. Human and parahuman DNA is checked against genetic databases. Uplift, bioshell, and bioroid DNA is checked for an encoded manufacturer serial number and a DNA-serial code (a BIN – Body Identification Number). Bioshell or bioroid DNA without those numbers is considered suspect, as it was likely created by an unlicensed (or TSA) facility. The BIN includes a unique serial number, manufacturer code, date of birth, and original design-type specification.

Utility Combat Armor

Widely used and relatively inexpensive, utility-combat armor combines a carbonweave suit with a ceramic-fiber cuirass. The cuirass is comfortable while carrying a full load, although it is relatively heavy. Takes three minutes to put on or remove. PD 3, DR 45 over torso (locations 9-11, 17-18 only), as medium carbonweave otherwise. \$3,000, 40 lbs. for full suit (both cuirass and carbonweave). LC 3.

TRANSPORTATION

Vehicles in the less-developed world range from decades-old models and cheap designs to the latest in Fifth Wave chic (carefully smuggled). Very old designs are still available for 10 to 20% of their standard cost. These are usually alcohol-fuel conversions, which reduces power output by 15%. See *GURPS Vehicles* (p. 84) for details.

Light Strike Vehicle

The Joint Tactical Electric Vehicle (JTEV) was the standard light-reconnaissance and striker vehicle for NATO from the 2020s through the 2040s. Although long retired from frontline use in the hyperdeveloped world, the basic design – commonly called a Light Strike Vehicle, or LSV – is still found worldwide in both civilian and military roles, due to its simplicity and high performance. The price reflects its older design and components, but current-generation rechargeable E-cells.

The standard model has a crew of two (driver, gunner) and room for one passenger in an open-frame, wheeled package. Foamed-Alloy armor provides reasonable protection. Two modular hardpoints on the top front of the LSV support a wide variety of equipment, from light-weapon systems, to tight-beam telepresence transceivers, to point-defense lasers. Fully electric, it presents a minimal heat signature, and is very hard to detect under cover; most units are constructed with stealth in mind.

Subassemblies: Body, four off-road wheels, 2× open mount.

Powertrain: 100-kW wheeled drivetrain with all-wheel drive, improved suspension and brakes, off-road tires, and 25 E-cell (500kWh) batteries.

Fuel: Energy bank provides drivetrain power for up to 5 hours, and otherwise powers auxiliary systems.

Occupancy: 2 NCS, 1 NS **Cargo:** 15 cf

Armor	F	RL	B	T	U
All:	5/20	3/20	3/20	3/20	3/20

Equipment

Body: Very-Long-Range Tight-Beam Radio, 20 mile Thermographic sensor, Radar/Ladar detector, Military GPS, Cheap Small Complexity 5 computer (typical). Basic Stealth.

Statistics

Size: 12' long **Payload:** 900 lbs. **Lwt:** 6,400 lbs.
Volume: 169 cf **Maint:** 74 hours
Price: \$26,675 + computer.

HT: 25/600 **HP:** 600 [body], 56 [each wheel].

gSpeed: 101 **gAccel:** 4.6 **gDecel:** 15 **gMR:** 1 **gSR:** 5
 Moderate GP. Off-road speed 34.

Linbao Systems Jian Light Urban Combat Vehicle

A Chinese design from the 2060's, the *Jian* – more commonly called the “luck-vee” – is one of the most common light-combat vehicles on Earth. Solid engineering, off-the-shelf components, and versatile design have kept this model in use in much of the developing world. The six off-road wheels give it decent performance on and off road. The alcohol-burning ceramic engine is easy to repair, and runs for 8 hours on a full tank. Carbon-composite armor provides decent small-arms protection.

The standard turret-mounted weapon is a 20mm autocannon (full rotation, universal mount, and 5,000 rounds of ammunition), but it is easily replaced with a water cannon for police duties. The standard model has a crew of two (driver, commander/gunner) and room for six seated, two standing passengers; main exit is a rear hatch. The most-common modification makes it a cybershell-only carrier, with room for 10 MCS-52 or four MCS-64 units and equipment. A point-defense laser is a common retrofit.

Subassemblies: Body, turret, six off-road wheels.

Powertrain: 300 kW standard ceramic engine, 300-kW wheeled drivetrain with all-wheel drive, and one E-Cell (20kWh) battery.

Fuel: 86-gallon self-sealing alcohol fuel tank provides 8 hours of full-power output from ceramic engine. Battery provides power for autocannon and auxiliary systems.

Occupancy: 2 NCS, 6 CS, 2 CSR **Cargo:** 50 cf

Armor	F	RL	B	T	U
All:	5/50	4/50	5/50	4/50	4/50

Equipment

Body: Very-Long-Range Tight-Beam Radio, 20 mile Thermographic Sensor, Radar/Ladar Detector, Searchlight, Military GPS, Cheap Small Complexity 5 Computer.

Turret: Searchlight, 20mm Autocannon (see below, p. 138) on full-rotation, universal mount. 5,000 rounds of ammunition standard. Often replaced with a water cannon.

Statistics

Size: 20' long *Payload:* 5,550 lbs. *Lwt:* 21,000 lbs.
Volume: 487 cf *Maint:* 44 hours *Price:* \$46,000

HT: 16/1200 *HP:* 1200 [body], 75 [wheels], 113 [turret].

gSpeed: 96 *gAccel:* 4 *gDecel:* 15 *gMR:* 0.75 *gSR:* 5
 High GP. Off-road speed 24.

WEAPONS

Although advanced weapons from the Fifth Wave world do sometimes make it into the developing regions, most available arms are based on older designs. The Xuan Feng battle rifle can be found in the armories of the majority of Third Wave nations. Guns from the earliest decades of the 21st century can still be found in more remote location, as they are usually quite simple, rugged, and reliable, although they have largely been replaced by mass-produced, cheap BCRs.

Autocannon

Representative of older vehicle-mounted solid-shot weapons, the autocannon is usually loaded with armor-piercing shells. Original price at manufacture was \$12,500; when purchased on the black market, older models usually run 20 to 50% of this, depending upon maintenance. Cost of single shot is \$1.

Basic Combat Rifle (BCR)

Known generically as BCRs, these are mass-produced weapons, made to be as cheap and disposable as possible. The standard design uses electric ignition and is completely sealed, although dozens of variants can be found worldwide. Popular models (with largely cosmetic differences) include the Hammerhead, the Mk99, and the Forza. There are several BCR-builder programs available for minifacs, designed to make use of available materials. Effectiveness will vary, depending upon which program was used and what component materials were available. \$150.

Enkidu

The standard sidearm of the Ghazi and Mutawi'yyun, the Enkidu (named for Gilgamesh's companion in Babylonian mythology) has a substantial underground market outside of the Caliphate. A caseless, electric-ignition machine pistol, the Enkidu is remarkably well balanced, so that while its 9mm bullet doesn't pack quite the same

punch as the PDWs popular in the Fifth Wave police and militaries, it is somewhat more accurate. \$1,000.

Point-Defense Laser

A light laser designed to destroy small missiles, a Point-Defense Laser fires three pulses a second and can be installed in a universal or casemate mount for easy installation in a cybershell or small vehicle, along with an integral power pack for 30 shots. In this case it weighs 25 lbs., takes up 0.5 cf (0.1 VSP), and costs \$2,225. If powered from a vehicular power pack, the Point-Defense Laser drains 0.0033 kWh per shot.

Spike SAM

The Spike SAM is representative of relatively inexpensive air-defense systems widely available on the global arms market. The basic system consists of a fire-and-forget missile in a disposable launch tube with a reusable grip. The missile has an onboard Complexity 4 computer and five-mile PESA for guidance, with a one-mile datalink capability. The missile is boosted to its top speed of 2,000 mph within one second of leaving the launch tube and has a 30 second endurance, giving an effective engagement range of over 15 miles. The missile has a modular 60mm warhead (see pp. TS158-159) and is armored with a DR 10 coating (stealth is optional). 10.5 lbs., \$4,380.

Switchblade LAM

Typical of the cheap Light Assault Missile systems intended for anti-personnel and anti-materiel use, and found worldwide. Both 30mm and 60mm versions are common. The disposable fire-and-forget missile has a Complexity 4 computer and optical guidance system. With a top speed of a bit more than 1,000 mph and an endurance of just under 8 seconds, the Switchblade has an effective engagement range of about two miles, although it's typically used well within that range. HEMP rounds (see p. TS158) are standard. 30mm: 5.9 lbs., \$766. 60mm: 9.3 lbs., \$947.

Xuan Feng, 30×30mm and 5.6×45mm CL

Based on designs used by China in the early decades of the 21st century, the Xuan Feng ("tornado") is relatively simple to produce and use. Like the Battle Rifle used by Fifth Wave nations, the Xuan Feng combines a 5.6mm slugthrower with a 30mm grenade launcher; unlike the more modern weapon, the Xuan Feng cannot use smart ammunition, and is outfitted with standard armor-piercing caseless bullets and high-explosive grenades. Standard load is a 40-round APS magazine and 2-round grenade magazine. The Xuan Feng does not require a virtual or heads-up display, but can be outfitted with one. \$600.

WEAPON TABLE

Weapon	Type	Dam	SS	Acc	1/2D	Max.	Wt.	RoF	Shots	ST	Rcl	Cost	LC
Guns (Light Automatic or Pistol)													
BCR (5mm)	Cr.	5d	11	10+2	500	3,200	11	12*	30+1	10	-1	\$150	1
Enkidu (9mm)	Cr.	2d+2	9	8	190	1,800	3.5	15*	15	10	-1	\$1,000	2
Guns (Light Automatic) & Guns (Missile)													
Xuan Feng:							12					\$600	1
– 5.6mm lt. Auto	Cr.	5d.	11	11+1	440	3,200		16**	30+1	9	-1		
– 30mm missile	Cr.++	12d-1	12	10	500	500		3~	3	–	0		
Guns (Missile)													
Switchblade (30mm)	Exp.	Spcl.	12	–	2,400	2,400	5.9	1NR	1	–	0	\$766	1
Switchblade (60mm)	Exp.	Spcl.	12	–	3,900	3,900	9.3	1NR	1	–	0	\$947	1
Gunner (Chaingun)													
Autocannon (20mm)	Cr.	18d (2)	20	15	1,500	6,100	135	100	5,000	Veh.	-1	\$12,500	1
Gunner (Beams)													
Point Defense Laser	Imp.	3d	17	17	720	1,400	15.8	3~	Spcl.	–	0	\$2,180	1

UNCONVENTIONAL
WARFARE

Cybershells, satellites, and cutting-edge weapon technology give the hyperdeveloped states a distinct advantage over their enemies in any conflict. As a result, some opponents of the Fifth Wave world seek out weapons that can give them their own advantage.

ECOWEAPONS

Ecological weapons are designed to attack the opponent's environment instead of its people. Tactical ecoweapons are fairly obvious when used, but strategic devices, which create long-term changes, are difficult to detect until it's too late. Ecoweapons sometimes use layered defenses against counter-measures (pp. 76-77).

Tactical Ecoweapons

Lux: A fast-acting defoliant, Lux is sprayed from aircraft at night, as it breaks down into harmless component chemicals under direct sunlight. One gallon of Lux can kill over a dozen acres of plants in a matter of several hours. Animal life hit with Lux is poisoned and has mild nausea – reduce HT by 2 for 24 hours. \$7,500/gal. LC 1.

Pharaoh8: Pharaoh8 (P8) is a genemod for locusts, making them resistant to standard insecticides, sterile, and even more ravenously hungry than normal. P8 locusts have an active swarm life of only 1 month, but in that time can devastate an agricultural region. Insecticides

effective against P8 locusts are now on the market, but more expensive than most developing-world farmers can afford. Unavailable commercially, P8 swarms must be engineered in a bio lab. LC 0.

Strategic Ecoweapons

Areoformers: As used by the terror group Red Right Hand, areoformers are a sub-class of ecoformers designed to convert a small region of land into a pseudo-Martian environment. Plants are hit with a fast-acting defoliant, all microbial life in the soil is exterminated, and ultraviolet radiation is used to break down organic material. The systems sterilize the ground and bring it as close as possible to the pre-terraform Martian soil chemistry. A single network of areoformers can render lifeless 1 acre of normal Earth territory per 24-hour period. \$1,000,000. LC 0.

Skunkbug: Skunkbug is a tailored retrovirus, targeting specific edible plants. Over the course of several growing seasons, the retrovirus adds a gradually increasing harmless but foul skunk-like scent/flavor protein to the plant genome. The food becomes entirely inedible and unpleasant to be around. As it attacks at the DNA level, seeds from infected plants continue to carry the protein. The only way to stop an infection is to destroy the crop and plant from an entirely new seed stock. Unavailable commercially, it must be produced in a bio lab. LC 0.

EXPLOSIVES

Blowing things up remains a very effective method of eliminating problems in 2100. Because of the improvements in medical technology, bombs are more reliable than bullets as means of killing people. Chemscanners

and chemsniffers (see p. TS151) are deployed throughout most urban environments to detect known explosives. Cyberdogs (see p. FW121) and K10A postcanines (see p. TS118) are also used extensively to detect explosives.

Binary/Trinary Explosives

In order to avoid detection by chemsniffers, terrorists use binary and trinary explosives. Binary explosives require the mixture of two otherwise-harmless chemicals in order to detonate; trinary explosives require three. Individual components are typically non-volatile, and may be relatively commonplace. Constructing a component-based explosive is a Chemistry-2 or Demolitions-2 task for *each* component; attempting to construct one that uses moderately innocuous components is a Chemistry-4 or Demolitions-4 task. If successful, the result will typically have a Relative Explosive Force of 1.2 (see p. HT25).

Security personnel are acutely aware of the risks of binary and trinary explosives. In 2098, Pan-Asia Transit Flight 44 suffered an on-board explosion, causing the transatmospheric plane to crash into the Indian Ocean, killing a Thai diplomat. Fragmentary records recovered from passenger AR systems show that just prior to the explosion, a male-female couple (both identified as former Thai TSA agents) entered the plane's lavatory. The agents likely had binary-explosive components painted onto their bodies.

NNBC WEAPONS (NUCLEAR/NANO/BIO/CHEM)

While ecological weapons target the environment, mass destruction devices target human civilization itself. So-called "NBC Weapons" – Nuclear/Biological/Chemical – have been joined by early Nano weapons. All four of these types have two major aspects in common: they are terrifying (such that governments will use extraordinary means to prevent or respond to NNBC attacks) and they are very difficult to make work. Producing functional NNBC weapons requires a great deal of expertise and optimal conditions.

Nuclear Weapons

Extraordinarily devastating, nuclear weapons have been used only a handful of times in human history. The eight great powers, along with a few of the regional powers, have the infrastructure to build and deliver nuclear warheads. The fear of terrorist use faded over the 21st century, as a move away from nuclear-fission power made weapons-grade material increasingly difficult to acquire. The attempted nuclear attack on the Martian beanstalk and the availability of industrial nukes (for use in asteroid-mining operations) have revived old fears, however.

A simple, one-kiloton fission device (such as the Mini-Nuke, below) has a destruction area of 1,100-yard radius, totally destroying everything for much of that area (a one-kiloton bomb does $6d \times 4,000,000$ damage in the center, $6d \times 2,000,000$ at 64-128 yards, $6d \times 1,000,000$ at 128-192 yards, and so forth). If a bomb does not achieve a proper fission reaction, it "fizzles," meaning that it explodes before all of the fissile material can achieve critical density. The explosive power of a fizzle is much lower – on the order of 10 tons of TNT – but radioactive material is spread across an area roughly the size of the maximum potential blast.

GURPS High-Tech has an extended discussion of nuclear weapons and their effects (pp. HT29-30).

Mini-Nuke: One-kiloton nuclear device, does $6d \times 4,000,000$ explosive damage. 12.5 lbs., \$25,000. Commercially available from Freehaven and Liang Mountain asteroid enclaves for mining operations. Illegal to import to Earth. LC 0.



Nanotech Weapons

Nanotechnology in 2100 remains too fragile to be readily used for mass destruction. There are substantial concerns, nonetheless; the "gray-goo" scenario, in which assembler nanomachines convert everything they touch into undifferentiated sludge, is widely feared. Fortunately, it is pure fiction. Nanomachines that can operate outside of controlled environments don't exist yet and it has long been understood by nanotechnologists that even an intentional "gray-goo" attack, once technologically possible, wouldn't go far. A disassembly process would put out a great deal of heat, and the faster it went, the more heat would be produced. A real "gray-goo" attack would simply be too slow and be too easily detected to do much damage.

PROTEUS WEAPONS

The proteus nanovirus (see p. TS165) can be delivered via aerosol and alters genetic information, rewriting DNA or inserting new genes, making it ideal for subtle nanotechnological attacks. Current-generation proteus nanoviruses cannot survive in the wild (outside of a body or controlled conditions) for more than 10 seconds before breaking apart; subsequent generations will likely be more robust. The two known incidents of proteus-based attacks are more akin to pranks than terror, both believed to have been carried out by the same individual.

Doolittle: In 2009, hunters in the Colorado Rockies reported deer cooperating – “ganging up,” in one man’s words – to attack the men hunting them. Another hiker in the same area told police that he saw a bear using an old backpack as a portable storage for fish. These stories were dismissed until a group of raccoons defeated relatively sophisticated security systems to break into houses. When the local police managed to kill one of the raccoons, scientists discovered that it had a substantially more complex brain than was normal for its species. Eight years of investigation led to the discovery of antigovernment crusader Richard Law Taylor’s “Doolittle” virus, a germline alteration that increased brain complexity and resulted in surprisingly adaptable, and often dangerous, behavior in the modified lines. Doolittle (which is actually an assortment of variants, each designed for a particular species) provides a +1 to IQ. Since 2090, more than 1500 Doolittle-infected animals have been found across North America.

Monkeybite: One of the most sophisticated proteus strains ever seen in any environment, its 2094 release was announced in an anonymous message to the GRA that simply said “beware the monkey’s bite.” Monkeybite is encased in a polymorphic version of rhinovirus, and is able to pass unnoticed through any disease resistance and immunity treatments that haven’t been updated in the past five years. When a person is infected, the proteus payload overwrites sections of the genome related to body hair. Over a period of several months, a victim will start to grow thick, wiry hair all over his body, similar to that of a chimpanzee. The only other symptom is the initial nasal infection, which includes much sneezing, spreading the infection; after that passes, aside from the sudden hairiness, the victim will be in otherwise normal health. It took nearly 9 months for Ambrosia Kliniken AG to come up with a curative therapy. Cases still pop up occasionally.

Instead, nanotech weapons based on nanosymbionts are of increasing concern. Most are based on medical nanomods (pp. TS164-165), and can inflict significant damage on a biological organism. The main obstacle to wider use of nanoweapons is the delivery mechanism

– nanosymbionts must be swallowed or introduced into the bloodstream. While this makes them poor weapons for mass use, they are ideal for targeted or cluster assaults.

Nanotech weapons are rarely found, even on the black market. Construction of a nanotech weapon is an Engineer (Nanotechnology) task, and requires a Fifth Wave nanofabrication lab. Initial creation takes one week, if based on a known design; costs listed with a * are fabrication costs for the initial nanoweapon. Subsequent production of the same design takes one day, at one-tenth the cost.

Cellular Disruptors: Causes breakdown of the cell membrane and cytoplasm proteins. The cells collapse and die; this is one of the few nanomod weapons that can be applied to the skin surface. Roll against HT-4 upon the initial attack and every five minutes after. If the victim fails, he takes 1d damage; if he succeeds, he takes 1 point of damage. Two successes in a row, or one critical success, are required for the attack to end. If applied to the skin surface, the nanomod can be washed off easily, but will still deliver its initial damage. \$150,000*. LC -1.

Immunophages: Attack natural and boosted immune systems. All HT rolls to resist infection are reduced by 1 per week for 20-HT weeks. If the victim has Immune to Disease (or nanomods that provide limited immunity to diseases), treat his effective resist bonus as +12 initially (e.g., four weeks after an *immunophage* attack, a person with the Immune to Disease advantage would have a +8 to disease resistance, not total immunity). Roll for resist at HT-4 each week to avoid effects that week (*guardian* nano applies). \$75,000*. LC 0.

Nanonuclease: Attacks DNA and reduces the body’s ability to heal itself. Nanonuclease have the effect of two levels of the Slow Healing disadvantage. (The victim gets a HT roll to regain lost HT once every three days.) A person hit with nanonuclease checks HT to resist on the initial attack, and then once monthly. If not cleared, they will also reduce the age at which aging begins, and at which rolls increase in frequency, by 10 years. *Nanonuclease* and *carcinophage* nano effectively cancel each other out. \$110,000*. LC 0.

Nanophages: Aggressively hunt down all nanosymbionts, temporary or permanent, and destroys them. *Nanophage* nano clears a body of all nanomachines on a 14 or less, except for *guardian* nano (p. TS165) and *shield* nano (see below). They are fully effective against *nanoburn* attacks (p. TS158). *Nanophages* take about one hour to clear a body of nano, and remain in a system for 24 hours. Not available as a permanent nanomod. \$20,000/-. LC 2.

Neural Disruptors: Attacks the myelin sheaths of nerves, interfering with proper nerve communication. Victim is allowed one HT roll at onset of attack to

avoid effects (*guardian* nano applies). Reduces DX by 1 per hour for 20-HT hours; if DX is reduced to 0, the victim is killed. DX loss is regained at a maximum of 1 DX per week; roll HT weekly to regain a point of DX. A *nanophage* treatment eliminates the *neural disruptor* nano in about an hour; subsequent recovery of DX is as normal injury recovery. \$90,000*. LC 0.

Shields: Not a nanoweapon *per se*, shield nano acts as a defense for attacking nano, reducing the effectiveness of *guardian* and *nanophage* protection. If shield nano is used, *guardian* nano provides only a +4 to resist a nano attack (and no-resist nano will be eliminated on a 10 or less), and *nanophages* are only be able to destroy other nano on a 10 or less (8 or less if *targeted nanophages*). Shield nano lasts no more than two weeks before losing effectiveness. \$30,000/-. LC 1.

Targeted Nanophages: Hunts down and destroy only a specific nanosymbiont model. They clear the particular nanomod from a body on a roll of 12 or less (*shield* nano reduces this). \$7,500/-. LC 2-4 (depends upon the target).

Biological Weapons

Biological attacks using natural organisms are difficult at best. Most killer microbes don't survive outside of specific environmental conditions. Moreover, modern biomedicine is able to prevent many types of infection.

Human-engineered germs pose greater threats (see *Disease*, pp. 74-75). The increasing sophistication of biotechnology has led to some frightening new strains. Counteragents are usually available in a matter of hours or days after a sample is brought to a Fourth-Wave-level laboratory, but that can be enough time for the disease vector to do considerable damage. In addition, engineered diseases have been known to mutate and re-emerge. Well-known examples include:

Hanta (E) Virus: A variant hantavirus strain released in 2085, designed to activate only in the presence of a certain genetic marker common to Exogenesis-created bioroids. The effects of Hanta (E) are terrible. Initial symptoms occur one to five weeks after exposure, and include fatigue, fever, and sore muscles. Daily recovery rolls are made at -4; critical success means the disease is thrown off. Four to 10 days after the initial phase, late symptoms occur, including persistent painful coughing and shortness of breath. Daily recovery HT rolls are made at -2, with critical failure meaning the loss of 1 HT per hour until death, failure meaning the loss of 1d HT, success meaning the loss of 2 HT, and a critical success meaning the loss of 1 HT and the disease is thrown off. If untreated, the disease requires a critical HT roll success to survive. Modern medicines treat Hanta (E) successfully, although recovery still takes two to four weeks. Hanta (E) was created by a former Manticore Biotech employee fired for

improper contact with newly created female bioroids. Believed to be extinct in the wild.

Viral Dystrophy: Aerosolized, extremely virulent, and terrible for its victims, viral dystrophy emerged in mid-21st century central Africa. Created during the breakup of the Democratic Republic of the Congo, it is considered one of the worst war crimes. Before a treatment could be devised – a treatment which only stopped the virus, but did not cure its victims – nearly a million Africans had been infected.

Once infected, the victim rolls a recovery HT check *once* for each limb. If successful, the disease does not affect that limb. Multiple limbs may be affected; if the victim succeeds all the HT checks, the disease passes. Over the course of several weeks, the victim wastes away, and the muscles in the extremities wither, reducing ST and DX by 1 each day in *that limb* until the limb is useless. The current treatment for viral dystrophy kills the virus and stop further degradation, but does not restore lost ST or DX.

By the time the disease runs its course – it is rarely directly fatal – victims are typically unable to walk or feed themselves. Some have limbs replaced with cybernetic equivalents; others tried experimental biotech treatments. Viral dystrophy was widely considered extinct until the Chinese terror group I Ho Ch'uan used it against government officials in Taipei in 2098.

Chemical Weapons

By far the simplest mass-destruction weapon to make, chemical weapons are most useful in enclosed area. Outdoors, wind disperses a chemical in a matter of minutes (20 minutes minus 1 minute per mph of ambient wind). Inside, chemical weapons remain concentrated, and retain full effect until the area is ventilated. Some chemicals persist on surfaces, so standard procedure in the case of a chemical attack includes a thorough biohazard clean-up.

Nerve Gas (Sarin): Deadlier than mustard gas (see p. B132), nerve gases (such as Sarin) cause 2d points of damage per minute of exposure and can be absorbed through lungs or skin. Victims who lose over half their HT continue to take damage after they escape the gas. Nerve gas contaminates an area for 3d hours after use, although strong wind disperses it (as above). Atropine sulfate halts the effects of nerve gas, but is itself a poison, incapacitating the recipient for 2d hours.

Anyone with the Engineer (Chemical) or Chemistry skills can try to create nerve gas, although the process is difficult; attempts are at -5 to the Engineer (Chemical) or Chemistry skill checks. Each attempt takes 6 weeks and \$500,000 with a Second Wave laboratory. Each successive improvement in laboratory technology cuts the time and expense by half (i.e., in a Fifth Wave lab, nerve gas production requires 5 days and \$67,500). Success produces enough nerve gas to affect 10,000 square feet.

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