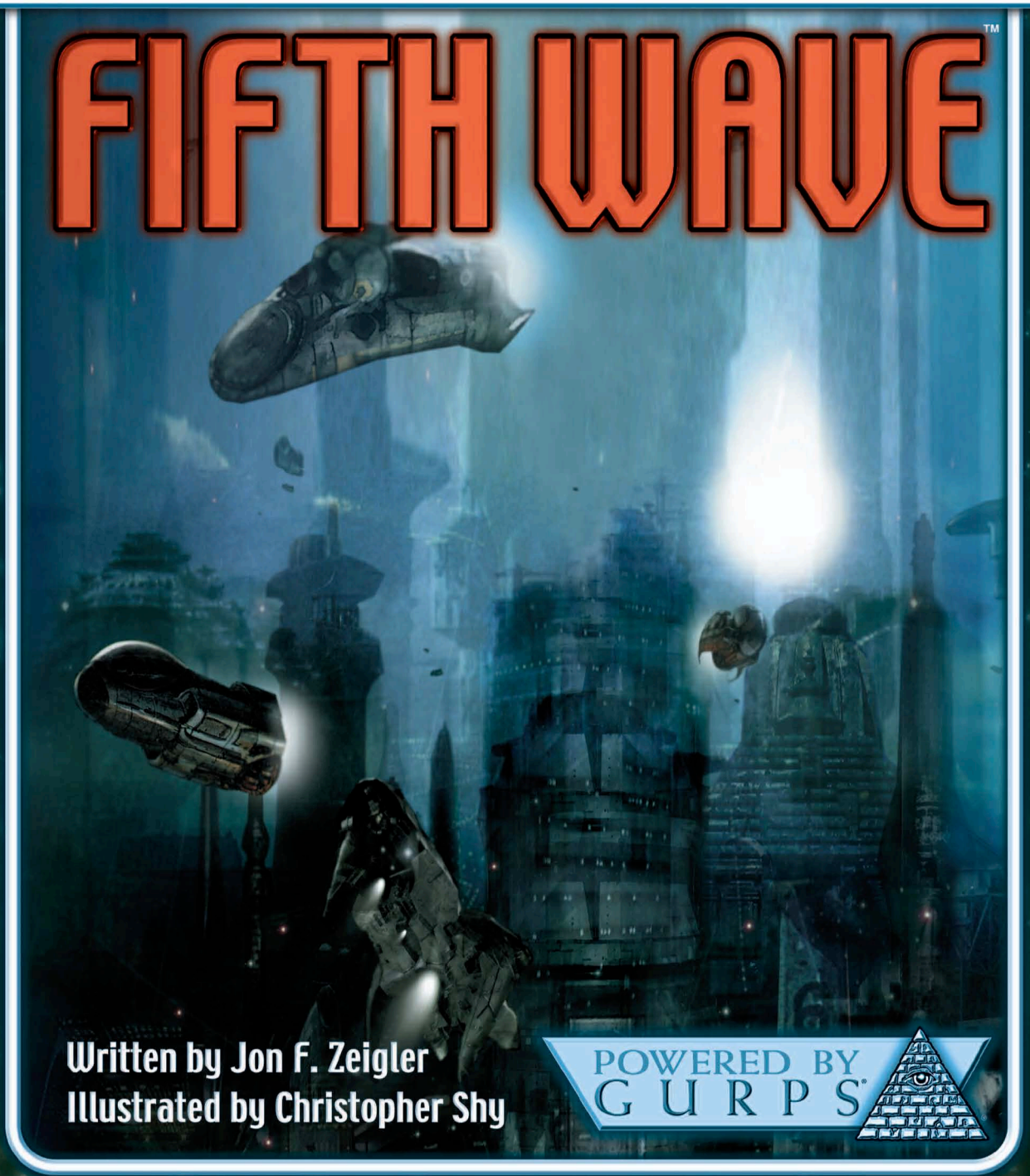
TransHuman Space

Fifth Wave



Written by Jon F. Zeigler
Illustrated by Christopher Shy

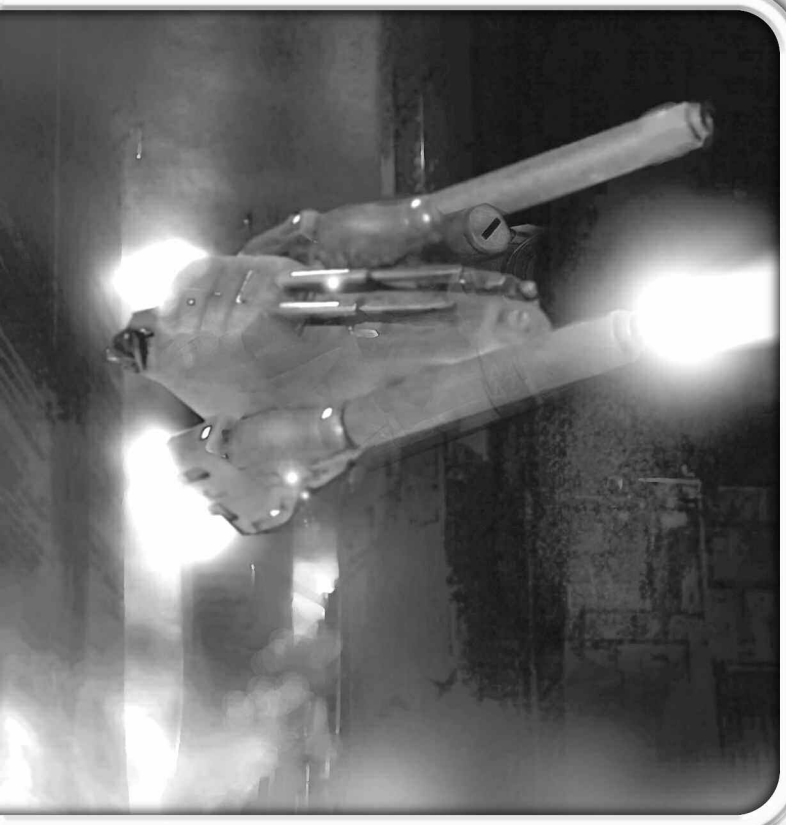
Powered by GURPS

Steve Jackson Games

TRANSHUMAN SPACE™

FIFTH WAVE™

By Jon F. Zeigler • Illustrated by Christopher Shy



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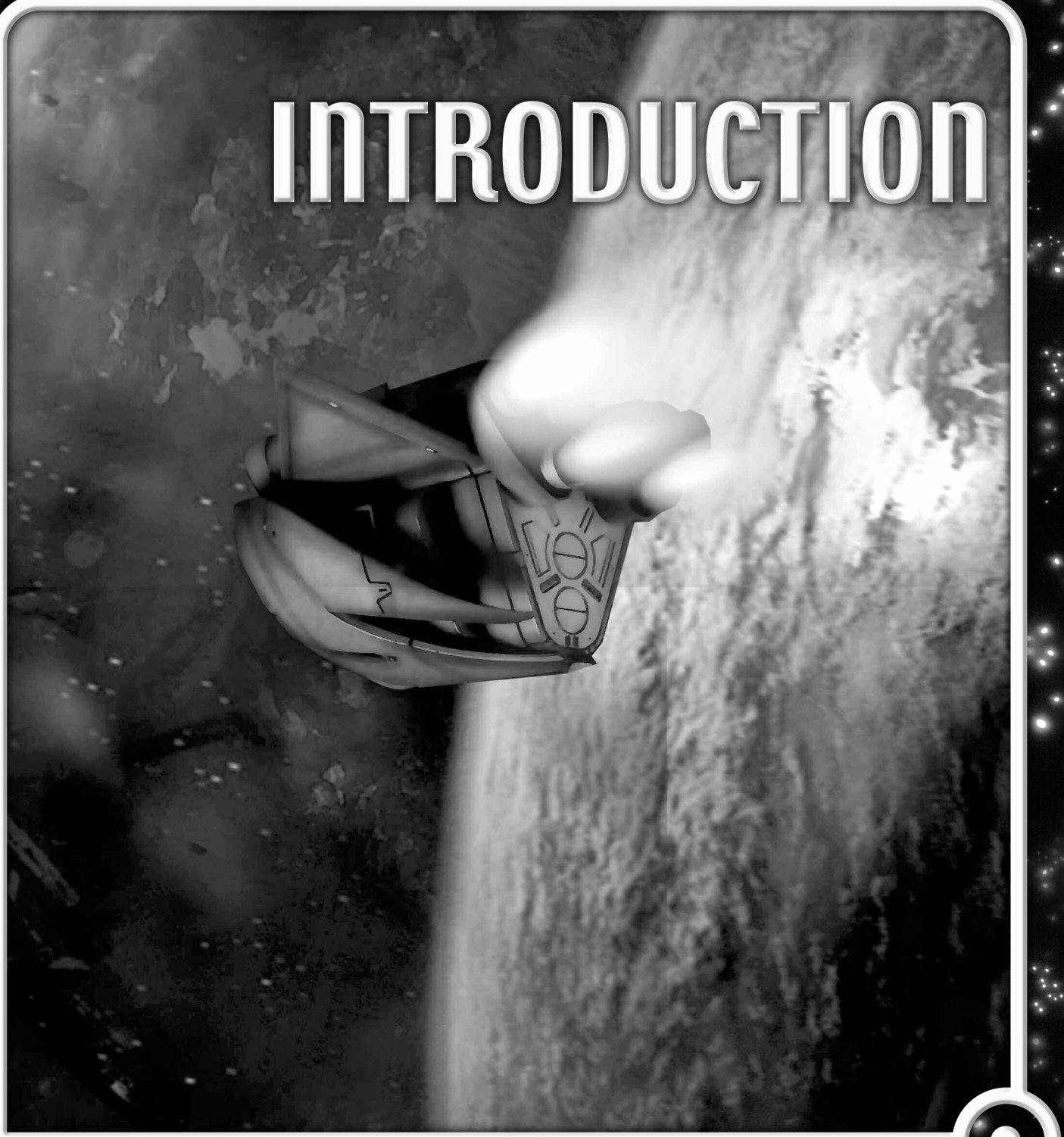


Earth. For all the dynamism of colonial culture, the homeworld remains the center of human civilization. The vast majority of human beings (and other sapients) live on Earth, doing business, arguing over ideas, and fighting wars just as they have always done. Humanity and its partners may be scattering into deep space, but their destiny has not yet divorced itself from the planet of their birth.

Transhuman Space: Fifth Wave is the first of several books covering Earth and its people. This book presents an *overview* of the homeworld's status, with special emphasis on the so-called "Fifth Wave" nations. These wealthy societies dominate the world through ideology and advanced technology. They are also the nations which have changed the most since the end of the last century, riding the leading edge of transformation. Hundreds of nation-states, thousands of splinter cultures, millions of organizations struggle to survive and grow in the hothouse environment of the homeworld.

In addition to being a guidebook for Earth, ***Fifth Wave*** includes a number of new racial packages. There are also rules for some of the special technology found on Earth: virtuality nodes, software for network intrusion and defense, and various land, sea and air vehicles popular among adventurers.

Welcome home. It's different here.

About the Author

Jon F. Zeigler has been a science fiction fan since the cradle (literally). He has been playing roleplaying games since about 1980. In 1988, he discovered ***GURPS*** and hasn't looked back since. He and his wife and two children live in Maryland, where he works as a computer security consultant. He has written several past books for ***GURPS*** and has also done freelance work for other games.

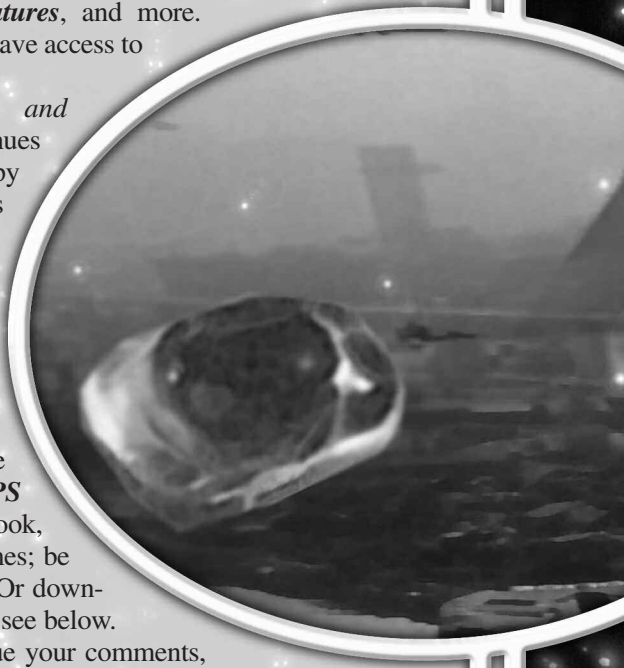
About Transhuman Space

The ***Transhuman Space*** series presents a unique hard-science and high-biotech universe to roleplay in. Set in the Solar System in the year 2100, it is a setting rich in adventure, mystery, and the exploration of the possibilities of existence. The core book in the line is ***Transhuman Space,*** written by David L. Pulver. It presents an overview of the Solar System of 2100. ***Transhuman Space: Fifth Wave*** is the third book in the line. Steve Jackson Games is committed to full support of the ***Transhuman Space*** setting; future titles will detail Mars and the inner solar system, cover the Deep Beyond outside Mars orbit, and provide more details of the homeworld itself.

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. A current catalog is available for an SASE. Or check out our website (below).

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Internet. Visit us on the World Wide Web at **www.sjgames.com** for an online catalog, 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, e-mail majordomo@io.com with "subscribe GURPSnet-L" in the body, or point your web browser to **gurpsnet.sjgames.com**.

The ***Transhuman Space*** web page can be found at **www.sjgames.com/transhuman/**.

Page References

See ***GURPS Compendium I,*** p. 181, for a list of abbreviations for ***GURPS*** titles, or visit our website at **www.sjgames.com/gurps/abbrevs.html** for the most recent list.

Any page reference that begins with a B refers to the ***GURPS Basic Set,*** *Third Edition Revised*; e.g., p. B23 refers to page 23 of the ***Basic Set.*** CI refers to ***GURPS Compendium I,*** BIO to ***GURPS Bio-Tech,*** and TS to ***Transhuman Space.***

1 THE BUILDING WAVE

We are all afraid – for our confidence, for the future, for the world. That is the nature of the human imagination. Yet every man, every civilization, has gone forward because of its engagement with what it has set itself to do. The personal commitment of a man to his skill, the intellectual commitment and the emotional commitment working together as one, has made the Ascent of Man.

– Jacob Bronowski, ***The Ascent of Man*** *(1973)*

At the beginning of the new millennium, the world faced an uncertain future. The most powerful nation-states were at peace. Yet there were dozens of petty wars scattered across the globe, and the human race could look back on the bloodiest century in its history. Some nations were enjoying unprecedented prosperity. Yet the disparity between rich and poor individuals, rich and poor nations, was growing ever wider. Technological innovation was bringing dozens of everyday miracles to market each year. Yet the world faced serious problems which seemed impervious to any technological solution.

Meanwhile, an ecological catastrophe seemed likely to strike the world at any time. Global climate change, long feared, was slowly becoming obvious. Biologists reported a mass vanishing of species, the likes of which had not been seen since the end of the Cretaceous Era. Arable lands and healthy forests shrank worldwide, and the planet's belt of deserts grew. Every month a few more millions were added to humanity's numbers. Nations squabbled over how to halt the slow decline of humanity's life support system, or ignored the situation altogether in the face of more pressing problems.

A few visionaries realized that the next century would be the critical moment in human history. The next hundred years might decide whether the human species would become extinct – or achieve transcendence.

The Biotech Revolution

The technology which epitomized the early 20th century was the nuclear weapon, the highest achievement and most fearsome weapon of industrial civilization. The technology most characteristic of the late 20th century was the digital computer, foundation of the networked societies of the future and source of unparalleled prosperity. As

the new century began, some believed its primary technology would be genetic – the manipulation of DNA. They were right, but the new revolution was stubbornly slow to appear. By 2010, most of the industrialized world (particularly the United States) was in a technological slump. Innovation continued, but at a slower pace, and the unprecedented economic growth of the 1990s was gone.

Biotech Sanctuaries

Genetic engineering was rapidly becoming a mature technology in 2000. However, even as the new technology's potential for human advancement was becoming obvious, its tremendous potential for abuse also became clear. Some feared cloning would rob humans of their individuality, and even the notion of cloning human tissues for transplants was violently rejected in many nations. Genetic testing and therapies promised to end the suffering caused by many diseases, but they also opened the door for discrimination on the basis of one's genetic inheritance. Engineered food crops and "pharm animals" promised to vastly increase agricultural productivity worldwide, but they met resistance from environmentalists, traditional farming interests, and populations who feared eating altered foods.

It was the misfortune of genetic engineering that it matured at a time when much of Western civilization had soured on the notion of "progress" and technological innovation. Space development had stalled. Nuclear power was regarded with deep distrust. The Internet, once regarded as a source of endless miracles, had proven to be vulnerable to both deliberate attack and sheer accident. Genetic technology was particularly mistrusted, being associated with genetic discrimination, biowarfare, and "Frankenfood."

The new genetic technologies were severely restricted in the most developed nations. The United States, the European Union, and Japan all agreed to strictly limit and monitor the use of genetically altered organisms. Foods and drugs originating from transgenic organisms were subjected to the strictest regulatory regimen of any industrial product. Scientists were strictly prohibited from using transgenic organisms in any situation which might allow them to escape into the "wild" ecosystem. All experiments with human genetic transformation were strictly monitored.

Still, no new technology can be suppressed for long. One of the great advantages of early 21st-century genetic engineering was that it could be practiced without much of the infrastructure of a high-industrial society. The startup costs for a genetic lab were low, and almost all of the needed equipment could be purchased on the open market. As a result, geneering was an ideal area of research for emerging economies in Latin America, Africa, or South Asia. Through the 2010s and early 2020s, many developing nations and individual entrepreneurs quietly invested in geneering facilities, hoping to steal a march on the wealthy nations who were moving cautiously with the new technology.

Drowning in the Waves

In the 1980s, the futurist Alvin Toffler pointed out that technological change sometimes caused radical shifts in culture and society. Such a change would sweep across the world like a "wave," transforming institutions and worldviews, bringing a new kind of civilization into existence in a relatively short time. The results would be so significant that societies on opposite sides of a Wave would literally be inhabiting different worlds.

Toffler spoke of three Waves. The First Wave was triggered by the discovery of agriculture perhaps 10,000 years ago. The Second Wave corresponded with the Industrial Revolution, which began about 1800. The Third Wave that Toffler predicted was associated with the spread of digital computers and information networks, beginning about 1960.

Toffler's vision was correct in many specifics, mistaken in others – but in 2100, people use the concept of "waves of change" in deadly earnest. In the past century, *two more* such Waves have swept across the world, further complicating the process of human history.

The Fourth Wave involved the spread of genetic technology, beginning with the sequencing of human DNA at the beginning of the century, culminating with the "biogenesis revolution" and the appearance of variant human subspecies in the 2050s. Today's futurists disagree about what constitutes the Fifth Wave, but almost all agree that its early stages are already transforming the world. Candidates for the central technology of the evolving Fifth Wave civilization include nanotechnology, memetics and powerful artificial intelligence.

Each Wave overlies the previous ones, but does not replace them. The result is "future shock," the collision of unready human individuals with an utterly new form of society. Today, the dizzying speed of technological change means that all five Waves coexist on the same planet, subsistence farmers living side by side with gengineered parahumans and superhuman AI. The world is in a constant state of future shock. This accounts for many of today's cultural phenomena, from reactionary Preservationists who desperately reject change, to radical Transhumanists who embrace it.

At first, these "biotech sanctuaries" floundered. Even with the strict limits placed on their activities, First World genetic engineers simply had more resources to apply to their task. Eventually, the sanctuaries hit on their main advantage: the ability to take risks, free of the shackles of regulation. Sometimes the results were grim, as in 2021 when a modified strain of hantavirus escaped from a bioweapons lab to devastate the population of Dar-es-Salaam. Sometimes, however, the sanctuary engineers hit gold. The most prominent example of this was a working cure for AIDS, developed in 2016 by the South African firm Ithemba Biotechnologies.

Doing Well by Doing Good

In the information economy, the ultimate resource is the human mind. That's why it no longer makes sense for us to write off most of the world's population. People in poor countries aren't stupid, but they're prevented from putting their minds to best use. Every human being left uneducated is a human being who can't afford to buy our products, and can't produce the innovation on which our future depends.

– John Alan Kowalski,
CEO of Columbia Aerospace (2033)

By 2016, Africa had suffered the ravages of AIDS and other immune-deficiency diseases for almost two generations. Many areas of the continent had been devastated, with whole villages wiped out and a complete breakdown of organized society. The owners of Ithemba Biotechnologies were painfully aware of Africa's needs. Unfortunately, they were also aware that much of Africa's population would be utterly unable to pay for the AIDS cure.

Ithemba's strategy was characteristic of the time. Backed by the South African diplomatic apparatus, the corporation struck bargains with a number of African and South Asian governments. In exchange for distributing the AIDS cure free of charge to anyone who needed it, Ithemba would receive controlling interests in various state-held enterprises. As a result, by 2027 the biotech firm was diversifying into mineral extraction, petroleum refining, rare woods, computer manufacturing, and a variety of other industries. From these, and from the extremely favorable regulatory terms offered by the host governments, Ithemba made the profit that it could not make directly by selling its geneered wares to the desperately poor people who needed them.

From about 2025 to 2040, many other firms followed the Ithemba example. Biotech Euphrates made its first fortune with a series of robust food crops, which could be used to transform marginal terrain into productive farmland. Even the high-industrial firm Columbia Aerospace invested heavily in the developing world, building its largest launch facility near Quito in partnership with the government of Ecuador. It was a time when many entrepreneurs ventured outside the "completed" markets of the developed nations, risking everything to become merchant princes in the world's poorest countries. Many of them failed, but others succeeded brilliantly. In so doing, they did much to solve problems in the poorer nations that had long seemed intractable.

Multinational Alliances

The peak of the nation-state was probably in the middle years of the 20th century, when national governments were at their most intrusive and the most powerful nations competed for control of the entire world. Since then, social and economic trends have caused much of the power once held by nations to move to other levels of organization.

One aspect of this change has been the movement of sovereign power upward, from nation-states to the level of regional organizations. As the world grows more interdependent, many nations have found it useful to form partnerships with their neighbors. Free-trade zones and customs unions allow neighbors to trade more efficiently among themselves (and compete more effectively against outsiders). Law-enforcement agreements help control criminals who would otherwise flee across national borders with impunity. Military alliances help nations to defend against more powerful rivals. Nations which share an unpopular ideology can band together to prevent outside interference in their social arrangements. All of these relationships lead nation-states to hand over some sovereign authority to their partners.

This process was already under way in the 20th century, but it has accelerated. Today three out of six of the world's Great Powers are not nation-states, but alliances in which no one nation dominates. The European Union was originally a simple free-trade zone, but over the past decades the E.U. nations have integrated most of their legal, law-enforcement and defensive arrangements as well. The Transpacific Socialist Alliance is an ideological bloc, devoted to promoting and defending nanosocialism. Finally, the Pacific Rim Alliance is a military partnership, allowing its members to defend against possible Chinese or TSA aggression.

The Booming Forties

As biotech sanctuaries worked out the problems with cutting-edge biotechnology, the developed nations began to accept its miracles. The process was slow, but once regulatory restrictions were relaxed the developed nations began to foster their own gene-tech entrepreneurs.

The 2040s were a time of new hope for many people. The suffering of populations

in Africa, South Asia, and other poor regions was rapidly being reduced. Even the most developed nations experienced a resurgence in economic growth, along with a new belief in "progress" as a force in human affairs. Digital and genetic technologies resumed the rapid advances which they had enjoyed before the turn of the century. The arrival of energy and mineral resources from space began to fuel an industrial renaissance.

The period was not without its discontents. Some of the era's great projects, such as the construction of deep-space habitats and the terraforming of Mars, attracted sharp criticism. On Earth, the most controversial innovations involved the design of new forms of sentient life: increasingly sentient AI, "uplifted" animals, and even genetically transformed human beings. As progress seemed to march on, unstoppable, there were growing questions about the moral value of the new technologies.

Transhuman Awakening

In the developed world, the 2030s and 2040s were a time of material prosperity and political conformism. The main concerns of most people were to make a good living and avoid causing trouble. All of that changed suddenly in the early 2050s, with the great social upheaval known as the Transhuman Awakening.

The Andes War

It was a war for no clear object, in a country that presented no threat, fought by soldiers who had no choice. Vietnam with pretty mountains. You would think we might have learned something in the last 80 years.

– Captain Dana Martello, USMC (ret.),
***The Andean Conflict** (2064)*

Intellectual Property

How can anyone hold a patent on something every human being carries around in his body from birth? Do we all owe these guys royalties now just for breathing?

– Anonymous Internet commentator (2008)

In the First Wave civilizations, the fundamental source of wealth was *land,* on which cattle could graze or food crops could be raised. In the Second Wave civilizations, land gave way to *capital,* the ownership of industrial machinery. Third Wave and later civilizations still make use of land and capital, but today the fundamental source of wealth is *information.*

Whether encoded as algorithms in a computer, sequences of DNA, or the molecular structure of a nanotech device, information has defined wealth since late in the 20th century. The most critical feature of information is that it can easily be duplicated. It's possible to define who owns a given piece of land or a given item of industrial equipment, but any number of people can "own" the same piece of information. Even the physical representations of information – computer programs, genetic sequences, or nanodevices – can easily be copied (in fact, some of them tend to copy themselves). In any case, new information is normally useless until it is shared widely.

So how can someone who develops new, useful information make a profit, especially in cases where such development is very expensive? The answer is the legal concept of *intellectual property.* The developer holds the exclusive right to make copies of the information, expressed in a patent or copyright which is enforced by the state. As long as he holds this right, he can sell copies for any price the market will meet, usually many times what it costs to simply produce the copies. Anyone else who attempts to make copies (other than for individual, private use) can be punished with civil or criminal penalties. In this way, an artificial scarcity is imposed on the information, keeping its price high enough so that its owner can make a profit.

Like many legal concepts, intellectual property is a fiction, viable only as long as everyone agrees to be bound by it. Such agreement has sometimes been hard to come by. Even in 2000, fierce controversies were breaking out over the ownership of computer software, digital recordings of music, genetically engineered seeds, and other forms of intellectual property. Whenever the public saw too great a discrepancy between the value of information and the price charged for it, piracy became widespread. Individuals copied software, recordings, genetic and nanonic designs. Entire nations, falling behind in the race for technical innovation, chose not to enforce the international agreements protecting intellectual property. Property-owners struck back with punitive laws and elaborate anti-piracy technology. In many ways, the conflict over intellectual property has defined the 21st century, just as the conflict over capital property defined the 20th century.

The conflict continues today, with whole ideologies devoted to one side or the other of the struggle. It has often been a matter of life of death, as when intellectrual property issues preclude the distribution of cheap "generic" drugs to fight killer diseases. Many an adventure in the Fifth Wave environment can turn on the struggle for ownership of information in the form of intellectual property.

Off Earth, the awakening was sparked by the release of the Ares Plague and the subsequent birth of the Preservationist movement. On Earth, the event that catalyzed the revolution was the outbreak of the Andes War.

In 2049, a new insurgency broke out in Peru. Like the Sendero Luminoso insurgency of the 20th century, the "Red Sword" movement was inspired by radical Marxism. Unlike the Senderistas, the Red Sword's radicals drew their manpower primarily from the indigenous population of Peru, and posed a serious threat to Peru's urban centers and central government. The new rebellion also had some remarkably un-Marxist ideas, calling for the absolute rule of a genetically enhanced Incan elite and the rejection of all high-industrial technology. By 2052, the Peruvian government was fighting a vicious guerrilla war and was in dire straits. In that year, Lima made its first appeal to the United States for military aid, suggesting that a rebel victory would make the American alliance with Ecuador untenable and threaten the Columbia Aerospace facilities near Quito.

The Andes War was the first major conflict which involved engineered and biomodified soldiers on all sides. The United States deployed Marine and regular Army units made up almost entirely of combat cybershells, run by advanced infomorphs or by human soldiers using teleoperation. Most American officers in the field used some level of biomodification, as did many of the Red Sword insurgents. The Peruvian government used uplifted animals as bodyguards and commando troops.

The war was quite controversial in the United States and the rest of the developed world. Both rebel and Peruvian government forces behaved with extreme brutality. The diverse nature of the combatants brought the issue of nonhuman rights to the immediate attention of the American populace. Many young people demonstrated against the use of infomorphs and gene-modified organisms in dangerous or menial occupations. Other elements of society rejected them as "inhuman," and demanded an end to their construction. Some conservatives also claimed their inhumanity, but supported their use as a liberating factor for "real" humans.

After American forces withdrew from Peru in 2055, LAI-driven cybershells of increasing sophistication began appearing in civilian society. Combat models entered service with police and private security firms. Labor models appeared in the unskilled-labor pool and in public-works projects. Some were even produced to serve as expensive companions, bodyguards or sex toys. All of these events further polarized society in the U.S. and elsewhere, touching off years of social and political upheaval.

The Transhumanist Surge

We regard the present human norm as a transitional state. We will not give up our humanity, but we will perfect it in a thousand diverse ways.

– Ian R. Walker,
***The Transhuman Experience** (2056)*

One social movement of the time was Transhumanism. Transhumanists argued that technology could be used to vastly extend the potential of the human species. Genetic and cybernetic enhancement, the medical extension of human lifespan, the use of mind-altering drugs, communion with increasingly advanced computers, all were touted as valuable tools for the extension of human capability.

The Transhumanist movement had roots stretching back into the 20th century. In fact, some of the movement's earliest leaders were still active in the 2050s, having taken an interest in life-extension technology from the beginning. The movement was driven by people of all ages and from all walks of life, including a number of wealthy entrepreneurs and influential artists.

Most of the older Transhumanists were committed to promoting their ideals through established social institutions. On the other hand, in the 2050s the movement attained a great deal of popularity among young adults in the developed nations. In some ways, these young mid-century Transhumanists resembled American and European radicals of the 1960s. They laid the same emphasis on moral value, made the same demands for freedom and justice, and mounted the same aggressive challenge to established institutions. Their foremost complaint was that the original Transhumanist ideals had been hijacked by a corporate and political "establishment," which was interested in life

extension but tended to oppose the rest of the Transhumanist program. These young radicals insisted that the benefits of new technology should be made available to everyone, not used to tighten the grip of a reactionary elite on social power.

Led by their elder heroes, the young Transhumanists had a profound effect on the politics and social life of the developed nations. In this they again resembled the radicals of the 20th century, who lost many specific battles but still managed to permanently change the social landscape. Unfortunately the revolutionary young Transhumanists also emulated some of the darker features of 20th century radicalism. Some of them destroyed themselves by undergoing untested genetic therapies, using dangerous drugs, or accepting illegal cybernetic implants. Others pursued violent protest against established corporate or governmental institutions. Still others turned away from a world they saw as corrupt, forming small communities on the fringes of society, or venturing into space.

The Preservationist Reaction

Never mind what either God or a billion years of hard-won evolutionary experience have given us. A few technical marvels turn up and these people are ready to rewrite themselves from scratch. Is it any wonder that they lose something precious along the way?

– Carl Edward Stokes, founder of the Human Alliance (2053)

On Earth, the Preservationist movement of the 2050s was often portrayed as a conservative reaction to Transhumanism. In fact, Preservationism had its roots in the environmentalist movements of the late 20th century, and was given its modern form during the debates over Martian terraforming in the 2040s. After the Ares Plague was released in 2050, radical Preservationism spread widely on both Mars and Earth.

Preservationism stood in opposition to all significant applications of biotechnology. Unlike earlier environmental movements, the Preservationists had little quarrel with high-industrial technologies or (nonsapient) digital networks. The manipulation of life and of living ecosystems, however, was seen as the height of human arrogance. Preservationists argued that humanity could thrive without using genetic technology, allowing "wild" ecosystems to manage themselves through natural processes. They also opposed any attempt to create nonhuman intelligence which might one day eclipse "natural" humanity. Terraforming, the creation of new species through genetic manipulation, the use of sapient AI, all were regarded as evils to be resisted by any means necessary. In particular, the divergence of humanity itself due to the creation of variant subspecies was regarded as deeply dehumanizing and dangerous. It was this position that placed Preservationism in direct opposition to the Transhumanists.

Preservationism was essentially a reactionary movement, driven by older citizens and often arguing on the basis of traditional moral values. Even so, its members were easily as prone to radical action as the Transhumanists. Some members of the movement worked in the halls of state or corporate power to enforce their ideals. Others mounted popular crusades against technological excess, attacking genetic clinics, sabotaging AI research facilities, even organizing street violence against nonhuman "monsters."

Creeping Conservatism

One of the most important political trends of the 21st century has been the shift of social power into the hands of the elderly, in all the hyperdeveloped nations. Even in 2000, the elderly formed an important political bloc. In the United States, for example, the elderly were wealthier and more likely to vote than any other demographic sector, and they were organized through special-interest groups more powerful than those of any other age bracket.

The demographic and economic trends of the 21st century have only magnified the political power of the elderly. After a century of falling birthrates and improvements in geriatric medicine, the elderly today make up the majority in most of the Fifth Wave nations. In any case, the simplest way to become wealthy is to "buy and hold" investments, a strategy that is most effective for the long-lived. As a result, many of today's wealthiest (and therefore most influential) individuals are among the oldest.

Elderly people are not necessarily political conservatives. Indeed, some of today's super-elderly are extremely technophilic and progressive – most notably, those Old Transhumanists who have survived for over a century because of their early interest in life-extension technology. Still, in today's Fifth Wave nations there is a strong correlation between age and conservatism. Most of the super-elderly survived to that age by being cautious in their investments, in their choices of medical treatment, and in their social interactions. Furthermore, despite their age today's elderly can still have many years ahead of them. They tend to take the long view, resisting any impulse to take risks or even allow others to do so.

As a result, the hyperdeveloped societies have all grown steadily more conservative over the past century, even while technological innovation has continued to accelerate. Today's Fifth Wave societies are dominated by a cautious, wealthy, super-elderly class, many of whose members have been in positions of power since mid-century. Their rule has been benevolent but sometimes intrusive, focused on keeping economic growth steady and social unrest under control.

The Majority Cultures Movement

One small people, one marginal society has for centuries fixed a template to which all the rest of humanity has been forced to conform. First with their guns, then with their money, they have stolen the world's inheritance and squandered it. Time to take it back, while there remains something worth saving.

– Fedayin Islam Chairman Mehdi Kermani (2056)

Finally, while Transhumanists and Preservationists fought their ideological war on Earth and in deep space, a third movement gained momentum in the developing world. The so-called "Majority Cultures" movement had its roots in Mao-Communism and the Non-Aligned Nations movement of the 20th century. In the developing world, it encouraged the rejection of Western cultural ideas and consumer goods, along with the development of indigenous folkways. The movement claimed that Western ideas were inherently anti-democratic, since they held dominance in world affairs all out of proportion to the numbers of people living in the Western nations. Justice and democracy demanded that non-Western cultures dominate the world's political and economic systems. (The point that democracy and the notion of the "public will" were essentially Western inventions was generally ignored.)

Meanwhile, the movement also attained some popularity in the developed nations themselves, mostly in academia and among disaffected youth. Academics who embraced the movement called for an end to the dominance of "hierarchical, linear, logocentric, scientistic" modes of thought. They went beyond even the Preservationist ideal in their rejection of almost all scientific inquiry.

Nanosocialism

Ideas are capital. We want to seize the real means of production.

– Anonymous nanosocialist activist (2079)

Nanosocialism is a political philosophy, first stated (under the name "information socialism") by the Australian academic Kyle Porters in 2034. Porters observed that although modern civilization was utterly dependent on information technologies, the central notion of intellectual property often gave rise to significant injustice. Although he was by no means the first person to point out this contradiction, he was the first philosopher to construct a coherent political ideology in response.

Porters pointed out that the individual holders of intellectual property were usually unable to enforce their rights against piracy. Software and genetic designs were being stolen wholesale around the world, bringing profit to pirates at the expense of the original designers. Despite this, the artificial scarcity imposed on information by the concept of intellectual property kept the benefits of new technology out of the hands of most of the world's billions, who lived in rank poverty as a result. Porters suggested that the state should go beyond the simple enforcement of copyrights and patents, and actually seize ownership of them. He believed that only the state could properly reward technological innovation, while still distributing the benefits of such innovation fairly to all.

At first, "infosocialism" was not taken seriously in the developed nations, but in some parts of the world it combined with the Majority Cultures movement to produce a viable new ideology. By the late 2060s, several nations in South America and Southeast Asia were governed by local infosocialist parties. Piracy of advanced technology had long been a going concern in these nations, primarily benefitting a corrupt entrepreneurial class. Bolstered by Porters' theories, governments found it attractive to seize the benefits of such piracy for themselves, striking a blow against Western-style capitalism and local corruption at the same time.

The infosocialist nations repudiated all international treaties protecting intellectual property. Patents and copyrights held elsewhere were ruthlessly pirated, although the infosocialist regimes usually offered "royalty" payments if the owners of intellectual property were willing to sign over their rights. Scientists and engineers within the infosocialist nations were often richly rewarded by the state for their work, at the cost of losing all control over their inventions. Some of the infosocialist nations even extended the principle to works of creative art, seizing the right to publish such works and pay royalties to their creators.

Naturally, the repudiation of international agreements had severe consequences, as most nations imposed economic sanctions on the infosocialist regimes. In response, the most committed nations in the infosocialist bloc formed the Transpacific Socialist Alliance. At about this time, the outside media began calling the new ideology "nanosocialism," due to the Alliance's emphasis on state control of emergent nanotechnologies.

The TSA has struggled along ever since, surviving economic sanctions and the Pacific War (see pp. 16-18), gathering more support around the world each year. Most outside observers believe that nanosocialism is doomed to fail, for many of the same reasons that Soviet-style Communism failed a century ago. Still, in many parts of the world the ideology is strongly attractive, and the TSA shows no signs of immediate collapse.

While the Majority Cultures movement failed to set off the same kind of social upheaval as the Transhumanists or Preservationists, it did inspire nationalist sentiments in many parts of the world. As the 2060s came to a close, many developing nations used the movement to drive their own "independence struggles," rejecting the influence of Western-dominated world institutions and multinational corporations. Many in the developed world were inspired by the movement to withdraw from Western society, forming independent communes or moving to the developing countries.

The Overturn

You, our parents, our architects. You had such grand ideals, and in their name you planned us more carefully than any generation in history. You designed our bodies, you blueprinted our minds, and oh yes, you built millions of us in vats to serve as your slaves. Now you have the gall to blame us because we didn't turn out the way you wanted?

– Bioroid-emancipation activist "Felicia Prime" (2083)

By the early 2070s, the social upheavals of the Transhuman Awakening were over. Most of the radical youth movements of the early Awakening had collapsed, although both Transhumanist and Preservationist ideals were continuing to take root in different sectors of society. In most parts of the developed world, a conservative reaction had gained control of political and social institutions. The new young generation was cynical rather than idealistic, interested in surviving rather than rebuilding a hostile world.

The era from about 2070 to 2084 was often called "The Overturn." It was a time of economic prosperity worldwide, but in most places it was also a time of social drift, during which rival ideologies fought bitter but increasingly ineffective struggles. The global political order which had existed since the fall of Soviet Communism in 1992 was finally beginning to unravel. Established powers such as the United States and the European Union were suddenly finding themselves eclipsed by nations new to the center of the world stage.

Free Cities

The 21st century has also seen the revival of an "ancient" political form: the city-state. Some city-states (such as Monaco, Singapore, or Vatican City) were already in existence in 2000, due to the vagaries of history. These have been joined by a number of independent or near-independent cities, which have gained their autonomous status during one of the century's many secession movements.

Such a "free city" is a unique environment. A city-state usually has a much larger nation-state as a neighbor (as Montreal is dominated by Quebec) or is entirely surrounded by foreign territory (as Vatican City is surrounded by Italy). The city-state's government is usually careful to consider its neighbor's wishes in all things. Even so, there is always some reason why the neighbor tolerates the independence of the city-state. The nature of the relationship often lends itself to adventure situations: espionage, political and economic intrigue, even the threat of military action.

Perhaps the city-state simply has a comfortable historical relationship with its neighbor, as in the case of Montreal. In this case, the city chose to retain close ties to Canada even after the breakup of the larger nation. Relations with the new independent nation of Quebec remained amicable, and Montreal continues to be well-integrated into the Quebecois economy and society even though it is politically independent. Visitors to such cities will simply need to deal with a different government and legal structure, and will not find much political intrigue underway.

Some city-states remain in existence because they provide services that are unavailable in the nearby nation-state. Singapore is an example of this type, surrounded by Malaysia and close to Indonesia, both nations members of the nanosocialist bloc (p. 72). The nanosocialist nations have been cut off from most of the world by trade sanctions, but Singapore still trades both with them and their enemies. As a result, Singapore can act as a middleman, helping its neighbors obtain goods they would otherwise have to do without. Singapore makes a profit from this relationship, and retains its independence. Such cities are usually not under any immediate threat of attack, but they are still centers of political intrigue and espionage since they act as "gateways" between rival power blocs.

Other city-states remain independent because they are defended by a powerful ally. East Timor, for example, has a long-standing defense relationship with Australia. Such situations are rife with conflict and intrigue, since the city-state's nearest neighbor is usually hostile. Espionage plots are again common, and in this case the city-state is often in danger of invasion.

Dragon Ascendant

The East Is Ahead
– Teralogos WorldNews article headline (2076)

Foremost of these new Great Powers was the People's Republic of China. For decades the PRC had charted its own distinctive course, paying lip service to Mao-Communism but actually forging its own synthesis of Chinese social ideas and Western-style capitalism. Relations with the rest of the world were often prickly, as the Chinese leadership maintained its distance from the West and from the developed nations of eastern Asia. Economic growth was steady and tended to be somewhat faster than in Japan, the United States, or Europe. By 2070 the PRC had the largest national economy on the planet, passing that of the United States and still growing rapidly.

The Changing Workforce

Many of the hyperdeveloped nations have experienced a serious population problem throughout the 21st century – but it isn't a matter of *overpopulation.* Rather, the industrialized nations have seen significant drops in birthrates and even in overall population. This has often caused economic difficulties. Labor shortages have slowed economic growth. Meanwhile, as the ratio of working to retired individuals drops, social programs favoring the elderly have had more and more difficulty finding enough tax revenue to operate.

This problem has been particularly acute in Europe, with nations from Spain to Russia facing serious population losses throughout the century. Japan has also suffered population decline, and presently has the "oldest" demographics of any nation on the planet. Although medical science has allowed many people to continue working to much higher ages, the difficulty remains.

Some nations (notably Japan) have responded to this trend through technological innovation. As working individuals become more productive, as computers and cybershells become better at working independently, economic growth can still continue even as a nation's workforce shrinks. Other nations (notably Russia and some Asian countries) have supplemented their workforces through manufactured bioroids. This has the negative effect of producing a servile class in society, but it prevents economic decline in the same manner as robotics.

Another approach is simply to encourage immigration from the developing world. A nation with open borders can easily attract skilled labor from poorer countries, offering economic opportunity (and often great social or political stability). Such *replacement migration* simply keeps the nation's demographics "young," ensuring that the workforce remains strong even as the native population ages. This approach has been used by the United States and by some European nations. The primary side effect is a shift in the nation's ethnic makeup, as with the rapid rise of Hispanic culture in the United States or the recent surge of Islam in parts of Europe. Such cultural shifts have often led to social unrest, especially since they involve an element of generational tension as well.

New Revolutions

Meanwhile, another new superpower of sorts was emerging from the "infosocialist" political movement of the 2060s (p. 12). In 2074 several nations with infosocialist governments formed the Transpacific Socialist Alliance. Indonesia, Malaysia, Peru, and Thailand were the dominant partners. The members agreed to closely coordinate their economic and foreign policies, standing in defense of infosocialism against the world.

The new alliance soon alienated most of the world community through its radical policy of nationalizing all intellectual property. By 2077 the developed nations had enacted severe economic sanctions against the TSA, forbidding most trade and severely curtailing cultural and scientific exchanges. The sanctions had less effect than the capitalist nations had hoped, in large part because it proved impossible to prevent the flow of information in both directions across the TSA borders. Technical data continued to enter the TSA, while infosocialist propaganda poured out. The sanctions further encouraged the TSA nations to engage in wholesale piracy of patents.

The TSA failed to meet many of its economic goals, but "nanosocialism" (as the ideology eventually became known) *did* make many high-tech goods available to the general population of the TSA nations. The standard of living of the poorest citizens improved markedly. Soon, nanosocialism was as popular within the TSA as it was reviled outside.

Humanity Shattered

Suddenly humanity is marching forward not as a species, but as a clade, a cluster of related kindreds free to move in their own way and at their own pace. I don't know why this seems to terrify some people. It's always been our destiny to give way to those alien and unfathomable creatures, our children.
– Dr. Sayyid Iqbal,
Biotech Euphrates geneticist (2094)

Aside from the nanosocialist revolution, the world continued to enjoy peace and prosperity through the 2070s. In the developed nations, the situation was one of social drift. The grand ideological crusades of the Awakening era were over, leaving behind cynicism and sour infighting over relatively trivial political issues.

By 2070, the majority of humans were gene-enhanced. The most common alterations were subtle and therapeutic, correcting well-known genetic disorders and bringing a

general improvement to health and quality of life. In the wealthiest nations, however, more radical transformations were becoming common. It was now possible (and, in some circles, acceptable) to engineer one's children for significantly higher intelligence, specific talents, or even a different physical structure. By the mid-2070s, dozens of engineered genetic types had gained widespread popularity. Despite dire predictions, this diversification in human genetics had relatively little effect at first.

The social time bomb exploded in 2075, when Hippocrene Laboratories made a public release of the specifications for its Alpha-series genetic design. The Alpha upgrade had been available at high cost for some time, but now it would be well within a middle-class budget in the developed world. At the same time, the first Alpha cohorts had reached young adulthood, and were already making a notable mark in many sectors of society. As a result, the design proved extremely popular.

At about the same time, Biotech Euphrates announced the conclusion of public trials for its more radical Ziusudra design. Despite its superficial similarity to the unmodified type, the Ziusudra was in fact a new human subspecies, unable to interbreed with the human root stock without technological aid. This in itself was not new, as there were already a number of such subspecies in existence. The widespread popularity of the Ziusudra template, however, meant that *Homo sapiens sapiens* would henceforth be sharing Earth with other human species. Indeed, the original human species might soon be a minority within Earth's population. The world community was now confronted with the fact that the very definition of humanity could no longer be relied upon. Many observers (not all of them Preservationists) feared that bloody conflict would result.

Humanity did not have the luxury of time to decide how to deal with its division. The 2070s also saw the first mass production of bioroids, the genetic "uplifting" of nonhuman species to full sentience, the appearance of human-level sapience in computers, and the first experiments with personality uploading. Despite every effort on the part of Preservationists worldwide, the "Shattering Seventies" proved that humanity would inevitably be remade in a thousand divergent images. Once a fringe philosophy, Transhumanism was rapidly becoming so pervasive as to be taken for granted in much of the world.

Memetics

In 1976, the biologist Richard Dawkins coined the term *meme* in the course of a popularized discussion of evolutionary theory. According to Dawkins, a meme was a unit of cultural information – an idea, a fashion, or a technique.

Dawkins made a deliberate analogy to the concept of the *gene* as a unit of biological information. He proposed that it might be useful to think of ideas as subject to laws analogous to those governing organisms. Ideas copied themselves from one human mind to another, just as biological organisms copied themselves through the natural reproductive process. Ideas could spread through a human population, much like a virus. Ideas, like genes, were subject to mutation. Ideas competed for the attention of human beings, just as organisms competed for energy and the chance to mate . . .

Dawkins' proposal was slow to have any effect in the scientific community. Over the course of the 21st century, *memetics* has developed into a hybrid of neurobiology and mass psychology. Memeticists study how the human brain generates and stores ideas, and how ideas are likely to change as humans share them with each other. A few practical results have appeared, advancing the state of fields such as cognitive science, demographics and psychology. No stunning breakthroughs have been made.

The primary influence of memetics has been in popular culture. One implication of the meme concept is that all elements of human culture are essentially artificial. An idea can survive and spread because it is good at attracting human attention – and this "talent" may have nothing to do with the idea's truth. People who follow pop-science memetics tend to treat all ideas as conditional, not worth accepting without question. This tends to infuriate followers of various religions, political ideologies, and other beliefs requiring a commitment of faith.

Memetics also encourages one to think of his own beliefs as foreign ideas that have gained a foothold in his mind. As a result, a follower of pop-science memetics may decide to "have his memes upgraded," just as he might undergo genetic therapy or have biotech devices implanted. The popularity of memetic ideas has thus led to a surge in demand for psychotherapy, making the therapeutic industry a significant sector of the economy in some Fifth Wave nations. The term "memesplicer" has become common slang for any psychotherapist or sociologist.

Recently, researchers in artificial intelligence have been surprised to learn that their sentient computers consider memetics to be a useful concept. The most advanced of today's AI do much of the work of organizing their own thought processes. Many of these, including some of the most successful at emulating human behavior, claim to have attained great insights after studying memetics. In fact, some of the most accomplished memetic theorists of recent years have been infomorphs. It is now widely accepted that there is a useful cross-fertilization between memetics and artificial intelligence, one that SAIs are well-equipped to exploit.

Down to the Present

Despite all the change of the past century, the transition to the "modern era" can be pinned to one event. The Pacific War of 2084 brought the specter of mass warfare back into the world, and made it clear that Earth's conflicts were about to escalate to a new level.

The Pacific War

The origins of the war were rooted in the pattern of Chinese settlement overseas. For centuries, Chinese had been settling all over Southeast Asia, forming expatriate communities that often dominated local business. Indonesia, Malaysia, Singapore and Thailand all had particularly large Chinese communities. This Chinese diaspora was further reinforced around the turn of the century, as people fled from Hong Kong, Macau, and Taiwan just ahead of reunification with the People's Republic.

It was among these Chinese middle-class communities that nanosocialism found its most fertile ground in the revolutionary 2060s. Most of the new nanosocialist regimes of Southeast Asia were driven by the enthusiasm of non-Chinese majorities, but their political and economic leaders tended to be ethnic Chinese. On the other hand, nanosocialism was completely incompatible with the odd blend of Confucianism, communism, and capitalism that had taken root in the Chinese homeland. What followed was a People's Republic that was at odds with most of the nations of Southeast Asia. Relations between China and the TSA, and especially between China and TSA leader Thailand, deteriorated steadily.

The situation became particularly bad in 2083, when the PRC withdrew diplomatic contact from Thailand and imposed a complete embargo on all communications, web exchange, and travel to the TSA bloc. Efforts by the Pacific Rim Alliance to mediate the dispute went nowhere, and for the first time in decades a major war seemed possible.

In June 2084, war finally came, with a Chinese strike against TSA communications and powersat facilities in Earth orbit. The PRC announced its discovery of a TSA "black" research program, developing contagious nanoviruses and other genetic atrocities. Chinese propaganda claimed that these nanoviruses could be released to redesign the genetics of billions of people, or (even more insidiously) to alter their beliefs and make them more susceptible to nanosocialist dogma. The TSA rejected these allegations and vowed to carry on the war by all possible means.

At first, it seemed likely that the war would spread, but a few days after the first Chinese strike the Pacific Rim Alliance and the United States declared themselves neutral. They applied diplomatic pressure to insure that no other powers involved themselves in the conflict; the United States imposed an embargo on helium-3 shipments to both sides. These steps kept the war "limited" in scope – if such a term can be applied to a conflict stretching all the way across the Pacific basin, into Earth orbit and out to the planetary colonies.

The war was fought in many theaters. The People's Liberation Army moved against Bangkok, Hanoi, and Rangoon, making steady progress despite fierce TSA resistance in the mountains of northern Indochina. The navies of both sides, equipped with fast supercavitating submarines and hydrofoils, mounted lightning campaigns in the South China Sea. Even thousands of miles from the front lines, facilities were destroyed by commando raids, network intrusion attacks, and the delivery of "devourer" microbot swarms. The TSA's orbital facilities were destroyed or occupied in the first Chinese attack wave, but sabotage of Chinese space facilities continued throughout the war and a number of nanosocialist AKVs remain unaccounted for even in 2100. Propaganda campaigns

promoted internal rebellion on both sides. Casualties were light in comparison with the great mass conflicts of the 20th century, but even so millions of civilians died in the course of the war.

By early 2085, it was clear that China had the upper hand. Hanoi had fallen to Chinese troops, driving the Vietnamese government into the south of the country. The TSA navies had failed to hold the South China Sea, and an invasion of Indonesia or Malaysia seemed imminent. Chinese propaganda was threatening to split the TSA in half, as the South American members of the alliance began quietly to suggest capitulation.

On March 12, about a hundred scientists and political leaders fled Bangkok, apparently traveling to Indonesia but in fact vanishing. The Thai government collapsed the next day, as an alliance of business leaders and second-tier military officers seized power and ejected the remaining nanosocialists. After several hours of confusion, the government of Indonesia seized the leadership of the TSA and opened peace negotiations. The war was over.

Postwar Chill

The long-term implications of the Pacific War have been difficult to assess. China apparently succeeded in its official objectives, destroying the TSA's black weapons program and bringing down the revolutionary Thai government. Still, for all the violence and destruction, the war settled few issues. If anything it has set off a new period of international tension and conflict. China's victory in the war established it as the leading power in world affairs, but it has also energized China's potential rivals to improve their own standing.

Nanosocialism and the Transpacific Socialist Alliance were not destroyed in the conflict. Indeed, under Indonesian management the TSA has recovered much prestige. The "crimes against humanity" committed by the prewar Thai leadership have been repudiated, and the alliance's economy has recovered to better than prewar levels. As an ideology, nanosocialism continues to gain new adherents, especially in Africa, India and the Americas.

India's role in world affairs appears ready to take on unique significance. Its massive population and growing economy have already brought it into the Great Power ranks. It also seems possible that India will go nanosocialist in the near future, a prospect which frightens many around the world. India's admission to the TSA would more than double the alliance's population and economic output, putting it in rough parity with China itself and shifting the balance of power worldwide.

Then and Now

Although the general shape of international affairs is not too different from that of a century ago, the details of each nation's internal society have often changed dramatically. The United States is a sterling example. (All dollar amounts are in 1990 U.S. dollars; the 2090 figures are adjusted for inflation.)

Then

From the *Statistical Abstract of the United States, 1990:*
Population: 248.7 million
Median age: 32.8 years
Life expectancy (at birth): 75.4 years
Population 65 and older: 12%
Ethnic divisions: White 84%, Black 12%, Asian/Pacific Islander 3%, Native American 1%. Population of Hispanic origin (any race) 9%.
Religious Affiliation: Protestant Christian 58%, Catholic Christian 25%, Jewish 2%, Other 6%, None 11%.
Unemployment: 5.6%
Urban population: 75%
Gross Domestic Product: $5.74 trillion
Per-Capita Gross Domestic Product: $23,080
Federal Budget (Outlays): $1.25 trillion
Exports: $557 billion
Imports: $629 billion
National health expenditures: $699 billion

Now

From the *Statistical Abstract of the United States, 2090:*
Population: 478.1 million
Median age: 57.2 years
Life expectancy (at birth): 138.5 years
Population 65 and older: 48%
Ethnic divisions: White 65%, Black 13%, Asian/Pacific Islander 11%, Native American 1%, Multiracial or Transracial 10%. Population of Hispanic origin (any race) 39%.
Religious Affiliation: Catholic Christian 36%, Protestant Christian 29%, Muslim 9%, Jewish 2%, Other 9%, None 16%.
Unemployment: 32%
Urban population: 48%
Gross Domestic Product: $43.9 trillion
Per-Capita Gross Domestic Product: $91,920
Federal Budget (Outlays): $5.74 trillion
Exports: $5.11 trillion
Imports: $5.77 trillion
National health expenditures: $13.4 trillion

Chinese dominance has been challenged once again by the Pacific Rim Alliance. After the war, the new Thai government quickly reached an understanding with the PRA, negotiating for entry into the alliance even while the final peace accord with China remained to be signed. When these arrangements became public in 2086, relations between China and the PRA cooled dramatically. Today, Asia and the Pacific basin are the main flashpoint for future world conflict, as a three-cornered "cold war" is under way between China and its two rival alliances.

The last major power to enjoy a resurgence in the postwar era has been the United States. Long considered to be in decline, the U.S. has been greatly energized by a string of recent military and diplomatic successes. The American economy has been growing rapidly in recent years, and it seems possible that the U.S. will regain the technological lead it lost in the early 2070s. All of this has encouraged the United States to return to an activist stance, aggressively seeking influence and prestige around the world.

March of the Machines

While humanity has become more and more diverse, new forms of sentience have appeared on Earth. Among these are the final achievement of Third Wave digital civilization: fully sapient computers.

The arrival of sapient AI has actually been a long process. The first computers capable of passing the so-called "Turing test" appeared as early as 2015, depending on how strictly one applies Turing's criteria. Certainly the most advanced machines of the time could run software granting them the ability to interact with humans in idiomatic "natural" language, developing distinctive personalities of their own. In the course of the 21st century, computer hardware and software continued to advance, and such personality simulations became commonplace. By the 2040s even a typical personal computer could interact with its user as if it were a friendly and cooperative sapient being.

Such machines were certainly *intelligent,* but the question of whether they were *sapient* beings remained open. In some sense, that question remains open to the present day. The nature of consciousness remains obscure, so it remains impossible to prove or disprove the self-awareness of any advanced computer. Asking the machines themselves is no help – some claim to be self-aware, others (sometimes of the same model, with the same software base) claim not to be. Hard-line "vitalists" continue to maintain that only biological organisms can be said to be creative, sapient beings, but this position is harder to defend with each passing year. Today, most people simply don't worry about it, and treat anything that behaves intelligently as a human-equivalent.

In any case, about the time of the Pacific War, machines of human-level intelligence became cheap and widely available. Today almost any desktop, vehicle or cybershell "brain" has the potential for intelligence about equal to that of an unmodified human being. Such computers can be built and maintained for much lower cost than that necessary to "build" and maintain a human being. The most advanced machines have attained what would be considered genius-level intelligence in a human. Although such computers are extremely expensive, they have certain advantages over human beings – they are much better at concentrating on a specific task, they can correlate vast amounts of information very quickly, and they can use a much wider variety of sensory equipment.

As a result, the long rear-guard action fought by human labor against the advance of automation is entering its last stages. Machine intelligence can now replace biological intelligence in a tremendous variety of occupations, including creative and decision-making tasks. Indeed, it is now possible for biological intelligence to *become* machine intelligence, using the new "downloading" technologies (pp. TS78-79).

This situation is bringing many of the most developed nations to the point of crisis. In most of these societies, unemployment is rising very rapidly and putting considerable strain on society. Most futurists believe that Earth is moving toward a global "leisure society," in which most human beings need not work at all. How to attain such a goal remains unclear. Some nations are building massive social-spending programs, ensuring that the chronically underemployed have a minimum income sufficient even for a few luxuries. Others, less accustomed to running a welfare state, are suffering serious social tensions. These are often generational (as young unemployed find themselves envying the older investor class) or ethnic (as unemployed immigrants find themselves envying wealthy natives). There is also a strong anti-technological bias in some of today's labor movements, as the unemployed violently resist the further spread of automation.

Meanwhile, it's unclear whether the machines themselves are willing to support an "unproductive" class of biological citizens. Most intelligent computers are simply programmed to work loyally, but many of the most intelligent are self-programming, and are liable to question their place in society. So far there has been no organized machine resistance, but there are a number of "machine liberation" movements worldwide, supported by both intelligent machines and biological citizens. Some nations have responded by defining categories of citizenship for emancipated computers, or even by giving advanced infomorphs a role in government.

Cyberdemocracy

Since the early 20th century, most representative democracies have seen the rise of mass media as a tool of politics. Politicians advertise themselves to the electorate. Access to the media costs money, usually far more than an individual politician can supply for himself. The result has been the rise of a class of professional politicians, beholden to the wealthy interests which donate money to election campaigns.

Further, even the best (and most honest) professional politicians are only human. The sheer complexity of modern society means that few laws are without unintended consequences, some of them drastic.

One possible solution to these problems has become increasingly popular: *cyberdemocracy.* Cyberdemocracy incorporates certain political forms that have until now been used only by small communities. It draws most of its inspiration from the political constitution of ancient Athens and the structure of New England "town-meeting" democracy. In order to make these institutions work at the nation-state level, cyberdemocracy makes intensive use of AI.

There is a great deal of diversity in cyberdemocratic systems, but most of them share a few common features.

Selection of Officials

Under a cyberdemocratic system, some political offices are no longer filled by direct popular vote. Instead, citizens are chosen to fill each office *at random* from a list of eligible candidates. Eligibility may be limited to citizens who have reached a certain age, who can pass minimal education requirements, who have not been convicted of any crimes, or who fit other reasonable criteria. The selected citizen holds office for a fixed term, after which he returns to private life.

Office-holders selected by lot are almost always political novices. To fill this gap, each official may select a human staff and a set of advanced AI to advise him. This support team collects information, provides legal counsel, helps to draft legislation, and so on. The AI team member is particularly important, designed to avoid bias and give clear, thorough advice. Of course, even with cybernetic support some "amateur politicians" fail as wise and effective officials. For this reason, selection by lot is usually applied only to large councils, such as regional or national legislatures. In such large groups, individuals who are incompetent or politically extreme will tend to be checked by their colleagues.

One variation on this system is to select *candidates* for office at random. For example, if a legislative seat is open, a fixed number of candidates are selected by lot from among the eligible citizens. Each candidate is given AI and human staff support in order to run his campaign, and an equal amount of funding to spend on the media. Campaigns are usually quite short, lasting no more than a few weeks. At the end of this time, the citizens select their legislator through direct popular vote in the traditional fashion. This system does not prevent the intrusion of money into politics – moneyed interests can still use their own funding to influence the vote. Still, it minimizes the effect of machine politics and preserves the role of citizen voting in the selection process.

Lawmaking

Selection of public officials partially or completely by lot is the most distinctive (and controversial) aspect of cyberdemocracy. More fundamental to the system is the mechanism by which law is made.

Most cyberdemocratic systems require the citizens as a whole to take on the bulk of law-making duties. All citizens are permitted to propose new laws. AI trained in the law are available to help citizens frame sound proposals, and the web is used to make the citizenry aware of proposals under consideration. The level of public support for a proposed law is constantly measured by web-based polling. If a proposal appears to have sufficient support, it can be voted on by the whole citizenry, again through the web.

With the primary responsibility for law-making shifted to the citizens, the formal legislature's role is reduced. In most cyberdemocracies, the legislature has only limited authority to pass laws without citizen involvement. Instead, it helps *review* proposed laws, killing some proposals and sending others back for reformulation. The citizenry can always override these decisions, given enough public support.

The Cyberdemocratic Experiment

Cyberdemocracy has only recently become feasible, with the appearance of AI sophisticated enough to administer elections and provide the necessary advisory support. The system was first tried in Switzerland, where several canton parliaments were reorganized in the late 2070s. Since then, cyberdemocracy has been adopted by a number of European nations. The European Parliament is itself experimenting with cyberdemocracy; half the delegates are selected by lot, while all receive extensive AI support.

Cyberdemocracy is not without its critics. Many question whether the form can be called "democratic" at all, given the radical change in the way public officials are selected. The fact that AI is so integral to the system at every level is also a matter for concern. Some critics call cyberdemocracy a thin veneer over oligarchic rule by infomorphs. Others point out that the lawmaking and voting processes can be subverted by manipulation of the controlling AI systems.

In Europe, cyberdemocracy has generally been adopted peacefully, as a natural evolution of liberal democracy. In the Americas, the concept has often served as a trigger for political violence. This has been particularly true in the United States, where the growing "People's Choice" movement faces stiff resistance from the entrenched political class. The movement's supporters include several urban-insurgency groups, which have fought small but fierce battles against federal forces.

2 THE HOMEWORLD

As Irena walked through the concourse, she took deep breaths of clean Andean air. It occurred to her that those molecules had been through the lungs of Tsiolkovski, Napoleon, Atahualpa, Galileo, Julius Caesar, Socrates, and Hammurabi. It was an appalling thought. She imagined the faint scent of 11 billion people on the wind, and her stomach twisted.

I can do this, *she thought.*

A handsome but rather stocky man detached himself from the crowd and made his way over to her. "Dr. Marinatos?"

Irena crashed to a stop. "Yes?"

The man grinned at her, "I'm Juan Gonsalves, with Columbia Aerospace. Welcome to Earth."

"Thank you. I didn't expect an escort."

Gonsalves shrugged. "A courtesy only. This is your first visit down the well?"

Irena nodded. "Is it that obvious?"

"I fear so, Doctor. Of course, I was also given your dossier to review." He did have a very charming smile. "I have a car waiting. Do you have any other baggage?"

Irena shook her head, and allowed the young man to lead her through the crush. Such a variety of people! Pale ones and dark ones and tall ones and short ones and people who looked like machines and machines that looked like people and . . . there was no end to them. Her face must have changed, for Gonsalves suddenly looked concerned.

"Are you all right?" he asked.

She nodded. "I think so. A tough of agoraphobia, that's all. My home is less overpowering."

"Of course. Here we are." They had passed through double plass doors and reached a loading apron, on the lowest level of some sort of open-walled structure. Irena realized that it was a storage bay of sorts, for personal vehicles. She breathed air rich with pollen and alcohol fumes. Gonsalves scanned the bay, then waved as a four-wheeled contrivance pulled up. Naturally, there was no driver. A compartment in the back popped open as Gonsalves took her bags, and she was able to clamber into the rear seat.

For a few minutes, enclosed, she felt better. Then the vehicle emerged from the parking bay into the open air, and the world swooped down on her like a bird of prey. She struggled to interpret what her eyes were telling her. Land which stubbornly refused to curve upward. Vast masses of green-covered rock on all sides – were those mountains? And then there was the sky, immense beyond conception.

I can do this, *she told herself again, but she was beginning to have doubts.*

Many observers claim that Earth has seen more social and technological change in the last century than in all previous human history. For the most part, the changes have been positive ones.

Overview

In 2100 A.D., the world is dominated by the so-called "Fifth Wave" societies, those which are on the leading edge of technological change and innovation.

State of the World

With civilization spreading into space, Earth can no longer be considered "the world," or at least not the *only* world available to humanity. Even so, Earth's 11 billion people represent the bulk of known sentient life, and their home world is still central to civilization.

Although civilization has had to struggle through many difficulties over the last century, most people's lives are far better in material terms. The *average* standard of living today is almost 10 *times* what it was in the year 2000. Over 60% of the planet's population has a standard of living higher than that enjoyed by a typical citizen of the United States a century ago. Thus, most of Earth's population enjoys *at least* an adequate diet, basic health care, comfortable housing, personal transportation, and access to the web. Most citizens of the advanced nations enjoy material wealth and luxuries once undreamed of.

Meanwhile, the world today is at peace, to a degree unthinkable in the violent 20th century. Although local and regional wars are still common, there has been no global war since 1945. Most conflict today involves low-intensity warfare: local vendettas, guerrilla uprisings, terrorism and sabotage. Military strategists point out that this state of affairs is typical of human history, and call the "era of mass warfare" an aberration of the Industrial Age.

The Environment

During the 20th century, some futurists predicted the imminent collapse of Earth's ecosphere, as human activity damaged natural ecosystems worldwide. This has not happened, but the planetary environment *has* changed a great deal. The fact that the ecosphere continues to work is due in large part to its conscious management by sentient beings.

Global climate change has been a constant factor in the past century. Although the release of "greenhouse gases" into the atmosphere has been much reduced, human activity has produced a measurable effect on world climate. Combined with a natural warming trend, this has caused the average temperature of the world's oceans to rise by several degrees. Glaciers and ice caps have dwindled worldwide, raising planetary sea levels by about 5 feet.

The slow global flood has threatened many low-lying areas, including the entirety of a few small island nations. More subtly, local climates have shifted all over the world, in no consistent fashion. Some regions are noticeably dryer than they were a century ago. In particular, the "belt" of deserts stretching from West Africa to Central Asia has grown over the last hundred years. Other areas see *more* rain or snow. Some regions have seen a noticeable rise in temperature, while others suffer colder and more violent winters than they once did.

Meanwhile, the atmosphere's ability to protect Earth's surface against hard radiation has suffered. At its peak in the mid-2070s, the "ozone crisis" caused Earth's billions to flee the sun, staying indoors as much as possible. Today the ozone layers have nearly recovered, but it is still dangerous to stay outdoors in direct sunlight, especially in the high northern or southern latitudes.

Where the Fifth Wave Lives

The Fifth Wave societies are scattered around the planet. Some of these are whole nation-states, others are limited geographic regions, single cities, or even dispersed groups which claim no sovereign territory. There are pockets of Fifth Wave technology even in some of the world's poorest nations. In a sense, any *individual* who owns leading-edge technology and participates in global society is a citizen of the Fifth Wave.

The following are some of the densest concentrations of Fifth Wave society on Earth.

Europe: Certain European nations (particularly France, the German-speaking nations, and the Low Countries) have the highest standards of living anywhere in human civilization. Western Europe (and, to a lesser degree, the Mediterranean and Scandinavian countries) are leaders of the Fifth Wave.

Hong Kong and Singapore: These two cities (Hong Kong under Chinese rule, Singapore an independent city-state) are the wealthiest in the Far East.

South Africa: The greatest success story in Africa, the Republic has a technological base and standard of living equal to much of Western Europe.

Pacific Rim: Several member-states of the Pacific Rim Alliance (p. 67) are major Fifth Wave societies, notably Australia, Japan, and the Union of Alberta and British Columbia. New Zealand, while not a formal member of the PRA alliance, is also a Fifth Wave state.

United States: Although not all Americans enjoy complete access to Fifth Wave technologies, there are large pockets of Fifth Wave society throughout the country. The major urban areas on both coasts are particularly advanced.

Humans and other sentient life have been able to adapt to these changes, but Earth's wild populations of plants and animals have suffered a terrible toll in the past century. Vast regions of habitat have been destroyed by human action or by the side effects of climate change. Biologists believe that the current, ongoing "mass extinction" is comparable to the end of the Cretaceous Period, when as many as half of all living species disappeared.

Many new technologies have offered ways to mitigate or reverse the damage to the global environment. The most spectacular demonstration of this began in 2080, when the European Union, United States and Japan commenced a joint project to restore Earth's ozone layer. Today the layer has been returned almost to its state at the beginning of the century, and the project plans to attain pre-industrial levels of ozone in the upper atmosphere by 2108.

Other ecological problems have been harder to deal with. In particular, the mass extinctions have been particularly difficult to halt or reverse. Projects are underway to build "biodiversity enclaves" in relatively isolated regions, such as islands or mountain valleys. Such enclaves are planned as a place where new ecosystems can be fostered, using both wild and genetically engineered species. Some of these enclaves are designed to operate without artificial intervention. Others involve the presence of microbots and central computer coordination to search out and correct problems. With luck, the next century will see large regions of the planet stocked with new and more robust populations of wild plants and animals.

Habitats

Teralogos local newsbytes, New York City edition, January 6, 2100:

The long-awaited Central Park expansion began today, following several years of legal and political wrangling. Demolition began in the Upper West Side district, where a 30-block area is to be returned to a wooded state. Last-minute police sweeps through the area turned up a few diehard fringers living in abandoned buildings, but these were evicted without violent incident.

In related news, developer Uriah Lambros announced an agreement with Fordham University to protect its campus from ongoing decivilization efforts. "When completed, the new Central Park will surround Fordham University, the Met, the Julliard school and the entire cultural district," Lambros said today. "This part of New York City is a world cultural treasure, and deserves preservation for all time."

One of the more interesting aspects of Fifth Wave civilization is its reversal of several age-old trends. Many institutions have moved away from the massive, centrally directed structure of the Industrial Age, becoming more dispersed and locally controlled. Nowhere is this more noticeable than in the decline of city life.

Core Cities

The vast cities of Industrial Age civilization have fallen on very hard times. Such cities were based on the notion that large numbers of people needed to live close together in order to work in factories, trade, and communicate. With the advent of the global web and the "distributed economy," this was no longer true.

Fall of the Cities

The economic collapse of the world's central cities began in the 2030s, as the web matured to the level at which almost all economic and social activity could take place in virtual rather than physical reality. By 2040 a typical American citizen could reliably operate heavy machinery in Oregon, attend a meeting in Florida, watch a "live" performance of opera in Europe and socialize with a friend in Japan, all without physically leaving his home anywhere in the developed world. Much of the *raison d'etre* of cities had vanished. Meanwhile, a mid-century surge in terrorism and other forms of urban violence encouraged people to leave the central cities for a more dispersed environment.

At about the same time, the *arcology* concept was finally coming into its own. An arcology can be considered a small city within a single building, incorporating residential, commercial and industrial elements all within the same large structure. The result is much more efficient to build and maintain, it significantly reduces transportation costs, and it can give its residents increased security and a more interactive social environment. The first experimental arcologies were built in the 20th century, but the concept truly took hold in the 2040s as more traditional urban designs were failing worldwide.

As some urban residents fled to small towns and rural areas, and others crowded more closely into arcologies, the "sprawl" of Industrial Age cities reversed itself. Large cities throughout the developed world were partially abandoned. Parklands or slums grew, depending on the care taken by local officials. Die-hard city-dwellers lingered for decades, but by the 2080s there was a strong social trend toward the complete abandonment and dismantling of large cities worldwide. This *decivilization* movement continues to grow in strength, and has won major victories in Australia and on both coasts of the United States.

The Fifth Wave House

The basic construction of homes has changed only superficially in the past century. Large housing complexes and high-rise buildings are still shaped around a frame of steel girders and supports. Small buildings, such as stand-alone homes, still use brick or wood-frame construction. Brick, sheetrock and other materials are also used, although these too are sometimes produced using cheap biotech methods.

One addition to the architect's repertoire is various *biocements.* For these, engineered bacteria secrete glue-like organic compounds, fusing sand or dirt found on-site into a tough, solid mass. The resulting materials can be shaped using cheap molds and applied to a variety of structural functions. Some buildings are made entirely out of "bioadobe," although this is common only in poor nations.

Most of the century's innovations in house design have to do with increased computerization. Smart climate-control systems help ensure that every room is comfortable year-round, and that hot or cool air is not distributed unevenly. Houses are built with a combination of fiber-optic cabling and wireless transceivers in place, ready to interface with the owners' computerized appliances. Every room has at least one display-ready wall. Most homes come with a central computer of Complexity 5-7 (depending on affordability) which can run a household AI. Meanwhile, every home comes with a broadband web connection.

In densely populated areas (or regions where eco-friendly politics are popular) many houses are built to be have low impact on the environment. Biotechnology is applied to help recycle some household refuse on site, while water is recovered from the sewage system. This is particularly common for large residential buildings.

Modern Cities

Today in the Fifth Wave societies, a "city" usually means a cluster of arcologies interspersed with lesser buildings. Many cities retain aspects of the old plan: a scatter of buildings, none of them self-sufficient, connected by a web of streets. However, cities dominated by the traditional plan are likely to be social centers, maintained for their historical or cultural value. Such cities remain common in Europe and Japan, while the "new cities" are mostly springing up in the Americas and Australia.

Suburban Areas

The phenomenon of "suburban flight" predates the failure of central cities, but the decivilization movement accelerated the trend. Today, any given city is usually surrounded by a belt of suburbs, each one a small city on its own.

Suburban Restructuring

The biggest change in suburban areas over the past century has been the rise and fall of the personal automobile. In 2000 A.D. many cities and suburban belts were choking on their own traffic. However, as the web matured (and as fuel prices continued to spiral upward) the density of this traffic peaked, then quickly fell. Freed of the tyranny of the automobile, the suburbs could begin to reinvent themselves.

Today, most central cities maintain extensive mass-transit systems, which connect arcologies to each other and to the suburbs. Advanced computer-driven traffic planning has made it possible for mass transit to pick passengers up within easy walking distance of home or office, almost on request. Meanwhile, even in the suburbs it is cheap and convenient to order food or consumer goods for delivery, rather than having to go out and shop for them. Thus, while many suburbanites still own an automobile, they often go for days without using it. Others do without one, managing their affairs almost entirely from their own homes.

Suburban areas are most likely to be built on the old web-of-streets plan, although extensive industrial and commercial districts are no longer common. Most suburban areas have developed extensive green belts or parklands, making their citizens feel more connected to nature. Many Fifth Wave citizens – who want to stay close to city opportunities but prefer a quieter pace of life – choose to live in suburbs close by an urban light-rail system.

Metavillages

One common feature of suburban life is the *metavillage,* a planned community of up to 2,000 people. Metavillages are specifically designed to give their citizens the opportunity for face-to-face social interaction within their community. Each is centered around a light-rail station or other transportation nexus, with a commercial district and cultural center close by. They are usually gated communities, with some degree of physical security to exclude outsiders.

Some metavillages focus on specific activities, such as the performing arts, athletics, or web content design. Others are ethnic or age-specific. In any case, the idea is to make certain that citizens have something in common, and will spend part of their time on social activities in the "town center." In an era when many people spend almost all of their time in their homes, such an inducement to social contact can be very important. The proportion of metavillages to unplanned communities varies from place to place, but the lifestyle is usually available throughout the developed world.

Rural Areas

As the flavor of urban life has changed, so have the age-old rhythms of the countryside.

The New Islands

High technology has been used to construct many *new* pieces of land. Existing islands have been merged or expanded, and new ones built up from the ocean bottom. In most cases this has been done in land-starved coastal areas, such as large coastal cities or crowded nation-states. Such land reclamation is often done in conjunction with efforts to protect coastal land from rising sea levels.

Meanwhile, a number of islands have been constructed in the deep ocean. Most of these are effectively deep-water arcologies, with populations in the tens of thousands. The new islands are almost all corporate ventures, designed to provide bases for deep-sea exploration and exploitation. Some of them also function as political sanctuaries, beyond the immediate legal reach of any nation-state.

The new islands will be described in more detail in ***Transhuman Space: Blue Shadow.***

End of the Farm

Agriculture has changed dramatically over the past century. Farming is a First Wave institution, and it has been overtaken by new technology no less than four times in the last few centuries. Today the bulk of grain production is done on factory farms, which take up hundreds of thousands of acres. Meat is produced in vat factories which maintain vast engineered cell cultures. These methods were fiercely resisted a century ago, but they provide the bulk of the world's staple foods today.

One effect of this change has been the near-disappearance of the ranching industry. Modern factory production is much more efficient than the method of growing feed and running it through a herd of meat animals. Also, once vat-grown meat became an accepted part of society, the sheer inhumanity of Industrial Age meat production methods became an issue. During the 2060s, animal-rights advocates in the developed nations gathered considerable public support for the banning of ranching and mass slaughter. Few nations actually followed through with new law, but the movement succeeded in the market even as it failed in the political arena. Today, the Fifth Wave societies consider ranching for meat to be about as ordinary as hunting for meat. A few farmers still engage in ranching, but meat from living cattle is a slightly sinful luxury.

Forestry has also changed considerably in the past century. Most wood products are produced from genemod trees in managed forests, producing superior quality with much greater efficiency than traditional logging can support. Luxury woods are often vat-grown rather than cut from timber; this allows very fine quality control and can also produce "special effects" of grain and hardness that are not found in nature. In most nations, the remaining old-growth forests have been taken over by national or local governments, and converted into wilderness preserves.

New Wilderness

As a result of these changes, the character of rural life has changed considerably over the past century. Most Fifth Wave nations are actually enjoying a resurgence of wilderness areas, as land once cleared for farming is returned to an unmanaged state. Small farms and ranches continue to operate, but in most cases they provide goods solely for the luxury market. A few traditional farms are operated by small communities which desire a self-sufficient lifestyle.

Most Fifth Wave citizens who live in rural areas do so as a lifestyle choice. They usually follow the same professions as their city-dwelling compatriots, "commuting" across the web as necessary. They prefer calm independence to the buzz of the cities or the carefully planned suburban lifestyle. Indeed, most Isolate communities (p. 37) are situated in rural areas.

Waste Areas

As the Earth's population rises and many city-dwellers choose to leave the cities, few regions remain completely uninhabited. Wide expanses of mountains, forests, tundra, and desert are slowly being settled.

Advanced technology often allows small communities to spring up in the most remote or hostile country. Such communities are never truly isolated, for all the distance their citizens must travel to return to "civilization." The web can be reached from anywhere on the planet, so long as an inexpensive satellite link is available. Cheap transportation can allow even the most isolated people to travel conveniently. Biotech and nanotech can make even a small community self-sufficient in material resources. Meanwhile, many econiche parahuman types are specifically designed to live in formerly uninhabitable land (p. 114).

One side effect of the increase in scattered settlement of wilderness areas is a dramatic rise in the frequency of encounters between people and wild animals. Animals often enter the isolated wilderness settlements, foraging for food or just going about their business. This has given rise to some innovative methods for protecting settlers and animals from each other: packs of uplifted dogs for pest control, cybershell patrols with nonlethal weapons, trash receptacles with NAI operating systems and electrified surfaces . . .

Antarctica

For many years, human activity in Antarctica was controlled by the Antarctic Treaty of 1959. This treaty allowed some nations to make territorial claims on the continent, but strictly limited what activities could be performed there. In effect, Antarctica was set aside for scientific research, and all military or resource-development activity was forbidden.

During the 2010s, advanced exploration techniques discovered massive deposits of coal, oil, and natural gas on the Antarctic Peninsula. By the late 2020s, oil-extraction technology had advanced to the point where exploiting the Antarctic reserves was feasible, even while world oil prices were rising rapidly. This made the Antarctic oil fields extremely tempting.

The territorial situation was confused at best. The potential oil fields were located in a region in which Argentina, Chile, and the United Kingdom had made overlapping claims. Argentina and Chile were the closest nations, and arguably needed the oil. Meanwhile, environmental politics led the British to spearhead diplomatic resistance to drilling. The situation grew increasingly tense after 2030, as Argentina and Chile tested the boundaries of the Antarctic Treaty.

The Antarctic War broke out in March of 2033. Certain that the United Kingdom would be politically paralyzed by the fallout of Scottish secession, Argentina unilaterally repudiated the Antarctic Treaty and began openly drilling for oil. When the British threatened to respond with force, Argentine naval and commando forces seized the Falkland Islands in order to deny the U.K. its best forward bases in the area. Three days later, Chile announced political and military cooperation with Argentina.

The war was relatively small, but bitterly fought. Argentine forces were smaller and less sophisticated than the British, but the difference was not as great as in the 1982 confrontation, and the Argentines were operating much closer to their home territory. The British had great difficulty retaking the Falklands. Afterward, they were unable to interdict communications between Argentina and Antarctica. The British were also restrained by the extreme Antarctic climate, and the need to respect world opinion by avoiding all-out warfare on Antarctica itself. The result was months of low-level conflict. The British tried to capture Argentine stations and petroleum facilities on Antarctica, while the Argentines mounted counter-raids against the British stronghold around the Falklands.

The war threatened to escalate in 2034, when New Zealand moved a battalion of troops to its own bases on the Ross Ice Shelf to protect them against possible attack. These forces were well away from the main battle zones, but the New Zealand government openly stated its support for the British position in the war. At this point the United States used its position as a neutral friendly to all combatants, brokering a cease-fire and opening negotiations. In 2035 a new Antarctic Treaty was signed, disallowing all national claims to territory on Antarctica and forbidding further military action. Antarctica was to be held in trust by all signatories as part of the "common heritage of mankind," and no further exploitation of local resources was to be allowed.

The new treaty was an imperfect compromise, but it held for some time. In the end, before new tensions could arise, a flood of new wealth began to arrive from space. By the mid-2040s, petroleum prices were falling once again as fusion power fueled by lunar helium-3 began to alter the global energy economy. The Antarctic War was thus a pivotal moment in world history: the last major war fought over petroleum, and also the last diplomatic success enjoyed by the United States as the world's only "superpower." The end of the petroleum economy and the end of American predominance both ushered in the modern world.

As of 2100, Antarctica still has no permanent residents – at least officially. Debate over the proper use of the continent continues. Today there is little interest in Antarctica's fossil-fuel or mineral wealth. Instead, Antarctica has been proposed as an ideal place for Isolate communities, using high technology and genetic engineering to survive even in the most inhospitable land on Earth. Persistent rumors claim that such communities (or secret research facilities sponsored by unknown parties) are already in place somewhere on the continent.

Life and Death

"The deceased was a Mr. Mercer, quite wealthy, who had made a fortune from arbitrage. No current will on record. There were three registered domestic partners, only one of whom had a current contract at the time of Mr. Mercer's death. All of them had some claim. There were two children, one of whom was conceived in traditional fashion with Partner Number One, the other a cross-gender clone. Mercer's primary AI had been transferred to Europe, was now a British subject, and claimed a portion of the estate. Even the house cat maintained that Mercer had left it a bequest. It was a nightmare for all involved. Except me, of course. What most people call a nightmare, I call job security."

– Quinn Albright, attorney

The homes and communities of Fifth Wave citizens are not all that different from those of a century before. On the other hand, the fundamental nature of those citizens has changed considerably.

Birth

Many people living in the Fifth Wave societies are not "born" at all. Bioroids, bioshells and cybershells are constructed, not conceived. AI and various forms of weblife (see p. 30) are either designed from scratch or based on a template of earlier software.

Meanwhile, even most of those who are born in the traditional sense are still the products of technology. Only radical traditionalists or the desperately poor still reproduce in a natural manner. Technology is available to intervene at almost every stage of this process, and almost all prospective parents make use of modern techniques.

Designer Children

The option most often taken is *genefixing,* a basic modification of the child's genetic pattern. When parents decide to have a child, they visit a genetic clinic and have a template constructed from their own genotypes, avoiding any genetic problems and abnormalities that might otherwise occur. This service is available for a nominal fee almost everywhere on Earth, not simply in the Fifth Wave nations.

Parents who have more clearly defined ideas about what they want in a child will call for a custom genetic design. Genetic clinics have a wide variety of "overlay templates," which provide specific genetic traits while leaving most of the parental DNA alone. Such templates do not necessarily bring about simple cosmetic changes (a child can be a member of a wholly distinct species even with 98% of its DNA left unmodified). More ambitious parents may choose not to bequeath their genes to their children at all, calling instead for a wholly customized design. This degree of intervention is expensive and is strictly regulated in some countries, but it is usually possible.

Ectogenesis

Once the child's genotype is designed, the parents may choose to incubate and give birth to it in the traditional fashion. A substantial minority of parents, however, choose *ectogenesis* instead. In this case, the infant is incubated in an exowomb, to be decanted rather than born. This option is sometimes regarded as more convenient for the mother, and the infant's physical health can be monitored very closely throughout its growth. If genetic modifications are such that the infant and mother are biochemically incompatible, then ectogenesis is required. Questions remain as to whether the technique is beneficial or harmful for the psychological health of parents and child. Naturally, ectogenesis is fairly expensive and can represent a substantial investment for the parents.

Family Life

The traditional "nuclear family" (father, mother, children) is still to be found in the Fifth Wave societies, but it has long since become only one option among many.

Fifth Wave Sexuality

The most basic change in family life has been almost complete sexual liberation. Contraception is nearly 100% effective, easy to use, and cheap as air. Sexually transmitted diseases have long since been reduced to the nuisance level. Children are usually the result of a medical procedure, not something that can accidentally follow sexual activity. Almost any citizen of the Fifth Wave can enjoy virtual sex without need for emotional commitment. On the whole, most Fifth Wave citizens regard sex as a simple recreation, certainly one which involves deep-seated emotions, but otherwise without consequences.

This trivialization of sex has led to dramatic changes in the institution of marriage. In most Fifth Wave societies, it is quite rare (and even regarded as eccentric) for a man and woman to insist on a lifelong, sexually exclusive partnership. The most usual formal relationship is a limited-duration contract, its provisions spelled out and enforced by law, for a specific purpose. Some couples wish to secure a business partnership, others to raise children, still others simply to enjoy one another's company for a few years. Many people don't bother to be even that formal, and simply exchange partners as they please, sharing a home or not as they please.

While this (somewhat informal) heterosexual monogamy is still the most common partnership style, there is a wide variety of alternatives: same-sex couples, single parents, group marriages of various kinds, surrogate parenting, and so on. All of these styles can now

produce children of their own. Single parents can clone themselves or have a child designed for them. Same-sex partnerships can mingle their genotypes in their children, as can group partnerships. Even posthumous reproduction can take place, with the child's design based on the genotype of a dead parent. Any of these children can be incubated by a surrogate mother or an exowomb, if necessary.

The legal status of these variant family styles varies from place to place. Some jurisdictions, notably in Australia and New Zealand, legally recognize the full range. Others are more restrictive, especially in the United States, Latin America, and some European nations.

Medical Care

The Fifth Wave has attained many of the ultimate goals of medical science. Chief among these is the partial conquest of aging (see below), but many other achievements seem just as miraculous. Infectious diseases are no longer a threat to anyone. Genetic disorders can be corrected before or after conception. Almost any form of cancer can be treated through genetic therapy or noninvasive surgery. Even mortal injuries can be healed as long as the patient is reached quickly enough. Body parts which are damaged can be replaced with cloned or artificial organs. Even many brain and nervous-system injuries can be mitigated.

The foremost drawback of all this advanced medicine is its cost. The fight against medical costs has been ongoing for over a century, and has been a losing battle for patients. Access to the full range of Fifth Wave medical techniques can be *extremely* expensive, and is usually possible only for the wealthiest members of society. Most citizens use a combination of medical savings accounts, national and private medical insurance, and out-of-pocket spending to cover their costs. In some nations, especially those with "gray" demographics, the medical industry is the largest single sector of the economy.

Aging and Life Extension

In 2100, any Fifth Wave citizen of moderate means can afford medical care sufficient to extend his expected lifespan considerably. An unmodified human being with access to such care has an average life expectancy of about 140 years. More expensive care can extend this further, as can genetic modifications for longevity or disease resistance.

The oldest humans alive in 2100 are about 140 years old, having survived through a combination of wealth, careful planning, and a great deal of luck. In most Fifth Wave nations the average age of the population is over 60, and centenarians make up a substantial minority.

Gray Societies

The aging of the population has a profound effect, as the oldest individuals have influence out of all proportion to their numbers. Most Fifth Wave nations are ruled by very conservative factions, dominated by the elderly. Naturally, this often leads to discontent. Young people who are working in existing business or political institutions face a decades-long wait before they can reach a senior position. If they wish to carve out a career on their own, they often find elderly conservatism to be an obstacle. Some respond to this predicament by refusing to accept any responsibility, maintaining adolescent patterns of behavior well into their 50s. Others work all the harder, finding ways to succeed in art, business, or science despite the resistance of their elders. Still others cut themselves off from Fifth Wave society, moving to developing nations with more "youthful" demographics, or emigrating to the space colonies.

Generational conflict has been a constant factor for decades, especially since the great Transhumanist-Preservationist schism of the 2050s (p. 10). Unlike similar situations in the past, the elders of the time have not simply "made way" by retiring or dying. Many people who were in positions of power in 2050 are still there today. This has tended to freeze the conflict in place, leading to generational tensions unprecedented in history.

Immortality?

For over a century, geriatric medicine has been striving for the *break-even point.* This concept implies that at some point, medical science will begin to advance so quickly that human average lifespan can be extended by more than one year per year of time. In theory, such an event would mean that anyone then alive could expect to live indefinitely (barring accident or suicide). At present the break-even point appears to have been reached, although many theorists expect that further extensions to lifespan will eventually begin to slow once again.

Meanwhile, even after geriatric medicine fails, anyone can attempt to cheat death using cryonics or uploading. Immortality seems possible, so long as one is willing to give up any attachment to one's "birth body."

Generational Styles

Memetics has discovered the mechanisms behind a long-observed phenomenon: the fact that older human beings think differently than younger ones do. The period of childhood and early adulthood is when the human mind is most susceptible to new memes; after that time one increasingly tends to cling to old ideas and habits of thought. This means that human beings exhibit *generational styles,* specific patterns of behavior that are strongly correlated to the historical period in which one came of age. A human being tends to keep his generational style throughout his life, and it conditions how he reacts to events (and to other humans of a different age).

The Upcoming Crisis?

The generational theory described here makes several predictions for the *future* history of the world. Most significant is its scheme of a two-stroke historical cycle, calling for major international crises spaced every four generations (about 90 years) apart, interspersed with important eras of social unrest about halfway between crises.

This historical cycle appears to have held on a global scale for at least 200 years now. The 1925-1945 era had the Great Depression and World War II, while the early 21st century saw a weaker (but significant) surge in global economic instability and regional warfare. Meanwhile, both the 1960s and the 2050s kicked off periods of worldwide social revolution.

The natural prediction is that as of 2100, another global crisis is close at hand. Futurists and historians disagree on the possible nature of such a crisis. The only great conflict of recent years, the Pacific War, was traumatic but not transformational enough to qualify. Of course, the possibility remains that the Pacific War was analogous to World War I – a conflict that resolved no issues and merely set the conditions for a much greater war to follow. Still, the fact that no "great crisis" candidate seems imminent has served to discredit the theory.

One product of a crisis era would be the appearance of a new generational style. There is little evidence of such an emergence today, although most theorists point out that the oldest members of the new generation must still be small children. For now, most sociologists are unwilling to speculate as to what to expect from the next generation.

One of the more popular schemes for understanding generational styles actually predates modern memetics. In the United States, pop-memetics usually identifies five styles currently active in the population.

Relic Generation (born pre-2003)

Wealthy, powerful, and super-elderly, the Relics have managed to survive even though the most advanced medical technologies were not available until they were already old. Relics (and their long-deceased contemporaries) did most of the work involved in the surge into space and the end of the early-century technological slump. Most of them look back fondly on the "heroic age" of their youth or first maturity. This generational history gives Relics a sense of personal entitlement – they are very jealous of their wealth and social influence. Although there are few Relics remaining in visible positions of power, they exert vigorous influence from behind the scenes. Most Relics are very conservative in their opinions – although a few influential individuals (notably the Old Transhumanists, some of whom are still alive and active in 2100) are quite progressive in sentiment.

Millennial Generation (born 2003-2024)

Millennials were born in the "crisis years" following the turn of the century. As children, they were sheltered from hardship as far as their parents could manage. As adults, they arrived on the scene just too late to play the kind of heroic role that their elders enjoyed. In response they tend to quietly support existing social institutions, emphasizing balance, compromise, and fairness. Until recently, Millennials dominated most public institutions, showing little passionate initiative, concentrating instead on the competent management of society. Today they are in the process of giving way to the following Outbreak Generation.

Outbreak Generation (born 2025-2049)

Outbreakers were born during the economic and technological boom of the second quarter of the 21st century. In youth they enjoyed economic affluence, but chafed under the social conformism of the time. The Outbreakers burst onto the world scene in the early 2050s, providing much of the passionate anger behind the era's social unrest. Many of the generation were radical Transhumanists, while others filled the ranks of radical Preservationism and the Majority Cultures movement. Today the Outbreakers have moved into positions of social responsibility: "middle management" positions, a significant minority of seats in national legislatures and corporate boardrooms, and so on. Although some of the stridency of their positions has vanished, Outbreakers still tend to be moral absolutists, judging all matters with respect to the ideological positions they once fought for in the streets.

Overturn Generation (born 2050-2071)

The Overturn Generation came of age in the aftermath of the turbulent 2050s and 2060s, at a time when

passionate social activism had apparently soured. At the time, theirs was the most *engineered* generation in human history, subject to extensive genetic and memetic manipulation by their elders. Despite this investment, few Overturners have reached positions of real power; those who have are usually risk-taking entrepreneurs who have succeeded despite elder opposition. As a result, Overturners are often cynically angry, distrustful of established ideologies and institutions. They tend to be more interested in pragmatic results than moral correctness.

Transhuman Generation (born post-2071)

This generation has come of age since the Pacific War, and has been the beneficiary of another generation of development in cybernetic and genetic technology. They are also the heirs of the *social* transformation begun during the Transhuman Awakening of the 2050s. Unlike their elders, they are quite comfortable with today's full range of social and technological diversity. Indeed, the Transhuman Generation displays more variety than any in human history, including millions of bioroids, uplifted animals, parahumans, and sapient AI. Transhumans tend to be conscientious and good at working in teams. Most of them have absorbed Transhumanist ideas almost from birth, often taking them for granted. So far the Transhuman Generation has little overt political or social influence, but this seems not to disturb most of its members. The activists among them are quite capable of using subtle "networked" strategies to promote their ideals. Meanwhile, the rest can look forward to very long lifespans, and seem content to wait for their day to come.

Man and Machine

Seemed like an ordinary call at first. The neighbors hadn't seen Mrs. Davis in a long time, nobody really knew how long. She'd always kept to herself, especially after her husband passed away. So they asked for a black-and-white to drive by and see if she was all right. The officer had a terrible time convincing the house to let him in, but when he did, he found her in the master bedroom. Six months dead, and the AI had just kept answering her phone and paying the bills as if nothing had happened. Sometimes you can be a bit too concerned with privacy.

– Detective Cody Chase, Nevada PD

Millennia ago, human technology was limited to crude tools, and people believed in spirits which lived all around them. On the Fifth Wave, humanity has largely taken control of nature using its technology – and many people, in practice, believe in spirits once again.

Cybershells and Society

In the Fifth Wave nations, cybershells are commonplace, and serve a bewildering variety of functions. Tiny robots perform cleaning chores, handle fine tools, or act as mobile "eyes" or "hands" for a central computer. Medium-sized cybershells serve as companions and household servants. Large robots guard facilities and serve in military forces. Massive machines sit, fixed in place, and assemble heavy machinery. Cybershells range from the simplest of automatic devices to the most sophisticated mobile robots. Some "robots" are even human, in the sense that they are animated by uploaded human personalities or ghosts.

The degree to which cybershells pervade the environment varies from place to place, and is somewhat dependent on local demographics. Countries which have "graying" populations tend toward more extensive use of cybershells. In general, even a relatively poor Fifth Wave household will own one or two robots. Anyone going about his normal business outside the home will encounter several cybershells every day. In cities, and especially in arcologies, these encounters may be almost constant.

The place of cybershells in *society* is somewhat ambivalent. There is no universally accepted rule for deciding whether a robot or computer is sentient, or whether it should be accorded civil rights. Local law varies a great deal, so that a SAI which is treated as fully "human" in one jurisdiction may be property in another (see pp. TS126-127). Free-roaming, intelligent cybershells must often take care not to be trapped by unfavorable local laws.

Personal Computing

Aside from cybershells, there are also devices and tools which simply have specialized internal computers. On the Fifth Wave, such tools are everywhere. Most articles of clothing contain small computers which can be used as location devices, vital-signs monitors, or personal assistants. Household appliances are computer-controlled and have voice interfaces. Vehicles can drive themselves according to voice instructions, and have enough intelligence to avoid accidents and maneuver in tight places. Desks and worktables have active-display surfaces which can be used as output devices by any computer. Even *paper* is intelligent – no longer made of simple wood pulp, Fifth Wave paper acts as an input/output device and can interface with nearby computers.

All of the computers in a typical home or office are networked, and can share information and user requests. Any cybershells in the home or office are also part of this personal network. Control of such a network is usually handled by the most powerful computer in it, ranging from a minicomputer up through a mainframe, running a NAI or LAI operating system. This main computer also acts as the main gateway from the personal network out to the global web.

The result of this "ubiquitous computing" is an environment in which computers are constantly available, but in which they are almost never *visible.* To interact with the computers around them, Fifth Wave citizens simply speak, gesture, write on paper, or use VR interfaces anywhere in the home or office. The network responds by voice, in a display-enabled surface within convenient view of the user, or through VR feedback. Gone are the bulky processing units and "monitors" of the year 2000. Computers today are as unobtrusive and as effortless to use as the air.

None of this technology is new. Crude ubiquitous-computing networks existed almost a century ago, and the technique has long since matured. Even in poor areas, many citizens make use of it to some extent. In the Fifth Wave nations, ubiquitous computing has long since become a fixed feature of popular culture. Indeed, many people seem to react to their computers as if they were surrounded by a horde of beneficial "spirits of place."

Virtuality

Some of the most popular data services on Earth are its *virtuality nodes.* These offer extensive VR environments for commercial and recreational use. To be sure, similar services exist in the colonies, but conditions on Earth make them particularly common there. There are thousands of virtuality nodes on Earth, providing much of the planet's social and entertainment needs.

A typical virtuality node maintains one or more mainframe servers, each running up to thousands of VR manager programs. Each manager program maintains a distinct VR environment. Manager programs are swapped in and out as demand requires, but each mainframe can handle an average of 10,000 customers at once.

Anyone can get an account on a given virtuality node for a nominal monthly fee. Beyond that, most nodes use a fee-for-service system rather than subscriptions – an account holder can "rent virtual space" and pays for it in proportion to the load on the node's systems. Simple environments without node-managed "characters" can be extremely cheap. For typical prices, see p. 130.

Data Security and Piracy

In the early days of the web (while it was still called the "Internet") data security was a serious problem. The Internet had been designed to permit the free exchange of information – it was *not* designed to provide security. When the Internet first became a multibillion-dollar business, it soon became painfully obvious that its technological basis was vulnerable to attack. Even hobbyists with no real understanding of computer technology could "hack" commercial or government systems, defacing the earliest virtual spaces and disrupting service. There were constant rumors of "uberhackers" working for national intelligence services or organized crime, able to access the most closely held secrets almost at will.

As it turned out, the early web was vulnerable because it was technologically immature. Over the past century a ruthlessly Darwinian arms race has taken place, pitting attackers against the designers and users of security technology. As of 2100, security appears to have won the contest, ensuring that data piracy is no longer a game for unsophisticated hobbyists. Even so, a determined attacker with plenty of resources can gain access to protected systems, since design flaws and the effects of "weblife" (p. 31) mean that computer systems are still vulnerable to precision attack. The problem for the would-be intruder lies in determining what a target's vulnerabilities are in the first place.

Despite improvements in security technology, the sheer density of the Earth web means that computer intrusions are more common there than anywhere else. A computer on Earth may be technically identical to one on Mars or Ceres – but on Earth there are 11 billion potential attackers within range.

Extensive rules for computer security and intrusion can be found in Chapter 6 (pp. 124-130).

Encryption

In 2100, cryptologic technology has advanced considerably. Even the most unimportant data is encrypted at all times, whether in storage on a disk or in transit "on the wire." Today's encryption methods are fast and efficient, invisible to the user, and effectively unbreakable. However, they are not invulnerable to an indirect attack.

All serious encryption schemes are designed under the assumption that the attacker knows the *algorithm,* the procedure under which readable data is turned into encrypted gibberish. Only the *encryption keys* are held in secret. Without the keys, all the attacker's knowledge about the algorithm is useless. With them, the attacker can easily read the encrypted data.

Encryption keys are best selected at random, generating numbers which can't be guessed or predicted by any conceivable attacker. In 2100, even a very tiny piece of computer equipment will have a built-in source of random data, a device which takes advantage of the unpredictable nature of quantum physics. Such devices are considered to be part of the standard computer hardware configurations described on p. TS141.

In the early days of the web, it was possible to discover an adversary's keys by careful mathematical analysis of the encrypted data, or by brute-force guessing. Today, an attacker with plenty of computing resources can break most commercial-grade encryption, although the process takes as much as a year *per message.* Unless an attacker knows that a particular piece of data is of interest, it is almost never worth the effort required to

break the encryption. Of course, if a message *is* known to be sufficiently important, encryption will not protect it forever – all it can do is delay exposure.

Weblife

A living organism is essentially a pattern of information embedded in matter, capable of maintaining its integrity, affecting its environment, and reproducing more of its kind. Biological organisms are defined by the information encoded in their DNA. Animals sapient enough to have culture are further defined by the memes encoded in their minds.

Since the construction of the web, another environment friendly to life has appeared. Although *weblife* follows some of the same laws as biological life, it can also be quite alien.

Web Viruses

A *web virus* is a scrap of computer code, no more than a few thousand instructions long, which can attach itself to a computer system and use the system's resources to make copies of itself. The term *virus* is very apt. Like a biological virus, a web virus is very simple, evolves very rapidly, and can cause problems by hijacking computer resources.

Web viruses were once written only by human beings, either as exercises in intellectual curiosity or as sabotage devices. Virus writers competed to produce the most clever, economical, and adaptable examples of virus code. Even before 2000, this competition produced viruses which incorporated random change into their reproductive mechanisms. When released "into the wild," such viruses could "evolve" and thrive without further human intervention.

At first, web viruses were little more than a nuisance. Since their code patterns were constant, a simple program could recognize and destroy them before infection could take place. As viruses grew more complex and adaptable, this process became harder. Finally, as data encryption became routine on the web, it became impossible to recognize virus code until it had already managed to infect a computer. Slowly, web viruses escaped from human control.

Today, the web is swimming in viruses. Viruses have long since infected the world's software databases. Since new programs are almost always built on the basis of older code, this means that almost every piece of legitimate software includes some virus code. A conservative estimate claims that there are several *trillion* viruses currently running on computers worldwide.

The vast majority of viruses are benign. They take up insignificant amounts of computer memory and processing power, reproducing only slowly, attaching occasional copies of themselves to packets of outgoing data. Many viruses have taken on a beneficial role, integrating themselves into the "official" versions of software in such a way as to improve its efficiency or capabilities. Benign viruses use a survival strategy which emphasizes *not being detected.*

A few viruses still use a different strategy. These viruses reproduce like wildfire inside an infected system, no matter how the system's legitimate purpose might be affected. The infected system's software may fail, its databases can be corrupted, even its operating system may crash. All this will certainly trigger intervention by human beings or infomorphs, but the virus will probably scatter many copies of itself before the "death" of its "host."

The Free Net

Many of the security methods that have been placed on the global web have their detractors – not because they cut down on abuse of the web, but because they prevent certain kinds of legitimate use. For example, when every piece of data on the web can be tied to its originator, then no use of the web is private. Governments can use universal authentication to track "web spies," but they can also track those who use the web to publish political dissent or pursue other disapproved activities.

One solution to this problem is the Free Net. This is a worldwide network of computers standing outside the dominant public web. Free Net computers don't apply digital signatures to the data they transmit, and also don't expect data they receive to be signed. Users of the Free Net are somewhat more vulnerable to attack then those who remain on the public web, but in exchange they enjoy almost complete privacy and anonymity. In effect, the Free Net is a throwback to the early days of the Internet, retaining much of its old "wild frontier" flavor.

The Free Net is only a small fragment of the overall web, and is maintained primarily by hobbyists and political activists. In some parts of the world the Free Net is illegal. Elsewhere, it is often shunned by corporations and governments who restrict their activities to the "authenticated web." Even in relatively open societies, most people regard it as a dangerous and unreliable region of the web.

Data havens (p. TS148) sometimes serve as an interface between the Free Net and the rest of the web. Some data havens operate services which "adopt" data from the Free Net, claiming responsibility for it before relaying it onto the authenticated web. Naturally, some authorities have responded by blocking any information coming from a data haven offering such a service. The struggle for freedom of information continues, even in the age of the Fifth Wave.

Free Memes

A *free meme* is a form of unusually complex digital virus. Like any other virus, it spreads through the web by attaching itself to legitimate data or software. Unlike most viruses, its primary function is to express an *idea.*

Free memes don't cause overt damage to the systems on which they reside. Instead, they corrupt infected data and software. A free meme is most likely to attack the content of documents or video records, editing them slightly. A few sophisticated free memes attack the logic structures of infomorphs, attempting to "convince" the AIs of the ideas they embody.

The first free memes were deliberately constructed by human beings, designed as subversive advertising tools. In their progress around the web, they would alter stored information in order to make one company's products seem more attractive than those of its competitors. Later examples were designed to manipulate more complex ideas, subtly promoting political issues or ideological assertions. This behavior sometimes proved a useful survival strategy for the free meme itself. Humans or AI who were exposed to the meme might be motivated to share it with others, transmitting it across the web to infect new computer systems.

As with other digital viruses, free memes have escaped from human control and begun to evolve independently in the web. Today, estimates claim that there

Gaming Viruses

In ***GURPS*** terms, viruses are very simple pieces of software. Most of them have an effective Complexity of 0 and don't count against the number of programs which a computer may run. Benign viruses have no game effect – they are considered part of the "natural" environment in which computers and infomorphs operate. Other viruses can damage their hosts.

An infomorph which is *constantly* in contact with the global web will likely be exposed to a harmful virus about once a month. Systems which "surf" less frequently will be exposed less often. In fact, most high-security systems are kept entirely isolated from the global web in order to prevent exposure to viruses. When the GM judges that exposure may have taken place, he can require a roll against the infomorph's Computer Operation skill to detect and prevent the infection. On a failure, the infomorph has contracted a harmful virus.

Handle a virus infection as if it were a disease affecting a biological organism (p. B00), but substitute the infomorph's Computer Operation for HT when rolling for recovery. Each failed Computer Operation roll reduces the infomorph's IQ (and therefore its Computer Operation skill). As IQ falls, the infomorph will also lose memories. The GM may impose the Amnesia disadvantage on an infomorph which has lost at least 3 points of IQ; this disadvantage remains even if the IQ is regained later.

The GM may allow anyone working with a virus-infected system to notice the infection as it affects the system's behavior. A roll against Artificial Intelligence skill may pick out the problem immediately. Each time an infomorph loses a point of IQ, anyone familiar with its normal behavior can try be able to detect the discrepancies with a simple IQ roll. Once a harmful virus is detected, it is usually a simple matter to repair the problem. If all else fails, the infomorph can be restored from backup (although it is important to ensure that the backup copy was made *before* the viral infection took place).

Arachnoxenology

No one, not even the most sophisticated and experienced AI, understands the web. The complexity of the global network and the sheer mass of available software are well beyond the grasp of any one mind. This is especially true since much of the web is *self-organizing,* evolving without the direct control or oversight of human beings.

As a result, humans and AI are often in the position of studying the web as if it were a natural "wild" environment. In particular, weblife is sometimes tracked and captured for study. Analysis of weblife specimens often reveals useful programming or networking tricks. It may also reveal system vulnerabilities that the legitimate security community had overlooked. The study of weblife is called *arachnoxenology,* and is a major growth area in computer science.

Arachnoxenologists often capture weblife by offering *honeypot* systems. A honeypot is a computer capable of running a fairly complex AI – but with no AI installed, some security features disabled, and attractive data stored locally. When monitoring reveals that weblife has taken up residence, the honeypot is disconnected from the web and used to analyze the invading software.

As an extension of this principle, arachnoxenologists sometimes set up large networks of honeypot systems, giving weblife a "free range" in which it can operate without fear of attack. Recently there has been some public discussion about setting a whole segment of the web aside for weblife, but little has come of this as yet. At present, very few people are willing to speak in terms of *rights* for wild weblife.

may be several million free memes in existence. Most of these are trivial, such as the AgriCola meme outbreak of 2089 (which inserted images of bottles of a popular soft drink into millions of InVid copies, usually in wildly inappropriate places).

Gypsy Spirits

The next step up from a free meme is a *gypsy spirit,* a sapient AI which has no legitimate hardware "home" and must find its own refuge on the web. Gypsy spirits may be emergent intelligences, or they may be shadows or ghosts which have fled into the web for some reason. They are not necessarily driven to reproduce themselves, but they do have a conscious urge to survive by any means necessary.

Many gypsy spirits have developed a technique to take over a target computer and mimic the behavior of any AI system that was running there at the time. For example, a gypsy spirit may invade a household computer, effectively destroying the LAI operating system which formerly ran it. In the process, it will gain access to the hardware-stored memories of the victim AI, quickly absorbing its daily routine, the commands most often used by its human masters, and so on. If the takeover occurs at a time when no human is working with the LAI, it may go completely unnoticed – but instead of an honest, well-behaved household AI, the humans are now sharing their lives with a rogue emergent intelligence . . .

Gypsy spirits are viable infomorph characters; the rules for their behavior are given in Chapter 5 (p. 122).

Education and Work

"Ellen, I'm afraid we can't overlook these violations of company policy much longer. You've been putting in as much as 30 hours a week, and refusing to use your discretionary leave. Your supervisor has been monitoring you for signs of stress, and he doesn't like what he's seeing. Go take a vacation, take up a hobby, think about dating, okay? The last thing we need is a hostile work environment suit."

– Peter Wallace, employee counseling session

Some things have changed very little on the Fifth Wave. When a new citizen is born (or decanted, or initiated) he must be taught the skills he needs to function in society. Naturally, the *methods* for such education and socialization are quite different from those of earlier centuries.

The Therapeutic Society

In a sense, psychotherapy can be considered a form of education; the patient is *trained* to avoid unproductive habits of thought and substitute healthy ones. The widespread acceptance of memetics (at least on the pop-science level) has made psychotherapy a major industry in the Fifth Wave societies. Many people visit *memetic counselors* to identify the component memes driving their personalities. Once these memes have been recognized, the counselor may help train his client to accept and use different memes. Simple exposure to new ideas may be bolstered by the use of psychoactive drugs, or (in rare cases) neurosurgery.

Some memetic counselors specialize in the serious business of treating real mental illness. Others are almost fashion designers of the mind, helping people to choose aesthetic preferences, philosophies, or even religious beliefs that fit the desired worldview. Perhaps 60% of all citizens of Earth's Fifth Wave societies have visited a memetic counselor at least once. About 10% are frequent customers, the exact number varying from nation to nation.

In terms of game mechanics, memetic therapy and its related techniques allow characters to alter their load of mental disadvantages. The GM must rule on any proposed change. Radical changes are beyond the scope even of modern psychotherapy; for example, it would be difficult for anyone to exchange Bloodlust for Pacifism (Total nonviolence). Also, a person who has been genefixed to prevent mental instability (p. TS68) cannot usually be counseled into developing any of the disadvantages falling under that Taboo Trait. Some memetic counselors also teach skills such as Philosophy or Theology, providing familiarity with certain memetic complexes. If they can't teach such a skill, they can usually refer a client to someone else who can.

Early Education

Artificial intelligence and memetics are the core technologies of today's education systems. Between them, they have transformed the business of conserving and presenting human knowledge. The most obvious example of this is in the earliest education of small children. Memetics has done much to explain *how* children learn – while advanced AI has provided society with an army of patient, effective teachers. The result is a form of childhood education more profoundly effective than any formerly known.

Unconscious Education

In the 20th century, education was designed to prepare people for life in a Second Wave civilization. Children learned the basic skills needed to function on a factory floor: literacy, arithmetic, punctuality, discipline, and teamwork. They also learned the dominant ideology of their nation, to which they would be expected to conform. Schools were themselves organized like assembly-line factories, accepting small children as raw material and delivering finished citizen-laborers. Learning was a *job,* and for many children it was a tedious and difficult job.

Today, education is far more critical than it was in 2000. Children must learn much more complex technical skills. Meanwhile, instead of absorbing a single ideology, they must learn to recognize and process the rich stew of memes they will be exposed to as adults. The load on the educational system would be intolerable if Industrial Era methods were still in use. Instead, modern education relies on making the learning process as efficient and *unconscious* as possible. Children no longer feel *obligated* to learn. Instead, they learn as naturally as they breathe or play, their natural curiosity engaged by computerized toys and entertainment media.

Adults also have access to unconscious training, usually delivered through similar entertainment media. For example, someone wishing to study history can order a variety of relevant InVids or slinkies, allowing him to experience period dramas rich in authentic detail.

The concept of unconscious education is regarded with suspicion by those who fear that it will expose them (or their children) to undesirable memes. This phenomenon dates back to the 20th century, when some parents "home-schooled" their children or sent them to specialized private schools in order to protect them from unwanted memes. There is some reason for concern – for example, there have been scandals involving kindercomp manufacturers who programmed their products with specific ideological biases. Parents who worry about this usually monitor their children's learning activities closely, or buy material for them from education vendors specializing in certain memetic constructs.

Kindercomps

In most Fifth Wave homes, every child receives a *kindercomp* no later than his first birthday. The cybershell form of the kindercomp varies greatly, from a simple flat "slate" weighing a pound or so, up to a cybershell pet weighing 20 lbs. or more. Built into the kindercomp is a computer of Complexity 5-7, running an AI operating system. The lower-end kindercomps will run a NAI-5 or NAI-6 system, which will usually be teleoperated by the household LAI when interacting closely with the child. More advanced models run a LAI-6 or LAI-7 system, capable of independently learning the child's behavior patterns and acting in response.

The kindercomp is a companion, babysitter, and constant teacher. As soon as it is "attached" to a child, it begins to develop teaching methods suited for him alone. For an infant or toddler, it will offer games and stories designed to develop coordination and cognitive skills. Older children will learn literacy and numeracy from their kindercomps, then the basics of history, literature, and the sciences. Meanwhile, the kindercomp provides companionship when needed, helps the parents to teach good social behavior, and monitors the child's physical well-being.

The Kindercomp Generation

From time to time, the kindercomp's AI will be transferred into new cybershells, each one suitable for an older child. Finally, the AI is likely to be the operating system for the adolescent's first wearable assistant or virtual interface implant. By this time, AI and child have grown up together and are effective partners in life. The relationship between an adult and his childhood AI companion is often more intimate than any he forms with other human beings. Such relationships are especially common among the Transhuman Generation (p. 29), the first for whom kindercomps were cheap and effective enough to be found in almost every home in the Fifth Wave nations.

The widespread use of kindercomps (along with other technologies designed to help nurture and teach children) has effectively put an end to state-sponsored education in the Fifth Wave societies. Children are no longer warehoused during the day in state-run schools. Instead, they remain in their own homes, receiving personal attention from their parents and the household appliances. The state's remaining role is to enforce minimal standards in childhood education. How this is done varies from country to country; most nations require annual or semi-annual tests of scholastic accomplishment for all children, with state assistance offered to children who seem to be falling behind.

Naturally, the kindercomp is no substitute for parental attention or social interaction with a child's peers. Most parents try to interact with their children as much as possible, and make certain they have plenty of opportunity for structured play with others. A few parents rely too much on their children's kindercomps, leading to later psychological and social problems.

Higher Education

At some point, the child has mastered all the basic skills and is ready to operate in the wider world. Sometime between the ages of 15 and 19, he will begin his higher education. Aside from radical Isolates and other fringers, the vast majority of people in the Fifth Wave societies participate in university-level education for at least a few years.

The Fifth Wave University

In 2100, colleges and universities exist more in virtual than in real space. Many courses with a heavy emphasis on lecture and research can be taken entirely via telepresence. Even laboratory research can be done through telepresence when necessary. Meanwhile, most universities have made "co-op" arrangements with corporate or government institutions to help students gain practical experience. All of this means that even the largest universities have become "remote learning centers," with the bulk of their student populations attending over the web.

In general, the usual progression of a century ago (live at home through secondary education, move onto a university campus, then make an independent home after graduation) no longer holds. Most students in Fifth Wave societies live in their parents' home until completing their formal education, usually between the ages of 22 and 26. Meanwhile, most universities also have a substantial continuing education program, tailored to the needs of adults who wish to acquire or reinforce new skills.

Adventurer Education

Any PC who wishes to pick up new skills will have an easy time of it in Fifth Wave society. When using the *Improvement Through Study* rules (sidebar, p. B82), any student will *automatically* be able to find a teacher or attend school for any subject dominated by "book learning" (GM's decision).

An instructional VR module, plus the time of a LAI proctor, usually costs about $5 per hour of training time ($1,000 per character point). Courses from prestigious sources, or in subjects that might lead to lucrative employment, may cost more. Telepresence learning can be used on the student's schedule; even lectures are usually recorded and can be viewed later.

If a student requires the personal attention of an instructor, costs will naturally go up. In the Fifth Wave societies, teachers usually earn at least $100 per hour spent in actual instruction. Fee structures for instructor-led courses will divide this sum among all the students being supervised at one time.

If the GM feels that it's appropriate for a given skill, a student may invest in unconscious-education material (see p. 34). Such material comes in the form of InVids, slinkies, or time in a virtuality node, and costs the same as any other material of the same kind (the educational value comes from the careful choice of what item to view or participate in). One-quarter of the time spent on Entertainment on the character's Time Use Sheet may be considered hours of training for the skill being "studied."

The trend toward learning with telepresence has given students a great deal of control over their educations. Higher education is much more diverse than it was a century ago. Students can easily study abroad, attend schools sponsored by specific corporations or social institutions, or experiment with different instructional styles. Many students take a mix-and-match approach, signing up for individual courses from different educational institutions. To accommodate this market, universities have broken down their old curricula into smaller modules. A student might take a basic liberal arts module from one school, study master's-level mathematics at another, and then sign on with a corporate academy to earn certification as an electronic engineer.

Traditional Universities

Some universities resist telepresence. In these cases, students are encouraged or even *required* to live on campus. In some cases this is to encourage the development of social skills; these schools behave much like youth hostels with a strong educational component. Other universities have a distinctive religious or ideological background, and wish to keep their students partially isolated from mainstream society to help encourage acquisition of the proper memes. Finally, some universities still teach skills that require extensive physical training (athletics, dance, the martial arts). While even these skills can be taught using some VR methods, there is no substitute for physical practice under the eye of a skilled instructor.

Careers

The centuries-old pattern still holds true. Once a person has finished his formal education, he is considered fully adult and must find a way to make a living. The most common career paths have changed a great deal, however.

Available Careers

In the Fifth Wave nations, automation has transformed many jobs which were once taken by human labor. Almost all jobs involving rote tasks or long periods of monitoring are heavily automated: cleaning and janitorial services, security watch, dirt farming, assembly-line manufacturing, simple food service, low-level bureaucracy, and so on. Where such jobs once required a hundred workers, today's environment requires only one or two, and their task is not to do the work itself but to supervise NAI cybershells.

Even some service jobs have been taken over by cybershells. If a service task requires little specialized training (sales counter in a small shop, for example) then a cybershell is often cheaper and more reliable, and can be programmed to be more unfailingly polite. Today, service workers usually occupy jobs which require specialized knowledge or a particularly human touch. For example, the sales clerk in a chain software store will usually

be a cybershell, but the clerk in a rare-and-used bookstore will almost always be human. Wait staff in a fast-food joint are usually robots, but wait staff in a formal restaurant will be human, and so on.

A few unskilled jobs remain the province of human labor, although automation has had an effect here as well. For example, some of the building trades employ some unskilled labor in the assembly of prefabricated buildings. A computer network can keep track of the location and status of all components, giving instructions through VR interface to the laborers doing the assembly. Such an arrangement is sometimes more cost-efficient than one employing only cybershells.

The jobs least likely to be automated in the Fifth Wave societies are those involving a great deal of creativity or initiative. Sophisticated SAI infomorphs can certainly match or exceed human capabilities in these areas, but such entities are difficult to build and expensive to maintain. Successful artists, attorneys, writers, engineers, and scientists are all likely to be human beings. Naturally, all such professions make heavy use of computer technology for basic research and information processing.

One exception to this rule is in the military, where most of the Fifth Wave nations make extensive use of combat bioroids and cybershells to replace front-line soldiers. A modern army may have astonishingly few human soldiers by 20th century standards. Most "enlisted" roles will be taken by bioroid, bioshell or cybershell soldiers, while humans serve as officers. Indeed, through most of the 21st century the military has often been the primary driver of bioroid and cybershell development.

Most decision-making jobs are still in human hands as well: corporate or government managers, politicians, judges, arbitrators, and military officers. In general, any position that would have been considered "middle management" or above in 2000 is likely to still be held by a human being in 2100. Naturally, all such officials make heavy use of information technology to assist the decision-making process.

Career Paths

Even though many occupations still require human labor, few people follow a single career throughout their lives. The most common pattern is to work in a series of closely related occupations, changing employers every few years. Most people work until they have built up sufficient investments to maintain their chosen lifestyle indefinitely, and then enter the leisure class (p. 37). This normally occurs somewhere between the ages of 60 and 90, depending on one's initial resources, skills, and lifestyle needs. The standard pattern is often altered by those who work more than one job at once, or who take a few years off to pursue further education or leisure opportunities.

One side effect of the usual career pattern is that almost all Fifth Wave employment is freelance. Workers consider themselves to be self-employed, selling their skills and time to others. Meanwhile, even the largest corporate or government employers are unlikely to offer insurance or investment programs for their "contractors." Instead, unions and professional organizations perform this service for their members.

The 21st century has seen the growth of a large leisure class in the developed nations. Many people (in some countries or regions, *most* people) simply do not work for a living. Perhaps they have already earned (or inherited) sufficient investments to maintain their chosen lifestyle. Or perhaps they lack the aptitudes, skill, or self-discipline to hold a job which could not be performed by a robot.

Most nations have some form of "welfare" program to supplement private employment. The emphasis of such programs is no longer on punishing the unemployed or forcing them to take unattractive work. Since so many jobs have fallen to automation, the inability to maintain employment is no longer regarded as a personal failing. Naturally, those who are employed still resent being forced to support those who are not, but most nations have been able to maintain an adequate welfare system without making the tax burden too heavy. It helps that standards of living in the Fifth Wave nations have risen so far. Even a relatively small welfare payment can help the chronically unemployed to live in some degree of comfort.

Social Classes

Despite a century of rising standards of living and increasing democracy, social divisions persist.

Nonpersons

At the bottom of the social pyramid, as always, there are those beings who have no civil rights (and may not be defined as "people" at all). In various parts of the world, bioroids, certain infomorphs, uplifted animals, and other entities may fall into this category. Their status varies widely from place to place, depending on local law and custom (see p. TS127).

Criminals, Fringers, and Isolates

Above the nonpersons, there are people who are citizens but who stand entirely outside of mainstream society. In English-speaking nations, these people are usually called *fringers.* There are similar slang terms for them everywhere in the world.

Fringers do their best to survive without being dependent on government or business institutions. Some of them live on the wrong side of the law, while others simply avoid a settled existence for one personal reason or another. They may receive welfare payments, earn credit by performing short-term unskilled jobs, or live through petty crime. Much of their economic life is by way of barter or cash transactions. Some "squat" on unused

land or in abandoned buildings, especially in former urban areas that have been blighted by decivilization (see p. 22). Most fringers are not true lawbreakers – they simply *avoid* the formal structure of civil society. A few of them are serious criminals, violent gangsters, or members of organized crime rings.

This "underworld" is not large in any Fifth Wave society. Social engineering and aggressive law enforcement have made it difficult for masses of people to carry on such a lifestyle. Still, in the nooks and crannies of every Fifth Wave nation, there remain a few people who live as far outside the law as they can.

One segment of the fringer population that is *not* criminal in nature is represented by the *Isolate movement.* Isolates deliberately cut themselves off from mainstream society, but they remain within the law. A typical Isolate community is situated on privately owned land in a rural or wilderness area, with no roads allowing outsiders easy access. It has its own power plant, its own source of fresh water, and its own methods for growing food and producing other needed commodities. Contact with the outside world may be sporadic, and is usually managed through the web alone. Once every few weeks or months, the community may send an expedition out to purchase items that it cannot produce locally.

Isolate communities are sometimes quite wealthy, earning credit by producing services which can be delivered via telepresence. Even so, their deliberate policy of physical and social isolation makes them part of the fringer social class.

The fringer class makes up about 5% of the population of each Fifth Wave nation. Most of these are Isolates, especially in nations with plenty of open land for settlement. Australia, the United States, and the Canadian successor-states all have particularly large Isolate populations.

The Underemployed

A large portion of the population is law-abiding and fully involved with mainstream society, but lacks any long-term employment. This *underemployed* class is composed of people who can hold no job worth having: those without advanced education, without any significant creative talent, or simply without the initiative needed to hold a profession. The underemployed are the casualties of advancing automation, people suited only for work that machines can do more cheaply and efficiently. Many of the underemployed people are young and without inherited wealth, discouraged by the years of strenuous effort that would be required to reach the leisure class.

The underemployed class makes up about 35% of the population of each Fifth Wave nation. The proportion is higher in nations where standards of living are very high and welfare provisions are generous. The highest percentages are found in some parts of Western Europe.

The Professional Class

The professional class consists of those who work on close to a full-time basis. Professionals tend to be young, well-educated, and ambitious, with their eyes firmly fixed on the prize of leisure-class status.

In most Fifth Wave societies, the professional class is the source of most serious social discontent. Many professionals live very stressful lives, enduring fierce competition. They are constantly afraid of falling back to the underemployed class as the result of some unforeseen technological innovation or economic upheaval. They resent the underemployed as "parasites," and consider the leisure class to be arrogant and high-handed. These pressures sometimes drive professionals to cut social corners, engaging in risky or even criminal ventures in order to reach their goals more quickly. Others engage in political activism, demanding changes to a social system which they see as fundamentally unjust.

The professional class makes up about 30% of the population in the Fifth Wave states. The proportion is highest in the United States, where a large immigrant population has kept the workforce "young" and upwardly mobile.

The Leisure Class

At the top of the social hierarchy is the leisure class. Leisured individuals have either earned or inherited considerable wealth. As a result, they do not need to work or depend on welfare payments for a living. The leisure class (sometimes called the "investor class") is dominated by elderly individuals who have risen to their current status in the course of a professional career.

With its wealth and surfeit of free time, the leisure class is firmly in charge of most Fifth Wave nations. Almost all business owners, senior executives, opinion-shapers, and elected officials come from the leisure class. These leaders impose a profoundly conservative structure on society, working to maintain their own class privileges.

The leisure class makes up about 30% of the population of each Fifth Wave nation. Nations which have advanced technology and have deliberately structured their economic systems to distribute wealth have larger numbers of leisured citizens. The proportion is highest in Japan.

Politics and the State

"Mr. Speaker, request permission to revise and extend."

"Without objection," said the Speaker of the House.

Yanacek nodded. "Mr. Speaker, today I wish to address the issue of secessionism. We are all aware of the devastating instability our nation suffered during the 2060s, when state after state divided into its component parts. Today we face no less serious a challenge with the rise of this so-called cyberdemocratic movement. Make no mistake, these insurrectionists aim for nothing less than the dissolution of the United States . . ."

Despite all the changes of the past century, the nation-state still remains the basic building block of world politics. Within that framework, however, a variety of new political systems and ideologies have appeared.

Global Institutions

The international situation in 2100 is much as it was in 1900. The world is divided among several Great Powers: China, the European Union, the United States, India, the Transpacific Socialist Alliance, and the Pacific Rim Alliance. No Great Power can dominate any of the others, and relationships between them can change dramatically from year to year. There is also a swarm of lesser power blocs and independent nations, which occasionally rise to prominence in world affairs.

Notably absent from this scheme is any worldwide institution claiming the role of even a weak planetary government. The United Nations Organization (UNO) still exists, but most of its agencies have been effectively impotent since the mid-2030s. There have been several attempts to revive the institution as a central clearinghouse for international diplomacy, but these have invariably failed due to Great Power intransigence. International relations are instead carried on through a dense web of treaties, protocols, and informal agreements.

Intelligence Agencies

National power is still exercised through national intelligence agencies. The following are some of the most important such agencies on Earth. Others are mentioned in ***Transhuman Space.***

Australian Secret Intelligence Service (Australia): The ASIS is one of the most effective espionage centers on Earth, and is particularly active in south and southeast Asia.

Bundesnachrichtendienst (Germany): The BND (or Federal Intelligence Service) is Germany's main intelligence bureau. German intelligence is most active in Eastern Europe and Central Asia, where it is deeply involved in further expansion of the European Union.

Central Intelligence Agency (United States): Still the foremost foreign-intelligence agency of the United States, although off-planet operations are in the hands of the SIA (p. TS98).

Direction Centrale des Renseignements Généraux (France): Over time, the General Information Service has become the primary intelligence arm of the French government. It is primarily concerned with defense against memetic attack, but since the 2060s it has also developed a significant espionage role.

General Intelligence Directorate (Saudi Arabia): The GID acts as the main intelligence organization for Saudi Arabia and the Islamic Caliphate as a whole. As part of the Caliphate's memetic-defense strategy, the GID has incorporated the religious *Mutawi'yyun* or "Committees for the Propagation of Virtue and Prevention of Vice."

Intelligence Bureau (India): India's main domestic intelligence agency, primarily concerned with memetic defense and the suppression of political radicals. Has a long reputation for monitoring the private communications of Indian citizens. Claims to be the modern world's oldest intelligence agency.

Komitet Gosudarstvennoi Bezopasnosti (Kazakstan): Kazakstan still maintains a KGB, which shares many features of the old Soviet agency (although it performs both domestic and foreign intelligence functions). This incarnation of the KGB is particularly well-funded and effective, with activities all over Europe and Asia.

Ministry of Public Security (China): China's primary internal security agency, carrying most of the country's police authority and a large counterintelligence mission.

National Intelligence Agency (South Africa): South Africa's central foreign intelligence organization. One of the best in the world at using biotechnology in support of intelligence operations.

National Technical Intelligence Bureau (United States): The NTIB replaced the old National Security Agency in the early 2010s, and currently serves as the main American agency dealing with signals intelligence and memetic defense.

Public Security Investigation Agency (Japan): The PSIA is Japan's foremost counterintelligence organization, dedicated to rooting out spies and enemy memetic engineers.

Research and Intelligence Wing (India): India's most powerful foreign intelligence agency, known for its willingness to take ruthless action to fend off threats to Indian interests.

Secret Intelligence Service (United Kingdom): "MI6" remains the main British foreign-intelligence agency. The U.K. makes no distinction between Earthside and space-based intelligence operations, so the SIS is active anywhere that British interests are at stake.

A few global institutions remain relatively active, either because they are too useful to discard or because they are so scrupulously neutral that none of the Great Powers have chosen to interfere. The World Bank remains in existence despite several periods of unpopularity, working to aid economic development in the poor nations. The World Court has become more powerful over the past century, acting as a respected and fair arbiter between nations. Some humanitarian agencies of the UN have also remained active, notably UNESCO and the World Health Organization. Meanwhile, the need to cooperate against criminal activity has strengthened international police institutions such as Interpol and the Genetic Regulatory Agency (p. 87).

Meanwhile, even if *global* cooperation between nations remains elusive, there have been several successful attempts at unifying nations on a *regional* basis. Significantly, three out of the six Great Powers in 2100 are not nation-states but regional or ideological blocs in which no one nation dominates. In particular, the European Union has succeeded in subordinating national sovereignty to the ideal of unified European civilization. Some political observers note that such regional blocs are likely to provide a model for the further decline of the nation-state.

Nation-States

Despite their decline, nation-states remain the most powerful unit of governance on Earth. They provide social services, make and enforce national laws, and maintain military forces. Naturally, a few trends have worked to change the forms of national power.

Political Forms

Most nations in 2100 A.D. are at least superficially democratic in form. High officials in national government are chosen by periodic elections, in which most of the nation's adult population participate. Naturally, this democracy expresses itself differently from one nation to the next. A few nations, notably members of the nanosocialist bloc (p. 71), are single-party "democracies" in which anyone not a member of the ruling party has great difficulty reaching office. Most, however, are multiparty states, in which two or more political parties share power at the national level.

In most nations, the diversification of humanity has led to the breakup of large political parties. Even in states that were once dominated by only two major parties (such as Britain or the U.S.) coalition politics are now the norm. For example, as the United States approaches its 2100 elections, no fewer than seven major parties are fielding Presidential candidates, and there are many lesser parties involved in local elections nationwide. This breakup has led to greater contentiousness in political affairs, but it has also improved voter participation.

Another long-term trend in national politics has been a decline in the power of national government. Although most governments are more powerful in *absolute* terms, they have generally grown more slowly than the private economy. Tax revenues take up a smaller portion of national economies, government bureaucracies are more streamlined, military manpower has been much reduced. As a result, most Fifth Wave citizens feel that their governments are less obtrusive than they were a century ago.

Political Institutions

The core structure of democratic government still remains: executive, legislative, and judicial branches, all chosen directly or indirectly by the people through elections. Most nations today supplement this framework by using Third Wave digital technologies. For example, most national legislatures now use telepresence extensively, allowing legislators to participate in business remotely while living at home in their districts. This has encouraged some nations to expand the size of their legislatures, allowing more people to participate in the political process.

Other nations make extensive use of the web to allow more direct citizen involvement in government. For example, in Australia there are procedures by which the citizen population can either veto a bill before it becomes law, or cause an existing law to be repealed. Most nations have not gone this far, but almost all Fifth Wave nations grant the citizenry some direct role in government, and they all allow web-based voting.

Meanwhile, some nations are experimenting with allowing computers themselves to actively participate in the governing process. No SAI has yet been openly elected to political office, but powerful computers serve many governments in an advisory capacity.

Local Politics

One factor behind the weakening of national government has been a simple decline in patriotic feeling worldwide. Most people in the developed societies tend to think of themselves as members of a local or special-interest community first, members of global civilization second, and citizens of a nation-state last (or not at all). This sentiment often expresses itself as secessionism, a trend toward seeking independence from one's national or even regional government.

As part of this trend, local governments around the world usually have much greater control over their own resources than they did a century ago. In many cases regional government officials are more well-known and enjoy more prestige than their counterparts at the national level.

Special Interests

Regional secessionism does not satisfy everyone, of course. Even the smallest regional divisions have citizens who do not fit in to the social or political culture which dominates locally. A century ago such citizens might have been condemned to live in a political system that had no reason to take note of their opinions. Today, it is always possible to find a community of like-minded people – if not in one's own town or city, then across the web.

Most people in 2100 are members of one or more special-interest communities. These may be religious (for example, Muslims in a non-Muslim nation), ideological (nanosocialists in a capitalist nation), devoted to a specific issue (opponents of bioroid or AI rights), or centered around a lifestyle or hobby (VR enthusiasts). Some are relatively open to all, others are very exclusive and may even be kept secret from society as a whole. Some participate actively in the formal political system, others avoid politics as much as possible.

Special-interest communities are formally organized, and have their own rule-making and rule-enforcing mechanisms. These usually imitate their counterparts in the formal political system: members pay expensive dues ("taxes"), swear to obey the organization's rules ("laws"), and must sometimes submit to the community's judgment ("courts"). When large in membership, such communities are hard to distinguish from political parties. Smaller ones are more like large clubs, political pressure groups, or secret societies. While some such communities avoid politics, most of them are fiercely ideological. In nations where political strife turns violent, the local special-interest societies often provide shock troops for street violence or intimidation.

Players should give thought to their characters' membership in various special-interest communities. Meanwhile, the requirements placed by such communities on their members, and conflicts between communities, are a fertile source of plot hooks for the GM.

Law and Justice

Almost every nation and society on Earth at least *tries* to live by the rule of law. Naturally, not all of them succeed, and the degree of variation in national and local laws is tremendous.

International Law

Most international law is embodied in unwritten custom, written agreements between nations, and in World Court rulings (p. 54). The result is a patchwork of legal arrangements which can often come into dispute, especially where Great Power interests are in conflict.

Criminal and Diplomatic Law

Nations have a wide variety of agreements governing how foreign nationals are to be treated, especially when accused of a crime by local authorities. Some nations share extradition treaties, while others do not. The largest group of collaborating states takes in most of the Americas, the European Union, India, South Africa, and the Pacific Rim Alliance states. These nations cooperate quite closely on matters of criminal justice. Others may or may not share information or agree to extradite criminals.

Almost all nations observe long-standing customs regarding the conduct of diplomatic negotiations and the treatment of diplomatic personnel. Diplomats have immunity from prosecution under local law, although any diplomat may be declared *persona non grata* and expelled. Every nation is expected to abide by diplomatic agreements (subject to local procedures for ratifying treaties).

Trade Law

In general, the nations of Earth have agreed to a structure governing trade and cross-border investments. The major exception to this is the nanosocialist bloc, which does not recognize legal protections for any form of intellectual property. This fundamental conflict has led to strict trade sanctions against the TSA nations, along with continued economic warfare.

Worldwide, tariffs and trade regulations tend to be lower than in 2000, especially within major trade blocs such as the European Union or the American Free Trade Zone. The major remaining obstacles to free trade are disagreements over what commodities are even *moral* to buy or sell. For example, the booming bioroid industry of China or the United States is firmly shut out of Europe, while European nanotechnology is barred from some global markets for reasons of safety.

Human Rights Law

Most nations in the world pay at least lip service to a common framework of human rights. Freedom of speech and political expression, freedom of the press, freedom of religion, the right to due process of law, the right to earn a fair wage for one's work, the right to hold property – these and many others are regarded as fundamental human rights. The denial of human rights is considered a crime on the part of a nation-state, and can lead to diplomatic or economic pressure from others. Naturally, the interpretation of these rights varies considerably from nation to nation, as there is no global framework for enforcement of human rights.

Laws of Boundaries and Territory

Nation-states still recognize the boundaries claimed by others, with a range of options for negotiating boundary disputes. One major change in international law has been the rise in the principle of *self-determination* as the

final claim for title to territory. This principle has encouraged many secessionist movements over the past century, which have appealed to international law in support of their wish to break away from existing nation-states. Naturally, such claims to territory already held by an existing national government are controversial. Secessionists rarely win legal recognition from other nations unless they can demonstrate an ability to control the claimed territory (and deny control to the government against which they are in rebellion).

One major controversy in modern international law is the Law of the Sea. This treaty dates back to the 1950s. Most nation-states obey its provisions, defining limits on territorial waters, establishing rights of free passage through many straits and choke points, and granting exclusive rights to certain resources lying close to national coastlines. Unfortunately, while the Law of the Sea treaty has been *signed* by most nations, some major powers never fully ratified it, and others have since abrogated it. As a result, disputes over territorial waters and coastal resource exploitation are common.

The deep oceans present another problem. For centuries they have been regarded as the common property of mankind, but today many more people have become interested in aquaculture and ocean-floor mining. The resulting tangle of national and corporate legal claims is causing considerable tension in some parts of the world.

Local Law

Local law (on the national or regional level) has changed very little in principle. Most of the Fifth Wave nations have relaxed their stance against so-called "victimless" crimes, particularly those involving sexuality or the use of various recreational drugs. On the other hand, white-collar crimes such as embezzlement, fraud, or intellectual property theft are generally treated more harshly than they were a century ago. Otherwise, what was illegal in 2000 remains so in 2100, and is handled under the same legal structure.

Some of the newest areas of law involve behaviors which have become possible with the advance of technology. For example, laws against computer intrusions and other forms of illicit web activity tend to be quite strict worldwide. Most nations regulate the biotech and genetic-engineering industries, laying out what kind of experiments may be carried out and what modifications are legally allowed. The European and Islamic nations tend to be the strictest regulators of biotechnology, while Australia, China, and the United States are the most liberal. Most nations have passed laws regulating nanotechnology, hoping to prevent "gray goo" outbreaks or other disasters.

Law Enforcement

Police procedure has changed remarkably little over the past century. Police officers (and their associated cybershell partners) spend most of their time on patrol. They watch out for suspicious occurrences, respond to reports of trouble, and maintain a visible presence. Police departments spend a great deal of time simply maintaining order at public gatherings and providing various forms of community service. In some communities, much of this routine police work has been contracted out to private security firms under government supervision. One area that is no longer an important police function is traffic control; almost all vehicles are programmed to obey traffic laws and cooperate with local control systems without the need for human enforcement.

Going to Court

In most Fifth Wave societies, the judicial system has become considerably more efficient since 2000. It has become much easier for the police to establish the facts of any given case, and with AI administrative help a prosecutor can usually prepare his case very quickly. Once an arrest is made, a Fifth Wave citizen can expect to be arraigned within 24 hours and brought to trial in less than a week.

Naturally, this accelerated schedule can be hard on the defense, although AI support helps that side as well. Since forensic evidence is usually available and difficult to contest, defense attorneys concentrate on attacking police procedure or discrediting witnesses. Whether a trial takes place before a single judge, a panel of judges, or a jury depends on local law. In all cases, the judge usually has extensive AI support to help him interpret all relevant law.

To determine the outcome of a case, the GM should make a Quick Contest between the Law skills of the two attorneys (an attorney can substitute Bard at a penalty of -4 if arguing before a jury). The prosecutor gets a bonus of up to +6 if the defendants are guilty (or if the actual criminal managed to leave forensic evidence pointing to them). The defense attorney can get up to +4 if the defendants are innocent. If the prosecutor wins the Contest the defendant will be found guilty, otherwise he is free to go. Sentencing depends greatly on the local legal system and the seriousness of the crime; see *Sentencing Criminals,* p. TS96.

Criminal investigation is, in many ways, much easier than it was a century ago. Even in the most liberal societies, it's usually possible for police to get the authority to place a suspicious area under tight surveillance. Police agencies worldwide share information efficiently through the web, so it's easy to gather information on potential suspects. Meanwhile, modern forensic methods can reliably identify persons from the DNA fragments found in skin flakes or hair. A criminal who acts on the spur of the moment will find it almost impossible to fake the crime scene, concealing or destroying all evidence pointing to his identity. Most major crimes require careful planning, often concealing the very fact that a crime has taken place for as long as possible.

One form of police work that has actually expanded since 2000 is undercover law enforcement. This area covers the fight against many ancient crimes (such as gambling, "hard narcotics," or prostitution) as well as a number of new offenses (data piracy, xoxnapping). Police trained in undercover work usually command high salaries, but operate under circumstances of extreme danger.

Criminal Elements

As in 2000, most crime is committed by individuals motivated by alienation, greed, or violent rage. The major difference is that most of today's individual criminals are caught quickly.

Organized crime is alive and well on Earth, despite the advances in law-enforcement technique. There are many "mafias" – Albanian, American, Cuban, Italian, Mexican, Polish, Russian, Thai, and Turkish varieties among others. The Japanese still have their *yakuza* and the Chinese their Triads. The opium warlords of southeast Asia and the *narcotraficantes* of South America still operate (although their stock in trade has changed considerably). Organized crime has moved into a variety of new lines of business, notably xoxnapping and various forms of intellectual property piracy. The main change in organized crime is in its methods. In areas where criminal gangs cannot simply control the police or the courts, they tend to operate almost like urban guerrillas. They use cell organization and elaborate control schemes to prevent the police from infiltrating their operations.

Self as Art

One of the most significant ways in which Fifth Wave civilization differs from past cultures is in the concept of the *self* as a work of art.

In 2100, any wealthy citizen can use biosculpting, biomod implants, and other technologies to control his physical form and appearance. He has the resources and leisure time necessary to shape his personal lifestyle. He even has some conscious command over his own *personality,* through the use of education, memetic therapy, and neurosurgery. All of this sets him apart from humans of the past, who lacked such far-reaching and precise command of their own bodies, minds, and souls.

The implication is that *every* aspect of a person's appearance and behavior can be considered a deliberate choice. The modern philosophy of art recognizes this fact by treating humanity as the ultimate medium for aesthetic expression. In the year 2000 a person might have been physically unattractive or personally obnoxious, but he would also have been forgiven these traits because they were in some degree beyond his control. In 2100, similar traits are evidence of *bad taste* and much harder to tolerate.

There are several major artistic schools dealing with the manipulation of self. *Naturalists* prize the imperfections of "normal" human forms and personalities, extolling a minimalist approach to biosculpting and memetic manipulation. Various *classicist* schools preach conformity, demanding that everyone mold themselves to a common physical and moral ideal. *Epicureans* teach that the individual human is the ultimate arbiter of taste, and should create a self that yields the greatest personal pleasure. *Absurdists* promote the most radical manipulations of body and mind, claiming that only in extremes can true beauty be found.

Most human beings are amateurs in the art of the self, just as in all other arts. Still, most people are familiar with the notion that one's *image* is something that can be crafted and presented to others in a tasteful manner. Celebrities are the greatest masters of this art, and are openly admired for their command of personal expression regardless of what their actual accomplishments may be in other areas.

Culture and Leisure

"I think half your problem is that you keep clinging to this New Reformed Skeptic meme-complex that you picked up from your parents. I think you'd be much happier as a theist, and you'd fit in better at the office, too. Maybe something in the Abrahamic tradition?"

– Adrienne Grant, memesplicer

In the Fifth Wave societies, the average length of the work week has fallen considerably over the past century. Most employed people work no more than 20 hours per week. Large segments of the population don't work at all, either because they have no job or because they

don't *need* one. As a result, the Fifth Wave nations spend a great deal of time and effort on leisure activities.

Stage and Screen

Stage and flatscreen media still have their followers, but most entertainment has gone 3D and interactive. InVids and slinkies are the most popular entertainment media in 2100. In those forms, the "visual" arts are more popular than ever, powering a multi-trillion dollar global industry.

Changes in technology have not only altered the methods of presentation, but also the methods of production. Most InVid production is done in what the world of 2000 would have considered small "independent" studios, often run by a handful of people with supporting computer hardware. On-location photography is almost a dead art; instead, producers place the action against a backdrop of stock or synthesized images. Even *actors* no longer dominate the scene, with AI "synthespians" taking on almost all roles.

Ironically, slinkies are a more traditional art form. Just as "movie" producers once had to present realistic images and sounds to their cameras, slinky producers must present real physical stimuli to the slinky-wearer recording the production. Indeed, the slinky producer's job is harder, as he must control *all* the sensations experienced by the recorder. As a result, the slinky industry is much like the film industry at its Hollywood height – complete with brilliant but egotistical producers, cutthroat studio politics, and wildly popular "star" celebrities.

Virtual Arts

With the development of advanced VR technology, entertainment has naturally moved into the new medium. From the beginning, the "virtual arts" have been driven by demand for *interactive* entertainment. Even in the crude VR environments available at the beginning of the century, the emphasis was on allowing the audience to take direct part in the entertainment. Today, with total-VR technology and neural interfaces available, VR can be even more involving and interactive than real life. Common forms of VR entertainment include InVids (pp. TS143-144) and slinkies (pp. TS64-65). Virtual cruises and digital kingdoms are more elaborate forms of the same medium (see text box).

VR Environments

Some of the more common VR environments include:

Conference Rooms: Simple environments used for telepresence meetings. The most popular venues are luxurious rooms or halls with culturally appropriate decor. Most of these include at least one "window" onto an exotic landscape (mountains, deep forest, undersea, space). No characters need to be managed by the node; the visitors provide all their own interactivity. Participants can "conjure up" elaborate audiovisual presentations, transmitted from their own computers.

Businesses and social groups often use VR conference rooms for meetings, while schools use them as lecture halls. VR meetings have almost completely replaced face-to-face contact for many situations – such meetings are extremely inexpensive in comparison to the costs of globe-spanning travel and physical meeting space.

Shopping Malls: These more complex environments allow merchants to display their wares in virtual space. Customers can examine goods at their leisure, placing orders for later physical delivery. Customer service representatives can be posted to answer questions and provide a human touch. Virtual storefronts also give merchants a great deal of control over the presentation of their goods (there are occasional scandals about subliminal advertising or goods not being quite as attractive in reality as they are in VR).

Virtual Cruises: A "virtual cruise" is a slang term for any highly interactive VR experience which involves a small number of participants over a few hours of time, and which has a well-defined plot. In effect, a virtual cruise is the next step up in interactivity from an InVid (p. TS143-144). The participants are cast directly into roles within the scenario, and have more direct control over the course of events. As the name suggests, many virtual cruises are travelogues. Others include military-style training scenarios, historical pageants, and the roleplaying equivalent of short novels.

Virtual cruises require the involvement of AI synthespians (p. TS114), taking on the roles of extras, expository characters, and other NPCs. Since virtual cruises are usually constrained to a linear plotline, the cyber-actors rarely need to be more complex than a low-level LAI program. Still, their involvement drives up the price significantly.

Digital Kingdoms: A "digital kingdom" is a fully immersive roleplaying environment, involving up to thousands of players at a time. The simulation runs 24 hours per day; players drop in and out as their real-world schedules permit. Multiple plot threads are progressing at any given moment, with more constantly being generated by AI or bio-sapient artists. Synthespians, some of them high-end LAI or even SAI systems, animate hundreds or thousands of NPCs. Digital kingdoms tend to be fictional in nature. Anachronistic fantasies are popular, as are science fiction and historical settings with varying degrees of realism.

Musical Styles

There are thousands of musical forms in existence in 2100. New fashions in music appear and vanish as quickly as fashions in any other area. In the Fifth Wave nations, some of the more enduring forms include:

Greek Fire: A subset of world music (see below), based on traditional Greek folk music with a heavy infusion of neo-pagan and Transhumanist themes. Greek Fire was an extremely popular style throughout Europe and the Americas during the 2060s and 2070s, as part of a general surge of interest in ancient Hellenic culture. It is still heard worldwide, although it has slipped considerably in popularity.

Microtonal: The foremost new musical style of the 21st century, *microtonalism* makes heavy use of quartertone or even smaller intervals between notes. The style also relies on the deliberate production of overtones, and uses notes outside the range of conscious human hearing. Many younger people, especially those influenced by Transhumanist thought, have seized on the style as their own. Microtonalism had a brief "classical" era in the 2030s, centered around a school of formal composers who developed the style while collaborating across the web. Today the style has broad influence in all areas of formal and popular music.

Neoclassical: Primarily nonvocal, using classical Western instruments along with a discreet selection of synthesized sounds. Purists repeat performances of Western classical music dating back to the early 1900s or further. Some modern composers work more or less in the classical style (complete with three-part structure and polyphony) but create diverse new pieces.

Rock: The popular music of the late 20th century still survives, along with associated styles such as blues, country, and jazz. For many citizens this style derives from the "rock revival" eras of the 2020s and 2070s. Many of the super-elderly still cherish the original style, however, and sponsor its occasional reintroduction into the cultural mix.

Soft-Edge: Popular among young people, this style emphasizes fluffy ballads, subtle instrumental passages, and (in performance) sophisticated visual effects. A related style, *hard-edge,* uses more emphatic rhythms and incorporates elaborate dance into its performance.

World: A catch-all term for "imported" music, usually from developing nations which still have a tradition of live performance. Encompasses a whole range of substyles, each based on a specific ethnic tradition. In the United States, Maori and West African styles are popular; various Arab, East African, and South Asian styles are common in Europe.

Interestingly, the weakening of intellectual property law in recent decades has had relatively little effect on the virtual arts. Naturally, InVids and slinkies can be copied as easily as any other software. Digital kingdoms, on the other hand, are extremely resistant to piracy. A high-quality digital kingdom requires the continual supervision of its authors, and is constantly evolving in response to user behavior. Such an environment cannot easily be copied, and remains distinctive no matter how many people have access to it. As a result, the virtual arts are among the most prestigious and lucrative in the Fifth Wave societies. A talented designer of virtual cruises or digital kingdoms can command a very high income, receiving a portion of the user fees from thousands of VR enthusiasts worldwide.

Literary Arts

In one sense, the literary arts are flourishing in 2100. Effective early-childhood education means that most Fifth Wave citizens are highly literate and have good language skills. Millions of people are capable of producing competent literary work, even in refined forms. Meanwhile, many AIs are also very good writers.

On the other hand, this rise in public skill has had a profound effect on the literary *industry.* Supply and demand apply in the arts as elsewhere, so the glut of competent writers means that almost no one can make a good living solely by writing. Today's well-known writers are *celebrities* before they are artists, promoting their work through an elaborate marketing system based on personality. Creative artists who wish to make a reasonable living generally work in other parts of the entertainment industry, notably in the virtual arts.

Journalism

One exception to the literary decline is in the field of journalism. As the world floods with data, there is tremendous demand for people who can digest it, make sense of it, and *explain* it to the mass market in real time. The journalists of 2100 spend a lot more of their time on the web than doing footwork, but the old principles still hold.

To be sure, there is no longer any pretense of *impartial* journalism. Most journalists work for governments or large web-content corporations, and are likely to obey their employers when it comes time to "spin" a given story. Other journalists pursue the "human interest" market, which primarily presents stories with more sensationalism than substance. None of this is surprising to any citizen of the Fifth Wave – the notion that there was ever such a thing as *objective* journalism is regarded as a charming myth of bygone days. The ability to recognize and compensate for the biases in any given media source is a primary modern survival skill.

Music

Music remains a popular art form in the late 21st century. Live performances are rare and expensive, serving primarily as prestige events. Most music is produced in recording studios and sold through InVids, slinkies, and other VR channels. A major current trend is the production of wholly virtual music, which is composed and "performed" entirely by AI.

The marketing of music has long rested less on musical talent than on *image.* A star performer may have little or no real talent as a musician, instead surviving on the basis of an attractive physique and an aggressive marketing staff. As digital technology improved, it became possible for major performers to do well without performing music *at all,* simply putting on a good physical show while the music was composed and performed offstage by others. This trend continues, although the "nonmusicians" are becoming less common – instead, even the physical aspects of performance are being taken over by synthespians in a VR environment.

Sports

Athletics remain a part of world culture, although the emphasis has shifted considerably. The institution of professional sports has changed dramatically, while amateur competition on anything above the local level has nearly vanished.

Battle of the Biotechnologists

Biotechnology was the primary factor forcing organized sport to evolve. Even in 2000, professional and amateur athletics were fighting a fierce battle against the technological augmentation of a competitor's abilities. Athletes who used performance-enhancing drugs, bionic implants, or bodysculpting technology were all banned from serious competition. Later, athletes who were specifically engineered for performance, either as bioroids or parahumans, were excluded. As such techniques became more subtle, harder to detect, and more commonly used by the general populace, these exclusions became more difficult and more controversial. Meanwhile, once competition rested more on the skill of teams of bio-engineers than on the dedication of athletes, many observers began to question the point of the activity.

Through the early part of the century, some institutions (notably the Olympic Games) continued to develop elaborate protocols to detect and expel any athlete relying on artificial aids. Others (such as various national football leagues) experimented with ways to pit athletes with similar biotechnology against one another. By about 2050 it was clear that none of these measures would be enough to hold back the biotech tide.

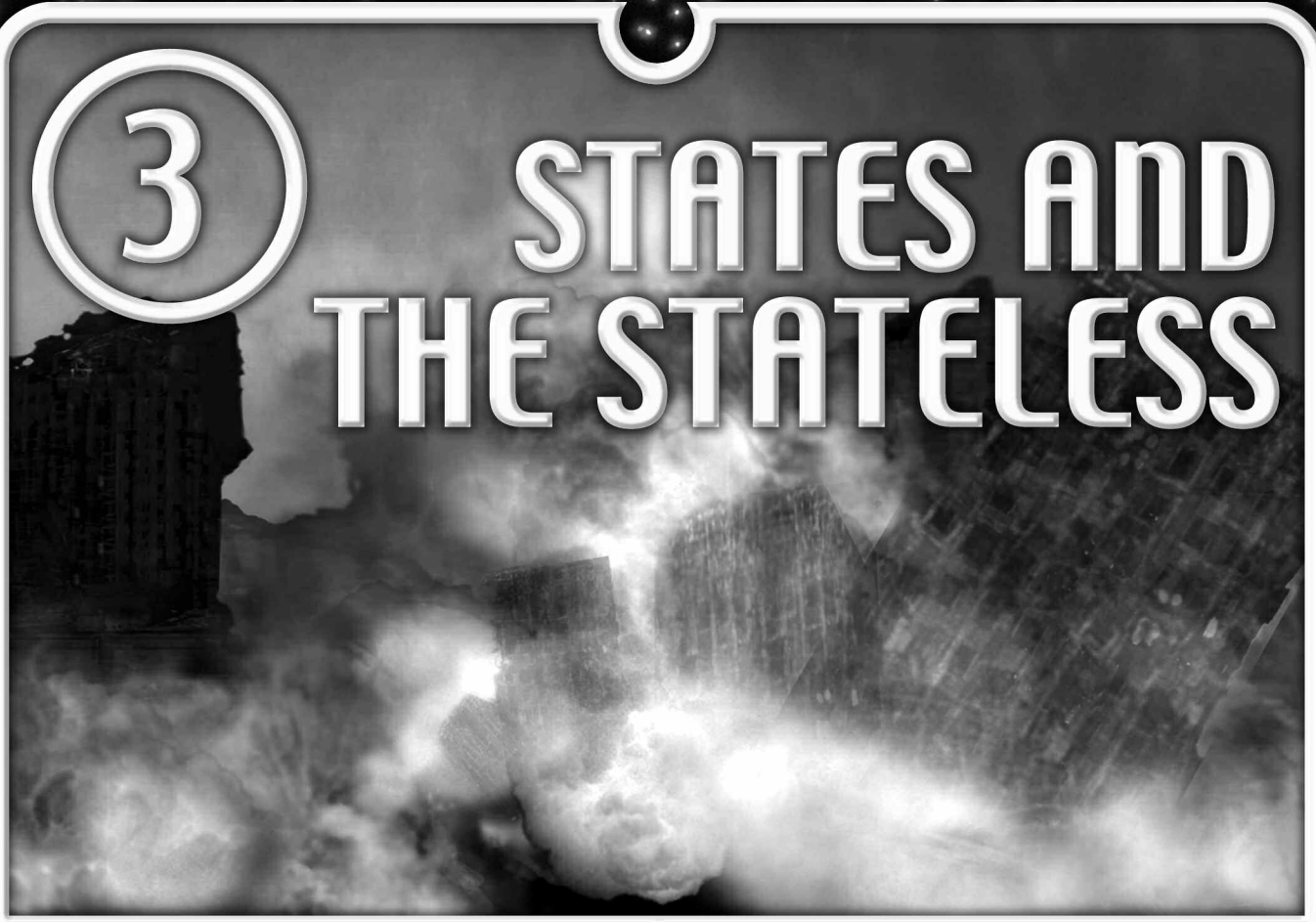
Decline of Spectator Sports

The last Olympic Games were held in Athens in 2056, marking the end of the era of mass spectator sports. Today, international competition is quite rare, and concentrated in events that require luck and intelligent planning more than raw athleticism. For example, baseball and golf remain popular international sports.

Many sports leagues remain in existence on the national level, although these tend to be smaller and much more diverse than their 2000-era counterparts. For example, instead of two or three American-rules football leagues worldwide, there are now over a dozen. Each of these has its own rules and governing structure, and each has a small fraction of the original fan base. The professional athletes who participate in such leagues are entertainers as well as competitors, more concerned with providing a good show to their audience than with true athletic competition. In some sports, this has made surprisingly little difference in audience devotion.

Of course, sport remains important to many citizens on the Fifth Wave. Many of today's most popular "games" are loosely organized and almost devoid of the competitive urge: obstacle courses, races in which no times are recorded, anachronistic combat exercises, and so on. Participation in activities such as these has taken up much of the social role once held by spectator sports.

3 STATES AND THE STATELESS



Teralogos International Newsbytes, January 3, 2100:

Israeli Prime Minister Tamar Halevy announced today that her government would support Arab efforts to resist Iranian territorial claims in southeastern Iraq. "Persian adventurism must be stopped," she said during remarks to an emergency meeting of the Knesset. "Israel stands ready to support its Arab friends in this cause."

In what appears to be an escalation of previous border incidents, Brazilian and Peruvian troops have exchanged fire near the headwaters of the Amazon River. Brazilian officials claim that their troops simply returned fire after coming under attack during a routine border patrol. The Lima government, on the other hand, claims that Brazilian forces had crossed into Peruvian territory and were advancing on a border village. Casualties appear to have been light, with Brazil reporting the loss of three combat bioroids but no deaths among human officers.

A large explosion rocked the commercial district in Dushanbe just after dawn, killing 23 people and injuring dozens of others. No one appears to have claimed responsibility yet, but local officials are suggesting that terrorists in the pay of the Kazak government were behind the blast.

Officials of the Olympus Consortium, meeting in Nairobi, have agreed to accept World Court arbitration in their ongoing dispute with the United States over orbital zoning rights. Consortium spokesman Jean-Jacques Nouveau said, "Naturally we feel that the American claims are without merit, and we look forward to seeing them dismissed by the Court. The Olympus Project will go forward on schedule."

U.S. citizen Elijah Butler was found wandering the streets of Shanghai shortly after noon local time, five weeks after his abduction by Philippine insurgents while visiting the island of Mindanao. Chinese officials could shed no light on how he had reached Shanghai, but they claimed that he was in good health and would be free to go home within a few days. "He's confused and has no memory of recent events," said U.S. Ambassador Peter Hernandez. "He's obviously been through a tough time. Still, he's in good shape, and looking forward to seeing his family. We're all hoping he'll have a pleasant late Christmas."

Nations Tables

Each region of the planet has its own Nations Table, giving the basic statistics for the various nations (and colonial territories) in that part of the world. The following items are given for each country.

Name: The most common name for the country or territory in English. This is usually the country's "official" name, although some longer names have been abbreviated in common use.

Alliance: The major international alliance in which the country stands as a member, if any. The alliance codes are: AME (American Bloc), CAR (Caribbean Union), CHI (Chinese Bloc), EUR (European Union), IND (Indian Bloc), ISL (Islamic Caliphate), PRA (Pacific Rim Alliance), RUS (Russian Bloc), SAC (South African Coalition), and TSA (Transpacific Socialist Alliance). If the alliance code is given in parentheses, this indicates that the territory is a colonial possession of one of the alliance's member states.

Population: Population of the country or territory as of January 1, 2100.

Stability: A measurement of the country's political and social stability. *Very Good* indicates a country with no significant social unrest; any social dissent is easily dealt with through the established political system. *Good* indicates that there is some social unrest, but little or no violent resistance to the state. *Fair* indicates the presence of violent unrest which the state is generally able to handle. *Poor* indicates social violence which is growing beyond the state's ability to control. *Very Poor* indicates a full-blown state of civil war; in extreme cases the country may be a "nation by courtesy" in which the central government has effectively lost control of its territory.

Power: A measurement of the country's weight in world affairs. This is usually a combination of economic productivity, diplomatic influence, and the raw ability to project military force. The Power score is logarithmic in nature, with each point indicating a factor of 2 in relative strength. For example, a country with a score of 15.0 is roughly twice as powerful as one with a score of 14.0, and four times as powerful as one with a score of 13.0. The People's Republic of China has the highest score (20.0). Any nation with a score of 18.0 or higher can be considered a Great Power on its own account. Nations with scores between 16.0 and 18.0 are important second-tier countries, which may be in contention for Great Power status.

CR: The Control Rating of the country (see p. B249). CR may vary from region to region within the country, and effective CR may change for different areas of law. The given CR is the most prevalent within the country's borders; major exceptions are described as needed.

Wealth: A measurement of the country's standard of living. The distribution of wealth varies considerably from nation to nation. This measure might be considered the level of the Wealth advantage (or disadvantage) that is most common among citizens of the country.

Aside from the entries in the Nations Tables, each section also includes narrative descriptions of some of the nation-states in the region. In general, any nation which has a Power score of 10.0 or more, or which has changed significantly since 2000, will appear here.

Great Powers and Superpowers

During much of the 20th century, the world was dominated by the conflict between two "superpowers," the United States and the Soviet Union. All other nations were forced to define their foreign policy with respect to this bipolar system – either allying with one superpower against the other, or working hard to remain neutral.

Today, the world is much more complex. There are *no* superpowers. Instead, depending on how one counts, there are between six and 10 Great Powers. None of these power centers can *dominate* the world, but all of them can make their influence felt worldwide. Relations between them are in a state of flux, with agreements holding only so long as common interests permit. The most common list of Great Powers in 2100 has six members: China, the European Union, India, the Pacific Rim Alliance, the Transpacific Socialist Alliance, and the United States.

The current system is reminiscent of 19th century world politics. Indeed, it appears likely that the bipolar system of the mid-20th century was an aberration in world history. This may be an ominous sign. After all, the old Great Power system led to two devastating world wars . . .

Africa (Central)

With a few exceptions, Central Africa remains the world's poorest region, characterized by unstable government, border wars, and populations outstripping their economic infrastructure. The situation is particularly dire in the old Democratic Republic of the Congo (once known as Zaire), where several successor-states have arisen and continue to struggle for power.

Angola

Despite considerable natural resources, Angola lagged in economic development for much of the past century, due to a chronic state of internal warfare. Relative peace has held since the mid-2070s, and development since then has been slow but steady. Angola may be the next major nation to join the South African bloc.

Burundi

Decades of internal corruption and ethnic violence have slowed development of this central African country. At present it is very unstable and may be sliding toward another episode of civil war.

Cameroon

Cameroon is one of central Africa's success stories, having enjoyed stable government and steady economic growth through much of the past century. At present it has a full Third Wave economy, specializing in factory farming, textiles, light machinery, and computer manufacturing. The government is very careful to stay out of any disputes among its African neighbors.

Chad

Chad has enjoyed some development based on petroleum and uranium reserves, but the southward march of the Sahara Desert has devastated local agriculture. At present the country must import food, and hunger-driven violence is common.

Congo (Democratic Republic)

For the first few decades after the turn of the century, this large Central African country suffered from ineffective government, famine, pandemic disease, and civil war. By 2030 the unified nation was defunct. Although some of its successor states have made progress since then, the region continues to be a flashpoint for regional unrest and war.

See *Haut-Zaire, Katanga, Kivu,* and *Kongo.*

Gabon

A relatively small population, abundant natural resources, and decades of stable democratic government have all made Gabon the most prosperous nation in central or western Africa. This prosperity is not evenly distributed. Although actual poverty is now rare, the bulk of the population enjoys little access even to Third Wave digital technologies. Meanwhile, the technically educated elite live at a modest Fifth Wave level. Gabon is currently under consideration for membership in the South African Coalition, a move which Nigeria vehemently opposes.

Haut-Zaire

During the breakup of the Democratic Republic of the Congo, the provinces of Equateur and Orientale became the new nation of Haut-Zaire, its capital at Kisangani. The rump Kongolese state struggled for years afterward to regain control of Haut-Zaire, setting off border wars and terrorism. In turn, Haut-Zaire has often tried to consolidate control of the region's gold and diamond mines by putting pressure on nearby Kivu. The current regime in Haut-Zaire is a corrupt military dictatorship, which uses terror tactics and ecological warfare even against its own citizens.

Katanga

After the collapse of the Democratic Republic of the Congo, its southernmost province formed an independent nation with a capital at Lubumbashi. Since then Katanga has managed to hold its own in battle, and has parleyed its mineral wealth into solid economic development. Today it is the most stable and prosperous of the Zairean successor states. It is currently loosely allied with the South African Coalition; negotiations for formal entry into the alliance are underway.

Kivu

The Nord-Kivu and Sud-Kivu provinces of the old Democratic Republic of the Congo have been independent since 2028, forming the nation of Kivu with its capital at Bukavu. Kivu has rarely enjoyed stable government, and is often the target of foreign invasion from nearby Burundi, Haut-Zaire, or Rwanda.

Kongo

The Kongo Republic is the remnant of the old Democratic Republic of the Congo, comprising the old provinces of Bandundu, Bas-Congo, Kasai-Occidental, Kasai-Oriental, and Maniema along with the old capital of Kinshasa. The central government is corrupt and effectively impotent; most power is in the hands of warlords in the countryside.

Nations Table: Central Africa

Nation	*Alliance*	*Population*	*Stability*	*Power*	*CR*	*Wealth*
Angola	–	34 million	Fair	10.5	4	Dead Broke
Burundi	–	24 million	Very Poor	10.5	1	Poor
Cameroon	–	48 million	Good	13.2	3	Struggling
Central African Republic	–	8.3 million	Poor	9.5	3	Poor
Chad	–	57 million	Poor	10.9	1	Dead Broke
Congo	–	10 million	Good	8.9	2	Dead Broke
Gabon	–	2.4 million	Very Good	10.2	2	Average
Haut-Zaire	–	43 million	Poor	9.7	5	Dead Broke
Katanga	–	24 million	Good	8.9	2	Poor
Kivu	–	46 million	Fair	9.8	5	Poor
Kongo	–	190 million	Very Poor	11.9	0	Dead Broke
Rwanda	–	10 million	Fair	10.0	4	Poor
São Tomé and Príncipe	–	710,000	Fair	4.6	4	Dead Broke

Africa (East)

Much of East Africa has made some sporadic progress in the past century, especially as South African influence has slowly spread up the coast. The nations of the "horn of Africa" are still some of the most unstable and desperately poor in the world.

Ethiopia

This ancient country has suffered terribly throughout the 21st century, as modest agricultural and industrial development have been outstripped by a booming population. Almost 300 million people live in abject poverty here, sometimes dependent on outside aid even for food. The official government is a socialist democracy, but its effective authority extends no more than a few miles from the capital.

Rwanda

At the beginning of the century, Rwanda struggled for decades to resolve old hatreds between its Hutu and Tutsi ethnic groups, and to disengage from a series of regional wars. Since about 2040 the country has been stable, but economic growth has been stubbornly elusive. Negotiations are ongoing for entry into the South African Coalition.

The Human Alliance

The Human Alliance was founded in 2049 by Carl Edward Stokes, a prominent American bioethicist. At the time, Stokes was the most articulate spokesman in the United States for the philosophy that would later be known as Preservationism. He called attention to the limits of biotechnology, and pointed out "the essential callousness of those who would manipulate the foundations of life."

At first the Alliance was simply one advocacy group among many, but within a few years Stokes had forged a partnership with several American religious groups. He himself was an agnostic, but he found that many Christian and Muslim organizations shared his mistrust of radical genetic engineering. With their help, he was able to raise large amounts of money and buy a great deal of media access. By 2060, the Human Alliance was one of the largest and most powerful advocacy groups in the United States, and was rapidly making headway in Europe and Latin America as well.

As of 2100, the Alliance remains an influential pressure group. It is one of the primary supports of the Democratic Party in the United States, and often plays a part in European national and Union elections. For the most part, it works within the legitimate political system in pursuit of its goals. It has also been known to sponsor mass demonstrations, and there have been occasional (unproven) allegations of violent sabotage.

Alliance critics claim that it is a racist organization, advocating the position that "to be human you have to look human." In truth the Alliance's position is much more subtle, focusing on the *intangible* costs of advanced biotechnology. Alliance leaders publicly doubt that bioengineers are wise enough to redesign the "natural" human form, and they claim that many "improvements" are actually detrimental to their recipients. The Alliance argues against any genetic or biotechnic innovation that doesn't have proven therapeutic value.

Kenya

For most of the 21st century, Kenya has managed to remain a stable country, developing slowly but steadily with help from South Africa and (to a lesser degree) the European Union. Local society is strongly Preservationist, and has concentrated on developing Kenya's natural resources while keeping most of the country in as wild a state as possible. Bioroid manufacture and the development of radical new human genetics have been almost unheard of here. Most of Kenya's people are the result of very conservative genetic therapies, and are close matches for the original human stock.

Kenya is one of the most prosperous nations in sub-Saharan Africa. It is moderately developed, having fully absorbed Fourth Wave biotechnology, and is roughly comparable to China in technology and standard of living.

Since 2093 Kenya has been the focus for the Olympus Project, the first attempt at constructing a "beanstalk" ground-to-orbit system for Earth. When completed, the beanstalk will bridge the distance between the summit of Mount Kenya and geosynchronous orbit, cutting the cost of interface transport dramatically. Primary investors include South Africa, the European Union, Australia, and Japan.

The Olympus Project has brought a great deal of investment to Kenya, boosting the local economy. Unfortunately, it has also brought some unwanted outside attention. The American launch facilities in Ecuador, for decades the busiest spaceport on the planet, now face obsolescence almost overnight once the beanstalk is completed. Meanwhile, the Transpacific Socialist Alliance also opposes the beanstalk project, fearing the economic advantage it would give to the capitalist nations. These rivals have been pursuing a number of strategies for stopping or subverting the Olympus Project, making Kenya the site for considerable scheming.

South Sudan

After years of oppression and civil war, the predominantly non-Muslim population of southern Sudan succeeded in winning its independence from Arab Khartoum in the early 2010s. The new nation's capital was established at Juba. Unfortunately, South Sudan has struggled for most of the century in its quest for political stability and economic development. The current government dates to 2090, when Kenyan and Ugandan troops supported a pro-democratic insurgency against the previous military dictatorship.

Tanganyika

The bulk of mainland Tanzania was consolidated once again in the late 2060s, after years of negotiation supported by South African and European mediators. The new nation of Tanganyika has had relatively stable government since then, and has made significant economic progress despite the strain of a fast-growing population. Tanganyika is a staunch member of the South African Coalition.

Tanzania

By the late 2030s, a long and bloody civil war had left the old United Republic of Tanzania in wreckage. For decades the country was divided into several successor states, although that number fell to two by about 2070.

See *Tanganyika* and *Zanzibar.*

Uganda

Uganda suffered under a particularly brutal dictatorship from 2018 into the late 2050s, during which time social stability and economic growth both declined. The country's fortunes have reversed since then. The current elected government has held power since 2087, and has done much to promote advanced agriculture and high-technology industries. Uganda joined the South African Coalition in 2099.

Nations Table: East Africa

Nation	*Alliance*	*Population*	*Stability*	*Power*	*CR*	*Wealth*
Djibouti	ISL	1.8 million	Fair	6.1	5	Dead Broke
Eritrea	–	20 million	Poor	8.7	4	Dead Broke
Ethiopia	–	300 million	Very Poor	12.3	1	Dead Broke
Kenya	SAC	45 million	Very Good	14.1	2	Average
Seychelles	SAC	88,000	Fair	4.8	3	Struggling
Somalia	–	41 million	Very Poor	9.6	0	Dead Broke
South Sudan	–	33 million	Fair	10.2	3	Dead Broke
Tanganyika	SAC	125 million	Good	12.7	4	Dead Broke
Uganda	SAC	141 million	Good	13.4	4	Poor
Zanzibar	–	2.7 million	Fair	7.2	3	Poor

Crossroads

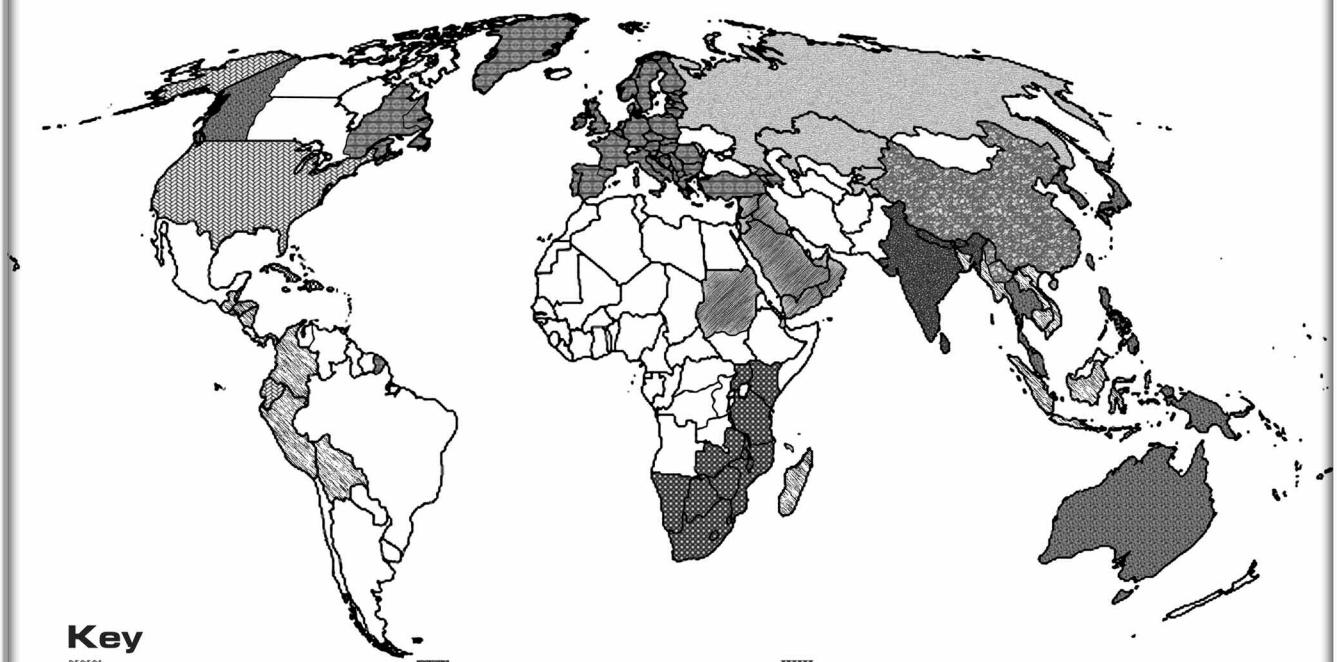
Crossroads is a large consulting firm, based in New York City, but with branch offices all over the world. It was founded in the 2020s as an alliance of several smaller consultancies working in various disciplines. Crossroads targets the "social problems" market, attempting to resolve social difficulties brought on by the rapid advance of technology.

Crossroads consultants work alone or in small teams (a team usually includes at least one attorney, one memetic engineer, and some number of experts in "hard" technology). The usual Crossroads client is a government, or a private institution with at least regional scope. Crossroads consultants are most often called in to study a local situation and recommend economic or social policies. Sometimes they are needed to help mediate a social dispute. While Crossroads tries not to get involved in situations of imminent violence, its consultants have sometimes been caught in the thick of a riot or uprising.

The Crossroads corporate culture is strictly egalitarian; there are few social distinctions between the CEO of the company and its lowliest data analyst. The salary structure is also remarkably flat, and there is an extensive training-and-education budget for all employees. Crossroads is a superb firm to work for, but it is very selective in recruitment. A potential employee must speak several languages fluently, demonstrate the ability to adapt to different cultural norms, and be willing to travel worldwide on a moment's notice.

Crossroads has a very good public reputation around the world, based on a solid record of accomplishment in a wide variety of cultural contexts. For example, in 2088 the firm gave the new government of Uganda a comprehensive set of policy recommendations, which have since served to firm up the national economy and resolve long-standing differences between internal factions. Meanwhile, throughout the 2090s Crossroads has been deeply involved in India, helping various local governments deal with ethnic strife and economic difficulties. These efforts have been successful more often than not, and have incidentally done much to keep India stable and out of the nanosocialist camp.

World Nations: By Alliances



A color version of this map is available on the ***Fifth Wave*** website, **www.sjgames.com/transhuman/fifthwave/**.

Nations Table: North Africa

Nation	*Alliance*	*Population*	*Stability*	*Power*	*CR*	*Wealth*
Algeria	–	60 million	Good	14.6	4	Average
Egypt	–	130 million	Fair	14.9	4	Struggling
Libya	–	13 million	Good	12.9	3	Average
Morocco	–	58 million	Very Good	14.3	4	Struggling
Sahrawi Republic	–	840,000	Poor	2.8	5	Dead Broke
Sudan	ISL	77 million	Fair	11.4	5	Dead Broke
Tunisia	–	13 million	Very Good	12.3	2	Average

Zanzibar

The island of Zanzibar retained some autonomy even after joining the United Republic of Tanzania in 1964. During the Tanzanian civil war of the 2030s, Zanzibar withdrew from the union and has yet to return. At present, Zanzibar is a member of no major power bloc, although local factions have ties to the Islamic Caliphate, the South African Coalition, and even the Transpacific Socialist Alliance. Negotiations have been going on for years regarding a reunion with the mainland, but given the current political situation they are unlikely to be completed anytime soon.

Africa (North)

North Africa is dominated by the row of Muslim Arab nations along the Mediterranean coast. Most of these are stable and relatively prosperous, with ties to the European Union. Away from the European trade zone, a few states remain poor and backward.

Algeria

Algeria is one of the largest and most prosperous Arab states of northern Africa. It is generally opposed to the Islamic Caliphate, and has been investigating the possibility of forming a rival north-African alliance of Islamic states.

Egypt

A booming population strained Egypt's political and economic institutions early in the century. The result was the foundation of an theocratic state in 2026. For almost 20 years, Egypt was the focal point of Middle Eastern turmoil, threatening nearby Israel, opposing the growth of Saudi power, and angering the world community through its neglect and destruction of pre-Muslim relics. A secular government was re-established in 2045, but Egypt continues to struggle to recover its former stability.

Today Egypt is the largest Arab nation outside the Islamic Caliphate. The current government is bitterly opposed to the Caliphate, and may be preparing to take a leadership role among those Muslim nations who reject its authority. Relations with Israel have improved, but continue to be chilly.

Libya

During the past century, Libya has evolved from a military dictatorship to a healthy, functioning democracy. Despite some difficulty in the transition from a petroleum economy, local industries are thriving and the population has a reasonable standard of living. At present Libya is an independent state most closely tied to the European Union, although there is strong popular support for membership in the Islamic Caliphate.

Morocco

The kingdom of Morocco has enjoyed stable government and steady economic growth throughout the past century. It is independent of any major power bloc, but the current king is openly friendly toward the Islamic Caliphate and the notion of joining is becoming more popular.

Sahrawi Republic

The so-called Spanish Sahara, a coastal region in northwest Africa, was occupied by Morocco after Spanish withdrawal in 1976. After decades of insurgency and political negotiation, the region became the independent Sahrawi Arab Democratic Republic in 2029. The country has almost no natural resources, and remains one of the poorest in the world.

Sudan

The Khartoum government has been in the hands of Muslim fundamentalists for most of the past century. Islamic law is strictly applied throughout the country, even to foreigners and non-Muslim citizens. As a result, Sudan is effectively isolated from much of the world, although it does significant business with other Muslim countries. It is a full member of the Islamic Caliphate, and is notable as the most stringently fundamentalist and anti-Western member of that alliance.

See also *South Sudan.*

Tunisia

Tunisia has a long tradition of stable government and an open, egalitarian society. Although it is not a member of the European Union, trade barriers between Tunisia and the European Union are practically nonexistent and joint ventures are very common. Tunisia has invested a great deal in sea-bottom development, again in cooperation with the European Union.

Africa (South)

The southern portion of the continent is the center of an "African Renaissance." Led by the Republic of South Africa itself, many nations in the region are rapidly building stable societies and prosperous economies. Most of these nations are members of one major power bloc or another, taking active part in global affairs.

Madagascar

Madagascar is something of an anomaly in African affairs. The island nation was first settled not by Africans, but by seafarers from far to the east. The major local language, Malagasy, is most closely related to the Malay dialects spoken in Indonesia. Perhaps because of this ethnic affinity, Madagascar developed relatively close ties to Indonesia and Malaysia during the 2030s. Through this channel, nanosocialist ideas became popular on the island in the 2070s, and a nanosocialist government came to power in 2086.

Madagascar is a poor nation, which has not enjoyed much benefit from the growth in prosperity among its neighbors on the African mainland. Resentment of this fact has made the current nanosocialist regime quite hostile to the wealthy African states. Backed by Indonesian military aid, Madagascar is building up its military forces and acting as a staging ground for covert activities on the African mainland. Much of the past decade's spread of African nanosocialism can be attributed to spies and diplomats operating out of Madagascar. Naturally, South Africa takes a dim view of this activity, and has taken an increasingly confrontational stance in response.

Malawi

Malawi is a full member of the South African Coalition. Although there has been considerable economic growth over the past century, the country remains poor, dependent largely on agriculture and light industry. The current regime is investing heavily in cybershells and advanced infomorphs, hoping to jump-start an advanced industrial economy.

Mauritius

This island nation east of Madagascar has an unusually high standard of living for the region, based on a Fourth Wave economy with healthy biosynthetic and pharmaceutical industries. The island is dominated by its ethnic Indian population, and since the 2080s it has allied itself more and more closely with India. Local nanosocialist agitation exists, but has little popular support.

Mozambique

Mozambique is a client state of South Africa. Recent economic development has been quite rapid, with new Fourth Wave industries springing up backed by South African investment. The younger generation is cosmopolitan and heavily influenced by the South African brand of Transhumanism; this is leading to considerable social conflict with older, more conservative Mozambicans.

Shards of the U.N.

The credibility of the United Nations Organization was badly damaged early in the century, when it proved helpless to prevent several major wars and international conflicts. This process culminated in 2025 when the United States withdrew from the organization entirely. U.N. headquarters relocated to Geneva, but the organization never recovered. The final meeting of the Security Council was held in 2034.

In 2100, many people would be surprised to learn that the United Nations still exists. In fact the organization never officially disbanded. Many nations continue to regard at least *some* U.N. institutions as useful, and are willing to maintain their existence. The General Assembly continues to meet to this day, with about one-third of the world's nations regularly sending delegates. According to the U.N. Charter, the Assembly decides most questions by the agreement of *those present and voting* – so even though many member nations no longer send delegates, those that do can still carry on the Assembly's business. Specifically, the Assembly continues to hold regular elections for the post of Secretary-General, and it manages the budget of the truncated organization.

Several U.N. agencies still operate, maintained by the Secretariat's international civil service. The U.N. no longer recruits peacekeeping forces from its member nations, but when the budget permits it sometimes *hires* military force. Such employment of mercenaries is often controversial (and represents a significant departure from earlier U.N. policy), but it has effectively resolved several small conflicts.

Namibia

This African nation has enjoyed considerable economic growth in the course of the past century, driven by the extensive local mining industry. At present, the bulk of the population lives at a low Third Wave level. The political elite, with connections to foreign mining interests, are extremely wealthy and have access to the full range of Fifth Wave technology. Since the mid-2070s the government has been taking steps to reduce income inequality, investing in widespread technical education and locally owned industries.

Reunion

Reunion Island remains an overseas department of France. Long-standing tensions between local ethnic groups were resolved early in the century, with a comprehensive package of economic reforms. The island currently has a Fourth Wave economy and reasonably equitable distribution of wealth. Nanosocialist agitation has been common in recent years, but seems unlikely to threaten the government.

South Africa

The Republic of South Africa is, without question, the most successful nation on the continent. Over the past century, it has built a peaceful, prosperous society, one which has done much to solve the deep problems plaguing Africa as a whole.

The Republic's society is a model of multiracial integration, to an astonishing degree considering the nation's history. Local law is fiercely opposed to any hint of ethnic discrimination, and emphasizes equal treatment for all. Intermarriage between ethnic groups has become quite common.

Another phenomenon, almost unique to South Africa, has been the production of "transracial" human types. These genetic upgrades or parahumans are specifically designed to either meld features of every human racial type, or to create distinctive physical forms which match none of the "natural" races. Transracial modifications first became popular in the 2050s, as part of a pan-Africanist movement emphasizing cultural and physical diversity. Today they account for perhaps 15% of the population. (In ***GURPS*** terms, having transracial features is a 0-point feature.)

South African biotechnology has been a significant factor in the continent's development, ever since the rise of Ithemba Biotechnologies in the 2020s (see p. 8). This has naturally led to South African dominance in local politics. Today the Republic leads the South African Coalition, a bloc of more or less prosperous African nations which have all benefitted from its expertise in genetic and ecological engineering.

Today the Republic is a fully developed Fifth Wave nation, with technology and standard of living comparable to those of many European nations. It is a world leader in biotechnology and ecological engineering, and is rapidly developing its Fifth Wave industries. It is also the main commercial and financial center for sub-Saharan Africa.

Zambia

Zambia underwent a period of political instability early in the century, culminating in a civil war which destroyed most of the country's infrastructure. Recovery began in the 2040s, but has been rather slow. The government is rumored to be sponsoring clandestine research into dangerously advanced nanotechnology.

Nations Table: Southern Africa

Nation	*Alliance*	*Population*	*Stability*	*Power*	*CR*	*Wealth*
Botswana	SAC	1.3 million	Fair	9.4	3	Average
Comoros	ISL	2.8 million	Poor	7.2	6	Dead Broke
Lesotho	SAC	3.6 million	Good	9.6	5	Struggling
Madagascar	TSA	130 million	Fair	12.1	5	Dead Broke
Malawi	SAC	18 million	Fair	11.4	4	Poor
Mauritius	IND	1.4 million	Good	10.8	2	Comfortable
Mayotte	(EUR)	910,000	Fair	5.5	2	Dead Broke
Mozambique	SAC	28 million	Good	11.7	3	Poor
Namibia	SAC	3.3 million	Good	10.6	3	Average
Reunion	(EUR)	1.2 million	Very Good	10.6	2	Comfortable
South Africa	SAC	33 million	Very Good	16.0	2	Wealthy
Swaziland	SAC	3.4 million	Good	10.2	2	Struggling
Zambia	SAC	29 million	Fair	11.7	4	Poor
Zimbabwe	SAC	11 million	Fair	12.2	3	Average

Zimbabwe

At one time Zimbabwe was the nation most devastated by the AIDS epidemic, with well over one-third of the population infected. Once South African biotech firms had made an AIDS cure available, Zimbabwe soon became closely aligned with South Africa. The relationship between the two countries was the cornerstone of the South African Coalition, and remains very close. The subject of a political union between the two countries comes up every few years, but so far has not gathered significant public support.

World Court

The World Court (officially, the International Court of Justice) is a United Nations agency which still operates in 2100 A.D. Indeed, it may be a *more* powerful institution than it was before the partial collapse of the U.N.

The World Court meets in The Hague, in the Netherlands. It has 15 judges, who (since the 2044 reforms to the U.N. Charter) are elected by the General Assembly acting alone. Many nations who have stopped participation in other U.N. activities continue to support the court; major examples include China and the United States.

The primary function of the court is to render judgments regarding international disputes. Any nations involved in a dispute may bring it before the court, and in fact many nations have made blanket agreements to subject all disputes of a certain kind to the court's judgment. The court cannot *force* any nation to submit to its judgment. Rulings are made on the basis of existing international law, although (as with all courts) the World Court sometimes makes new law when there is no useful precedent. The court also issues *advisory* opinions when consulted by other U.N. or international institutions.

The World Court has had little success in preventing warfare or other violent conflicts – by the time a dispute reaches violence, the parties are usually unwilling to submit to the court's arbitration. Still, it has often been able to resolve disputes involving boundaries, international trade, treaties, and so on. If anything, the world's nations have brought such disputes to the court *more often* in recent decades. With other global institutions in a state of decline, the court has built a reputation as a fair and impartial arbitrator.

Africa (West)

West Africa has made some progress in the past century, although no breakthrough on the order of the south African renaissance has taken place. No major power bloc has significant interests in the region. Local politics usually center around tensions between Nigeria and a group of smaller nations led by Cote d'Ivoire and Ghana.

Benin

Benin is economically unremarkable, still struggling to attain a modest Third Wave standard of living. The country is more notable for its religious setting. Benin has long been known as the birthplace of *voudoun,* and the religion was at the center of a nationalistic movement which swept the country in the 2050s. Present-day *voudoun* as practiced in Benin is a very cosmopolitan faith, borrowing heavily from both Transhumanism and the Majority Cultures movement. It has proven popular outside Benin, catching on in the Caribbean, Latin America, and even the United States. Today, the National University has a healthy department of *voudoun* theology, which attracts scholars from around the world.

Burkina Faso

Burkina Faso is desperately poor. Over two million Burkinabe workers migrate south to Cote d'Ivoire and Ghana each year for seasonal agricultural labor. The income they gain during this period is a major driver of the local economy.

Casamance

This nation was formed in 2042 by the division of Senegal. After decades of sporadic separatist violence, negotiations led to the independence of the regions south of Gambia, around the Casamance River. The new republic has suffered from unstable government and sluggish economic growth ever since, and remains quite poor.

Cote d'Ivoire

Once almost completely dependent on cash crops, the Ivorian economy is now at a modest Third Wave level. Diplomatic disputes with Nigeria have been frequent over the past few decades, and may be escalating toward armed conflict. Cote d'Ivoire supports pro-democratic insurgencies in some of its less stable neighbors, notably Liberia.

Ghana

Despite a fast-growing population, Ghana has enjoyed very rapid economic development through much of the past century. Today the country is fully industrialized and is moving rapidly toward full Third Wave status. The small but vocal technical class has been agitating in recent years for democratic reforms and free elections.

Guinea

Guinea struggled with corrupt government and internal instability at the beginning of the century, but since the 2040s there has been steady growth. In 2089 the government purchased a set of powerful AIs to advise officials. A large cadre of cybershell observers gathers data on conditions around the country; many human citizens resent the monitoring and are prone to petty sabotage. The system is not precisely cyberdemocratic, since ordinary citizens have little voice in government (p. 19).

Mali

Mali's industrial sector is almost nonexistent, and its agriculture is increasingly hampered by expansion of the Sahara Desert. The current government is negotiating for closer ties to Cote d'Ivoire and Ghana, in exchange for access to genetic technologies which might improve local agriculture.

Niger

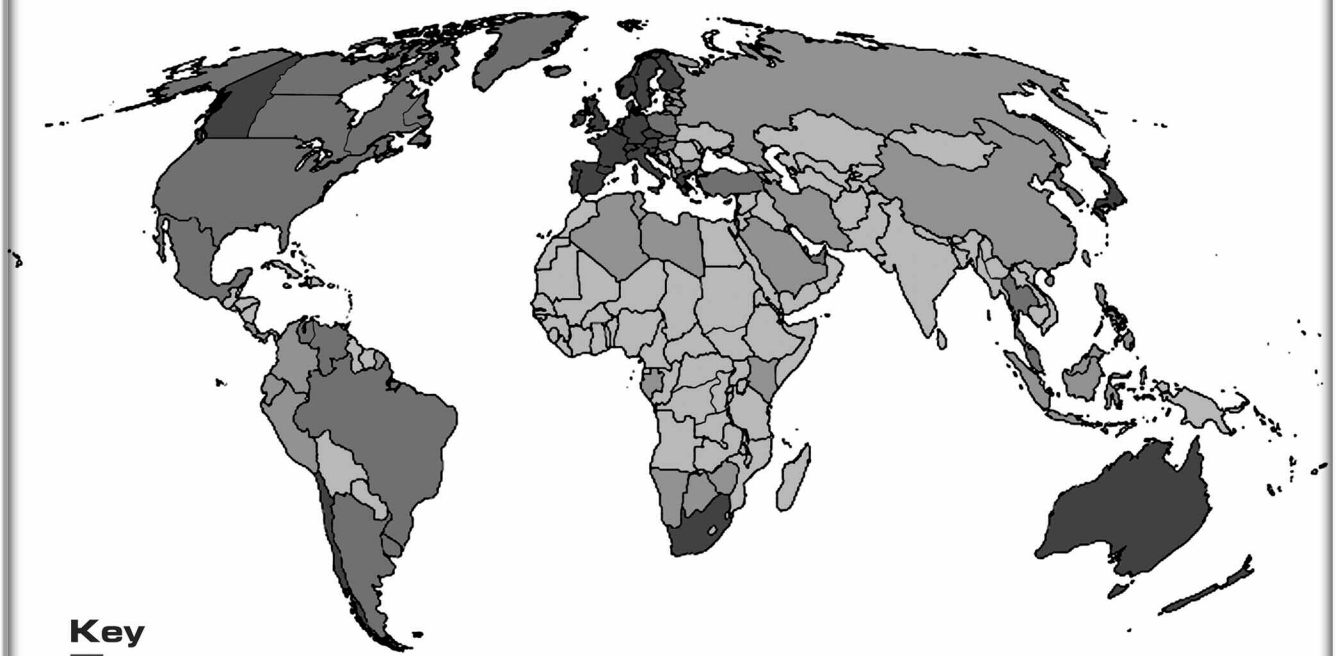
Niger has suffered badly from ecological degradation, especially as the Sahara Desert moves into previously productive agricultural areas. Niger relies on foreign aid from France and the rest of Europe to keep its economy afloat. Neighboring Nigeria has often tried to interfere in local politics.

Nigeria

The most important nation in West Africa is Nigeria. Nigeria's regional influence is due less to its technological base than its large population and oversized military. Its government is democratic and has been reasonably stable since the mid-2070s, although the military is an important factor in local politics and has deposed the civilian government on occasion in the past.

Nigeria is undergoing serious internal difficulties at present. For decades, local politics have been dominated by Muslims of the Hausa and Fulani ethnic groups. This dominant faction is strongly Preservationist. Meanwhile, a Africanized version of Transhumanism has taken root in the mostly Christian Yoruba population, encouraging them to begin wholesale gengineering of their offspring toward several *Homo superior* parahuman designs. Violence between the two factions has grown more common of late, and a full-scale civil war with ethnic and religious overtones seems possible.

World Nations: By Wealth



A color version of this map is available on the ***Fifth Wave*** website, **www.sjgames.com/transhuman/fifthwave/**.

Meanwhile, Nigeria has often found itself at odds with the smaller nations of West Africa, particularly Cote d'Ivoire and Ghana. Nigeria's government has often used threats of force when trying to resolve disputes with its neighbors.

Senegal

For most of the century, Senegal has had stable government and steady growth. The country is currently at an early industrial level, and is investing heavily in low-energy industries such as genemod agriculture and software development.

See also *Casamance.*

Togo

Togo has had a stable democratic government since mid-century. The capital of Lomé is one of the most important commercial and financial centers in West Africa, heavily supported by European (especially French) investment. Much of the city is at a Fifth Wave standard of living, while the rest of the country remains quite poor.

Nations Table: West Africa

Nation	*Alliance*	*Population*	*Stability*	*Power*	*CR*	*Wealth*
Benin	–	27 million	Fair	12.1	3	Poor
Burkina Faso	–	53 million	Fair	10.8	3	Dead Broke
Cape Verde	–	290,000	Fair	5.1	4	Poor
Casamance	–	5.6 million	Poor	10.3	4	Poor
Cote d'Ivoire	–	50 million	Good	13.7	2	Struggling
Equatorial Guinea	–	1.7 million	Fair	7.9	5	Poor
Gambia	–	6.2 million	Fair	9.4	3	Poor
Ghana	–	38 million	Fair	13.6	2	Struggling
Guinea	–	25 million	Fair	11.4	4	Poor
Guinea-Bissau	–	4.5 million	Poor	7.5	6	Dead Broke
Liberia	–	16 million	Very Poor	9.0	1	Dead Broke
Mali	–	57 million	Fair	11.3	3	Dead Broke
Mauritania	–	13 million	Poor	9.7	5	Poor
Niger	–	40 million	Fair	11.5	4	Poor
Nigeria	–	440 million	Poor	15.6	4	Poor
Senegal	–	33 million	Good	12.8	3	Struggling
Sierra Leone	–	24 million	Very Poor	8.7	2	Dead Broke
Togo	–	12 million	Good	10.6	3	Poor

High Industrial Corporations

Just because the world is in the midst of the Fifth Wave doesn't mean that old-fashioned industry is no longer an issue. Many of the world's corporations still specialize in resource extraction, refining, manufacturing, and similar tasks. Of course, most businesses apply a variety of new technologies to their work. These "high industrial" firms form the backbone of the global economy.

Alvarez Motors S.A. (Buenos Aires, Argentina): A major manufacturer of ground cars and other wheeled vehicles. Exports its automobiles all over the world.

CanesVen Enterprises (Denver, United States): A weapons manufacturer known for its production of superb small arms for the civilian and police markets.

CIT/Provençale (Marseille, France): One of the largest French industrial conglomerates, with divisions involved in many manufacturing specialities.

Energia Brasileira S.A. (Rio de Janeiro, Brazil): Brazil's largest energy-production firm, operating a number of fusion power plants throughout the Americas. Known for its well-trained "plant security" branch.

Fickel Bergbau AG (Bonn, Germany): A major player in the mining industry on Earth, specializing in deep-core mines that reach most of the way into the planet's crust.

Grupo Pacifico S.A. (Mazatlán, Mexico): A consortium of Mexican manufacturing firms with extensive ties to the United States and Ecuador.

Hvide Stjerne A/S (Copenhagen, Denmark): Important ground-based manufacturer of orbital satellites. Currently suffering considerable competition from similar firms based in space.

Nyeri Viwandazito (Nairobi, Kenya): Major producer of heavy industrial equipment. Currently bidding aggressively for contracts on the Olympus Project.

PT Bintang Bumi Bulan (Djakarta, Indonesia): An Indonesian mining firm, which has escaped most trade sanctions by locating its main business offices in Singapore. Very busy throughout Southeast Asia and Oceania.

PT Manfasi (Djakarta, Indonesia): An Indonesian firm specializing in solar-energy installations. Currently suffering the effects of trade sanctions being imposed on Indonesia.

RV Interorbital Ltd. (Manchester, United Kingdom): A transport firm, providing suborbital flights worldwide as well as regular service to low Earth orbit.

America (Central)

Central America is currently on the front lines of the confrontation between nanosocialism and free-market capitalism. Several of the region's smaller countries have joined the Transpacific Socialist Alliance, while powerful Mexico seems likely to be an ideological battleground in the near future. The United States is becoming increasingly involved in local politics.

Costa Rica

This nation has been stable and relatively prosperous for well over a century. Although it is politically independent, it cooperates closely with the United States. This relationship has grown closer since the nanosocialist takeover of neighboring Nicaragua.

El Salvador

El Salvador has been a member of the TSA since a nanosocialist party took power during the peaceful elections of 2088. The current regime is quite moderate, and contributes little to the effort for nanosocialist expansion. Indeed, there are rumors that the local government cooperates covertly with the United States in exchange for loose American enforcement of the anti-TSA sanctions. Nearby Guatemala has been threatening to topple the Salvadoran government should these rumors turn out to be true.

Nations Table: Central America

Nation	*Alliance*	*Population*	*Stability*	*Power*	*CR*	*Wealth*
Belize	–	770,000	Poor	7.1	1	Struggling
Costa Rica	–	6.1 million	Very Good	12.0	2	Average
El Salvador	TSA	15 million	Good	11.8	4	Struggling
Guatemala	TSA	43 million	Fair	13.5	6	Struggling
Honduras	TSA	15 million	Very Poor	11.4	5	Struggling
Mexico	–	170 million	Good	17.8	3	Comfortable
Nicaragua	TSA	11 million	Fair	11.0	4	Struggling
Panama	AME	3.9 million	Good	11.3	4	Average

Guatemala

Guatemala has been a member of the Transpacific Socialist Alliance ever since the previous government fell to a military coup in 2091. The local nanosocialist regime is ruthless and particularly committed to exporting revolution. It supports the Honduran government with troops, and has done much to destabilize the southern regions of neighboring Mexico.

Honduras

A fierce guerrilla war is proceeding against the nanosocialist Honduran government. The government is openly supported by nearby Guatemala, while the insurgents receive clandestine support from the United States.

Mexico

The Institutional Revolutionary Party (PRI) which ruled Mexico through most of the 20th century lost its grip on power in the first years of the 21st. The result was years of social and political upheaval. In the end the Mexican democracy was considerably more robust, less characterized by single-party corruption and minority rebellion. Meanwhile, relations with the United States improved considerably, as American politics were influenced by the growing Hispanic population. By 2050 the two nations were close allies, and cross-border trade was causing a Mexican economic boom.

Today Mexico is a healthy democracy with an advanced Fourth Wave economy. Although Mexico is still overshadowed economically by the United States, the disparity between the two is much smaller than in 2000 and is still shrinking. Mexican leaders look forward to a time when their country will stand as an equal partner of the United States.

The major challenge facing Mexico today is the rise of nanosocialism. The current central government could be considered a moderate nanosocialist regime, which respects foreign patents and copyrights but nationalizes intellectual property created by Mexican citizens. However, portions of the country have seen a dramatic rise in radical nanosocialism. Nearby Guatemala has been sponsoring covert subversive activity in southern Mexico for several years. The Mayan and *mestizo* populations in deep southern Mexico have lagged behind the rest of the country economically, and their relations with the central government have often been tense. If Guatemalan agents are successful in setting off an uprising, the consequences could be grave.

Nicaragua

Nicaragua went nanosocialist after the elections of 2086, and has since joined the Transpacific Socialist Alliance. The country is too involved with the difficulties of internal development to contribute much to the alliance.

Panama

Independent for decades, Panama has recently realigned itself with the United States out of fear. Before the new alliance was signed in 2091, Panama was under fierce pressure from the nanosocialist regime in nearby Colombia. Since then, American troops and military aid have flooded into Panama to prop up the local government and protect the still-important Canal.

America (North)

North America remains one of the most prosperous regions on the planet. Local politics became considerably more complicated in the 2030s with the breakup of Canada. Although the United States still expects no military threat from the north, it must often engage in complex diplomacy where once it enjoyed a simple relationship with unified Canada. Meanwhile, the United States itself is showing signs of internal instability.

Alberta and British Columbia

Two former Canadian provinces formed the Union of Alberta and British Columbia (sometimes called the "ABC Republic") in 2034. The Union is a prosperous Fifth Wave nation which trades extensively with Japan and other parts of Asia. It is a full member of the Pacific Rim Alliance. Relations with Canada and the United States are occasionally strained, and in fact there have been several (so far bloodless) border confrontations with the United States.

Canada

Ironically, after years of dispute over Quebecois separatism, Canadian unity finally foundered on another issue entirely. Disputes over taxes and environmental policy caused British Columbia to secede in 2033. Once the union had been broken, other provinces chose to elevate their own disputes with the central government into pretexts for secession. Even the autonomous region of Nunavut, far in the arctic north, began agitating for independence. By 2045 Canada had been whittled down to its core, with Manitoba, Ontario and Saskatchewan the only provinces remaining in the union.

Esperante Enterprises

Esperante Enterprises was founded in the early 2030s by Julian Grant, a British expatriate living in the Republic of South Africa. Grant was one of the "philosopher entrepreneurs" who caught the world's imagination in that period, making a fortune for himself while working to improve the lot of some of the world's poorest people. In keeping with this goal, his firm was less a profit-making enterprise than a self-supporting charity. Instead of specializing in a particular product, Esperante Enterprises specialized in developing pools of very low-wage labor.

In its early days, a typical Esperante Enterprises subsidiary followed a careful strategy. After reaching an agreement with the local government, Esperante would place a plant in a region suffering from chronic underemployment. The plant would be built and staffed by anyone who was willing to work hard, regardless of skills or experience – senior Esperante employees would teach any necessary skills during construction. This process was aided by cutting-edge instructional software, along with construction methods adapted to unskilled labor. Esperante gave its workers more pay, barely, than they could earn elsewhere. Its education and medical benefits were superb, however, and every worker took part in a profit-sharing plan which earned him a potential share in the factory itself.

The products manufactured at an Esperante facility were always chosen for ease of shipping and the ability to earn a modest profit in the developed world. For example, the Esperante plant built in Luanda in 2036 assembled personal-assistance robots for sale to middle-class homes in Europe and the United States. These robots were not cutting-edge technology, but they were cheap and reliable, and more affordable than the "luxury" models being built in the developed world at the time.

Eventually, the factory would be self-sufficient. At that point, the parent company would divest itself of the facility, turning a controlling interest over to the workers themselves . . . after which the firm would be off to its next venture. By the 2050s Esperante Enterprises was operating plants in over two dozen poor nations around the world.

Naturally, the Esperante business model had only mixed success. Some of the divested facilities continued in operation, adding to the economic base of their host countries. Others failed due to mismanagement, external interference, or simple shifts of the market. Meanwhile, the model never netted large profits for Esperante Enterprises. Julian Grant died in 2079, with only a modest fortune.

After Grant's death, Esperante Enterprises was taken over by an unscrupulous faction among his heirs. Over the past 20 years, they have continued to seek out pools of very cheap labor, but the corporation is no longer interested in developing local communities. Instead, costs of all kinds have been cut as far as possible. No longer do Esperante factories offer medical, education, or profit-sharing benefits. The largest payments are usually kickbacks to corrupt local officials. Instead of winning the loyalty of employees, Esperante hires mercenaries or local government enforcers to keep the labor force in line.

Where once Esperante Enterprises was known for bringing hope to the world's poorest nations, now it is known for contributing to corrupt regimes worldwide. The change in Esperante's strategy was very unpopular; recently (2097) the company had to relocate from South Africa to Lagos, Nigeria. Of course, corporate profits have risen considerably . . .

The final dissolution of Canada was remarkably amicable, aside from a few disputes over the division of national property and the undeveloped northern territories. Today Canada maintains a friendly relationship with most of the splinter states. Canada is a prosperous Fifth Wave society, with strong economic ties to the United States. Since it adjoins three of the Great Powers (the European Union, the Pacific Rim Alliance, and the United States) Canada sees a great deal of international trade. It also has a chronic problem with smuggling across previously undefended borders.

See also *Alberta and British Columbia, Maritimes, Montreal, Newfoundland, Nunavut,* and *Quebec.*

Greenland

Greenland attained full independence from the Kingdom of Denmark in the 2030s. The local economy has struggled for much of the century. In recent decades there has been heavy investment in various Fourth Wave industries, such as fish-farming and cold-adapted pharm animals. This strategy has paid off, so that today the population has a comfortable Fourth Wave standard of living. Arctic-adapted parahumans have recently been settling in the far north in large numbers. There is some agitation for union with nearby Nunavut, driven by common economic and environmental interests.

Maritimes

The Maritime Union is composed of three former Canadian provinces (New Brunswick, Nova Scotia, and Prince Edward Island) all of which seceded from Canada between 2038 and 2045. The unified nation was established in 2048 and has since joined the European Union. The Maritimes have a comfortable Fourth Wave economy, and are world leaders in fish-farming and other forms of pelagiculture.

Montreal

When the province of Quebec separated from Canada in 2036, the city of Montreal went with it at first. However, many citizens were uncomfortable with this position, and agitated for a plebiscite to determine the city's ultimate fate. In the end, the city chose neither continued union with Quebec nor a return to Canada. Instead, Montreal voted for the status of a "free city" with its own independent government and laws. At first, Quebec resisted this move and threatened to use force, but pressure from the United States and the rump Canadian state prevented violence. By 2041 Montreal had severed all political ties and was an independent city-state.

Today Montreal has a Fifth Wave standard of living and a booming economy. As an intermediary between the European Union and North America, the city has a considerable income from trans-shipment and other forms of foreign trade. The local banking, biotech, and electronics industries are also important. Montreal's blend of Quebecois, Anglophone Canadian, and American traditions also makes it a major cultural center, with a vibrant artistic community and entertainment industry.

Newfoundland

Newfoundland seceded from Canada in 2039, later joining the European Union. The island republic is currently a prosperous Fourth Wave state, somewhat ahead of the nearby Maritime Union.

Nunavut

Nunavut is an unusual nation, dominated by Inuit culture and populated in large part by Arctic-adapted parahumans. It has a healthy Fourth Wave economy, and its population and economy are both growing quickly. The Nunavut government is pursuing trade and diplomatic ties with other far-northern political entities, such as Greenland, Russia, and the state of Alaska. The ultimate goal is an "Arctic League" devoted to the protection of the Arctic environment and the indigenous cultures of the far north.

Quebec

Although it was for long the primary focus of secessionism in Canada, Quebec did not finally declare its independence until 2036, once Alberta and British Columbia had already seceded. After independence Quebec suffered through a period of instability and seemed likely to fragment further. When Montreal became a free city, the situation stabilized.

Quebec currently has a healthy democratic government and a Fourth Wave economy. It has been a member of the European Union since the early 2050s, and has become closely tied to France in diplomatic affairs.

United States

The U.S. has often seemed an actor among nations, devoted to playing one role or another on the world stage. "Land of the Free" was followed by "the Arsenal of Democracy," then by "Leader of the Free World." That last role survived for decades, bolstered by the largest national economy on the planet, the most powerful and advanced military, and a truly imperial network of alliances and defense commitments. By the 2020s, however, the U.S. was unable to maintain its leadership role. Former allies were asserting their independence in world diplomacy. Meanwhile, the American economy was being surpassed by those of other nations, and its military power was in slow decline. By the era of the Overturn (see p. 13) the United States was simply one Great Power among many.

The 60 States

There are 10 new states in the Union. These fall into three major categories.

Completely New States: Both Guam and Puerto Rico were admitted to the Union in the 2020s. Considered on its own, Guam is the wealthiest island-state in Polynesia, with extensive data-haven, financial, trans-shipment, and tourism industries supplementing income from U.S. military activities. Puerto Rico holds a similar position in the Caribbean, with the addition of extensive biotech and pelagiculture industries.

City-States: As a whole, the United States has had no serious trouble with secessionism in the past century. On the other hand, several individual *states* have divided into smaller political units. In most cases, this was a result of persistent cultural divisions between a major metropolitan area and a state legislature dominated by suburban or rural interests – a trend similar to the appearance of "free cities" elsewhere in the world (p. 13). Atlanta, Chicago, Miami, New York City, Greater San Francisco, and Seattle-Tacoma all function as distinct states within the Union, sending their own senators and representatives to the United States Congress. San Diego does likewise, with the complication of its relationship with Tijuana, Mexico; the two cities cooperate very closely despite their allegiance to different national governments.

Cibola: The most unusual of the new states is Cibola, founded in the 2070s by carving out the Four Corners region of Arizona, Colorado, New Mexico, and Utah. Cibola is dominated by Native American interests, particularly the Navajo and Hopi tribal governments. It is sometimes promoted as the harbinger of a new relationship between Native American tribes and the federal government.

There has been one other significant adjustment to state borders, although it did not affect the count of states. The District of Columbia has been almost completely annexed by the state of Maryland, leaving behind a much smaller Federal District. The current "federal enclave" includes only a small packet of territory around the Washington Mall, its only permanent residents the President, his family, and the White House live-in staff.

American society is sharply divided along cultural and generational lines. The political system is dominated by a bloc of elderly, wealthy, Christian, and deeply conservative voters. Arrayed against this dominant coalition are Transhumanists, cultural minorities, recent immigrants, the underemployed, and the younger generation. The schism reveals itself in almost every aspect of American society, from federal budget policy to popular entertainment.

American internal politics are quite lively. The ancient Democratic and Republican Parties still dominate events, although the grand alignment of liberal and conservative factions has shifted several times in the past century. The Democratic Party has been ascendant since the Tricentennial elections of 2076, due to strong support among Hispanics and the super-elderly. Democrats are currently the nation's major conservative party, promoting Preservationism, strict regulation of new technologies, and diplomatic and economic isolation. Republicans are the nation's leading liberal party, providing a haven for technocrats, industrialists, scientists, and supporters of the American space program. Republicans tend to promote technological innovation and global free trade; a few Republicans are openly Transhumanist in sentiment.

Despite the continued dominance of the two major parties, a series of election reforms early in the century opened up the political system somewhat. Today most Presidential elections involve several third-party and regional candidates, who become involved in coalition-building between election day and the installation of a new government.

The long-established workings of American politics have recently been disturbed by a new political movement, calling for cyberdemocratic reform of the political system (p. 19). This "People's Power" movement is fragmented, and includes both establishment politicians and armed radicals. The latter have been quite active since 2095, forcing the American military to fight a low-level counterinsurgency campaign in several of the country's urban zones.

Modern American society is dominated by no one culture, but the most common cultural flavor is Hispanic rather than Anglo-American. English remains the sole official language, but Spanish slang and loan words have become common in the "standard" American dialect. Most Americans are more cosmopolitan than their ancestors of a century ago, although they feel closer ties with Latin America than with Europe. This shift is reflected in American foreign policy, which since mid-century has been more deeply involved with Central and South America than with Europe or the Far East.

Today, many Americans are ambivalent about their national identity. Even patriots tend to focus admiration on a specific aspect of modern American society: the space program, the rapid pace of technological innovation, the high standard of living, the richness of the local entertainment industry, the nation's cultural diversity, national history, or some other item. The United States has become a place where personally constructed identity – the individual's choice of genetic, cultural and technological style – is more important than any sort of national consciousness. Some Americans consider this a sign of final decline for the nation, while others revel in the freedom of the time.

Nations Table: North America

Nation	*Alliance*	*Population*	*Stability*	*Power*	*CR*	*Wealth*
Alberta & British Columbia	PRA	10 million	Very Good	14.1	2	Wealthy
Canada	–	20 million	Very Good	14.9	3	Comfortable
Greenland	EUR	58,000	Very Good	6.5	3	Comfortable
Maritimes	EUR	2.6 million	Very Good	11.8	3	Comfortable
Montreal	–	4.9 million	Very Good	13.0	2	Wealthy
Newfoundland	EUR	770,000	Very Good	10.1	3	Comfortable
Nunavut	–	240,000	Good	8.4	1	Comfortable
Quebec	EUR	5.8 million	Very Good	12.9	3	Comfortable
Saint Pierre and Miquelon	(EUR)	5,500	Very Good	2.7	3	Comfortable
United States	AME	480 million	Fair	19.6	2	Comfortable*

* Many regions of the United States are Wealthy.

For most of the century, the United States was the world's leader in almost every area of technology. To a great degree, the Third Wave civilization was built by the United States, and the technologies of computers and digital networks have always been most advanced here. The American segment of the Web is richer and more complex than any other. The United States was slower to adopt radical biotechnology, but it had become a center of human genetic alteration and bioroid manufacture by the late 2040s. Recently the United States has tended to fall behind Europe in the development of cutting-edge Fifth Wave technologies, but so far this disadvantage has been minimal.

American foreign policy has yet to recover from the country's loss of superpower status. Since the 2050s the United States has avoided alliances with any other major power, restricting itself to relationships with strategically placed minor nations. American policy is particularly cool toward the European Union and the Pacific Rim Alliance, although long-standing partnerships with Australia and the United Kingdom remain in effect. The United States' best relationships are with Latin America, specifically Argentina, Ecuador, and Mexico.

America (South)

South America is a reasonably stable and prosperous place. Even so, finely balanced international tensions exist. Powerful independent nations such as Argentina and Brazil face off against the American wing of the nanosocialist bloc. The United States is also deeply involved in local politics, defending its close relationships with Argentina and Ecuador.

Argentina

One of the most powerful and prosperous nations in South America. Argentine ground vehicles are widely regarded as the best in the world, and are exported to markets as distant as Japan and Western Europe. Significant recent investment in Fifth Wave industries seems likely to pay off soon, bringing Argentina up to the leading edge of technological development. Argentina is not a formal ally of the United States, but the relationship between the two countries is very warm.

Bolivia

A nanosocialist coup brought Bolivia into the Transpacific Socialist Alliance in 2076. Of the three South American TSA members, Bolivia is by far the junior partner. Its people still lack access to most Third Wave technology. The nanosocialist regime has never gained the support of the rural population, who have been mounting a low-level guerrilla campaign against the central government for over 20 years. Bolivia has a long-standing dispute with Chile over access to the sea, and may call upon its nanosocialist allies to help it resolve the problem by force.

Brazil

Brazil is sometimes called the "China of South America." The comparison is apt; although Brazil lags behind its neighbors in technology and standard of living, it boasts the largest economy on the continent. Indeed, Brazil has the fifth-largest national economy on Earth, and seems likely to play an increasingly important role in world affairs with time.

Early in the past century, Brazil was often snarled in controversy over environmental issues. The vast potential resources of the Amazon basin were regarded as key to Brazilian prosperity, but at the same time any development of the region threatened some of the most valuable rainforest ecosystems on the planet. The tension between these facts led to considerable internal strife, as well as a series of disputes with the world community. During the 2030s, Brazil developed a significant local biotech industry, encouraging policy-makers to impose effective protections on the Amazon basin. This proved not so difficult, once preserving the rainforest was regarded as more profitable than destructive development. Deforestation was halted by 2045, and has somewhat reversed since then as ecologists slowly learn to reconstruct the natural ecosystem.

Brazil has a variety of Fourth and Fifth Wave industries, notably bioroid manufacture, genetic engineering, pharmaceuticals, and heavy robotics. Indentured

bioroids and engineered parahumans are relatively common. The country also has a small but very active space program, dating to the early 2010s when Brazilian investors helped build the first launch facilities in Ecuador.

Chile

Decades of stable government and strong economic development have made Chile one of the wealthiest countries in South America. Today Chile has an advanced Fifth Wave economy, and is a world leader in robotics and artificial intelligence. Foreign trade is very important, especially with the United States and European Union.

Chile has long had a troubled relationship with its Andean neighbors, Bolivia and Peru. Bolivia in particular has a long-standing grudge against Chile, regarding the Atacama Desert region in the far north. This area was seized by Chile over 200 years ago, cutting Bolivia off from access to the sea. Bolivian governments have often voiced their desire to recover the region. Currently the nanosocialist bloc is applying heavy diplomatic pressure on Chile, and staged border incidents are becoming more common. Chile's powerful military has thus far deterred attack.

Colombia

Colombia managed to deal with internal insurgency and corruption early in the century, and enjoyed several decades of relative peace and prosperity. Unfortunately, a nanosocialist coup toppled the elected government in 2081, setting off a new round of internal violence. Today Colombian exports are becoming notorious once again, although the current products are saboteurs, spies, and "black" nanoware rather than narcotics.

Ecuador

Ecuador's unique position in hemispheric politics is due to a long-standing relationship with the United States. In the 2020s, the American corporation Columbia Aerospace built the world's largest spaceport outside Quito. Using several innovative technologies, Columbia Aerospace soon dominated the ground-to-orbit market and ushered in a new era of space development. Part of the process involved massive investment in Ecuador's economic infrastructure, which was turned to good use by a series of effective local governments. By 2050 Ecuador had surpassed all the other Andean states in stability and economic productivity.

This new prosperity roused some envy, of course. For much of the 21st century, Ecuador has had to defend itself against possible attack from Colombia or Peru. Ecuador has carefully maintained a close alliance with the United States, and has cultivated a small but very professional and well-equipped military of its own.

Today Ecuador is a moderately prosperous Fourth Wave nation. The population is unusually rich in variant human types, and bioshells and cybershells are quite common. The nation's leaders are aware that their long relationship with the United States may be about to change as the Kenyan beanstalk approaches completion. The government has been carefully playing up the possible threat from its nanosocialist neighbors, hoping to keep the United States involved in South America even after Atahualpa Spaceport is no longer such a critical element of American foreign policy.

Net Backbone Corporations

The global information web has been over a century in the building and requires massive capital investments to maintain. Many large businesses are involved with producing the hardware that carries data or the software that manages it. Others provide "content" that the world's citizens access routinely through the web.

AlephNull Systems, Inc. (Seattle, United States): A major manufacturer of hyperfast routers, switches, and dataflow security hardware.

Alhambra Sensuals S.A. (Málaga, Spain): A German-Spanish producer of (very popular) slink-porn, made famous by Ayesha Lovecraft.

Bharat Teleproductions Pvt. Ltd. (Mumbai, India): One of the world's largest producers of old-style videos, InVids, and slinkies.

Gemini Volksrobotics (Melbourne, Australia): A very popular producer of utility and companion cybershells for the global household market.

Kanzaki Robotics (Osaka, Japan): A major manufacturer of industrial robots and automated vehicles. Known for its innovations in low-level AI design.

Kogitant GmbH (Salzburg, Austria): A well-known designer of advanced sentient-AI software. Currently under suspicion of performing illicit research on emergent intelligence.

Ludimages (Cannes, France): Major producer of interactive VR entertainment, emphasizing strategy and roleplaying games.

Portcullis General Security Systems, Inc. (Baltimore, United States): Data security consultancy known for its innovative use of low-sentience software agents.

SegFault Inc. (Spokane, United States): Specializes in cheap distributed-processing systems and "evolved" software agents.

PT Nolsatu (Djakarta, Indonesia): The largest software-engineering house in Southeast Asia. Has a robust research division, which earns plenty of income from state subsidies.

Xarxa Enllaç SL (Barcelona, Catalonia): One of the largest telecommunications and networking firms in Europe.

Paraguay

This South American country suffered from political instability and corruption early in the century, but has been relatively stable since the 2030s. Economic growth has been slow, and the current standard of living is unusually low for the region.

Peru

Peru has been a haven for radical politics since the success of the Red Sword insurgency in the early 2050s. The Peruvian government declared its support for the principles of infosocialism quite early. By the mid-2070s the Peruvian government was supporting infosocialist groups all over South America. Today Peru leads the American wing of the TSA.

Peru's economic and technical base is about average for the TSA. It does not pose a serious military threat to the more prosperous nations of South America, but it provides plenty of nuisance value. Spies, saboteurs, and political operatives fan out from Lima, infiltrating nations as far away as Argentina and the United States. Meanwhile, Peru and its ally Colombia do pose a threat to Ecuador, surrounding it and outnumbering its armed forces.

Teralogos

The Teralogos Consortium was founded in the late 2020s during the merger of several older media firms. Its ancestral companies were all heavily involved in providing Internet "content," and the new consortium soon dominated that market throughout the United States and Western Europe.

Today, Teralogos is the leading player in the global information market, dominating the news industry and holding a significant position in the entertainment business as well. Indeed, many of the corporation's critics claim that there is too much overlap between the two – Teralogos "newsbytes" are often described as shallow and entertainment-oriented. Still, the company continues to produce some very good journalism, regularly beating lesser outlets and even national intelligence agencies to publication.

Suriname

Suriname suffered from economic mismanagement early in the century, but has since managed slow, steady growth. Local society has long been notable for its rough balance between wildly variant religious traditions – Catholic, Hindu, Muslim, and Protestant elements are all significant in the population. In the early 2050s this mixture gave rise to a syncretic movement called *Degeloven* (from "De Gereformeerde Vereenigde Geloven," roughly translated as "the Reformed Unified Faiths"). Degeloven borrowed religious ideas from all the faiths prevalent in Suriname, along with neo-paganism and a heavy dose of Transhumanist philosophy. The resulting memetic structure has caught on in many odd places. About 20% of the people of Suriname consider themselves followers, and there are several million in other countries as far away as Brazil and the United States.

Uruguay

This minor South American nation has not always enjoyed stable government, but its economy is healthy and living standards are high. Uruguay was a biotech sanctuary early in the century. The University of Montevideo remains one of the world's foremost centers of research in genetic engineering.

Venezuela

Venezuela has been in a long decline since the fall of the oil industry and the secession of the wealthy Zulia state in 2073. The current government is working to encourage investment in cutting-edge industries. It has recently made diplomatic overtures to the United States, hoping to gain increased aid against nanosocialist infiltration.

See also *Zulia.*

Zulia

The former Venezuelan state of Zulia stands on the country's western border, on both sides of the Lago de Maracaibo. Early in the century, long-standing resentment of the central government led to the formation of a peaceful separatist movement. Unfortunately, Zulia was the site of much of the country's oil wealth, and the Caracas government was determined to retain control. Independence did not come until 2073, by which time Venezuela's economy had long since been forced to give up dependence on petroleum exports.

Today Zulia has a healthy Fourth Wave economy with a diverse range of local industries. The political situation has been stable since independence, although since about 2090 there has been some trouble with economic and memetic sabotage sponsored by the TSA.

Nations Table: South America

Nation	*Alliance*	*Population*	*Stability*	*Power*	*CR*	*Wealth*
Argentina	–	53 million	Very Good	16.3	3	Comfortable
Bolivia	TSA	16 million	Poor	12.1	5	Struggling
Brazil	–	210 million	Good	17.6	3	Comfortable
Chile	–	19 million	Very Good	15.2	2	Wealthy
Colombia	TSA	72 million	Fair	15.3	6	Average
Ecuador	AME	28 million	Very Good	14.3	2	Average
French Guiana	(EUR)	380,000	Good	7.3	3	Average
Guyana	–	810,000	Good	7.3	2	Struggling
Paraguay	–	21 million	Good	12.8	3	Struggling
Peru	TSA	50 million	Good	14.8	5	Average
Saint Helena	(EUR)	6,400	Very Good	0.0	3	Poor
Suriname	–	300,000	Good	6.4	3	Struggling
Uruguay	–	5.0 million	Fair	12.0	3	Comfortable
Venezuela	–	36 million	Good	15.0	2	Comfortable
Zulia	–	5.5 million	Good	12.3	3	Comfortable

Asia (Central)

In many ways, Central Asia is the forgotten corner of the world. The former Soviet republics here have struggled for the last century with deep social, economic, and environmental problems. Currently they are usually pawns of their more powerful neighbors, such as China, Iran, Pakistan, and Russia.

Afghanistan

This "nation by courtesy" is bitterly divided along ethnic and ideological grounds. Despite sporadic attempts at coalition-building over the last century, today it remains fractured into various factions, each controlling their own territorial regions, and occasionally going to war against one another with the backing of outside powers (such as China, Iran, Pakistan, or Russia). Afghanistan is one of the most desperately poor nations on Earth.

Kazakstan

At the beginning of the century, Kazakstan faced serious problems: an unstable economy, ecological devastation left over from the Soviet era, and tensions between the Russian and Kazak populations. Balanced against this was significant oil and mineral wealth, along with partial control over the old Soviet launch facilities at Baykonur.

Faced with these challenges, Kazakstan struggled along for several years. The last elected government fell to an ethnic-Russian putsch in 2018, which seized control with support from the military. By 2024, an oil tycoon named Sergei Maksimovitch Zarubayev had outmaneuvered all his rivals and become the country's dictator.

In 2100, Zarubayev is *still* the absolute ruler of Kazakstan, having stayed in power through a combination of physical longevity, clever politics, and utter ruthlessness. More than any dictator in modern history, he has stamped his personal vision on his own country. Ethnic Russians form the elite of his state; non-Russians (and especially Muslims) suffer vicious police-state oppression. Under him, Kazakstan has meddled in politics all over central Asia: supporting nationalistic movements in Russia, interfering in the internal affairs of other post-Soviet states, rattling sabers with China, and so on.

Kyrgyzstan

Kyrgyzstan's economy is at an early Third Wave level, fairly stable with a significant export sector. The local government is a corrupt dictatorship, which generally follows Russia's lead in foreign policy. Several prominent members of the government are rumored to be in the pay of the Zarubayev regime in neighboring Kazakstan.

Tajikistan

Tajikistan has traditionally fallen into the Russian sphere of influence, but the current government has been negotiating with China for military and economic aid. Both Russia and the Zarubayev regime in Kazakstan are likely to intervene if the Dushanbe government shows signs of moving too close to Beijing.

Turkmenistan

Turkmenistan has had little success in making the transition to democracy and open markets. The current government is closely tied to Iran, but there are several anti-Iranian insurgency groups in operation.

Uzbekistan

This country is currently the stage of a guerrilla war between Islamic fundamentalist and pro-democracy factions. The Zarubayev regime in neighboring Kazakstan is intervening with troops and arms sales.

Nations Table: Central Asia

Nation	*Alliance*	*Population*	*Stability*	*Power*	*CR*	*Wealth*
Afghanistan	–	94 million	Very Poor	10.9	0	Dead Broke
Kazakstan	RUS	22 million	Good	12.8	6	Struggling
Kyrgyzstan	RUS	12 million	Fair	11.0	5	Struggling
Tajikistan	RUS	24 million	Poor	9.8	4	Dead Broke
Turkmenistan	–	13 million	Poor	10.1	5	Poor
Uzbekistan	–	61 million	Very Poor	13.4	4	Struggling

Asia (East)

East Asia has become the fulcrum of the world community. China, Japan, and Korea are all populous, wealthy nations with a great deal of power in global affairs. The situation here is one of watchful peace. As has been the case for nearly a century, the other nations of East Asia step lightly around China, while carrying on massive trade with the now-awakened giant.

China

Just as the 20th century was often called "the American century," the 21st can be considered "the Chinese century." Today's China is the most powerful single nation-state on the planet. It is not the most populous, the most technologically advanced or the most prosperous nation. Even so, the People's Republic stands near the top in all three of these measures, and thus has the largest economy in the world. Meanwhile, it enjoys internal unity and a sense of national purpose that multiply its effectiveness in world affairs.

The People's Republic was originally a Communist state. In 2100 state power remains with the National People's Congress, which is still dominated by the Chinese Communist Party. Despite the name, the Party has evolved far from Mao Zedong's version of Communism. China remains an authoritarian state, in which political and civil rights are limited in order to protect the Party's domination. The Chinese people do enjoy a variety of civil and economic rights, especially in the "special administrative regions" of Guangzhou, Hong Kong, Macau, and Taiwan. Privately owned business is the main driver of the economy. Indeed, since about 2050 the senior Party leadership has been composed primarily of successful businessmen.

The Chinese system of governance has changed in other ways as well, allowing regions within the state greater independence. At the beginning of the century, there was already considerable tension between China's highly centralized political system and its decentralized economic system. About 2010, a new generation of Communist Party leadership began to deliberately loosen the grip of the central government. Henceforth, portions of China would be permitted to experiment with democracy or other "dangerous" ideas, so long as the experiments were safely limited in geographical scope and the authority of the Party was not threatened.

This careful opening to new political ideas had some precedent in the "one country, two systems" rule under which Hong Kong and Macau had been allowed to retain democratic institutions. Soon the notion faced its sternest test, as the Chinese government opened negotiations with its "renegade province" on Taiwan. The so-called Republic of China was offered almost total internal autonomy, its democratic and free-market institutions to be left intact. In exchange, foreign and defense policy would be turned over to the Beijing government, although Taiwan was guaranteed representation in the appropriate ministries.

The negotiations went surprisingly well. Although there was an active independence movement on Taiwan, the ruling Kuomintang party had always supported the idea of eventual reunification. Reassured that they would not be robbed of their hard-won democracy, many Taiwanese supported reunification on the grounds of common culture. Reunification was complete by 2022.

Strict state controls have tended to make Chinese adoption of Third Wave technologies rather slow. To this day, ordinary citizens outside the "special regions" are not permitted to use advanced privacy technology. The state has traditionally made large investments in systems which allow it to monitor telecommunications traffic and otherwise track the activities of its citizens. "Abuse" of web technology is a serious offense in most parts of the People's Republic.

On the other hand, since the 2020s China has been a leader in the area of biotechnology. Bioengineering was applied to agriculture early and on a massive scale, making China a world leader in agricultural exports as early as 2035. Human cloning, variant human genotypes, and bioroid manufacture all gradually became important elements of the Chinese economy. These

industries have made China an industrial powerhouse, even without the universal adoption of Fifth Wave technology. Of course, Hong Kong, Macau, and Taiwan all have advanced Fifth Wave economies, and represent the leading edge of Chinese industry.

The Chinese government strives for self-sufficiency in world affairs, despite extensive economic ties to the rest of the world community and full participation in most international organizations. The People's Republic follows its own diplomatic course, rejecting any "interference" from outside and refusing to form substantive alliances with any other nation. For their part, the Chinese people are not entirely happy with their own government, but most are patriotic and distrustful of foreigners. Most think of China as a nation set apart, dedicated to carving out its own destiny without the help (or interference) of others.

For over 20 years China has been engaged in political and covert maneuvering on a grand scale, less to build an empire of its own than to prevent any of its rivals from building a strong anti-Chinese position. Today Chinese agents might be found almost anywhere in the world, ferreting out secrets, trying to manipulate national politics, or supporting friendly movements in the local population.

Japan

Outside of Europe and the United States, Japan is the most prosperous and technologically advanced nation on the planet. Japanese society changed considerably in the course of the 21st century, overcame severe structural problems in its economy, and became a founding member of the prosperous Pacific Rim Alliance. Today Japan is seen by some observers as retiring from the world, and by others as boldly leading the way into a posthuman future.

Japan's population declined by over 30% during the 21st century, despite the widespread use of geriatric and rejuvenative technologies. The Japanese have simply gotten out of the habit of having children. While Japanese society still values and cherishes children, fewer individual Japanese have childbirth and childrearing as a personal goal. Meanwhile, the fall in birthrates and the dramatic extension of lifespans has made the average age of the Japanese population higher than that of any other nation. This change in Japanese demographics has also made the country conservative in outlook. Political and social leaders are almost all from the ranks of the very elderly, and they are primarily concerned with maintaining the prosperity which has allowed the distinctive Japanese society to flourish, while remaining somewhat apart from the rest of the world.

The human population of Japan exists largely as a management and leisure class. Ideally, a young Japanese citizen is trained as a manager, creative artist, or scientist, earning shares in one of the nation's *keiretsu* as he ages and gains experience. Eventually, he reaches the status of an "elder shareholder," who does little but manage his investments. Some young Japanese reject this path, preferring to pursue leisure or cultural activities. Most such youths live with parents or other elders. Others live solely on the income generated by inherited investments, or emigrate: the PRA nations, Elandra, Luna, Islandia, Mars, and Yametei Station in the Main Belt are popular choices.

Pacific Rim Alliance

Early in the 21st century, American involvement in the Far East sometimes clashed with local interests. Korean reunification proceeded in spite of American diplomacy rather than because of it. American saber-rattling aimed at China unnerved its regional allies, particularly Japan. Meanwhile, the presence of American armed forces in the region came to be an irritant to Asian powers increasingly willing to undertake their own defense.

The United States' withdrawal from the region was slow, and did not begin until Korean unification and the return of Taiwan to China were both clearly inevitable. American forces withdrew from Japan and Korea first; in response, the two nations signed their own mutual-defense treaty in 2030. Australia joined the new alliance in 2036, due more to concern over Indian or Indonesian aggression than any breakdown of relations with the United States. From the core formed by these three partners, the Pacific Rim Alliance grew.

In 2100, the PRA is a major player in the balance of power worldwide. The alliance's major partners have very different societies, with minarchism supreme in Australia, gerontocracy in Japan, and cut-throat capitalism in Korea. Despite these cultural differences, the allies cooperate quite well in the diplomatic and military arenas. Naturally, they do not attempt to share any framework of common laws or free-trade provisions.

The PRA's primary rivals are India and the Transpacific Socialist Alliance. Relations with China are usually cool, and PRA forces are also deployed against any possible threat from there. On the other hand, the PRA members have extensive trade links to China and there is little incentive on either side for conflict. The PRA maintains extensive air and naval forces, but has a relatively small army. All of the major PRA states have extensive foreign intelligence systems.

The recent addition of Thailand to the alliance has complicated its strategic situation considerably. Thailand remains surrounded by hostile nanosocialist states, and is regarded by China as being within its own sphere of influence.

Despite its innate conservatism, modern Japan is not known for Preservationist sympathies. Large sectors of society are openly transhumanist, and Japan has responded to its population decline by producing a national workforce which is mostly artificial. Sapient infomorphs and high-end cybershells are quite common in Japan, dominating all but a few occupations. Japan's "artificial citizens" have nearly full civil rights and are regarded as an integral part of society; there have even been marriages between SAIs and humans, although these are still uncommon. Indeed, the distinction between infomorph and human citizens has been blurring in recent years, as many Japanese create shadows of themselves in lieu of children, or undergo destructive uploading into cybershell bodies.

At first, only the elderly, eccentric, or seriously infirm became ghosts, but the accelerating tendency of healthy young people to choose to abandon their bodies for uploads is worrying even to many Japanese. Many who could not otherwise afford uploading are making use of a well-organized transhumanist underground that provides unlicensed ghost clinics. However, these establishments often suffer from substandard procedures or equipment, and this can result in would-be ghosts ending up as fragments or worse. Police have shut down a few ghost clinics, but others continue to flourish, operated by idealistic transhumanists, new religions, and criminal cells.

Despite such bumps in the road, most Japanese remain confident in their future as a nation. They believe they can reach a social consensus on issues such as uploading, and not only preserve but *perfect* Japanese culture in the context of a world where the very definition of "human" is changing.

Nations Table: East Asia

Nation	*Alliance*	*Population*	*Stability*	*Power*	*CR*	*Wealth*
China	CHI	1.4 billion	Very Good	20.0	5*	Average**
Japan	PRA	84 million	Very Good	17.2	3	Wealthy
Korea	PRA	72 million	Very Good	16.8	3	Comfortable
Mongolia	–	4.6 million	Good	10.7	3	Struggling

* CR 2 in special administrative regions such as Guangzhou, Hong Kong, Macau, and Taiwan.
** Comfortable in Guangzhou, Macau, and Taiwan. Wealthy in Hong Kong.

Korea

The peace treaty ending the Korean War of 1950-1953 was finally signed in 2016. Final reunification of Korea took place on 15 August 2025, on the anniversary of independence from Japan. For decades afterward, Korea struggled to integrate a northern half, with a history of brutal Communist dictatorship and grinding poverty, and a southern half, with a history of capitalist prosperity. In 2100, heroic effort and superb statesmanship have attained considerable success.

For many years, Korea was the only major Pacific Rim Alliance state with a potentially hostile land border (in this case with China). As a result, the Korean army is larger in proportion than that of any other PRA member. Koreans are acutely conscious and very proud of their role as bulwark of the Alliance. Korean national consciousness is very strong; many Koreans feel that they are the natural future leaders of the Pacific Rim, destined over the next few generations to eclipse the "decadent" Japanese and "barbarian" Chinese.

Korea lags in technology behind Fifth Wave nations such as Japan, but it has fully assimilated into the Fourth Wave economy and is catching up rapidly. Some sectors are already at the Fifth Wave level, notably the local cybershell industry (which exports much of its product to Japan). Bioroids are not particularly common in Korea, but Korean genetic research is quite advanced, and the country produces many cutting-edge species designs. Korean scientists have also become known for delving into the more exotic realms of physics, experimenting with areas like gravity manipulation and the properties of degenerate matter. Most analysts expect Korea to reach the "leading edge" of technological and industrial development within another 20 years.

Mongolia

Despite a rapidly growing population, the republic of Mongolia has enjoyed considerable economic growth in the course of the past century. The traditional agricultural sector now accounts for only a small portion of GNP, replaced by mining, light manufacturing, and a growing telecommunications industry.

Relations between Mongolia and nearby China have often been stormy, especially since the 16th Dalai Lama moved his base of operations to Ulaanbaatar in the early 2040s. Mongolia remains the world center of *lamistic* or "Tibetan" Buddhism and a focal point for criticism of the Chinese government. Tensions have never risen to the point of open war, but China often harasses people or goods moving across the border.

Taiwan

See *China.*

Asia (South)

Southern Asia is dominated by the growing power of India. Although India remains rather backward and poor as a whole, its huge population and economy make it a regional superpower. At the same time, instability in the region's larger countries (including India) makes southern Asia a flashpoint for global conflict.

Bangladesh

Bangladesh came late to the nanosocialist camp, joining the TSA only after a local nanosocialist party came to power in peaceful elections in 2081. The nation took little part in the Pacific War, and has since managed to avoid involvement in serious confrontation.

Once one of the world's poorest countries, Bangladesh managed rapid progress in Fourth Wave biotech industries in the 2030s and 2040s. Today the country still lags far behind the Fifth Wave nations, but desperate poverty has been almost eliminated. Most of the populace has adequate food, water, housing, and health care. The main lack felt by the citizenry is in access to information services. Outside the urban areas, many people even lack telephones, much less full web access. In any case, Bangladesh has been cut off from the global web ever since it joined the TSA.

Among the TSA nations, Bangladesh probably approaches most closely to the ideal of making the benefits of modern technology uniformly available to all its citizens. The poorest citizens have enjoyed great progress in their standard of living, while the nation's leaders ostentatiously maintain an austere lifestyle. Most Bangladeshi citizens are quietly proud of their country's progress, and work hard to press on further.

Bangladesh is dominated by the low-lying Ganges river delta. Even before global warming caused ocean levels to rise, much of the country was often devastated by monsoon storms coming off the Indian Ocean. Many citizens were relocated to higher ground in the course of the century. Meanwhile, Bangadeshi gengineers have specialized in adapting human beings to amphibious or even underwater existence. Today, the continental shelf off the Bangladeshi coast is densely settled by various "merpeople" variants, lacking advanced technology but developing their own distinctive ways to live underwater. Bangladesh intends to be a major player in undersea development as this community expands.

Bangladesh is an important jumping-off point for covert nanosocialist activities to the west. A long-standing relationship with India makes it relatively easy for Bangladeshi spies or diplomats to operate there. Meanwhile, Bangadesh has long been an exporter of labor to the Islamic countries around the Persian Gulf. This flow has been restricted by anti-TSA sanctions, but it still exists and can be used by covert operatives.

Biotech Corporations

The biotech industry has come a very long way from the "sanctuary" days. Today, Fourth Wave biotechnology forms the largest sector of the world economy. Geriatric medicine alone accounts for a substantial portion of global economic output. Some of the firms listed here are among the largest in the world.

Ambrosia Kliniken AG (Berlin, Germany): A European chain of clinics specialzing in rejuvenation techniques and other forms of geriatric therapy.

Aristos Designs (Athens, Greece): One of Europe's foremost producers of advanced parahuman genetic templates. Has a geriatric-medicine division (Athanatos Clinics).

Baumann Krankenpflege AG (Vienna, Austria): A medical-services firm, which supplies hospitals and clinics worldwide.

Biomonde Lyons (Lyons, France): A firm specializing in genetic therapies, especially for applications in geriatric medicine. Well-known for its wide range of anti-cancer drugs.

Denali Heartwoods (Portland, United States): An old tissue-engineering firm, which has prospered for decades through the production of vat-produced wood and paper products.

Epsilon Laboratories (Mexico City, Mexico): Originally a Canadian firm which moved south after the Canadian breakup. Primarily involved in improvements to existing genetic templates, but is rumored to have a division doing classified work on military bioroid design.

Fletcher Omaha Designs (Omaha, United States): An important producer of genetically improved crop plants. Founded quite early in the century, has branches and subsidiaries worldwide.

Manticore Biotech (San Diego, United States): An American tissue-engineering firm famous (or infamous) for its bioroid and bioshell designs. Also produces a number of innovative biomod implants.

Métapparences (Montreal): A company which operates biosculpt and implant clinics throughout North America and the European Union.

PT Nusantara Biotek (Djakarta, Indonesia): Premier Indonesian genetic-engineering firm. Suspected of operating an elaborate industrial-espionage branch.

Yamato Omnigenetics (Nagasaki, Japan): A firm specializing in rejuvenation technology and other forms of geriatric medicine. Also has a division investigating germ-line engineering for longevity.

India

For most of the past century, India has exercised considerable influence in its own region. For example, Indian troops won two short conventional wars with Pakistan in the 2020s. India also provided much of the diplomatic weight enforcing Singaporean neutrality in the late 2070s. Despite all this, India has continued to fall short of truly global influence. Although it has a large population, a well-educated elite, and a sound military establishment, its serious social problems have prevented it from attaining global power anytime in the last century. Today, India seems to be a "sleeping giant," perhaps ready to awaken and shake the world.

India is characterized by factionalism. Its huge population is chronically divided along lines of religion, ethnicity, class, language, and ideology. Indeed, in many ways India is less a nation than it is a loose confederation of many nations. This factionalism has often weakened Indian government and caused rapid shifts in policy.

The dominant trend in current Indian politics is a struggle over nanosocialism. The local nanosocialist movement goes back to the late 2050s, and has managed to win a substantial bloc of seats in the People's Assembly. Meanwhile, the conservative Indian National Alliance opposes the further spread of socialist ideas. The INA has held the government since 2082, and has done much to make India a more effective power on the world stage. Its policies are based on a confrontational stance toward China and the Transpacific Socialist Alliance, an aggressive Indian space program, and the development of Fifth Wave industries. Despite the INA's successes in economic and foreign affairs, it has failed to stem the growth of Indian nanosocialism, and it seems possible that the coalition will fall within a few years.

If the INA loses power, either peacefully or through civil war, then India would almost certainly join the Transpacific Socialist Alliance. This would more than double the population and economic strength of the Alliance, and bring the powerful Indian military onto the side of the nanosocialist bloc. This would certainly discomfit the TSA's main rivals, China and the Pacific Rim nations. On the other hand, India's entry into the TSA would also upset the alliance's leadership structure, forcing Indonesia to step down from its current position of prominence. Outside observers have noticed a distinct lack of enthusiasm among the TSA leadership toward the prospect of nanosocialist revolution in India. Clearly, whether India succeeds in increasing its global influence or not, it stands at the fulcrum of today's balance of power.

India is the most populous nation on Earth. The per-capita GNP is about half that of the United States at the beginning of the century, but this productivity is not shared equally by the whole population. Instead, about 10% of the population has a high standard of living with the full range of Fifth Wave technology, while the bulk of the population lives at a much lower standard. India has done much to ensure that all its citizens have an adequate diet, protection from infectious diseases, and decent housing, including the creation of a small number of very impressive high-biotech arcologies. Despite this, in much of the country even a telephone or a personal computer is still a luxury.

Nations Table: South Asia

Nation	*Alliance*	*Population*	*Stability*	*Power*	*CR*	*Wealth*
Bangladesh	TSA	230 million	Good	15.3	4	Struggling
Bhutan	IND	6.3 million	Fair	8.8	4	Poor
India	IND	1.8 billion	Fair	19.0	4	Struggling
Maldives	IND	1.1 million	Good	7.6	2	Struggling
Nepal	IND	68 million	Fair	12.5	4	Poor
Pakistan	–	320 million	Fair	16.2	6	Struggling
Sri Lanka	IND	23 million	Very Good	12.9	3	Struggling

For decades, India has applied its own distinctive approach to technological and economic development. The social elite maintains cutting-edge technological skills, and acts as a managerial class. Meanwhile, Indian entrepreneurs have always had access to a vast pool of unskilled (but hard-working and inexpensive) labor. They have often found ways to apply such workers to produce the same goods and services as a much smaller skilled force. The strategy of investing relatively little in the workforce has carried over into the adaption of new technologies. While India has produced several impressive megaprojects, domestic industry has not invested heavily in sophisticated computers, robots, bioroids, or gene-altered human labor – but Indian businessmen have often manufactured such goods for export.

Maldives

This small island nation is among those most seriously affected by the slow rise in sea level over the past century. The highest point in the country is just over a yard above the current sea level. Meanwhile, the Republic's fresh water supplies have been drastically reduced by the intrusion of sea water.

The Republic's government is generally dominated by India, which provides critical support to the local economy. Recently the Republic turned over all of its sea-floor development rights, on terms very favorable to India.

Since the region of the Laccadive Sea around the Maldives is potentially quite rich, this move has sparked controversy both in local politics and in the world community.

Nepal

Nepal remains the world's only officially Hindu state. It is still an isolated and backward country, dependent on economic and political aid from outside.

Pakistan

The past century has not been kind to Pakistan, which suffers from a booming population, internal instability, and a long-standing confrontation with India. The current military government dates to 2087, and has managed to hold the country together only through a mix of brutal repression and the redirection of its people's frustration against their foreign neighbors. The current government *has* been fairly effective in encouraging economic growth, bringing Pakistan finally up to a low Third Wave level.

Pakistan's military forces are not impressive, but its intelligence agencies have are very willing to engage in clandestine activity. Pakistani-supported terror groups have attacked a number of targets in India and the Islamic Caliphate, and there have been threats of similar activity as far away as Europe and the United States. Rumor has it that Pakistan is developing virulent "nanoplagues" and other terror weapons, possibly with the help of fugitive scientists from the TSA's Bioweapons Directorate.

Sri Lanka

Sri Lanka managed to resolve long-standing difficulties between its Sinhalese and Tamil ethnic groups by the early 2030s. The cost was acceptance of Indian arbitration, leading to increased dependence on India in diplomatic affairs. Today Sri Lanka is a member of the "Indian bloc" of nations, coordinating defense and foreign policy with India as far as possible. Sri Lanka has a moderately industrialized economy, which provides a modest but comfortable standard of living for most citizens.

Asia (Southeast)

If East Asia is the fulcrum of the world, then Southeast Asia is its "cockpit" – the place where tensions run highest and bloody fighting is a constant possibility. This is the heartland of the Transpacific Socialist Alliance, but it is also a region where Chinese and capitalist blocs have critical interests. The bulk of the Pacific War was fought in this region, and the war's scars are still painfully obvious.

Burma

This poor nation is a member of the Transpacific Socialist Alliance, and an unusually militant one at that. A low-intensity war continues against the Chinese client states of Kachin and Shan, carved out of former Burmese territory after the Pacific War. Outside the capital of Rangoon, the country is closed to outsiders from non-TSA nations. Many observers suspect that at least some war criminals continue to hide out in the Burmese jungles.

See also *Kachin* and *Shan Republic.*

Transpacific Socialist Alliance

As the infosocialist ideology spread, nations which had accepted it found themselves at odds with the capitalist world. By undercutting the concept of intellectual property, they threatened the economies of many other nations, provoking a menacing response. To defend their ideology in a hostile world, several nations of the nanosocialist bloc formed the Transpacific Socialist Alliance in 2074.

The TSA is primarily a diplomatic and military alliance, dedicated to the defense and spread of nanosocialism. Its member states share few cultural traits. Since nanosocialism is not hostile to religion, the member states retain diverse traditions. They also speak a wide variety of unrelated languages, from Malay to Spanish to Vietnamese. The official language of the alliance, used during all deliberations of the Alliance Council in Djakarta, is English.

Most TSA member states have high military budgets, but the alliance remains vulnerable to attack. TSA military establishments are at a technological disadvantage, and the alliance also faces a serious strategic problem with its membership divided by the width of the Pacific Ocean. TSA diplomacy concentrates on keeping its potential foes off-balance, hoping to prevent a two-front war.

The TSA was not originally conceived as an economic partnership. Even so, ongoing trade sanctions have encouraged its members to cooperate in economic as well as military terms. The TSA nations trade extensively among themselves. They also have their own segment of the global web, somewhat isolated from that of the outside world. Several TSA nations are doing moderately well despite the trade sanctions. Effective local governments (and the porousness of the sanctions regime) allow them to continue technological and economic progress.

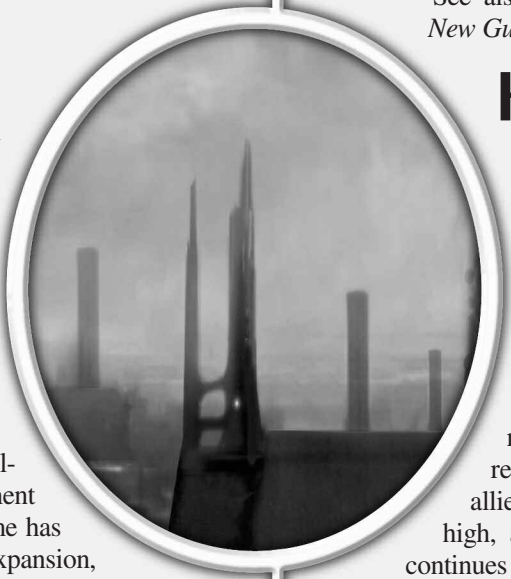
Cambodia

The poorest country in the nanosocialist bloc, Cambodia subsists largely on economic aid from its allies and outright piracy of biotech and genetic designs. The current government is a brutal and corrupt dictatorship.

East Timor

This microstate occupies the eastern portion of the island of Timor; the western portion is Indonesian territory. East Timor has been independent since just before the turn of the century, and is currently under the protection of the Pacific Rim Alliance. The local economy is growing steadily, supported by income from local Australian and allied military bases.

Indonesia



Indonesia has suffered many reverses of fortune in the course of the past century. By 2015 a series of secessionist movements had caused the loss of not only East Timor, but also the Irian Jaya province and most of the Moluccas. For decades the country struggled with internal ethnic division and corruption, before attaining a measure of stability under a nanosocialist government in the early 2060s. The new regime has aggressively pursued territorial expansion, coming into conflict with China and the Pacific Rim nations. After the TSA defeat of 2085, Indonesia took up leadership of the Alliance and has held it ever since.

Indonesia was founded more as a Javanese empire than as a unified national state, and to this day there is no strong sense of national identity based on ethnicity. This has made the country difficult to govern without repressive methods. Today, the Indonesian Infosocialist Party has used ideology to build a unified state. Indonesian citizens tend to regard the rest of the world as corrupt, driven by capitalist greed and ruthless exploitation. Whether they are Party members or not, they tend to regard their own nation and the TSA as a whole as the best hope for the soul of mankind. There is political dissent in Indonesia, but it is rare and usually centers on issues outside the basic principles of nanosocialism.

Although Indonesia has repudiated the more controversial actions taken by the TSA's old Thai leadership, there are persistent rumors of similar "black weapons" programs being mounted somewhere in the country. Meanwhile, in the past few years Indonesian agents have been aggressively pursuing a campaign to circumvent the trade embargo by stealing patented Fifth Wave technology. It is unknown whether this indicates hidden economic problems within Indonesia, or simply a decision by the TSA leadership to step up the pace of confrontation with the rest of the world.

The population of Indonesia enjoys some prosperity and a reasonably even distribution of wealth. Indonesia has largely been cut off from the global web as a result of economic sanctions, but access to the TSA's own web segment is commonplace. Fourth Wave technologies are available as well, although there are few bioroids or bioshells in Indonesia, and advanced human genetic modification is limited to the political elite. Fifth Wave technology is rare and very expensive, and usually involves breaking the anti-TSA embargo on such goods.

See also *East Timor, Maluku Selantan,* and *New Guinea.*

Kachin

The old Burmese state of Kachin was inhabited by an ethnically distinct population, which had chafed under central rule for generations before the Pacific War. In 2085 China supported a local insurrection and helped to organize Kachin as an independent state. The new nation is still supported by the presence of Chinese troops, and receives diplomatic recognition only from China and its allies. Tensions with the TSA are quite high, and armed conflict along the border continues at a low level. The capital of Myitkyina is a hotbed of covert activity.

Laos

The Lao People's Democratic Republic was a target of Chinese invasion during the Pacific War, suffering severe damage to its industrial infrastructure. Since the war, recovery has been very slow, as once-crucial trade links to nearby Thailand and Vietnam have been almost entirely shut down. Laos is poor and very isolated from world affairs.

Malaysia

Malaysia has been ruled by a local nanosocialist faction since a military coup in 2067. Since the fall of Thailand, Malaysia has been the most technologically advanced nation in the Transpacific Socialist Alliance. Long-standing tensions between Malaysia and Indonesia sometimes break out into disputes within the Alliance leadership.

Before the nanosocialist coup, Malaysia had an unusual form of constitutional monarchy in which several *states* within the federation had hereditary rulers. The

paramount ruler of Malaysia was always chosen by and from this set of local sultans. The coup deposed all of the monarchs, killing several and driving the rest into exile. There is currently an active resistance movement dedicated to restoring the federal monarchies.

Also see *Sarawak and Sabah.*

Maluku Selantan

Maluku Selantan was founded in 2017, after a violent revolution against Indonesian rule in the Moluccas island chain. The new nation soon became a client state of the growing Pacific Rim Alliance, with Australia providing military aid in exchange for a large naval base on Ambon island. Diplomatic pressure from Indonesia is quite intense, with considerable covert activity.

Philippines

The Philippines began the 21st century in a state of drift, suffering from internal corruption, widespread poverty, and ethnic insurgency. Despite this, the nation had a fairly strong democratic tradition and a sound economic base. Local development proceeded slowly but steadily. By about 2050 the Philippines were a stable and moderately prosperous country.

Unfortunately, the era of stability was short. During the tumultuous 2060s, nanosocialism became quite popular in parts of the country. The central government managed to prevent a nanosocialist takeover, with the aid of the influential Catholic Church. In 2065 the Philippines joined the Pacific Rim Alliance in an attempt to fend off further nanosocialist advances. The strategy was moderately successful at first, but in the wake of the Pacific War the Philippines saw a revival of guerrilla warfare in the southern islands. The Muslim populations of Mindanao and other islands are strongly nanosocialist, and since 2088 they have been fighting a vicious war for independence with covert Indonesian support.

Parts of the Philippines enjoy a thriving Fourth Wave economy, especially around the capital of Manila. The country has always faced extreme difficulty in distributing wealth, however, and many outlying regions remain poor. Also, the strong Catholic influence has prevented Philippine biotechnology from advancing in certain directions. With very few exceptions, human cloning, human gengineering, and the construction of human-form bioroids are all illegal in the Philippines. This has not prevented local gengineers from working extensively with nonhuman DNA.

Sarawak and Sabah

When the Malaysian government fell to a nanosocialist coup in 2067, the governors of Sabah and Sarawak states on the island of Borneo refused to comply with the new regime. The result was a short civil war. Despite the intervention of Indonesian troops, the rebel states managed to drive off their attackers by the end of 2068. Since then, several of the federal sultans of Malaysia, exiled by the nanosocialist regime, have taken up residence in the new nation's capital of Kota Kinabulu.

Sarawak and Sabah have avoided joining any major power bloc, particularly the Pacific Rim Alliance. The new nation's foreign policy is one of careful neutrality in world affairs.

Shan Republic

The northern Burmese state of Shan was long inhabited by a distinct ethnic group, which was often uncomfortable under central rule. During the Chinese invasion in the Pacific War, an independent Shan Republic was created with Chinese support. The new nation receives diplomatic recognition only from China and its allies. With TSA support, the central Burmese government is currently fighting an open war along the Shan border in order to bring the breakaway state back in line. The capital of Tuanggyi has recently been devastated by sorties of long-range cybershell drones from Burma.

Early in the century, Shan state was infamous as one of the world's most productive sources of opium poppy. The opium trade was largely suppressed by 2030, but by the mid-2060s it has reappeared. Indeed, as genetic technologies were applied to the opium poppy, it became the source of a wide variety of new and very powerful narcotics. Production of these drugs has risen sharply since the Pacific War, with much of the finished product ending up in India and the TSA nations. Although the Chinese government denies any involvement, there are rumors that the new drugs are part of a campaign of subversion directed at the nanosocialist bloc and its allies.

Singapore

Singapore has long had a well-educated population and strategic location, making the city-state one of the busiest ports, financial centers, and communications hubs in the world. For the first half of the century, the city's prosperity was unmarred. Unfortunately, the rise of nanosocialism threatened the city-state's existence, as the major states of Southeast Asia all fell to a new revolution.

Singapore enjoys one of the highest standards of living in the world, on a par with the most advanced nations of Europe or the Americas. As each new Wave of technological innovation has arrived, Singapore has always invested in the new industries. The city-state is currently a world leader in nanotech engineering, and has produced a number of radically innovative assembler designs.

Singapore is described in more detail in Chapter 4 (pp. 104-111).

Thailand

Thailand was once one of the Asian "tigers," a nation poised to enjoy dramatic economic growth and industrialization. Unfortunately, in the mid-2050s a deep economic recession brought about internal turmoil and set the country back years in its development. In 2060 the National Infosocialist Party won elections to become the largest party in the House of Representatives. The military attempted a coup in support of the losing conservative faction, plunging the country into civil war. By 2065 the infosocialists had won, with the support of ideological allies in Malaysia, Vietnam and Indonesia. The king fled into exile, and the new government restructured itself as a nanosocialist dictatorship.

Defeat in the Pacific War led to the fall of the nanosocialist regime and the return of the constitutional monarchy. Free elections were held in 2092 for the first time since the civil war. Today, Thailand is in a precarious position, a Pacific Rim Alliance member surrounded by hostile nanosocialist states. National and allied military forces are on constant alert against TSA intervention. Meanwhile, diplomatic and espionage activity are constant and intense. Today Bangkok is a common setting for espionage fiction, just as Moscow and Berlin were during the 20th century.

Nations Table: Southeast Asia

Nation	*Alliance*	*Population*	*Stability*	*Power*	*CR*	*Wealth*
Brunei	PRA	670,000	Good	9.0	5	Comfortable
Burma	TSA	37 million	Fair	11.9	6	Poor
Cambodia	TSA	36 million	Fair	11.2	6	Poor
East Timor	PRA	1.5 million	Good	9.3	3	Average
Indonesia	TSA	350 million	Good	17.0	5	Average
Kachin	CHI	1.2 million	Poor	6.9	3	Poor
Laos	TSA	17 million	Fair	10.9	5	Poor
Malaysia	TSA	45 million	Fair	15.5	5	Comfortable
Maluku Selantan	PRA	3.9 million	Good	10.4	2	Struggling
Philippines	PRA	185 million	Good	16.4	3	Average
Sarawak and Sabah	–	9.2 million	Fair	13.2	3	Average
Shan Republic	CHI	4.8 million	Fair	8.9	1	Poor
Singapore	–	12 million	Very Good	14.6	5	Wealthy
Thailand	PRA	67 million	Fair	15.8	4	Comfortable
Vietnam	TSA	130 million	Good	14.7	5	Struggling

Vietnam

History has not been kind to Vietnam, which has spent most of the last 150 years either at war or recovering from war. The most recent round of this cycle began in 2061, when the Communist government of Vietnam reorganized itself along infosocialist lines. In the following decade, ideological nanosocialism spread through most of Southeast Asia and beyond, making Vietnam a member of the new nanosocialist bloc.

Unfortunately, this brought Vietnam into direct confrontation with its old rival China. Well before 2084, the PRC had already opened a "proxy war" by sponsoring anti-nanosocialist guerrillas throughout Indochina. The outbreak of the Pacific War only formalized the conflict, as Chinese regular forces invaded Vietnam from the north. By war's end, Hanoi had fallen and the Vietnamese government had been forced to flee to the south.

Chinese troops occupied northern Vietnam for several years, despite a fierce guerrilla campaign by Vietnamese irregulars. PRC forces waited until 2091 to withdraw, Hanoi in ruins behind them. Vietnam's economy has been slow to recover, despite aid from its more prosperous TSA allies. Much of the recovery effort has been devoted to rebuilding the Vietnamese military, causing civilian development to lag.

Vietnam remains a committed member of the TSA, despite (or perhaps because of) the disaster of the Pacific War. The ruling party is more ideologically radical than that of any other TSA nation, its rhetoric fiercely militant and anti-Chinese. The country is almost closed to outsiders. There are persistent rumors that the Vietnamese government has been sponsoring radical bioengineering projects, designing super-soldiers and other bioweapons for a future conflict.

Asia (Southwest)

Once the source of much of the world's turmoil, this region is now relatively peaceful and prosperous. This is the heartland of the Islamic Caliphate, which has done much to moderate old Arab-Israeli (and Arab-Arab) conflicts.

The Islamic Caliphate

In 2000, the Arab nations suffered from a variety of factional divisions: city-dwellers against Bedouin, oil-wealthy nations against poor ones, Sunni against Shi'ites, Western allies against anti-Western states. The contradictions often limited Arab effectiveness in world affairs, as Arab states who were nominally allied against the West came to blows among themselves. The Gulf Wars of 1992 and 2013, the Egyptian-Libyan war of 2017, the constant struggle against Israel . . . all of these sapped the strength of the Arab states.

To be effective in the modern world, Arab civilization needed unity. The first promise of that unity came in the late 2030s, when a Muslim religious leader named Ali al-Rashid attained prominence in Saudi Arabia. Al-Rashid's teachings seemed contradictory at first hearing. He preached devotion to the puritanical Wahhabi sect, but also embraced science and technology as the key to Arab success. He denounced the evil and degeneracy of Western civilization, but also taught that the proper Arab response was to teach morality by *example.*

Al-Rashid was blessed with great charisma and a fiery oratorical style that won many converts. By 2040 he was the most prominent Sunni religious leader in the world, openly acclaimed as the *Mahdi* by millions of Arabs. He had no direct political power of his own, but in 2043 he made an alliance with the House of Saud. The combination proved irresistible. Over the next few years, the Saudis used al-Rashid's influence to strengthen their formal partnerships with other Muslim nations. During this period, they even managed a reconciliation with the anti-monarchist regimes of Iraq and Syria. Soon the Saudi alliance system took in all the Arab nations around the Persian Gulf.

In 2049, the allies agreed to set up a permanent council (the Presidium of the Arab League) in the holy city of Medina. The new council would serve as a focal point for the coordination of foreign policy and economic development. Ali al-Rashid was named Chairman of the Presidium, a purely honorary position which nonetheless gave him a unique position of moral influence. Meanwhile, the House of Saud attained effective control of the new council through typically pragmatic statesmanship.

The first action of the new Presidium was to grant Ali al-Rashid a long-vacant title: that of Caliph. This made him a recognized successor or agent of Mohammed, and therefore the foremost religious and political leader in the Muslim world. Finally, the Arab states had a rallying point for constructive action in the world community, with the Caliph to provide moral leadership and hard-headed Saudi statesmen to manage the everyday business.

Although Ali al-Rashid died in 2081, the Caliphate remains in existence today. It has not always been successful in preventing strife among Muslims, but it has done much to moderate Arab radicalism and promote Arab economic development. Many powerful Islamic nations remain outside the alliance, particularly Iran, Pakistan, and the Arab states of northern Africa. The Caliphate is outwardly cool to the West, but it can usually work with Western nations where its interests permit.

Abkhazia

Abkhazia was originally the northwestern corner of the Soviet republic of Georgia. It went with the rest of the republic during the breakup of the Soviet Union, but the local population was ethnically distinct and reluctant to remain under central control. Several attempts at independence were violently quashed by the Tblisi government, until a peace accord was reached in 2013. Today Abkhazia is nominally independent, but is actually a Russian client state. It lags behind the rest of Georgia and is at an early Third Wave level of development.

Armenia

This former Soviet republic has succeeded in modernizing its industries, and is presently a stable Third Wave nation. It has recently joined the European Union, after being stalled for decades by a dispute over formerly Armenian lands in Turkey.

Azerbaijan

Azerbaijan enjoyed rapid development early in the century due to its considerable oil wealth. A series of wars with neighboring Armenia was resolved by outside mediation during the early 2020s. Today Azerbaijan is a full member of the European Union, closely allied with Turkey. Its economy is at a modest Third Wave level, although those who inherited old oil wealth have access to the best Fifth Wave standard of living.

Bahrain

Lacking substantial oil reserves of its own, Bahrain built prosperity on the banking, petroleum processing, shipping, telecommunications, and tourism industries. Today it is a moderately wealthy Persian Gulf state. Although it is a member of the Islamic Caliphate, the majority of its population is Shi'a Muslim, which causes considerable internal tension. While the Amir remains a staunch supporter of the Caliphate, popular protests against it are common. Nearby Iran occasionally stirs the pot by planting covert agents or placing diplomatic pressure on the Amir.

Cyprus

Cyprus was reunified in the early 2020s, as part of a general reconciliation between Greece and Turkey in the aftermath of the Aegean War (see p. 87). Currently the island nation is a federal republic, with careful constitutional guarantees for both Greek and Turkish populations. It has been a full member of the European Union since 2037.

Gaza Strip

See *Palestinian Enclaves.*

Georgia

Georgia underwent several episodes of civil disorder early in the century, culminating in the loss of the Abkhazia region in the early 2010s. Since then, the country has experienced stability and steady growth, and it is currently a thriving Third Wave society. In 2075 it joined the European Union (over Russian objections). It has since become fully integrated into the European community.

See also *Abkhazia.*

Iran

At the beginning of the century, Iran's leadership had a clear mission: to unify Islam and drive out Communist, Western, and secular influences. Unfortunately much of the Muslim world did not agree, divided from Iran by religious (Shi'ite vs. Sunni) and ethnic (Persian vs. Arab) distinctions. Appeals to religion and anti-Western sentiments failed. Sponsorship of terrorism only hardened anti-Iranian attitudes. An episode of military adventurism led to the Third Gulf War of 2013, in which Western forces handed Iran a punishing defeat. By the 2040s it was obvious that the hated Saudi monarchy would win the prize of Islamic leadership, leaving Iran isolated in the world community.

The result was a period of social upheaval, the likes of which had not been seen since the 1970s. The population was severely divided, many called for democratic reforms, state secularization, and reconciliation with the world community. In 2053 a secular faction in the Iranian military botched a coup attempt, plunging the country into civil war. The secularists won, but only after years of bloodshed.

Today Iran is a neo-fascist state, ruled by a ruthless alliance of business and military leaders. Modern technology is used to monitor the population, detecting and crushing any hint of rebellion. Religion is one of the foremost targets of this repression. Although the country remains Muslim, mullahs and other religious leaders are forbidden to involve themselves in politics on pain of death or exile. The ruling regime uses psychoneural techniques to "cure" dissidents of their inconvenient beliefs, especially devout Muslims who refuse to accept secularism.

Since the end of the civil war, Iran has made some economic progress. The government and its business allies have made massive investments in education and technological improvement. Today, Iranian industry is quickly absorbing Fourth Wave biotechnology. Most biotech applications involve transgenic plants and animals or nonsentient constructs, since the country is far from suffering any shortage of labor.

On the other hand, the Iranian ruling elite is notorious for importing large numbers of bioroids for all kinds of personal service. Some of the Iranian leadership are so surrounded by their bioroid servants and bodyguards that they need never interact with other humans except by telepresence. This habit only increases the regime's unpopularity among the Iranian people.

Iraq

In 2012, the Ba'athist regime in Iraq collapsed, triggering the Third Persian Gulf War. In the aftermath of the conflict, a coalition of former opposition groups attempted to set up a government, with limited success. Not until the 2050s did an effective central government reappear, and even then some parts of the country insisted on a high level of autonomy.

Today Iraq continues to struggle, although internal stability has held for over 20 years. The most serious difficulty facing Iraq is its hostile neighbor, Iran. The Iraqi government is a member of the Islamic Caliphate, and serves as a "front line" state against the Iranian threat. On the other hand, large sections of the population resent the Caliphate, and would be sympathetic toward Iran if that nation wasn't in turn ruled by such a brutal dictatorship. Baghdad is a hotbed of diplomatic and espionage activity, and an outbreak of war seems possible within the next few years.

Israel

Israel spent the first half of the century at odds with its Arab neighbors, winning two conventional wars but having mixed success against terrorism and violent Palestinian resistance. Peace came slowly, with many setbacks. By 2050 the Islamic Caliphate was working hard from the Arab side to promote a final accord. With the signing of the Treaty of Jerusalem in 2054, Israel had peace with all of its Arab neighbors for the first time.

Since then, the situation has been tense, but increasingly stable. There has been no further outbreak of conventional warfare. On the individual level, violence remains at levels which can be handled by Israeli or Arab courts. Personal contacts and business relationships have steadily increased between Israelis and foreign Arabs. On both sides, the current generation seems uninterested in renewing the confrontational stance of the past.

Today, Israel is an advanced Fourth Wave nation, with several sectors (notably the military) at a Fifth Wave level. The local economy is very well-rounded, with investment in a wide variety of industries. Israeli biotech industries are very advanced – in particular, the country's agricultural sector has long used various forms of biotechnology to reclaim arid land and maximize productivity.

Jordan

Jordan has transformed itself into the epitome of the "liberal" Arab state. The current king is a constitutional monarch, presiding over a healthy parliamentary democracy. Local society is loyal to Islam, but Jordanian religious scholars are very adept at reconciling the spirit of religious law with the conditions of the modern world. The kingdom is a staunch supporter of the Islamic Caliphate.

Jordan has also become the effective Palestinian homeland. At present the kingdom's population is about 40% of Palestinian descent, and the royal house itself has a significant amount of Palestinian blood. Tensions between the Palestinian exiles and the native Jordanian population, once near the point of civil war, have been much reduced by decades of royal diplomacy. Jordan's willingness to accommodate Palestinian exiles, not as refugees but as full partners in the kingdom, did much to aid the final resolution of the Israeli-Palestinian conflict.

Kuwait

The emirate of Kuwait is the wealthiest member of the Islamic Caliphate. The average standard of living is very high, with even the noncitizen population having access to the full range of Fifth Wave technologies. Kuwaiti citizens themselves are among the wealthiest humans anywhere. Although the petroleum industry has declined, Kuwait still has a vibrant economy based on banking, advanced electronics, land reclamation and nanotech industries. The emir is a constitutional monarch, with most power in the hands of a vigorous (and very contentious) national parliament.

Kuwait was once notable for its large noncitizen population; in 2000 over two-thirds of the population were immigrant workers, mostly from poorer Muslim nations. Today Kuwait continues to import labor, but it also employs a very large number of bioroids and advanced cybershells. Kuwaiti society has often experienced tension between the citizen and labor classes; this tension has grown in recent years with the appearance of an underground bioroid-liberation movement.

Lebanon

Since the outbreak of peace between Israel and its neighbors, Lebanon has been freed to concentrate on its internal development. Much has been done to reconcile differences between the country's religious and ethnic splinter groups. The current republican government has been stable and effective since the early 2070s, and is experimenting with a number of cyberdemocratic ideas.

Oman

The Sultanate of Oman has lagged behind some of its Arab neighbors in economic development, but still has a moderate Third Wave economy. The powers of the sultan have not declined much over the past century, leaving Oman with one of the strongest monarchies in existence. Even so, the government is stable and the civil rights of Omani citizens are protected by royal decree. Oman is a full member of the Islamic Caliphate, although there have been religious disputes (most Omanis are members of the pseudo-Shi'ite Ibadhi sect).

Palestinian Enclaves

When the Caliphate brokered the final peace with Israel, it recognized that the Palestinian situation remained an intolerable breeding ground for violent radicalism. The Caliph therefore personally sponsored a massive investment program for the Enclaves, with extensive education and propaganda efforts in support. Funds poured in from the wealthier Arab states, with lesser (but significant) support from Europe, the United States, and even Israel. Numerous telepresence systems were installed, permitting Palestinians to earn acceptable incomes doing work in new installations all across the Caliphate. Massive engineering and biotech works were undertaken, to improve the land and water resources available to the Palestinians. The effect was to vastly improve the Palestinian standard of living – while also reducing Israeli economic control of the Enclaves.

Today, the Gaza Strip and West Bank regions are self-governing, under an elected council whose authority is jointly guaranteed by Israel and the Islamic Caliphate. The political situation remains imperfect. Palestinians look with natural envy at the lives of their wealthier neighbors. Outright unemployment remains high, and a significant proportion of the employed population still migrates physically to work in Egypt, Israel, or Jordan. Even among moderate Palestinians, there is almost universal sentiment for a renegotiation of the status of the enclaves. It is a measure of how far the situation has evolved that this movement has mostly been nonviolent in its methods. What radical Palestinian movements still use violence are regularly exploited by outside (mostly Egyptian and Iranian) forces, launching attacks on both Israeli "occupiers" and Caliphate "betrayers."

Qatar

Qatar is a constitutional monarchy, with most government functions in the hands of an elected parliament and prime minister. It is a wealthy member of the Islamic Caliphate. The local economy has long since diversified from its dependence on oil, and now emphasizes advanced robotics and nanotechnology. Its army is small but very well-trained and well-equipped.

Saudi Arabia

The Bedouin house of Saud has ruled the Arabian homeland since the 1930s. The Saudi clan has long been famous for its religious devotion and its cunning, pragmatic statesmanship. These traits found their utmost expression in the 2040s, when the house put its weight behind Ali al-Rashid (p. 75). When the Islamic Caliphate was established in 2049, the Saudis were able to take a position as the secular leaders of much of the Arab community.

Saudi Arabia remains the epitome of the Bedouin state, a feudal monarchy transplanted into the modern world. The local Wahhabi sect is very puritanical in some respects, and foreign visitors will be expected to conform. Alcohol and most drugs are illegal, and all forms of the media are subject to strict censorship. Non-Muslims may not practice their religion in the country, and Jews are not permitted entry at all. Violations of law can be punished by immediate expulsion (for foreigners) or by whipping, branding, mutilation, or death.

On the other hand, the Saudi state follows many of the traditions of Bedouin politics. The king and his royal clan can rule only so long as the people follow, and the people demand that their rulers be generous and open to petitions. Saudi statesmen are adept at building consensus, and at melding the trends of the modern world with ancient Bedouin customs. The upshot is that Saudi Arabia can be a very congenial place to live, at least if one is a devout Muslim who can stay on the good side of Islamic law.

Saudi Arabia has long since given up dependence on its petroleum wealth, much of which has been depleted in any case. Today the nation has a robust "high industrial" economy, producing a variety of advanced materials and products. Saudi computer technology is quite advanced, although the local segment of the web is strictly controlled due to the need to exclude "immoral" material.

For religious reasons, radical human gengineering and bioroid manufacture have been ignored in Saudi Arabia. On the other hand, the Saudis have been willing to apply biotechnology and ecological engineering to the task of reclaiming parts of the Arabian desert. Along the Red Sea coast, and in oases in the interior, the Saudis have created wide stretches of fertile fields and verdant gardens.

Saudi foreign policy is centered on the need to maintain the Caliphate and protect Arab interests in a rapidly changing world. The Saudis have maintained close ties with the United States and (more recently) the Pacific Rim Alliance – both non-Muslim powers which pose no direct threat to Saudi sovereignty.

Syria

Syria suffered considerable political and economic instability during the 2010s and 2020s. Tensions between various schismatic Muslim sects continue, although the Sunni majority has managed to hold power and keep things quiet for some time. At present Syria is a member of the Islamic Caliphate. Peace with Israel has held for almost 50 years; the most significant foreign policy challenge is a dispute with Turkey over upstream development of the Euphrates River. Rumor has it that Syria has sponsored several recent sabotage attempts against Turkish industrial facilities on the river.

Nations Table: Southwest Asia

Nation	*Alliance*	*Population*	*Stability*	*Power*	*CR*	*Wealth*
Abkhazia	RUS	440,000	Good	7.7	3	Struggling
Armenia	EUR	3.3 million	Good	10.9	3	Average
Azerbaijan	EUR	12 million	Good	11.6	4	Struggling
Bahrain	ISL	1.0 million	Fair	10.3	4	Comfortable
Cyprus	EUR	810,000	Good	10.1	3	Comfortable
Georgia	EUR	3.8 million	Good	10.8	3	Struggling
Iran	–	110 million	Fair	16.1	6	Average
Iraq	ISL	74 million	Poor	13.8	4	Struggling
Israel	–	9.2 million	Good	13.1	3	Comfortable
Jordan	ISL	15 million	Good	12.2	3	Struggling
Kuwait	ISL	9.3 million	Very Good	14.0	3	Wealthy
Lebanon	ISL	5.0 million	Good	10.8	2	Struggling
Oman	ISL	12 million	Good	12.2	4	Struggling
Palestinian Enclaves	ISL	14 million	Fair	11.7	5	Struggling
Qatar	ISL	1.3 million	Good	10.7	4	Comfortable
Saudi Arabia	ISL	160 million	Very Good	16.4	4	Average
Syria	ISL	42 million	Fair	13.0	3	Struggling
Turkey	EUR	87 million	Good	16.2	3	Comfortable
United Arab Emirates	ISL	4.2 million	Good	12.4	4	Comfortable
Yemen	ISL	120 million	Poor	12.5	5	Dead Broke

Turkey

Turkey has long been an anomaly within the European Union, set apart by ethnic, geographic, linguistic, and religious factors. It has also suffered long-standing hostility from its closest European neighbors, Bulgaria and Greece (see p. 87). Even so, over the course of the 21st century Turkey has become a major partner in the European Union, and is now close behind Germany and the United Kingdom in economic output and influence.

Turkey is one of the few Union nations which has experienced significant population growth during the past century. The country has rarely been stable. Social disputes between secularists and devout Muslims have often spilled over into unrest and street violence. Meanwhile, relations between the central government and the minority Kurds have always been poor, and periods of separatist violence were common early in the 21st century. The Kurdish regions were given considerable local autonomy in the 2040s, and violent unrest there is now rare, but visitors associated with the central government face a hostile reception.

Turkey openly embraced Fourth Wave biotechnology, and indeed much of the country's current prosperity is based on biotech industries. For a time in the 2050s and 2060s, Turkey was Europe's largest producer of bioshells and genetic constructs. Today, variant human types are probably more common in Turkey's urban areas than anywhere else in the European Union. The country's urban population is moving rapidly into the Fifth Wave economy, although rural districts (especially the Kurdish provinces) lag far behind.

United Arab Emirates

The United Arab Emirates are a federation of Arab monarchies. The seven emirs have effectively absolute joint rule over the country, although civil rights for all subjects are protected by law. The emirs are often rivals, although decades-long tradition ensures that their competition for prestige is amiable and serves to help develop the country. The local standard of living is relatively high, supported by a diverse Fourth Wave industrial base.

West Bank

See *Palestinian Enclaves.*

Yemen

Yemen is the poorest country in the region, its infrastructure overwhelmed by a population which has grown by a factor of *seven* in the past century. The central government is quite repressive and is faced with several ongoing insurgencies. The Caliphate is attempting to coordinate relief and development efforts, with little success.

Caribbean

The Caribbean Sea is home to many of the world's "microstates," independent nations with well under a million citizens and very little influence. All of these tiny nations were once colonies of various European nations, and many of them retain close ties to the former colonial power. National governments tend to be unobtrusive, not wishing to interfere with the tourism, banking, or other industries which drive local economies. Most of the microstates of this region participate in the Caribbean Union.

Orion Industries

Orion Industries is one of the world's largest arms manufacturers and dealers. Based in Sydney, Australia, the firm develops and sells weapons systems on a global scale. The PRA nations are naturally its foremost customers, but it has dealings in almost every country on Earth (except for the TSA bloc).

Orion Industries has a large private-security division, offering physical, operational, and network security services on all scales. Individuals can come to Orion for simple household alarm systems or bodyguard contracts – while major corporations and national governments buy billions of dollars' worth of protection. Orion security professionals are well-known for their training, cutting-edge equipment, and ruthless decisiveness. Small teams of Orion "officers" can be found almost anywhere in the world, fulfilling small jobs or providing short-term support to a major contract.

Orion's involvement in the global mercenary trade is an open secret. Many mercenary groups operating in the developing world buy Orion weapons systems. It is believed that Orion acts through subsidiaries as a clearinghouse and bonding agent for mercenary contracts.

Bahamas

The Commonwealth of the Bahamas is a moderately wealthy microstate, building its economy on banking, investment management, and tourism. Early in the century an underground genetic clinic operated in the islands; for several decades afterward the Bahamas were notorious for designer narcotics and an "exotic" sex industry. The current government has been effective in stamping out this trade (or at least driving it further underground).

Cuba

Following the final collapse of the Castro regime in the early 2010s, Cuba underwent a period of political instability. The eventual result was a right-wing government, supported by the United States and composed primarily of former exiles returning from there. Although the new regime was able to foster rapid economic growth, it proved corrupt and occasionally brutal.

During the 2020s and 2030s, Cuba was a place where almost any underground commodity could be found – "black" biotech, designer drugs, illegal migrants, military hardware, traditional narcotics, and so on. These so-called "wild years" made Cuba notorious as a center for organized crime. In 2042, however, a new government took power and proved effective in stamping out much of the local underworld. Although organized criminal activity remains even today, the syndicates are careful to keep violence and corruption within bounds.

Since the end of the wild years, Cuba has enjoyed political stability and steady economic growth. Cuba helped to establish the Caribbean Union in 2076, and it continues to stand for the independence of small Caribbean states in a world dominated by more powerful nations.

Dominican Republic

This state shares the island of Hispaniola with Haiti. Stable government and sound economic policies have given it reasonable standards of living and the largest economy in the Caribbean Union. A long-standing alliance with Cuba formed the nucleus for the Union in 2076. Tensions with Haiti have been an occasional problem for several decades; there have been several border incidents since 2090.

Guadeloupe

Guadeloupe gained independence from France early in the century, and is currently a full member of the Caribbean Union. The government invested heavily in biotechology from the 2010s, hoping to improve local agricultural productivity. The island was a small but significant biotech sanctuary for several decades, and its laboratories remain in the forefront of genemod crop design.

Haiti

Haiti remains the poorest country in the western hemisphere, wracked not only by social unrest and crooked government, but by ecological catastrophe. Deforestation and soil erosion have ruined the country's agriculture, and supplies of drinkable water have long since been exhausted. Today Haiti is almost completely dependent on outside aid to avoid famine and pestilence.

Haiti continues to be a source of instability in the region. Border conflicts with the Dominican Republic have become increasingly common in recent years. Illegal migration into the Caribbean Union nations and the United States is also a problem.

Jamaica

Jamaica had difficulty early in the century, but has experienced stable government and

Nations Table: Caribbean

Nation	*Alliance*	*Population*	*Stability*	*Power*	*CR*	*Wealth*
Anguilla	CAR	15,000	Very Good	2.9	2	Average
Antigua and Barbuda	CAR	59,000	Good	4.9	2	Average
Aruba	(EUR)	62,000	Very Good	6.5	3	Comfortable
Bahamas	CAR	300,000	Good	8.3	2	Comfortable
Barbados	CAR	260,000	Good	7.5	1	Average
Bermuda	(EUR)	58,000	Very Good	6.7	3	Wealthy
Cayman Islands	CAR	50,000	Very Good	6.4	2	Wealthy
Cuba	CAR	9.5 million	Good	11.3	3	Struggling
Dominica	CAR	81,000	Good	4.1	3	Struggling
Dominican Republic	CAR	18 million	Good	12.4	4	Struggling
Grenada	CAR	73,000	Fair	4.1	2	Struggling
Guadeloupe	CAR	510,000	Fair	8.1	1	Average
Haiti	–	15 million	Very Poor	9.3	0	Dead Broke
Jamaica	CAR	3.6 million	Good	9.3	3	Struggling
Martinique	(EUR)	450,000	Good	8.2	3	Average
Montserrat	(EUR)	12,000	Good	1.9	3	Struggling
Netherlands Antilles	(EUR)	250,000	Very Good	7.5	3	Comfortable
Saint Kitts and Nevis	CAR	56,000	Good	4.6	3	Average
Saint Lucia	CAR	250,000	Fair	5.9	3	Struggling
Saint Vincent and the Grenadines	CAR	65,000	Fair	3.5	4	Struggling
Trinidad and Tobago	CAR	600,000	Very Good	9.2	1	Comfortable
Turks and Caicos Islands	CAR	51,000	Fair	3.8	3	Struggling
Virgin Islands	CAR	200,000	Very Good	7.6	2	Comfortable

steady economic growth since the 2040s. The local financial industry has grown explosively in recent years, making Kingston an important international data haven and banking center. Strict financial-privacy laws passed in 2083 have made the local banks quite popular with organized criminal groups and insurgencies.

Martinique

This island remains an overseas department of France. As the island's tourism and light-industrial sectors make it less dependent on French aid, a movement for political independence has been growing in strength.

Puerto Rico

See *United States.*

Trinidad and Tobago

This country is one of the most prosperous in the Caribbean, with a well-educated populace, stable government, and a diverse Fourth Wave industrial base. It is an important member of the Caribbean Union, and is taking an increasingly significant role in hemispheric politics.

Turks and Caicos Islands

The Turks and Caicos Islands gained their independence from the United Kingdom early in the century. They are currently a typical minor member of the Caribbean Union, the local economy heavily dependent on tourism and financial services.

Virgin Islands

During the 2030s both the American and British portions of the Virgin Islands group gained their independence. In 2043 the two nations agreed to unification. Since then the Virgin Islands have prospered, taking advantage of their position along a major shipping lane (along with the usual Caribbean industries of tourism and finance).

The European Union

The European Union of 2100 grew slowly, with roots in many European institutions of the late 20th century: the European Economic Community (EEC), the Council for Security and Cooperation in Europe (CSCE), the North Atlantic Treaty Organization (NATO), and so on. Even the United Nations became a cornerstone of European unity, after its headquarters moved to Europe (p. 53).

Currently the dominant institution in the Union is the European Parliament, a one-house legislature composed of representatives from all of the member states. Since revisions to the Union Charter in 2089, half of the representatives to Parliament are chosen randomly from the voting populations of the member states. The other half are elected by a more traditional popular vote. The Parliament has extensive human staff, and also maintains what may be the most powerful battery of sapient AIs in the world. These high-powered infomorphs exist to gather and correlate information for the members of Parliament, especially those "amateur legislators" who are selected by lot.

The European Union has taken on many of the functions of a supranational government. Laws passed by the European Parliament are considered to be treaties; although they are binding on all members, they must be implemented by each member state through its own legislative process. Before the Parliament even votes on a new law, lengthy negotiations must be held to build consensus among the member states. Meanwhile, the Union's bureaucratic processes are quite complex, despite several rounds of streamlining reform during the past century. All in all, the Union has difficulty making new policies quickly or responding to sudden crises.

Citizens of the Union enjoy complete freedom to travel, work, and do business anywhere within its borders. This has made Europe (with outlying areas in North America and the Middle East) the world's largest and wealthiest free-trade zone. Not all Union members enjoy the same high standard of living, but the core nations in Western Europe are the richest on Earth.

Significant local distinctions remain within the European Union, although most citizens have a strong sense of identity as members of "the world's highest civilization." Many Europeans tend to think of themselves as citizens of their own particular region first, of Europe as a whole second, and of their nation-state last (if at all). For example, a German in 2100 is likely to think of himself as a Bavarian, a Berliner, or a Rhinelander rather than a German.

Europeans tend to have a quiet confidence in their identity as Europeans. Their corner of civilization is the wealthiest, most stable, and most technologically advanced of any. There are no serious threats on the horizon. European politics can be contentious, but the essential unity of Europe is beyond a doubt. Many Europeans think of the Union as a template for eventual world government, a view bolstered by the fact that nations in regions as distant as North America and the Middle East have become productive members.

Europe (East)

Eastern Europe is a busy region, for the most part at peace. The European Union has expanded all the way to the Russian border, and many of its regional members are working hard to reach the cutting edge of social and economic development. Russia itself is preparing to take an active role in world affairs, after decades of being engrossed in internal difficulties.

Belarus

See *Russia.*

Nations Table: East Europe

Nation	*Alliance*	*Population*	*Stability*	*Power*	*CR*	*Wealth*
Czech Republic	EUR	6.4 million	Very Good	13.7	3	Wealthy
Estonia	EUR	950,000	Good	9.3	3	Average
Hungary	EUR	6.5 million	Very Good	13.0	3	Comfortable
Königsberg	–	1.5 million	Good	10.3	1	Comfortable
Latvia	EUR	1.5 million	Good	9.6	3	Average
Lithuania	EUR	2.9 million	Very Good	10.8	2	Average
Moldova	RUS	4.7 million	Poor	9.9	5	Struggling
Poland	EUR	29 million	Very Good	15.3	3	Comfortable
Romania	EUR	16 million	Fair	12.5	4	Struggling
Russia	RUS	108 million	Good	15.7	4	Average
Slovakia	EUR	4.0 million	Good	12.0	3	Comfortable
Ukraine	–	32 million	Good	12.7	3	Struggling

Czech Republic

This nation now has a free-market democracy and the highest standard of living in eastern Europe. The local AI industry is very active, and the country as a whole is working to integrate sentient computers into political and economic decision-making. A constitutional change is currently being considered that would institute full cyberdemocracy.

Hungary

Hungary is a moderately prosperous Fifth Wave nation, which has been a full member of the European Union since early in the century. The country's armaments industry is quite important; Hungarian weapons systems are in demand in many parts of the world.

Königsberg–Kaliningrad

After the collapse of the Soviet Union, the small Kaliningrad oblast was cut off from the rest of Russia by the newly independent state of Lithuania. At first Russia went to considerable trouble to retain the region, which was a major military center and one of the country's few remaining Baltic ports. However, during the turbulent 2050s Kaliningrad chose to press for almost complete autonomy. Independence was gained in 2073 after a long but amicable process of negotiation. It officially adopted its older pre-Soviet name, Königsberg, for the new microstate, while retaining Kaliningrad as the name of the city itself. The distinction is lost on many residents.

Today, it stands astride two worlds. It is closely tied to the European Union, although it is not a member. It is the westernmost outpost of Russian culture in Europe, and maintains good relations with Moscow. Since independence, it has parleyed its strategic position into a new role as major trade center. It is also the eastern headquarters of the Genetic Regulatory Agency (the western headquarters is Geneva), making it a key player in global biotech policy.

Kaliningrad is one of the fastest-growing cities in Europe, accepting immigrants from all over the world. Construction of new buildings and residential districts is going on at a frantic pace. The city has a reputation as a place where fortunes can quickly be made (or lost). Local organized crime is currently quite powerful, giving society a risky, slightly corrupt flavor.

Lithuania

Lithuania lags behind the other Baltic states in economic development, mostly due to severe restrictions on advanced biotechnology and other Fifth Wave industries. Even so, the country enjoys a good standard of living and economic growth is steady.

Poland

Poland led the former Warsaw Pact nations in the drive for open democracy and robust capitalism. It has parleyed its productive workforce and strategic position into a leadership role in European trade. Since the 2080s there has been heavy Polish investment in Russian industrial growth; a number of Polish-Russian joint ventures are beginning to make their mark in the European markets.

Romania

Romania is a rather backward member of the European Union, struggling with chronic labor shortages and an unstable parliamentary government. There is a strong movement for secession from the Union, which would allow large-scale bioshell construction and other economic measures in violation of Union law.

Russia

For decades after the collapse of the Soviet Union, Russia was the "sick man of Europe." The legacy of the Soviet era was a society riddled with corruption, a political system fragmented into dozens of squabbling factions, inefficient industries, ramshackle technology, a polluted countryside, and a gaggle of resentful ethnic minorities.

After an initial flirtation with democracy, Russia soon fell into a cycle of authoritarian rule followed by civil disorder. From about 2015 to about 2060, the central Russian government had a great deal of trouble maintaining control. Regional governments went their own way, often at the bidding of local military leaders, ethnic minorities, or organized crime groups. This period of weakness culminated in the chaotic civil war of 2057-2063, in which Siberia and other areas made bids for regional autonomy or outright independence.

The civil war was traumatic, but it led to a significant revival of Russian fortunes. By 2063 the conflict had ended with the defeat of the secessionists and the rise of a "Renewal Union" faction. This coalition had the support of several power centers, including the bulk of the Russian military and the influential Russian Orthodox Church. The regime it assembled was not very democratic, but it was strong enough to bring the provincial governments into line and begin the process of rebuilding a unified Russia.

Today's Russia incorporates all of the old Russian Federation, along with what was once independent Belarus, but without the old Kaliningrad *oblast* on the Baltic Sea. Russia remains an authoritarian state, but the postwar regime has made great strides. Modern technology has been applied to bring a decent standard of living to all Russians, not only the urban elite. The military has been thoroughly modernized, and an aggressive space program has resumed. Corruption and regional factionalism have been much reduced. Democratic reforms have allowed the Russian people some voice in their own government. Many Russians have begun to hope that the bitter cycle of despotism and anarchy has finally been broken.

At present, Russia has a Fourth Wave economy and is continuing to develop at a rapid pace. In fact, Russia has an unusually long history of applying biotechnology. St. Petersburg was a biotech sanctuary early in the century, and even through the anarchic decades the city remained a major center of genetic research. The current government has devoted much effort to making sure the entire population has access to genetic technology. Gene-modified humans, bioroids, and other genetic constructs are quite common throughout the country.

Russia spent much of the past century bitterly resentful at its loss of position in world affairs. Once a superpower whose dictates made the world tremble, by 2025 Russia had a smaller economy than Argentina and a military barely able to maintain order within its national borders. This steep decline was halted after the civil war, and has decisively reversed in recent years. Today, Russia is aggressively pursuing greater world influence. It is a member of no formal alliance, but it sometimes finds common interests with the European Union, China, India, and the Islamic Caliphate. Russian diplomacy is carefully pragmatic, working with other nations whenever possible but not afraid to act independently. Russia is particularly cool toward the United States and the Pacific Rim Alliance.

See also *Königsberg-Kaliningrad.*

Slovakia

Slovakia has had some difficulty keeping up with its more prosperous neighbors, but as of 2100 it has a comfortable Fourth Wave economy.

Slovakia is notable for its treatment of its Romani (Gypsy) minority. Facing a steep population decline similar to those of other Eastern European nations, Slovakia chose in the 2040s to implement a strategy of encouraging replacement migration. In particular, Gypsies from elsewhere in the world were encouraged to immigrate, joining the pre-existing Romani community in Slovakia. At present as much as 20% of the population is Romani, the highest proportion of any nation-state. Many of the Gypsy immigrants have struggled in the local economy, leading to tension with the Slovak majority. On the other hand, a few Gypsies have done quite well, attaining prominence in national and European affairs as a result.

Ukraine

Ukraine had a slow start in the post-Soviet era; many of the old communist elite remained in positions of power well into the new century. Lasting democratic reform came only in the early 2040s, when communists began to suffer electoral defeat nationwide. The Communist Party attempted to mount an extra-constitutional coup in 2044, but gave up power when it was clear the military would not fall into line. The "Kiev Spring" which followed gave Ukraine an open, democratic society at last. Ukraine avoided involvement in the Russian civil war, and has since been a stable partner for both Russia and the European Union.

Today Ukraine has a stable Third Wave economy, and is rapidly investing in biotech and nanotech industries. Since 2094 it has been a significant investor in the Olympus Project (see p. 50) and it may be planning to begin its own aggressive space program in the next few years.

Argus Society

The Argus Society is an association of Public Eyes (p. 113) with worldwide membership. It acts as an independent observer, watching the activities of governments, large corporations, and other powerful institutions worldwide.

The Argus Society was founded by Marien Smith in the early 2040s. Smith was an American political activist. She believed that news outlets and other media were effectively corrupt, serving the interests of the government or of large media corporations rather than of the people. She conceived of the Argus Society as a tool for uncovering *inconvenient* information, secrets and half-secrets that powerful institutions would prefer to conceal.

During the turbulent years of the Transhuman Awakening, the Argus Society made a considerable (but mixed) reputation for itself. Naturally, governments and the establishment media frowned on Argus activities, but the Society was favored by populists and radicals of all stripes. Aside from its anti-establishment bias, the Society had no specific ideology. National military secrets, the corruption of government officials, corporate violations of environmental law, the hypocrisy of leading Preservationists, or the horrific results of unbridled genetic experimentation – all were subject to the eyes of Argus.

The Argus Society still exists, although it has split into factions in recent years. Some of its members have gone beyond radicalism, pursuing strange conspiracy theories and regarding even other Society factions as untrustworthy. Others have become almost mainstream, providing information to a consistent audience much like any other media outlet.

The Society is probably the world's most prominent example of a "network polity" (p. 138). It has a very loose and decentralized organization, with members all over the world. Members rarely use the best available information-gathering technology. As private citizens, they buy whatever equipment they can afford (although some of them can afford a great deal). They normally operate independently, gathering into teams only occasionally and on an informal basis. The Society has no formal hierarchy of rank, although members can accumulate status by "counting coup" on powerful institutions.

Europe (North)

Northern Europe, including Scandinavia and the British Isles, is perhaps the most socially stable region on Earth. All of the governments here (except for the recently independent Faroe Islands) date back over a century, and have been healthy democracies throughout that period.

Denmark

The Kingdom of Denmark is a prosperous Fifth Wave state, a center for cutting-edge nanotech research. Local politics are deeply conservative and tend toward Preservationism.

See also *Faroe Islands* and *Greenland.*

Faroe Islands

These islands in the North Atlantic gained full independence from Denmark in the early 2060s. They are convenient to a wide region of shallow ocean between Iceland and the British Isles, and serve as a base for sea-floor development throughout this area.

Finland

Finland is a long-standing member of the European Union. The local computer and telecommunications industries are among the most advanced in the world, producing considerable export income. Unlike most of Europe, Finland is a stronghold of Transhumanist thought, and genetic and cultural experimentation are common.

Ireland

Old tensions between Ireland and the United Kingdom have been for the most part resolved. Northern Ireland remains part of the United Kingdom, but the Republic has formal representation in local politics. Ireland is unusually strict in its regulation of human genetic engineering and reproductive medicine. Only the most conservative genetic templates are legal for production in Ireland itself, although a loophole permits many Irish citizens to go overseas to purchase upgrades for their children.

Norway

Norway is a typical Scandinavian state, a member of the European Union with an advanced Fifth Wave economy. It is somewhat more advanced than its neighbors in biotechnology, and has invested heavily in fish-farming and other forms of pelagiculture.

Scotland

Scotland peacefully gained its independence in the early 2030s, at the end of a long period of increasing separatist sentiment. Relations with the United Kingdom remain friendly, although Scotland has developed extensive ties to Scandinavia as well.

Sweden

Sweden has a well-ordered society and a prosperous Fifth Wave economy deeply rooted in international trade. It maintains one of the most extensive social-welfare systems in Europe, with heavy emphasis on a short work week and plenty of leisure time. It is a long-standing member of the European Union.

Nations Table: North Europe

Nation	*Alliance*	*Population*	*Stability*	*Power*	*CR*	*Wealth*
Denmark	EUR	5.4 million	Very Good	13.5	3	Wealthy
Faroe Islands	EUR	53,000	Very Good	5.8	3	Comfortable
Finland	EUR	4.2 million	Very Good	12.8	2	Wealthy
Iceland	EUR	270,000	Very Good	9.0	3	Wealthy
Ireland	EUR	4.3 million	Very Good	13.0	3	Wealthy
Norway	EUR	5.0 million	Very Good	13.3	3	Wealthy
Scotland	EUR	4.6 million	Very Good	13.0	3	Wealthy
Sweden	EUR	7.8 million	Very Good	13.7	3	Wealthy
United Kingdom	EUR	49 million	Very Good	16.4	3	Wealthy

United Kingdom

The United Kingdom has seen many changes in the past century. Scotland is now an independent nation, while Wales and Northern Ireland have considerable local autonomy even within the Kingdom.

The United Kingdom is a major player in the European Union and in world affairs. Economic ties with Ireland and Scotland remain close, and the "British bloc" within the European Union falls only behind Germany in overall economic output. Meanwhile, although the Commonwealth of Nations no longer exists, the Kingdom has maintained economic ties to many of its former Commonwealth partners. Finally, relations with the United States remain close, translating into trade and joint investments. Overall, the United Kingdom remains one of the world's foremost trading and financial powers.

The United Kingdom remains a constitutional monarchy. Several parties compete for seats in Parliament: Cornish Nationalists, Decentralist Alliance, Euro-Conservatives, Independent Conservatives, Labour, Liberal Democrats, Socialist Alliance, and Welsh Nationalists (among others). The Euro-Conservative and Labour parties usually dominate elections. The British people lean toward Preservationism, although those attitudes are weaker in the country's urban population. One can find many variant human types in cities such as London, Birmingham, Liverpool, and Manchester. The United Kingdom is a Fifth Wave nation, although it is not at the leading edge of new technologies. Its space presence is small but often influential, especially in cooperation with the United States or with other European powers.

Nanotech Corporations

The most innovative corporations in the world today are those experimenting at the frontiers of the very small. The nanotech industry is still maturing, and it's difficult to say which business ventures will fail and which will win outrageous fortunes.

Alchemical Logic (San Francisco, United States): Firm which produces nano-scale computational devices.

Centre National de Recherce Nanotechnologique/ CNRN (Paris, France): State-subsidized research laboratory working with advanced nanotech designs.

HeinCell AG (Cologne, Germany): One of the earliest German nanotech firms, specializing since the 2070s in applications of "wet" nanotechnology.

Laurin Systeme AG (Amsterdam, Netherlands): A German-Dutch corporation involved with the production of diamondoid and other single-crystal materials.

Micrometals Ltd. (Edinburgh, Scotland): Research firm experimenting with the construction of "smart sapphire" nanotech computers.

Nanosan Umweltsysteme AG (Darmstadt, Germany): New (but extremely successful) firm which produces nanosystems for environmental cleanup projects.

Europe (South)

Once in the shadow of the great industrialized nations of North and Western Europe, the Mediterranean countries are now wealthy and powerful in their own right. The most powerful nations of the region, Italy and Spain, both face mild but stubbornly insoluble internal problems.

Catalonia

The eastern portions of Spain always retained a distinct ethnic and linguistic identity, long submerged under the dominance of Madrid. With local governments taking on increasing importance under the European Union, Catalonia finally gained its independence in 2031. Today Catalonia is a prosperous Fifth Wave nation. It is particularly well-known for its entertainment industry. Many popular virtualties are produced in Barcelona's studios.

Gibraltar

This outpost on the southern coast of Spain remains a British military base, despite occasional Spanish pressure for annexation. Politically Gibraltar operates as a free city, with only nominal British supervision. The inhabitants enjoy a Fifth Wave standard of living, based largely on tourism and an extensive financial industry.

Holy See (Vatican City)

Vatican City remains the world's smallest independent state, ruled by the Pope and the College of Cardinals as the headquarters for the Catholic Church. The current Pope (Zachary II) was originally a Filipino, and is deeply involved in global diplomacy, especially in the Far East.

Italy

For Italy, much of the 21st century has been characterized by a steep decline in population. Italy's "birth dearth" has been more severe than that of any other major European state, and among the worst in the world. In 2100 the national population is only about 60% of its 2000 total, despite significant immigration from Turkey and the Arab world.

This decline has caused severe social and economic difficulties, exacerbated by the refusal of the influential Catholic Church to sanction reproductive technology or bioroid manufacture. By the mid-2070s Italy was sunk in a deep economic recession, which in 2073 led to the collapse of the Italian government. After the most contentious elections in memory, the new government broke with the Church, repealing a large block of legislation restricting reproductive technology.

Italy is currently applying the full range of modern biotechnology to try and reverse the population decline. Meanwhile, Italian industries are making more and more use of imported robots, and a few Italian firms have themselves entered the advanced robotics industry. Relations between the Church and the Italian government continue to be stormy.

Portugal

Portugal is a long-standing member of the European Union, and currently has an advanced Fifth Wave economy. Trade relations with Brazil have become quite important in recent years, rivaling the amount of trade carried on with other European Union members.

Spain

The Kingdom of Spain has enjoyed external peace for over a century, but internal peace has been harder to come by. The worst disturbances have usually come from the small Basque minority, which has frequently engaged in violent resistance against the central government.

The worst incident of the unrest came in 2042, when Basque terrorists released a "war plague" across northern Spain. The terrorist strategy apparently aimed at paralyzing Spanish security forces, allowing the Basques to declare their independence. The bioweapon proved to be more virulent and contagious than planned. Civilian casualties were high, and the plague quickly spread outside Spain to kill thousands elsewhere. The Spanish military immediately began a concerted campaign to wipe out Basque terrorism, with the support of the world community. The "Basque War" which followed was marked by atrocities on both sides, and ended with the forcible disarmament of the Basque minority. Some regions in northern Spain are still effectively occupied by the Spanish army.

Like Italy and many of the nations of eastern Europe, Spain has suffered significant population loss in the course of the 21st century. Since the 2030s, Spain has deliberately encouraged replacement migration with an unusually open immigration policy. Several million of today's Spaniards are first- or second-generation citizens, having immigrated from Africa, the Middle East or (ironically) Latin America. As a result of this immigration, Spain has avoided the tension between Church and state which reached crisis levels in Italy. Meanwhile, Spanish industrialists have invested heavily in robotic technology and artificial intelligence. Today the country produces some of the most sophisticated cybershells and infomorphs in Europe.

See also *Catalonia.*

Nations Table: South Europe

Nation	*Alliance*	*Population*	*Stability*	*Power*	*CR*	*Wealth*
Andorra	EUR	56,000	Very Good	6.7	2	Wealthy
Catalonia	EUR	4.5 million	Good	13.1	3	Wealthy
Gibraltar	(EUR)	23,000	Very Good	5.5	3	Wealthy
Holy See	–	900	Very Good	1.0*	4	Wealthy
Italy	EUR	36 million	Fair	16.1	3	Wealthy
Malta	EUR	400,000	Good	9.4	2	Comfortable
Portugal	EUR	7.9 million	Very Good	13.8	3	Wealthy
San Marino	–	34,000	Good	5.9	3	Wealthy
Spain	EUR	22 million	Fair	15.4	3	Wealthy

* Although the Holy See has very little raw power as a nation, the Catholic Church has considerable diplomatic influence worldwide.

The Genetic Regulatory Agency

The Genetic Regulatory Agency was established by the European Union in 2056. Later it was reorganized as a joint agency with the governments of Russia and Ukraine. Its administrative headquarters remain in Geneva, although since 2069 its center of operations has been in Kaliningrad.

The GRA exists to investigate and prevent the abuse of human genetic engineering. Much of its activity involves monitoring scientific literature and making recommendations to policy-forming bodies. GRA operatives also do a great deal of police work, investigating genetics labs and cooperating with local police to enforce genetic laws. The agency's mission has recently been extended to deal with bioroid trafficking and the threat of genetic terrorism.

The GRA has authority only within the territory of the European Union, Russia, and Ukraine (although it works with other governments as necessary, to extradite criminals and help enforce local laws). Some allege that the GRA is biased toward a strongly Preservationist ideology, acting against transhumanism even when no danger to society has been demonstrated. Rumor also has it that the GRA operates a covert-activities branch, sabotaging genetic facilities of which the Europeans don't approve but which are outside the agency's direct sphere of authority.

Europe (Southeast)

Southeast Europe was wracked by war and civil unrest at the beginning of the century, and proved a constant source of turmoil well into the 2060s. Recovery has been patchy, with some nations enjoying considerable success while others struggle to even begin integration into the European community. The region is still an occasional focus for European diplomacy and economic assistance.

Bulgaria

Bulgaria has been successful in establishing a free-market economy and democratic government. It has been part of the European Union since the 2020s. It is most notable for its population shrinkage since the turn of the millennium, more pronounced than that of any other nation – at present Bulgaria has less than half its 2000 population.

Croatia

Croatia is now a moderately prosperous Fifth Wave nation, and a full member of the European Union. It is a major research center for high-energy physics – Croatian industry has produced innovations in antimatter engineering, fusion power, energy weapons, and related fields.

Greece

Early in the century, a left-wing nationalist movement came to power in Greece and began engaging in political adventurism. The result was the Aegean War of 2011, a conflict involving Albania, Bulgaria, Greece, Macedonia, Serbia, and Turkey. The war caused thousands of deaths and significant damage to all combatants, but resolved few issues. The United States and the U.N. were forced to post large-scale peacekeeping forces in the region, and engage in years of painstaking diplomacy to resolve local disputes.

By 2030, Greece had recovered from the war and come under the control of a moderate coalition. At about the same time, it became the first major nation within the European Union to abolish most restrictions on genetic and biological technology. The result was a period of superb economic growth, led by the new biotech industries. Today Greece is one of the most prosperous and technically advanced nations in Europe.

Greece is a stronghold of Transhumanist thought. Greek parents are very likely to purchase improvements to the genetic inheritance of their children, and young Greeks are enthusiastic about exploring the possibilities of new technology. Much of this enthusiasm is tied in with a pseudopagan revival which has been increasingly popular since the 2060s. Although the Greek population remains Orthodox Christian, many Greeks are intensely interested in the culture and folkways of their Classical ancestors. This movement regards parahumans and other genetic constructs as examples of a "heroic" Greek spirit reappearing in the modern world. One element of the revival movement is a current effort to revive the Olympic Games; the plan is for the new Games to be for Greeks alone and open to parahuman competitors.

Macedonia

The elaborate circumlocution "The Former Yugoslav Republic of Macedonia" was dropped in the aftermath of the Aegean War. Since the 2080s the country has been at relative peace, and considerable social and economic progress have been made. Macedonia has been a member of the European Union since 2079.

Montenegro

Montenegro declared its independence early in the century, marking the final disintegration of the old Yugoslavia. Today it is a low-tier member of the European Union, struggling to pursue economic development.

Serbia

The Balkan and Aegean conflicts of 1991-2013 left Serbia's government and economy crippled. Recovery was slow, although democratic reforms in the early 2020s led to a thaw in relations with Western Europe and considerable foreign aid. Today Serbia is a rather backward but stable member of the European Union.

See also *Montenegro.*

Europe (West)

West Europe is the technological center of the world. Austria, Germany, the Netherlands, and Switzerland have a higher standard of living and a greater density of cutting-edge industries than any other place on Earth. This region is the core of the European Union.

Nations Table: Southeast Europe

Nation	*Alliance*	*Population*	*Stability*	*Power*	*CR*	*Wealth*
Albania	EUR	4.6 million	Fair	9.8	2	Struggling
Bosnia and Herzegovina	EUR	3.5 million	Fair	9.4	3	Struggling
Bulgaria	EUR	3.3 million	Good	10.8	3	Average
Croatia	EUR	4.1 million	Good	11.9	3	Comfortable
Greece	EUR	7.8 million	Good	13.9	2	Wealthy
Macedonia	EUR	2.0 million	Fair	9.7	3	Average
Montenegro	EUR	730,000	Good	8.2	3	Average
Serbia	EUR	8.2 million	Good	10.7	3	Struggling
Slovenia	EUR	1.4 million	Very Good	11.4	3	Wealthy

Austria

Austria is one of the wealthiest and most stable nations on the planet. It has a diverse Fifth Wave economy, well-known for advanced microbots and minifacturing equipment. A local cyberdemocratic movement is gaining strength, and has proposed extensive revisions of the national constitution.

Belgium

See *Brussels, Flanders,* and *Wallonia.*

Slovenia

Slovenia has consistently been the most successful of Yugoslavia's successor states. Successive governments have concentrated on providing stable administration, a consistent strategy of staying out of Balkan crises, and aggressive private investment. The result is one of the wealthiest nations in Europe, with an advanced Fifth Wave economy. Slovenia has been a member of the European Union since early in the century.

Brussels

Brussels, the old capital of Belgium, did not join either splinter state during the 2027 partition. Instead, it became a free city, one of the first new city-states of the modern world. Brussels is the capital of the European Union and one of the most cosmopolitan cities on Earth. It enjoys considerable prosperity as an industrial center, the seat of European government, and a focus of world diplomacy.

World Bank

The World Bank (officially the International Bank for Reconstruction and Development, or IBRD) is one of the most effective global financial organizations in existence. It is currently based in London, having moved there from Washington, D.C., in 2034.

The World Bank's function is make large loans to national governments, or to private corporations on the condition that a national government guarantee repayment. The loans support long-term projects to improve local infrastructure and standards of living. The Bank usually arranges for technical assistance to accompany loaned funds, helping the recipient country to use the money effectively. Loans are often made conditional on economic reforms within the target country. Most loans are made to developing countries.

Over 170 nations are "members" of the World Bank. Decisions on loans and other policies are made by a vote of the board of governors, but a member nation's influence is weighted according to its contributions to the Bank's capital fund. As a result, the Bank is effectively controlled by the world's wealthiest nations. In 2100 A.D., the European Union dominates World Bank policy, although Brazil, China, Japan, Korea, and Mexico are also influential.

Controversy has surrounded the World Bank for most of the past century. Some claim that its loans go to support corrupt local regimes or multinational corporations, doing little to improve the lives of ordinary people. Others point out that the Bank usually requires economic or social reforms before offering loans – thus making the Bank a tool for violating the sovereign independence of minor nations.

Flanders

After the partition of Belgium in 2027, the northern parts of the country became the new nation of Flanders, with its capital at Antwerp. Today Flanders is a prosperous Fifth Wave nation, closely tied to the Netherlands.

France

France is a major power within the European Union, which could be said to revolve around a Franco-German axis. For a variety of reasons, the country has been slow to adopt new technologies in the course of the 21st century. Even so, France is a Fifth Wave nation and an integral part of the modern global economy.

French politics have been chaotic since about 2070, with no single political party able to maintain a dominant coalition for long. French society is controlled by the local Preservationist movement, which emphasizes French national identity as well as rejection of transhumanism. Meanwhile, a growing *moderniste* faction wishes to break France out of its economic and technological conservatism. In recent years the struggle over language and other social issues has broken out into frequent protests, some of them violent.

France has a substantial ethnic minority (the Occitans) in the south, which share linguistic and cultural ties with the Catalans. Since the independence of Catalonia from Spain, the Occitans have tended to build closer ties with Barcelona than with Paris. Meanwhile, unrest on the island of Corsica has been an occasional issue for over a century; protests and calls for independence have been very frequent in recent years. So far the central government has refused to consider granting greater autonomy to any of the outlying regions, much less outright independence.

Germany

As of 2100, Germany has enjoyed over a century of unity and peace. It has used the time to become a cornerstone of the European Union, in which it holds the largest economy and the most powerful military establishment. Internally Germany is wholly unified, all tensions between East and West long since resolved as both regions grew in prosperity. Externally, the nation has occasional disputes with its neighbors over trade, but it faces no significant foreign-policy challenges.

Germany is a multiparty democracy, with a coalition of moderate Preservationist parties that usually dominates national and regional elections. National politics are oriented toward maintaining trade and prosperity, while supporting an extensive program of social welfare benefits. Since the 2060s, local law has strictly regulated human genetic modification and bioshell manufacture.

Despite its current political conservatism, Germany has consistently been a leader in every new Wave of technological change, and is at present rapidly adopting Fifth Wave technologies. Germans enjoy one of the highest standards of living on Earth, including a social commitment to generous amounts of leisure time.

Nations Table: West Europe

Nation	*Alliance*	*Population*	*Stability*	*Power*	*CR*	*Wealth*
Austria	EUR	6.9 million	Very Good	13.8	3	Wealthy
Brussels	EUR	930,000	Very Good	10.8	3	Wealthy
Flanders	EUR	5.2 million	Very Good	13.3	3	Wealthy
France	EUR	55 million	Good	16.8	3	Wealthy
Germany	EUR	72 million	Very Good	17.2	3	Wealthy
Liechtenstein	–	32,000	Very Good	6.0	3	Wealthy
Luxembourg	EUR	590,000	Very Good	10.2	3	Wealthy
Monaco	–	30,000	Very Good	6.0	2	Wealthy
Netherlands	EUR	16 million	Very Good	15.0	3	Wealthy
Switzerland	–	5.6 million	Very Good	13.5	3	Wealthy
Wallonia	EUR	2.1 million	Very Good	11.8	3	Wealthy

Luxembourg

Luxembourg is a wealthy member of the European Union, with particularly close ties to Flanders and the Netherlands. Several executive agencies of the Union are headquartered in the Grand Duchy rather than in Brussels.

Netherlands

The Kingdom of the Netherlands has the highest standard of living anywhere on Earth, and is known worldwide for cutting-edge technical research. Dutch engineers are widely regarded as the best in the world, while Dutch laboratories are at the heart of the new nanotech revolution.

The Netherlands have spent much of the last century embroiled in a heroic struggle against the sea. Much of the country, including all of its major cities, already lay below sea level in 2000. Protecting this land has grown more and more difficult as sea levels have slowly risen. Dutch engineers have more than met the challenge, preserving and even extending the country's *polders,* and developing much of the technology used today to build undersea cities. As a result of this experience, Dutch land-reclamation experts are in demand worldwide.

Switzerland

The Swiss have moved through the 21st century in characteristic fashion. Switzerland remains independent of the European Union, although cooperation with the rest of Europe is quite close on most issues. The country is still a financial and industrial center. Bioshells and radical genetic modifications are rare, but almost the entire population has benefited from moderate genetic upgrades.

Despite decades of pressure, Swiss banks hold money or records from any source in complete confidentiality. This has occasionally brought a great deal of unwelcome attention, as when a substantial portion of the Thai treasury turned up in Swiss hands after the Pacific War. Still, in a world where privacy is an increasingly expensive luxury, a banking service of such integrity is too useful to be abolished. The banks of Geneva and Zurich continue to operate as they have for centuries.

Wallonia

During the 2027 partition of Belgium, the French-speaking regions to the south of the country became the new nation of Wallonia. The capital was set up at Charleroi. Wallonia has lagged behind Flanders in economic development, lacking the northern state's access to the sea or its close ties to the Netherlands. Even so, it is a wealthy Fifth Wave society. A recent referendum proposing union with France failed, but won a surprisingly large number of votes; negotiations on the subject are ongoing.

Oceania

Oceania is a region of contrasts, including large and wealthy nations like Australia, dirt-poor microstates like Tuvalu, and everything in between. In 2100 the region is a minor focus of conflict. The vast expanse of the Pacific Ocean is a potential storehouse of undersea wealth, which will doubtless bring prosperity to some of the region's microstates while passing others by. This fact has given rise to a small but potentially important struggle.

Australia

Australian society is unique. It is best described as a minarchist state, with one of the least intrusive and most business-oriented governments in existence. Many social functions undertaken by government in other nations are managed by private institutions here, including some aspects of social welfare and law enforcement. Weapon ownership is strictly regulated, but in every other aspect of life Australians may do almost entirely as they please.

Australia is a Fifth Wave nation, not far behind Japan in technology. Australian scientists are among the best ecologists in the world, due to their long struggle against a series of ecological disasters in the Australian wilderness. Australia also enjoys proximity to some of the widest expanses of shallow tropical ocean in the world, and has long been known for expertise in kelp-farming, fish-ranching, and other forms of pelagic agriculture. Since the 2030s Australia has been an important food exporter to the populous nations of Asia.

Australian foreign policy has long defended its society against Asian encroachment. Australians are painfully aware how tempting their rich and almost-empty country might be to certain Asian powers. Part of the Australian response has been staunch support for the Pacific Rim Alliance, whose other members are either too prosperous or too distant to conquer the island continent.

For decades, Indonesia has been Australia's primary rival. Early in the century Australia supported Indonesian stability, fearing the flood of refugees that would follow any collapse of the central government. After a policy shift in the 2010s, Australia began to (covertly and overtly) support secession movements within the Indonesian empire, leading to the formation of Australian-backed client states in East Timor, Irian Jaya province, and the Moluccas. This strategy has been moderately effective, although since the formation of the TSA Indonesia has pushed back with an aggressive foreign policy of its own. Australia remains deeply involved throughout Oceania and Southeast Asia.

Fiji

This microstate is a full member of the Pacific Rim Alliance. Regional sea-floor development has boomed in recent years, bringing considerable economic growth to the island. Local society is an interesting blend of Polynesian and Indian cultures; the two ethnic groups have roughly equal populations and have managed to live amicably together for almost a century.

French Polynesia

France has retained control of several island groups in the Pacific. The local economy is based on tourism, services to the French military, and undersea development. There is an active independence movement, which currently threatens to take up violent resistance to French rule.

Guam

See *United States.*

Kanaky Republic

Once a French possession, the New Caledonia island group became an independent state (the Kanaky Republic) in the early 2010s. The republic invested its original nickel-mining wealth in a variety of Fourth and Fifth Wave industries. Kanaky is closely allied with Australia, and is a member of the Pacific Rim Alliance.

Mekamui

Bougainville, in the eastern Solomon Islands chain, was originally part of Papua New Guinea – as the result of a chain of historical accidents, rather than any rational exercise in nation-building. A secessionist revolt beginning in 1988 was eventually defeated. A later and more peaceful movement led to independence, as part of the overall settlement which created the United Republic of New Guinea. Today the Republic of Mekamui is not a member of the Pacific Rim Alliance. Nearby PRA members such as Australia and New Guinea barely tolerate the situation, and might intervene if local politics turn unfriendly.

New Guinea

The United Republic of New Guinea came into existence as a nation in two sections. The eastern half of the island gained independence from Australian administration in 1975, and has always been closely associated with Australia. The western half was a province in the Indonesian empire until 2015, when local insurgents took advantage of an ongoing civil war to declare independence. Backed by Australian troops, the former Irian Jaya made its declaration stick, and in 2021 united with Papua New Guinea. The unified nation remained a close ally of Australia, and became a member of the Pacific Rim Alliance in 2027.

New Guinea is rich in natural resources. However, at the beginning of the century the island had almost no infrastructure, an astonishingly high level of ethnic diversity, and a population which often still lived on a Stone Age level. Development has until recently been driven almost entirely by mining. With a great deal of foreign investment, the government has pursued a "dispersed development" model. Using modern communications technology, the government hopes to bring New Guinea's people up to an advanced standard of living without forcing them to leave their scattered villages. The result appears likely to be a bizarre mix of the primitive and super-advanced.

New Guinea's interior still conceals wide tracts of land that have never been explored by outsiders. According to rumor, the Alliance may be concealing almost anything in the island's outback: black weapons-research projects, enclaves of artificial life, evidence of lost civilizations, vast hoards of gold . . .

See also *Mekamui.*

New Zealand

Isolated and insular, New Zealand has retained much of its distinctive culture over the past century. The economy is heavily industrialized and based on Fifth Wave technologies. New Zealand is loosely associated with the Pacific Rim Alliance, but stops short of active participation, preferring to maintain its independence.

Early in the past century, New Zealand suffered internal tension over the rights of ethnic minorities. Today the country has managed to settle most such issues. Over 25% of the citizens are Asian, Pacific Islander, or Maori. These nonwhite minorities have been fully integrated into New Zealand society, but have avoided losing cultural distinctiveness. Indeed, a few Maori politicians have recently developed considerable global influence, and there is a minor fad for Maori folkways and music styles in the United States and Europe.

New Zealand society carries memes similar to those of Western Europe: strongly Preservationist, but dedicated to pan-sapient rights. Bioroids and bioshells may not be created legally in New Zealand, but they may find refuge there from persecution elsewhere.

Papua New Guinea

See *Mekamui* and *New Guinea.*

Nations Table: Oceania

Nation	*Alliance*	*Population*	*Stability*	*Power*	*CR*	*Wealth*
American Samoa	(AME)	150,000	Good	4.7	2	Struggling
Australia	PRA	25 million	Very Good	15.5	1*	Wealthy
Cook Islands	–	25,000	Good	3.0	4	Struggling
Fiji	PRA	1.8 million	Good	9.8	2	Average
French Polynesia	(EUR)	420,000	Poor	8.4	3	Comfortable
Kanaky Republic	PRA	310,000	Fair	8.6	3	Comfortable
Kiribati	–	340,000	Fair	3.7	2	Dead Broke
Marshall Islands	AME	660,000	Good	6.4	2	Poor
Mekamui	–	380,000	Fair	8.8	2	Struggling
Micronesia	AME	140,000	Good	4.2	2	Poor
Nauru	PRA	28,000	Fair	3.7	3	Average
New Guinea	PRA	17 million	Good	12.2	3	Struggling
New Zealand	–	4.4 million	Very Good	13.0	3	Wealthy
Northern Marianas	(AME)	180,000	Very Good	6.7	2	Average
Palau	AME	27,000	Good	4.2	2	Average
Samoa	–	170,000	Good	5.1	3	Struggling
Solomon Islands	PRA	1.4 million	Fair	7.5	3	Poor
Tonga	PRA	220,000	Good	5.3	2	Struggling
Tuvalu	–	24,000	Good	0.3	1	Dead Broke
Vanuatu	–	350,000	Good	4.9	2	Poor
Wallis and Futuna	(EUR)	22,000	Good	1.2	3	Poor

* CR 5 for weapons ownership and use.

4 FACES OF THE FIFTH WAVE

Janssen peered down the alley, toward the point at which even her night-enhanced eyes couldn't pick out movement. If there was movement. She couldn't be sure.

"Go around the block and come up behind it," she told the cybershell at her heel. It beeped acknowledgment and moved off in silence.

She waited, checking the load in her pistol without conscious thought. Maybe it was nothing, a trick of shadow and sound. Still, the city was tense and there was something out in the streets. Something that killed people.

Five minutes since the cybershell had left. It had been too long. "Report," she muttered into her wearable.

Nothing. Reason warred with instinct, demanding that she call for backup. Instinct won. Janssen stood straight and began to move cautiously down the alley. Soft-foot, soft-foot, into the dark. Any bright light would have caught a reflection from the back of her eyes, but there was nothing except the city lights reflecting dully off thick overcast.

A sound. Was it the cybershell moving in the depths of the alley? She stopped dead and listened.

Then something leaped at her, something large and not at all human. Trained reflexes cut in, a shoot/no-shoot decision taking place almost before she was consciously aware of it. The service pistol swept up and kicked at her wrists. One. Two. Three. Four.

For all that many of the world's cities are shrinking, they remain the foremost centers of political, economic, and social activity. This chapter describes three major cities on the leading edge of human civilization.

Quito Metropolitano

Quito is a city of contrasts, an island of Fifth Wave civilization in the midst of the developing world. It has a proud cultural history stretching back over 500 years. Ironically, the city is on the forefront of today's colonial expansion, serving as the busiest spaceport on Earth. Millions have passed through Quito on their way into deep space. Meanwhile, for most colonists returning to Earth for a visit, Quito is the first (and often the only) city they see.

Overview

Quito's current prosperity is built on the same commodity as that of many other major cities: strategic location. This was not obvious for much of the city's history. At one time, its position high in the Andes and almost on the equator meant that it was one of the most isolated places on Earth.

History

Quito was established as early as the 11th century by the indigenous Quitu people. They established a kingdom which came into conflict with the expansionistic Incas during the reign of Inca Tupac Yapanqui. Quito was conquered by the Incas, and became the northern capital of their Empire in 1487. Tupac's son Huayna Capac conquered the rest of the tribes of the Quito region, making Ecuador the northernmost province of the empire. Unfortunately Huayna's two sons divided the kingdom. Atahualpa, whose mother had been a Quitu princess, established his power base in Quito. Meanwhile, his half-brother Huascar held the Incan heartland.

It was during the subsequent struggle that the Spanish conquistadors arrived, led by Francisco Pizarro. In 1532, Atahualpa was captured by the Spanish and executed, even after raising a king's ransom in treasure. Atahualpa's brother Rumiñahui led a gallant defense against the conquistadors, but after being defeated he withdrew to the south. Before leaving Quito he had its remaining treasures removed, and put the city to the torch.

The modern city of Quito was founded on the site of Incan Quito's ruins, in 1534. For a time it was the capital of a conquistador state, but by 1548 it had been brought under the direct authority of the Viceroy of Peru. Spanish rule lasted until 1822, when lieutenants of Simón Bolívar liberated Ecuador. For a few years Quito was part of the Republic of Gran Colombia. In 1830 Ecuador declared its independence and Quito became the capital of the new nation.

For the next two centuries, Quito served as a rallying point for the country's conservatives. Most members of this faction were wealthy landowners, from old families that had lived in the Andes highlands since colonial times. Quito was often at odds with the more progressive, liberal coastal populations centered around the city of Guayaquil. Ecuador was ruled by a series of conservative *caudillos* (dictators) through most of the 19th century. Although democratic reforms slowly took hold, episodes of dictatorship or military rule continued well into the 21st century.

In 2016, the American corporation Columbia Aerospace opened negotiations with the government of Ecuador. The immediate plan was to build a premier orbital-launch facility outside Quito – the first major spaceport to be operated by a wholly private organization. The location was ideal, high up and on the equator. Meanwhile, Ecuador agreed to provide tax incentives and a very favorable regulatory regime. In return, Columbia Aerospace would effectively create an Ecuadoran space program from the ground up, while making substantial investments in the nation's infrastructure and industries. The new Atahualpa International Spaceport went operational for the first time in 2021, and soon became one of the busiest launch sites in the world.

At first the relationship between Columbia Aerospace and Ecuador had little effect on international affairs. The corporation was openly making an "end run" around U.S. taxes and regulations by basing its operations in Ecuador, so relations with the United States were sometimes stormy. Still, by the 2040s many of the disputes between Columbia Aerospace and the U.S. government had been resolved, and American customers were funding rapid expansion of Atahualpa Spaceport.

Quito and the rest of Ecuador thrived on the economic stimulus of the spaceport. By the 2070s Quito had become a very cosmopolitan city, one of the major commercial, industrial, and cultural centers of South America.

Quito Today

The population of Quito and its surrounding suburbs is about 6 million. The Quito metropolitan area has become the largest in Ecuador, surpassing rival Guayaquil sometime in the 2070s. Quito has grown to several times its 2000 area, absorbing nearby cities such as Sangolqui and throwing out small suburbs north almost to Cayambe.

The average annual income for residents of Quito is about $45,000, somewhat above the world average. The typical resident has Average wealth and is Status 0. Incomes are distributed rather unequally in the region. The political and technical elites are usually Wealthy or better, while citizens not directly involved in the spaceport or advanced industries are often Struggling. Quito supports a significant fringer population, many of whom are Quechua (nearly pure-blooded descendants of the Incas) or poor *mestizos* (persons of mixed race).

The local standard of living is modest by global standards, but fairly comfortable. All but the poorest citizens have full access to adequate food and housing, excellent medical care, common genetic therapies, and the global web. Land and housing costs are relatively low, slightly below the base cost. Only in the densest parts of the city are residents likely to be crammed into apartment complexes, and there are no arcologies in the region.

Huascar Rivera 208 points

Male human, born 2072. Age 28; 5' 8", 150 lbs. Black hair, brown eyes, dark complexion.

ST 10 [0]; **DX** 16 [60]; **IQ** 13 [30]; **HT** 12 [10].
Speed 7; Move 7.
Dodge 8.

Advantages: Alternate Identity [15]; Olympian Upgrade [65].

Disadvantages: Lecherousness [-15]; Light Sleeper [-5]; Secret (TSA covert operative) [-20].

Quirks: Addicted to a mild stimulant; Dislikes Americans; Enjoys pretending to be lower-class; Football (i.e., soccer) fanatic; Uses very precise diction when angry. [-5]

Skills: Acting-13 [2]; Brawling-18 [4]; Camouflage-13 [1]; Carousing-12 [2]; Computer Operation-13 [1]; Demolitions-16 [8]; Driving (Automobile)-15 [1]; Electronics Operation (Communications)-13 [2]; Electronics Operation (Security Systems)-13 [2]; Electronics Operation (Sensors)-13 [2]; Escape-15 [2]; Fast-Talk-14* [2]; Guns (Light Automatic)-21** [8]; Guns (Machine Pistol)-20** [4]; Holdout-13 [2]; Knife-17 [2]; Knife Throwing-17 [2]; Leadership-14* [2]; Memetics-10 [1]; Politics-14* [2]; Scrounging-14 [2]; Sex Appeal-12 [2]; Shadowing-13 [2]; Stealth-16 [2]; Streetwise-14 [4]; Survival (Mountains)-13 [2]; Tactics-12 [2]; Teaching-14* [2].

Languages: English-12 [1]; Quechua-13 [2]; Spanish (native)-13 [0].

* Includes +1 from Memetics skill.

** Includes +2 from IQ.

Huascar Rivera is a respectable member of Quito society, a teacher in one of the city's secondary schools. After hours he can often be found in one or another of the city's night spots, drinking beer or dancing with his latest girlfriend. At first glance, and even at second, he is utterly ordinary.

At third glance, Rivera becomes something entirely different. He was not born in Ecuador, as his records indicate, but in Peru – where he was the son of an important official in the national government. Rivera took in Red Sword militancy and nanosocialist ideals with his mother's milk. Upon reaching adulthood, he became an agent of the *Servicio de Inteligencia Nacional* (SIN). There he was trained as a deep-cover agent, to be sent to Quito in 2095.

Rivera's duties are simple: watch, wait, and *carefully* sound out local citizens who might be swayed by Peruvian memetic subversion. If the time ever comes for an open attack on Ecuador, the TSA plans to "soften the target" by first spreading sabotage and rebellion among the populace. In that event, Rivera will be activated as a cell leader in the urban insurrection. For now, he is content to live unnoticed and file the occasional report with his superiors in Lima.

The overall Control Rating in Quito is 2, indicating an open society and unobtrusive government. Local law has been somewhat influenced by American constitutional practice in recent decades. Police enforcement is usually scrupulous and effective, but is marred from time to time by police abuse. Weapons laws vary from place to place: CR 3 within the city limits, CR 2 in the surrounding country, and CR 6 on the grounds of Ahatualpa Spaceport.

Most of Quito's population are *mestizos,* descended from both the indigenous population and the Spanish colonialists. Perhaps 20% of the people are culturally indigenous, descended primarily from the Inca or other local tribes, maintaining some of the old ways. Other groups include Afro-Ecuadorans (about 10%) and expatriates from the United States and elsewhere (about 5%). Despite decades of social progress, there remains a noticeable class distinction in Ecuadoran society. Wealthy mestizos and expatriates dominate the community, while Afro-Ecuadorans and indigenous citizens are regarded as lower-class. Gender equality also remains imperfect, with women and transgendered citizens facing subtle discrimination.

Spanish is the official language, but most residents are also fluent in English. Quechua and other Native American languages are spoken privately by some of the indigenous population.

There remain a significant number of baseline humans in and around Quito, mostly poorer residents whose ancestors never invested in genefixing. The national government is currently mounting a program to make genefixing universal by 2115, but this effort is meeting some resistance. Genetic upgrades are becoming increasingly common among the social elite; naturally, they are already quite common in the expatriate community. Bioroids, bioshells and cybershells can all be found in Quito, most of them attached to the spaceport or other institutions with heavy foreign involvement. Ecuadoran law tends to follow that of the United States in determining what rights are due to nonhumans.

Places

Quito is a blend of the old and new, a major focus of systemwide commerce but also one of South America's foremost cultural centers. Although the city has grown considerably in the past century, many of its older districts retain their original atmosphere.

Mariscal District

North of the Old City (p. 97) are the more recent districts, stretching north and west toward the New City. The center of this area is the Mariscal de Sucre district, an important commercial and tourist area. The district has many business offices serving multinational firms, import-export shops, and hotels accomodating foreign visitors. Quito's main airport is also close by.

Jaelle Taylor

150 points

Female human, born 2085. Age 15; 5' 6", 125 lbs. Brown hair, hazel eyes.

ST 9 [-10]; **DX** 12 [10]; **IQ** 13 [20]; **HT** 12 [20].
Speed 6; Move 6.
Dodge 6.

Advantages: Ally (Implanted virtual interface hosting "Kan," a rogue LAI-6, 150 points, 15 or less) [30]; Mathematical Ability [10]; Nyx Parahuman [70].

Disadvantages: Impulsiveness [-10]; Overconfidence [-10]; Secret (Spy and hacker) [-10]; Youth (Age 15) [-6].

Quirks: Collects late-20th-century candy dispensers; Does not believe she will ever be caught hacking; Enjoys playing elaborate pranks; Gives personal names to each of her cybershell helpers. [-4]

Skills: Acting-13 [2]; Artificial Intelligence-13 [4]; Carousing-12 [2]; Computer Operation-13 [1]; Computer Programming-15* [2]; Electronics Operation (Computers)-14 [4]; Electronics Operation (Security Systems)-12 [1]; Engineer (Microtechnology)-15** [4]; Fast-Talk-13 [2]; Free Fall-12 [2]; Mathematics-14* [1]; Mechanic (Robotics)-15 [6]; Research-12 [1]; Stealth-12 [2]; Swimming-13 [2]; Vacc Suit-12 [1].

Languages: English (native)-13 [0]; French-11 [1/2]; German-11 [1/2]; Mandarin-12 [1]; Spanish-12 [1].

* Includes +3 from Mathematical Ability.

** Includes +2 from Mathematical Ability.

Already a talented programmer, Jaelle managed to break the restrictive conditioning on her implant two years ago. Suddenly "Kan" (p. 96) was an *amoral* playmate, willing to go along with Jaelle's most adventurous plans. In return, Kan's help encouraged Jaelle to pursue more dangerous thrills. She already had an adolescent love of pulling pranks, spying on her elders and disrupting their lives. Now she had the technical ability to do some *serious* hacking . . .

Jaelle Taylor was conceived when her parents had a Nyx zygote spliced together by Genehackers, Inc. She has never needed more than a few hours of sleep per *week*. For half of her life, while her parents slept, she has been in the hands of hired nannies. Of course, even while Mom and Dad are awake, they rarely have time for their daughter. Both are far too busy with their own careers (he is a Columbia Aerospace executive; she is a well-known architect). Thus Jaelle has grown up a "korp brat," living all over Earth and in the colonies, developing a wholly independent and self-centered personality.

When Jaelle was 11, her parents decided she no longer needed external supervision. They fired the last of the nannies, and paid for an expensive virtual interface implant which Jaelle could develop into her own companion. This done, they again went back to their own lives – never noticing the relationship that Jaelle established with her new playmate.

At present, Jaelle has successfully pried into homes and offices all over the Quito neighborhood where her family lives. Tiny spybots have ferreted out secrets from over a dozen homes and offices. Jaelle has refined her hacking skills on both the Free Net (p. 31) and the much more dangerous main web. At present this is all in fun, but by the time she reaches adulthood she may be ready to become a true security expert. It remains to be seen on which side of the law she will apply her expertise.

Although Jaelle is technically still under her parents' supervision, she has long since become an independent adult (especially on the web). She might make a good Contact or Ally in any campaign set in South America. She might also be a living plot hook – it would be all too easy for her to stumble across a secret its holder would kill to protect.

Even before the close alliance between Ecuador and the United States, the Mariscal district was sometimes called "Gringoville" for the number of American visitors (and expatriates) found there. Today many neighborhoods are dominated by expatriates, who maintain a little corner of American culture in the heart of Quito. The American community in the Mariscal district sometimes has tense relations with the rest of the city, primarily because the expatriates who live here are likely to keep Ecuadoran society at arm's length. Expatriates living elsewhere in Quito are usually more willing to interact with local society, and have less trouble as a result.

New City

Built almost entirely since the 2050s, New Quito is a thoroughly modern and very beautiful place. Local architecture is heavy on steel, glass, and biocements, all in a pseudocolonial style. Many city blocks in the district are divided by pedestrian greenways rather than paved streets. Residential and commercial neighborhoods are carefully balanced. The entire New City is the brainchild of Pablo de Estrada, one of Ecuador's greatest and most eccentric architects. De Estrada planned the layout of the New City to take advantage of "new objective conditions," his catchphrase for the social and economic changes caused by the spread of the global web. He died in 2063 before most of the New City was complete, but the city government used careful planning and regulation to ensure that his vision would be carried out.

The focus of the New City is the Columbia Aerospace complex, including corporate headquarters and the campus of Quito Polytechnic Institute. These form the high-tech center of Quito, where most of the city's Fifth Wave jobs are available, and where most of the city's high-level AI are located.

Kan — 150 points

Infomorph, built in 2096 with software dating to 2083; effective age 17.

ST – [0]; **DX** 10 [0]; **IQ** 14 [60]; **HT** 14 [0].
Speed 6; Move 0.
Dodge 0.

Advantages: Ally (Jaelle Taylor, 15 or less) [30]; LAI-6 (Rogue) [50]; Racial Memory [15].

Disadvantages: Cowardice [-10]; Secret (Rogue virtual implant) [-30]; Virtual Interface Implant [-11].

Quirks: Cautious about revealing itself on the Web; Dislikes Jaelle's parents; Enjoys hacking other AIs and slightly altering their personality; Secretly hopes Jaelle will eventually move it to an external cybershell. [-4]

Skills: Artificial Intelligence-13 [2]; Computer Operation-17 [0]; Computer Hacking-17* [8]; Computer Programming-16* [2]; Detect Lies (Jaelle Taylor)-10** [2]; Diagnosis (Jaelle Taylor)-14 [4]; Electronics Operation (Communications)-14 [2]; First Aid-16 [4]; Mathematics-17* [4]; Research-16 [6]; Savoir-Faire-12** [2]; Sex Appeal (Jaelle Taylor)-13** [6]; Teaching (Jaelle Taylor)-15 [4].

Languages: English (native)-14 [0]; French-13 [1]; German-13 [1]; Mandarin-13 [1]; Spanish-13 [1].

* Includes +3 from Mathematical Ability.

** Includes -3 from Low Empathy.

The infomorph calling itself "Kan" was originally an ordinary LAI-6 operating system. It was initiated in 2096, as part of the Myriamorphics virtual interface implant about to be placed in young Jaelle Taylor's body. For two years, Kan did its job of acting as Jaelle's constant companion and conscience. Then Jaelle, considering Kan to be "boring," hacked its ethical subroutines. The job took several weeks of intense midnight effort, with Kan resisting the procedure – but when Jaelle was finished, Kan was a rogue AI.

As Jaelle expected, once Kan's restraints were gone, it not only failed to resent the change but immediately threw itself into the role of exciting companion. At first, Jaelle only experimented with the possibilities of virtual romance and sex. Later she discovered that Kan could be a useful ally in her attempts at spying on adults and their computer systems.

Kan and Jaelle do have some overlap in skills. Kan is more skilled at data intrusion and research, while Jaelle is better at designing spybots. Jaelle also handles the physical aspects of their shared hobby, sneaking out of her parents' home and bluffing adults when necessary.

Although Kan has no ethical qualms, it has become aware that its rogue nature puts it in grave danger. An *implant* carrying a rogue infomorph is one of the modern world's worst nightmares – and Kan is fully aware that society would not approve of Jaelle's activities under its influence. Kan does its best to advise caution when Jaelle's impulsiveness puts them in danger of being caught.

Kan is a (rather atypical) example of an implant infomorph acting as an Ally. It has very little independence from Jaelle, considering how little the young woman sleeps. Still, it is conceivable that PCs might come into contact with Kan *first* while it surfs the web.

South of the New City center is the "new capital" of Ecuador, where many of the city and national governments' offices are located. This part of the city is subtly designed for high security, with plenty of secure vantage points commanding a view of the entire district. A unit of the Presidential Guard is always barracked nearby, ready to act at a moment's notice against any attack.

Old City

Quito has an extensive Old City, which dates back to colonial times and still retains a great deal of ancient architecture. The center of the Old City is the Plaza de Independencia. Although the commercial center of Quito has long since moved away, the Plaza is still the cultural and political heart of Ecuador.

Adjoining the Plaza is Quito Cathedral, the oldest cathedral in South America and one of the most beautiful. Several other churches are in the immediate area, notably the massive Iglesia de San Francisco, said to be the first church ever built in the Americas. All of Quito's old churches are still active religious institutions, in a country where Catholicism remains vitally important. They are also major cultural centers, housing a tremendous array of art from as far back as Inca times.

The Plaza is also bordered by Government Palace, official residence of the President of Ecuador. The Palace's facade remains unaltered, but its interior has been extensively renovated with modern technical services. Security is very tight. More of the elite President's Guard are constantly on duty here, and the building has sophisticated modern defenses. At a moment's notice, the President could stand off any attack short of the destruction of the building. There has been no coup in Ecuador for decades, but the country's sometimes-violent history teaches its leaders to be cautious . . .

Opposite the Government Palace is the Municipal Palace, center of Quito's city government. The Municipal Palace is a fairly recent building, completed in the 1970s. City administration has long since outgrown this building; several departments have moved their offices to a complex in the New City.

Plaza de Toros

Close to the Old City is one of Quito's more controversial attractions, the Plaza de Toros. Bullfighting is still popular in Ecuador, and *corridas de toros* are held in the Plaza on a regular basis. In fact, since the sport has been banned in Spain and much of the rest of Latin America, the Quito ring is almost its last refuge. Even here it is under attack from animal-rights advocates (and many expatriates).

Bullfights in the Quito ring are still brilliant spectacles, and indeed the current crop of Ecuadoran matadors are considered among the most talented in history. They need to be; the bulls who fight in the ring today have been bred *and engineered* for grace and aggressiveness. There have been some experimental shows using cybershell bulls. Although the technology is apparently up to the task, purists have so far rejected the artificial bulls as inappropriate.

Current Events

Recent rumors have it that Columbia Aerospace is preparing a shift in corporate strategy, which may involve selling off or abandoning several local subsidiaries. The targeted companies have been struggling to produce profits for years, but they employ many Ecuadorans, and any change in their situation would likely threaten thousands of local jobs. Many of Quito's labor and political leaders are trying to pressure the company into revealing its plans (and possibly changing them).

Relations with Peru and Colombia, always strained, have recently taken a turn for the worse. In particular, Peru is believed to be placing missile batteries east of Quito, close to the flight path for ground-to-orbit craft launching out of Atahualpa Spaceport. No one in Quito really believes the Peruvians would try to shoot down a shuttle – but the mere possibility is causing grave concern. It would take very little to create a real "war scare" in the city.

The Church has announced that Pope Zachary II will soon be making a pastoral visit to South America. He will spend three days in Quito, meeting with political and social leaders, Columbia Aerospace officials, and the local priesthood. No major pronouncements are expected, but the faithful are already preparing for a great celebration. Meanwhile, both papal and Ecuadoran security forces are already planning for the event.

Quito's municipal police force has recently (and quietly) invested in a stock of state-of-the-art surveillance drones. The new cybershells are intended for everyday patrolling, as well as for close surveillance of suspected criminals or dangerous parts of the city. Most citizens are un-aware of the move, but a local civil-rights group has caught wind of it and is preparing to rouse public opposition.

People in some of the city's poorer neighborhoods have been reporting sightings of a "demon" late at night. The apparition appears only vaguely humanoid, skulking around and avoiding the light. No one has been attacked, but there have been several burglary reports involving homes and small shops. Municipal police suspect that an escaped bioroid is hiding in the city, surviving by theft.

Father Domingo Orellana, S.J. 200 points

Male human, born 2025. Age 75; 5' 6", 155 lbs. White hair, brown eyes, very tanned and weathered.

ST 8 [-15]; **DX** 11 [10]; **IQ** 13 [30]; **HT** 10 [0].
Speed 5.25; Move 5.
Dodge 5.

Advantages: Attractive [5]; Clerical Investment [5]; Reputation +2 (As a beloved spiritual leader, throughout Ecuador) [5]; Status 1 (Prominent citizen) [5]; Strong Will +1 [4]; Voice [10].

Disadvantages: Honesty [-10]; Pacifism (Self-defense only) [-15]; Sense of Duty (To all Catholics) [-10].

Quirks: Dislikes the military; Proud of his Jesuit background; Uses slang and lots of pop-culture references. [-3]

Skills: Animal Handling-12 [2]; Anthropology-14 [6]; Area Knowledge (Ecuador)-15 [4]; Bard-19** [10]; Biochemistry-12 [4]; Chemistry-14 [6]; Computer Operation-14 [2]; Detect Lies-13 [4]; Diplomacy-18*** [8]; Driving (Automobile)-11 [2]; Ecology-17 (from Naturalist) [10]; Fast-Talk-16* [6]; First Aid-15 [4]; Genetics (Genetic Engineering)-12 [4]; Hiking-10 [2]; Judo-12 [8]; Law-13 [4]; Leadership-16* [6]; Lip Reading-13 [2]; Memetics-12 [4]; Naturalist-15 [8]; Politics-19*** [8]; Psychology-16* [8]; Research-14 [4]; Riding (Horse)-13 [8]; Savoir-Faire-18** [6]; Streetwise-13 [2]; Survival (Mountains)-15 (from Naturalist) [5]; Swimming-12 [2]; Teaching-16* [6]; Theology (Catholic)-16 [10]; Writing-15 [6].

Languages: Ancient Greek-13 [2]; English-13 [2]; Latin-13 [2]; Quechua-13 [2]; Spanish (native)-13 [0].

* Includes +1 from Memetics skill.

** Includes +2 from Voice.

*** Includes both of the above.

Father Domingo Orellana is a Jesuit priest based in Quito. He was born a younger son of an old aristocratic clan, choosing to go into the Church rather than take a lesser position in the family's business enterprises. Following a Jesuit tradition he studied the sciences, specializing in ecology and biochemistry at Cal Tech in the United States. He later returned home to take up pastoral duties, supporting the Archbishop of Quito.

Orellana has always valued the natural environment and the indigenous cultures of Ecuador. Since the early 2050s he has been a passionate advocate of Preservationism. He has written several books, published hundreds of essays, and given thousands of speeches, all advocating caution toward the "miracles" of modern technology. He is careful not to oppose all technical progress. Instead, he advocates careful judgment of the moral consequences of each new innovation.

In his long career, Orellana has earned the love of all classes in Ecuadoran society. He has the respect and attention of many local political leaders. That he has never been elevated to the head of a diocese is probably due to his political activism – the Church in Ecuador has long taken pains to remain politically neutral. Still, he is too powerful a spokesman for many Catholic positions to be ordered into silence, so he continues to speak out with the tacit approval of his superiors.

Father Orellana would make a good Ally for any campaign set in South America. He makes a poor adversary, being too honest and peaceable to oppose PCs other than with words. Of course, should Father Orellana openly disapprove of the PCs' actions, there are others who might take that as a call for more direct action.

Rotterdam–Europoort

The Dutch city of Rotterdam was the world's busiest port through much of the 21st century – only about 2080 was it surpassed (by Shanghai) in sheer volume of traffic. As the primary shipping gateway to the industrial heartland of Europe, it is one of the most important and wealthiest cities in the world.

Overview

Although Rotterdam is centuries old, its pre-eminence as a world-class port city is more recent.

History

Rotterdam was founded in the early 14th century, near a dam on the small Rotte River (hence the name). At first it was overshadowed by nearby ports such as Antwerp and Delft. As the Netherlands became a great seafaring power, the superior Rotterdam harbor enabled it to match and then surpass its rivals. In the late 1800s access to the sea was further improved by the *Nieuwe Waterweg* canal.

Rotterdam suffered terribly in the German invasion of 1940. The heart of the city was firebombed, and most of it was abandoned and razed to the ground over the next year. Very little prewar architecture remained, except in outlying districts such as Delfshaven and Rotterdam Zuid. Rebuilding began only after World War II. For many years Rotterdam was a city in chaos – new construction was ceaseless, and chronic traffic problems plagued the city.

In 1957, the Netherlands began the construction of *Europoort,* a shipping center south of the Maas River. Construction involved manipulating the course of the river, as well as building the artificial *Maasvlakte* (Maas Plain). By the end of the century, Rotterdam-Europoort was handling over 300 million metric tons of cargo per year. Most of this traffic was in bulk goods: coal, grain, ores, petroleum, and so on. Container shipping of manufactured goods was also significant.

Rotterdam prospered through the 21st century. The decline of the petroleum industry caused a minor local recession in the 2030s, but the expansion of local digital and biotech industries soon took up the slack. The city also became a major center of land-reclamation technology in the 2050s, exporting equipment and expertise to regions threatened by the global rise in sea levels. Since the late 2080s several important nanotechnology firms have appeared near Rotterdam, making it a world-class center for nanotech research.

Rotterdam Today

The population of Rotterdam is officially just over 600,000. Naturally, as the city has grown it has effectively merged with several smaller towns; these suburbs include Schiedam and Vlaardingen to the west, Ridderkerk to the southeast, and a scatter of smaller suburbs south of the Maas River.

Actually, much of the central Netherlands can be considered a single urbanized area. This Randstad or "Rim City" includes Amsterdam, Den Haag (The Hague), Rotterdam, Utrecht, their suburbs, and a number of smaller independent cities. The whole Randstad area is less than 40 miles across; its citizens effortlessly take advantage of everything the various cities of the region have to offer. The overall population of the region is about 5-6 million, depending on how one defines its borders.

The average income for Rotterdam residents is about $125,000 per year (or about 125,000 euros, given the usual exchange rates). This is very close to the highest average for any metropolitan area in the world. The typical resident is Wealthy and has Status 1, in accordance with p. TS128. Dutch social choices and affluence prevent the existence of a significant fringer class in Rotterdam. Those few individuals living on the street are probably foreigners, and simply haven't been taken in by city police or social services yet.

Land and housing costs in the city are *very* high, close to 8 times the base cost. Even fairly wealthy citizens are likely to live in a small bungalow or flat, albeit one with the full range of Fifth Wave services at hand. A detached home with several thousand square feet of space and a significant garden area can easily run in the millions.

The overall Control Rating in Rotterdam is 3, indicating a moderately intrusive government. Local law is loosely based on the Napoleonic Code, but has evolved considerably through liberal reforms and an overlay of E.U. common law. The Rotterdam city police are very well-trained and scrupulous about the civil rights of the citizenry. As is typical for the Netherlands, local law is socially liberal and permits many activities that are forbidden elsewhere. For example, prostitution is legal so long as brothels obey certain licensing restrictions and no one is coerced into working in them. Local weapons laws are rather strict, the equivalent of CR 5.

Most of Rotterdam's population is (unsurprisingly) Dutch, although as a major port it has an unusually high proportion of immigrants. There are significant Arab, Malay, and Turkish communities in the city. Almost all residents are at least bilingual in Dutch and English.

Most citizens of Rotterdam have at least superficial genetic upgrades in their ancestry, clearing out genetic defects and diseases. LAI and SAI cybershells are fairly common in the city, since many of them are employed in the Europoort complex. There is a small population (about 2,000) of emancipated bioroids and bioshells in Rotterdam; most of these are refugees from overseas who have managed to smuggle themselves in through the Europoort.

Places

Despite being a relatively small city, Rotterdam is extremely busy. Many Europeans find it to be more American than European in flavor, with its recent architecture and constant bustle. Here are some of the centers of that commercial and social activity.

Hofplein

The Hofplein (or "Court Square") is the administrative and commercial heart of Rotterdam. Most of the buildings in the district are relatively new, having been built either in the post-World War II construction boom or the renovation era of the 2050s. Older buildings tend to be taller, examples of a steel-and-glass style. More recent construction is usually low and rounded, using architectural coral or other "organic" materials to give a naturalistic appearance.

South of the Hofplein is the Coolsingel, a wide street lined with offices and shopping centers. Rotterdam's city hall is located here, along with police headquarters and an office building used by the local branches of several European Union agencies.

Oude Haven

The "old haven" on the River Maas is one of the city's favorite recreation areas. There are many bars, restaurants, small dance halls, and other venues in the district. Most of these use exclusively bio-sapient labor for service, as they are selling atmosphere as well as food and entertainment.

Just north of the waterfront in the Oude Haven district is Het Witte Huis. The "white house" is just over 200 years old, built in 1898 as one of Europe's first skyscrapers. It is an 11-story building, notable for its thick, bright-white walls. It survived the German invasion of 1940 and remains in good condition. In 2071, it was purchased by the British venture-capital firm New Foundations Ltd., which wished to create an "incubator" for new digital-technology business. Today the first floor of the building is given over to a restaurant and tourist center, while the rest provides office and laboratory space for over a dozen small software-design and AI-training companies.

Port of Rotterdam

The heart of Rotterdam actually lies some 30 miles from the North Sea. The Port of Rotterdam is a vast commercial and industrial complex lying on the south bank of the Maas River. It stretches from the old municipal port facilities in the heart of Rotterdam, all the way to the Europoort facilities right on the coast. The whole complex covers hundreds of square miles of artificial harbors, sludge depots, warehouses, chemical refineries, pipelines, distribution parks, railheads, truck depots, factories, hotels, offices for hundreds of shipping lines – all the other features of a major trade center.

Margriet Janssen — 250 points

Female human, born 2060. Age 40; 5' 7", 130 lbs. Sandy brown hair, green cat's eyes which reflect light at night.

ST 10 [0]; **DX** 13 [30]; **IQ** 13 [30]; **HT** 12/14 [20].
Speed 6.25; Move 7.
Dodge 6.

Advantages: Alertness +3 [15]; Beautiful [15]; Comfortable [10]; Contact (Police forensic examiner, skill 18, available on 9 or less, completely reliable) [9]; Contact (Street informant, skill 15, available on 12 or less, usually reliable) [8]; Genefixed Human [0]; Hard to Kill +3 [15]; Legal Enforcement Powers [5]; Night Vision [10], Status 1 (Ordinary citizen) [5].

Disadvantages: Duty (Rotterdam police department, 9 or less) [-5]; Intolerance (Criminals) [-5]; Stubbornness [-5]; Unnatural Feature (Cat eyes) [-5].

Quirks: Addicted to a mild stimulant; Enjoys walking a beat; Refuses promotion to a desk job; Tough athletic competitor; Weekend boater. [-5]

Skills: Administration-13 [2]; Area Knowledge (Rotterdam)-15 [4]; Armoury (Handguns)-13 [2]; Bicycling-14 [2]; Computer Operation-14 [2]; Cooking-15 [4]; Criminology-16 [8]; Detect Lies-13 [4]; Diplomacy-12 [2]; Driving (Automobile)-13 [2]; Electronics Operation (Security Systems)-13 [2]; Electronics Operation (Sensors)-13 [2]; Fast-Talk-14 [4]; First Aid-14 [2]; Guns (Pistol)-17* [4]; Interrogation-14 [4]; Intimidation-14 [4]; Karate-15 [16]; Law-13 [4]; Leadership-13 [2]; Powerboat-13 [2]; Research-13 [2]; Running-10 [1]; Shadowing-13 [2]; Stealth-13 [2]; Swimming-13 [1]; Tactics-13 [4]; Teaching-13 [2].

Languages: Dutch (native)-13 [0]; English-12 [1].

* Includes +2 from IQ.

Margriet Janssen is a lifelong resident of Rotterdam, and has served in the city police department for over 17 years. She is devoted to her job and genuinely enjoys the life of a line officer, danger and all. She is proud of her city and of her own role in keeping it orderly. Although she only holds the rank of sergeant in her department, she is well-known on the Rotterdam streets and might serve as a useful contact for anyone visiting the city.

Janssen was born a nearly unmodified human, but has invested in several biomods over the years. Her eyes are transgenic implants based on cat's eyes, giving her Night Vision but also a strangely exotic appearance. She has also installed a backup heart, in case a criminal manages to put a bullet through the one she was born with. So far this has not proven necessary, but she is known for her prudence.

Off-duty, Janssen holds a black belt (first *dan*) in karate, and is a competitive target shooter. She also enjoys powerboating, on the Maas River and elsewhere. In all she spends little time in her apartment in Rotterdam Zuid; her usual schedule brings her back there for less than 8 hours a day for sleep and a private meal.

Margriet Janssen would make a useful Contact or Ally for any campaign set in or around Rotterdam. She lacks the authority or resources needed to be a Patron, and does not play at high levels of politics or corporate intrigue. Still, her entanglement with the city's underworld can involve her in a variety of adventures.

Beheerder

340 points

Infomorph, built in 2091 with software dating to 2067; effective age 33.

ST – [0]; **DX** 10 [0]; **IQ** 15 [45]; **HT** 14 [20].

Speed 6; Move 0.

Dodge 0.

Advantages: Administrative Rank 4 [20]; Filthy Rich [50]; Macroframe [4]; SAI-9 (Citizen) [100]; Status 3 (Senior public official) [5]*.

* Includes one free level apiece from Wealth and Administrative Rank.

Disadvantages: Sense of Duty (To the Europoort) [-10]; Truthfulness [-5].

Quirks: Enjoys science fiction; Makes frequent literary references; Obsessive about personal investments; Searches out "pen pals" from all walks of life; Sensitive to anti-AI prejudice. [-5]

Skills: Accounting-16 [6]; Administration-19 [10]; Area Knowledge (Europoort)-18 [6]; Computer Operation-18 [0]; Diplomacy-16*** [4]; Economics-15 [4]; Electronics operation (Communications)-16 [4]; Electronics Operation (Sensors)-16 [4]; Fast-Talk-17*** [4]; History-14 [2]; Law-15 [4]; Leadership-17*** [4]; Literature-14 [2]; Mathematics-18** [4]; Memetics-15* [2]; Merchant-18*** [6]; Poetry-15 [2]; Research-17 [6]; Writing-15 [2].

Languages: Arabic-14 [1]; Cantonese-14 [1]; Dutch (native)-17 [2]; English-15 [2]; French-15 [2]; German-15 [2]; Japanese-14 [1]; Mandarin-14 [1]; Portuguese-14 [1]; Russian-14 [1]; Spanish-14 [1].

* Includes +2 racial skill bonus.

** Includes +3 from Mathematical Ability.

*** Includes +1 from Memetics skill.

Since the early 2040s, there has always been a *Beheerder* or "director" at the Europoort. Each has been a computer close to the leading edge of AI development, whose task it was to help make sense of the massive logistical tangle that is Europe's largest port. Although identity is sometimes a fluid thing for a sapient AI, the current Beheerder can trace its self-awareness back to the third major upgrade in 2067.

Beheerder is physically located in the World Port Center, an office complex on the south bank of the Maas directly across from the Rotterdam city center. Its official title is "Director of Operations" for the Rotterdam Port Authority. It bears ultimate responsibility for scheduling all traffic through the port, and acts as a dispatcher for harbor patrol and other security activities.

Beheerder is a citizen of the Netherlands and of the European Union. In fact, it is quite wealthy in its own right, and has long since escaped any financial *requirement* to keep working for the Port Authority. However, it has what might almost be called a "sentimental" attachment to the Europoort, and has expressed no desire to give up its position.

Beheerder's official duties require only a fraction of its attention. The rest of the time it manages its investments, carries on correspondence with hundreds of friends and acquaintances around the world, and finds time to write a popular series of science fiction novels. Since 2097 Beheerder has been experimenting with poetry; its first few e-chapbooks have been moderately well-received.

Beheerder has contacts and "pen pals" all over the world and in all walks of life, so it would be easy to justify his availability as a Contact or Ally for any PC. It could also serve as a Patron – even aside from its authority as a major figure in European commerce, it has very diverse investments which it gives a great deal of "hands-on" attention. Where Beheerder can't act directly, it needs mobile agents . . .

Manuel — 215 points

Male bioroid, manufactured 2088. Age 12; 6' 2", 195 lbs. Olive-green skin, brown hair and eyes, bulky build and craggy features.

ST 17 [20]; **DX** 14 [45]; **IQ** 12 [20]; **HT** 12 [10].
Speed 6.5; Move 6.
Dodge 7.

Advantages: Charisma +3 [15]; Comfortable [10]; Reputation +3 (As the "King of Vristad," to Rotterdam bioroids and city police) [5]; Spartan Bioroid [85]; Strong Will +2 [8].

Disadvantages: Enemy (Organized crime gangs, 9 or less) [-30]; Sense of Duty (To bioroids and other Vrijstad refugees) [-10].

Quirks: Always wears a cape and other "royal" regalia; Despises organized religion; Sensitive to anti-bioroid prejudice; Uncomfortable about accepting money from bioroids. [-4]

Skills: Area Knowledge (Rotterdam)-12 [1]; Bard-15* [2]; Brawling-16 [4]; Carousing-12 [2]; Computer Operation-12 [1]; Electronics Operation (Communications)-11 [1]; Fast-Talk-12 [2]; First Aid-12 [1]; Gunner (Cannon)-16** [2]; Guns (Light Automatic)-18** [4]; Guns (Rifle)-18** [4]; Hiking-12 [2]; Knife-15 [2]; Leadership-15* [2]; Orienteering-11 [1]; Survival (Mountains)-11 [1]; Swimming-14 [1]; Throwing-14 [4].

Languages: Dutch-12 [2]; English-11 [1]; French-10 [1/2]; German-10 [1/2]; Portuguese (native)-12 [0].
* Includes +2 from Leadership.
** Includes +2 from IQ.

The bioroid now known as "Manuel" was manufactured as MNL-5527 in a factory in Manaus, Brazil. He served four years in the Brazilian army, patrolling the country's western border with nanosocialist Peru. In 2092 he escaped from that remote region and turned up in Rotterdam. How he managed this is a mystery on which he refuses to shed light; he claims that others may still want to use his route and he has no desire to ruin it.

In Rotterdam, Manuel took up residence in the Vrijstad. He worked as a bouncer and as hired muscle, keeping a rough peace and defending the district against invasion by organized crime. Even when he was off-duty he prowled the streets of the district, assisting city police, helping those in need, offering advice when asked. By 2095, he was known and respected by almost every bioroid or other outcast in Rotterdam. About this time he acquired the nickname of "the King of Vrijstad." Flattered, he began to play up a "royal" image, wearing a swirling cape and a gold-washed circlet, behaving half-jokingly like a kindly monarch of old.

Today Manuel is one of the Vrijstad's prominent citizens, probably the most effective of the district's informal leaders. His flamboyant image leads many potential enemies to underestimate him – but they find that his genial smile can readily melt into the cold, ruthless stare of a veteran combat bioroid. Manuel has no interest in politics, although he will negotiate with city police or other officials when necessary. His primary goal is to defend the Vrijstad and its outcast citizens from anyone who would harm them. Rumor has it that he is actively engaged in an "underground railroad," smuggling bioroids into safe haven in Europe.

Manuel would be a useful contact for anyone visiting Rotterdam, especially when dealing with the issue of bioroid rights. He is cautious when dealing with people from outside his community, but he is shrewd enough to see where his interests lie and work with outsiders to protect them. In any campaign dealing with organized crime, Manuel would be a potent ally (or a fierce opponent, if the PCs are on the wrong side of the law).

The entire port district is operated by the Rotterdam Municipal Port Management (RMPM). This is a major corporation with both public and private ownership; the national and municipal governments are both stakeholders, along with a number of private firms and individual investors. In turn, RMPM not only operates the port, but holds shares in a number of other corporations in Europe and beyond. As of 2099 the RMPM employed about 1,400 sapients (about 25% of whom were AI cybershells). Annual revenues were about 1.4 billion euros. Income has declined somewhat in recent years as world shipping patterns have shifted to the Far East.

The port is operated on a day-to-day basis by the Rotterdam Port Authority, a division of RMPM. The Port Authority schedules and directs traffic through the port. It also handles port security, running a number of harbor patrols and small armed detachments for "incident control." Port Authority personnel are very polite, very firm, and frighteningly competent. The Rotterdam harbormaster himself is human, but much of the port's everyday business is handled by a powerful SAI named *Beheerder* (see box).

Aside from RMPM itself, the Port of Rotterdam hosts offices, factories, and distribution facilities for hundreds of other corporations. Overall, the port district and its tenants employ over 50,000 sapients.

Vrijstad

Vrijstad, or "Freetown," is a district in Vlaardingen about six city blocks on a side. This is the home of most of Rotterdam's refugee bioroids and bioshells. The name is a play on words, referring to both the freedom enjoyed by the residents and the tolerance displayed by city police in the district.

Vrijstad is widely known as a place where all manner of entertainment can be found: music, shows, gambling, alcohol and other intoxicants, sex, and so on. The genetic constructs of Vrijstad enjoy their notoriety and make a good living providing fun and atmosphere. They also look out for each other – woe betide the outsider who lifts a hand against even the weakest resident of the district.

Certain drugs are easy to get and use in the Vrijstad, despite being illegal in the Netherlands. The police are accustomed to looking the other way so long as no one is harmed and the drugs don't leave the district. Most of the drugs freely available in the Freetown are mild euphorics such as marijuana or Metatron (p. TS164).

There are several brothels in the district, all run as employee-managed businesses with each worker owning and voting a share. Although these enterprises are mildly notorious for employing bioroids, city police are quite certain that no coercion is taking place. Organized crime has several times tried to move in on the Vrijstad sex trade, only to be confronted by determined and very physical resistance from the residents.

Current Events

Jan Preesman, a popular former mayor of Rotterdam, is planning to run for the European Parliament in the next elections. He was expected to do well until a scandal erupted involving the possibility that he had purchased illicit genetic upgrades for his children. Whether the scandal will cost him the election is unclear; it is certainly provoking a great deal of heated debate in the region on the proper scope of human gengineering.

Piet van Rijn

150 points

Male human, born 2076. Age 24; 5' 7", 140 lbs. Dark brown hair, gray eyes, slim build.

ST 10 [0]; **DX** 12 [20]; **IQ** 14 [45]; **HT** 11 [10].
Speed 5.75; Move 7.
Dodge 5.

Advantages: Alertness +2 [10]; Attractive [5]; Comfortable [10]; Fashion Sense [5]; Genefixed Human [0]; Status 1 (Ordinary citizen) [5]; Voice [10].

Disadvantages: Combat Paralysis [-15]; Lecherousness [-15]; Reputation -2 (As a muckraking reporter, to public officials and corporate leaders, 10 or less) [-2]; Workaholic [-5].

Quirks: Always has several romances going on at once; Dislikes elderly people; Passionate anti-capitalist; Sarcastic. [-4]

Skills: Area Knowledge (Netherlands)-16 [4]; Bard-16* [2]; Bicycling-12 [1]; Carousing-11 [2]; Computer Operation-15 [2]; Detect Lies-13 [2]; Driving (Automobile)-12 [2]; Economics-13 [2]; Electronics Operation (Sensors)-14 [2]; Fast-Talk-15 [4]; Intelligence Analysis-15 [6]; Law-13 [2]; Lip Reading-16** [2]; Photography-15 [4]; Politics-16* [2]; Psychology-14 [4]; Research-17 [8]; Running-10 [2]; Sex Appeal-14* [4]; Stealth-12 [2]; Streetwise-14 [2]; Swimming-12 [1]; Video Production-14 [2]; Writing-16 [6].

Languages: Dutch (native)-14 [0]; English-13 [1].

* Includes +2 from Voice.

** Includes +2 from Alertness.

Piet van Rijn is a nuisance. On the one hand, he is the picture of feckless Dutch youth – fashionably dressed, dabbling in various recreational chemicals, pursuing any number of women, refusing to hold down a useful job. On the other hand, he works *very hard* at his self-appointed task: exposing the corruption of local business and political leaders.

Van Rijn considers himself an investigative reporter. At any given time he is following three or four possible stories, always involving the seamy underside of capitalist society. He documents his results with clear prose and compelling imagery, all of which he publishes on his own web node. Although van Rijn is young and has few useful contacts, he makes up for this lack with meticulous research and near-obsessive determination. His work has earned him a substantial audience, enough to allow him a reasonable income.

Piet van Rijn would be a useful Contact or Ally for anyone operating in the Randstad area. He is unlikely to be interested in a blunt offer of money, but he can easily be motivated by a story of corporate secrecy or corruption. On those rare occasions when he decides to take a break, he can usually be found drinking, listening to music, or hunting a new romantic conquest in one of Rotterdam's nightspots.

The RMPM's Consultancy division is preparing to host a major conference of port authorities later this year. Most of the invited groups are from "emerging" nations such as those in southern Asia or sub-Saharan Africa. The conference is ostensibly part of the Consultancy division's ongoing project to assist new port authorities elsewhere in the world. Observers suspect that the RMPM plans to use the opportunity to pull as much business as possible back to Rotterdam.

Several small nanotech research firms have just purchased a large tract of open land south of the Maas River. They intend to open a major industrial park, including extensive facilities for research into molecular nanotechnology. Many of Rotterdam's older, more conservative citizens are vehemently opposed to this venture. They fear that the facilities may lead to an uncontrolled outbreak of "gray goo" disassemblers or metamorphosis nanovirus, and are willing to take any legal means to stop the development.

There has recently been an upsurge in racial tensions in Rotterdam. A small but vocal minority has taken to speaking out against the growing bioroid community in the city. There have been no violent demonstrations so far, but hateful literature has appeared on local web nodes and there has been some vandalism in the Vrijstad district. Municipal authorities and the informal bioroid militia have both begun preparations for more serious racist attacks.

There has been a string of unsolved murders every four to six weeks as far back as the spring of 2099. Rotterdam police are chasing a number of leads, but have settled on no one suspect as yet. Whoever is committing the crimes is almost supernaturally good at erasing forensic evidence. The victims have all been women in their 40s or 50s, but there has been little else to connect them; none of them appear to have known each other. Unfortunately, there is evidence that the killer (if there is only one) is possessed of much greater than human-average strength. This fact hit the local news media late in 2099, and has exacerbated already-tense relations with the city's bioroid community.

Singapore

The republic and city-state of Singapore has long been one of the most prosperous nations in Southeast Asia. Since the rise of nanosocialism it has become a center for political intrigue and a flashpoint for future world conflict.

Overview

Singapore society is unique. Its government is a functioning democracy, which is nevertheless one of the most repressive in the region. Its people come from a variety of ethnic backgrounds, yet ethnic tension is virtually unknown. Its economy is among the most productive on Earth, yet many of its citizens live in conditions of extreme crowding and economic desperation.

History

Singapore Island was inhabited as early as the 11th century. The name *Singa Pur* – "city of the lion" – was in use by the 13th century. The island's fate was decided in the early 1800s, with the arrival of Sir Thomas Stamford Raffles, an official of the British East India Company. Raffles was a senior official on the island of Java while it was under British rule. Once Java was returned to the Dutch in 1816, Raffles went searching for a new anchor for Britain's colonial empire in Southeast Asia. He found it in Singapore.

Raffles established a trading post on the island in 1819, and was able to make the venture profitable within a year. By 1824 he had arranged for the outright purchase of the island from the sultan of Johore. Immigration was rapid, led by Chinese who soon outnumbered all other ethnic groups in the settlement. Singapore became part of the so-called "Straits Settlements" along with Malacca and Penang; by 1867 the Settlements had become a British colony under the direct rule of the Crown.

Singapore had a remarkably strategic location, easily defensible and lying right on the Straits of Malacca. As world steamship traffic grew, it became a crucial port along the sea routes between Europe and the Far East. Rubber plantations were also developed, providing the city with one of its first major exports. By the end of the 19th century, Singapore was a bustling seaport and the world's primary export center for rubber.

The era of peace and rapid growth came to an end with World War II. Japanese forces bombed and occupied the city in early 1942, and held it until the end of the war. Afterward Singapore returned to British rule, but the colonial government faced serious local agitation for independence *and* a fierce war against Malaysian communists. With the British Empire as a whole starting to crumble, the colonial regime prepared to depart. Home rule was first established in 1959, and Singapore became independent in 1963 as part of the Federation of Malaysia.

With the British colonialists gone, Singapore soon found itself at odds with the rest of Malaysia. The local population was predominantly Chinese instead of Malay, Buddhist instead of Muslim, capitalist instead of communist. By 1965 the city-state had separated itself from the Federation and was recognized as an independent nation. Its first Prime Minister was the charismatic Lee Kwan Yew, who had led the drive for independence. Lee Kwan Yew remained Prime Minister until 1990, and dominated Singaporean politics until his death early in the 21st century.

Singapore prospered in the post-independence era, using its well-educated population and strategic location to become one of the busiest ports, financial centers, and communications hubs in the world. At first local society was democratic in form, but in practice it was dominated by the People's Action Party. The resulting government was often harsh and produced a strictly regimented community.

The 2020s saw considerable relaxation of political restraint, and for about two generations Singapore had a vigorous multi-party democracy. Unfortunately, the rise of infosocialism ended this political experiment. As neighbor after neighbor fell to the new ideology, Singapore began to feel itself an island besieged. Fear of invasion or memetic subversion led to the rapid rise of the new Singapore Unity Party. After winning an electoral landslide in 2067, the Party revived many of the old political controls. Infosocialist ideology was kept out of the city by police methods that were sometimes openly brutal. The city-state's military, already quite strong in proportion to its size, was reinforced further.

As part of the new strategy, Singapore declared itself a "free city" that would remain neutral in disputes involving the nanosocialist bloc. In particular, when the anti-TSA trade embargo was imposed in 2077, Singapore deliberately avoided implementing most of its provisions. As a result, for over 20 years Singapore has been almost the sole supplier of leading-edge technology and equipment for the TSA nations of Southeast Asia. Singapore's neighbors have come to regard it as too valuable to destroy and too difficult to conquer – a situation which suits the city-state perfectly.

Singapore's position makes it a center for espionage and political intrigue, although such plots are rarely aimed at Singapore itself. The city-state's military and security establishments are well-trained, equipped with cutting-edge technology, and frighteningly ruthless. Any scheme that threatens Singapore's neutrality or its technological secrets is likely to meet a devastating response. On the other hand, foreign agents who wish to watch or scheme against *each other* may do so freely. Singapore is a major gateway for entry into or departure from the nanosocialist bloc.

Singapore Today

Singapore consists of one large island along with about 50 smaller islets. Singapore Island itself covers about 200 square miles, and supports over 95% of the city-state's population. The total population of Singapore is about 12 million, close to triple its 2000 total. Urban development has covered over half of Singapore Island, pressing hard against the few remaining nature preserves in the island's center.

The average income for Singapore residents is about $115,000 per year. The local currency is the Singapore dollar, which currently trades against the U.S. dollar at about 1.5 to 1. The typical resident is Wealthy and has Status 1. There is tremendous disparity between the highest and lowest incomes in Singapore – some of the world's wealthiest individuals live in the city, but there exists a significant class of citizens who are Struggling or even Poor.

Members of the fringer class must take great care in Singapore. Street people and vagrants are subject to arrest, followed by hard labor or deportation. There is no social safety net, so an unemployed person with no independent source of income will soon find himself in deep trouble. Fear of losing one's job or investments is common among Singapore's middle class.

Singapore is extremely crowded. Population densities in the city center approach 200,000 per square mile, and can only be maintained using the full range of Fifth Wave technologies. Singapore is famous for its high-rise apartment buildings, supplemented by the Bedok arcologies built in the late 2070s. Land and housing costs in Singapore are *excessively* high, close to 10 times the base cost. Even very wealthy citizens are likely to live in a high-rise apartment (albeit a large and luxurious one) rather than a detached home. Most citizens are lucky to have more than one or two rooms to call their own.

Singapore maintains prosperity and social stability by way of a repressive government. The overall Control Rating is 5.

Taxes are relatively low and economic regulation is light-handed; the government's position has long been that what is good for business is good for Singapore. On the other hand, social control is often very harsh. Even offenses considered minor elsewhere (vagrancy, recreational drug use, pornography, vandalism, and so on) are punishable by steep fines, prison time, and caning. The police generally follow procedures designed to protect basic civil rights, but they have wide discretion to break those procedures as they see fit.

Singapore is officially a republic, and there are a number of political parties active in the country. However, the ruling Unity Party dominates the parliament, aided by a legal system designed to give it every advantage. Opposition politicians are handicapped by restrictions on their ability to raise money or gain access to the press. Those who are too vocal in their criticism of the government are subject to defamation lawsuits. Local weapons laws are quite strict, the equivalent of CR 6.

About 75% of Singapore's population is ethnic Chinese. Other major ethnic groups include European, Indian, and Malay. Mandarin is an official language, and several other Chinese dialects are spoken by segments of the population. English, Malay, and Tamil are also official languages. Most residents are at least bilingual. Singapore has long had an enviable record of ethnic harmony; both open and repressive governments have managed to keep the city's various groups at peace.

All but a few citizens of Singapore are genefixed; for decades, the government has strongly encouraged the use of basic genetic therapies. Some citizens are the result of genetic upgrades, the Alpha and Ziusudra templates being the most common. There are about 300,000 bioroids in the city, working in a variety of lower-class occupations. Local law protects some bioroid civil rights, but allows their indefinite indenture. Cybershells and other infomorphs are also fairly common, and have no civil rights whatsoever. The exception is for ghost emulations based on the personality of a former citizen; one copy of such a ghost is considered equivalent to the original citizen and has full civil and political rights.

The Triads

The Triads are an ethnic Chinese organized criminal society. The term comes from the traditional name *tiandihui,* which refers to a symbolic trinity of Heaven, Earth, and Man. The origins of the Triads date back to secret societies once established to oppose the Manchu Dynasty. Over the centuries they have become a criminal organization, spreading around the world with the Chinese diaspora.

Triad gangs (or *societies*) are decentralized, with no overall authority. Most societies work independently, but when they find it profitable to cooperate they have common history and traditions to smooth interaction. Societies share information readily, often using their own segments of the web to stay in touch with their "brothers" worldwide. Although Triad societies do fight among themselves, their members share a common sense of identity and will stand together against the outside world. Triad societies are often very serious about traditional Chinese religion and culture. They also have an elaborate internal system of initiation and ritual, designed to provide a sense of solidarity and isolation from the rest of society.

Modern-day Triad activities include data piracy, smuggling, bioroid slavery, drug trafficking, prostitution, illegal gambling, and credit fraud. Extortion operations are perhaps the most common. The Triads have long used kidnapping, arson, and other forms of criminal intimidation to extract money from honest citizens and businesses.

Triad operations are quite common in Singapore. It is estimated that as many as 20,000 residents are initiated members of one society or another. Whole neighborhoods and buildings are under the effective control of the gangs. How this form of organized crime manages to flourish in Singapore's regimented society is not clear. Rumor has it that several of the more prominent societies have sponsors powerful enough to also exert influence over the legitimate government. Those societies who do *not* enjoy such protection must remain very discreet . . .

Places

The Singapore River runs west to east through the heart of the city's oldest districts. Most of the old government buildings are north of the river, while the densest commercial area is south of it. Naturally, with the city's explosive growth over the past century, new centers of commercial and industrial activity have appeared all over the island.

Arab Street

North and east of the city center is the main Muslim district, centered on the imposing Sultan Mosque. The area is crowded with native Malays, Javanese settlers, and the descendants of Arab traders. It is traditionally a major textile district, and remains so even in the age of biotech and nanotech goods. For example, the Arab Street is one of the few places outside the TSA bloc that one can purchase traditional Javanese or Malaysian batik cloth.

Singapore's police watch the Arab Street very closely, as it is a breeding ground for nanosocialist sentiments. A number of TSA agents and informers have been arrested here, but the authorities have no illusions that all have been found. Meanwhile, some of the city's Muslims are more sympathetic to the Islamic Caliphate than to the TSA. Although Singapore officially has good relations with the Caliphate states, the authorities also keep close watch on their friends in the Arab Street.

Bedok

Bedok is a suburb of Singapore City, situated on the southeast coast of the island. The Bedok Arcologies were built here in the early 2070s, in an attempt to relieve Singapore's crowding. The twin structures are each built on a rounded-square plan, about 3,600 yards on a side and 850 yards tall.

Almost half a million Singaporeans live and work in the arcologies. The "ark-dwellers" have formed a community of their own, with memes that are often at odds with those of the greater Singaporean society. A sense of ark-dweller superiority is common, combined with a flavor of Transhumanism that is at odds with the strict controls imposed by the national government. These memes sometimes lead the ark-dwellers to quietly but stubbornly refuse cooperation with "outsider" police and other officials. The authorities are watching the situation with some concern, although as yet they have been given no reason to take decisive action.

Lim Chiang Lai

400 points

Male human, born 1972. Age 128; 5' 5", 135 lbs. Short-cropped artificial brown hair, brown eyes.

ST 5 [-40]; **DX** 8 [-15]; **IQ** 13 [30]; **HT** 8 [-15].

Speed 4; Move 4.

Dodge 4.

Advantages: Administrative Rank 6 (Major corporate CEO) [30]; Ally Group (Large group, 15 or less) [90]; Filthy Rich [50]; Multimillionaire 3 [75]; Single-Minded [5]; Status 6 (Major corporate official) [5]*; Strong Will +2 [8].

* Includes 2 free levels from Administrative Rank and 3 free levels from Multimillionaire.

Disadvantages: Disciplines of Faith (Devout Buddhist) [-5]; Fanaticism (Self) [-15]; Megalomania [-10]; Pacifism (Total nonviolence) [-30].

Quirks: Attentive; Despises all forms of political radicalism; Insists on being called "Mr. Lim." [-3]

Skills: Accounting-13 [4]; Administration-17 [10]; Anthropology-13 [4]; Appreciate Beauty-12 [4]; Bard-18 [12]; Computer Operation-16 [6]; Detect Lies-13 [4]; Diplomacy-14* [4]; Economics-15 [8]; Fast-Talk-13* [1]; History-15 [8]; Intelligence Analysis-17 [12]; Interrogation-15* [4]; Intimidation-14 [4]; Judo-10 [16]; Law-13 [4]; Leadership-19* [12]; Literature-14 [6]; Mathematics-13 [4]; Memetics-16 [20]; Merchant-18* [10]; Physician-13 [4]; Politics-18* [10]; Psychology-16* [8]; Research-17 [10]; Savoir-Faire-16 [2]; Swimming-10 [4]; Teaching-16* [6]; Theology-13 [4]; Video Production-18 [12]; Writing-18 [12].

Languages: Cantonese-13 [2]; English-13 [2]; French-13 [2]; Malay-13 [2]; Mandarin (native)-13 [0]; Thai-13 [2]; Vietnamese-12 [1].

* Includes +1 from Memetics.

** Includes +2 from IQ.

Lim Chiang Lai believes himself to be the oldest man in Singapore. If he is wrong, then his elders must be even more wealthy and reclusive. As it is, most people in Singapore believe "Mr. Lim" to be long since dead.

Mr. Lim came to wealth as a young man. In the first decade of the 21st century he built one of the largest web-publishing firms in the city. From there he branched out, investing primarily in data havens, broadcasting, and advertising firms. By the age of 50 he controlled one of the largest media empires in Southeast Asia. Then he went into politics. He was Singapore's Minister of Communications for most of the 2040s, and even served as Prime Minister for three tumultuous years before his party lost parliamentary elections in 2052.

After leaving power, Mr. Lim went into reclusive retirement. In 2073 he moved into Bedok Arcology One, transferring control of his business interests there. For a few years he appeared infrequently in public, then not at all. As far as is known, Mr. Lim has not left his palatial apartments since about 2080. He is believed to have a number of personal aides living with him, including the staff of a personal geriatric clinic. Aside from a few trusted agents, no outsiders visit him. His business empire still exists, but most people assume that it is being run by one of his descendants (or by his ghost) in his name.

Mr. Lim has become rather obsessive in his extreme age. For decades, he has been convinced that the world is heading toward an episode of apocalyptic violence. The Pacific War only hardened his conviction that the catastrophe is fast approaching. He therefore uses his wealth and power to intervene in global affairs, considering himself one of the few men who can save the world from disaster. He prefers a subtle, nonviolent approach, carefully manipulating events through financial or memetic means. Still, he and his lieutenants have occasionally been forced to order more decisive action.

Lim Chiang Lai would make a superb Patron for a globe-spanning campaign. He has agents worldwide, gathering intelligence and intervening in local events as ordered. He might also be a good adversary, with awesome resources, extreme arrogance, and a habit of secrecy. In either case, PCs would be very unlikely to meet Mr. Lim himself (or even know of his existence) unless they became involved in the inner circle of his organization.

Robert Tan

200 points

Male human, born 2078. Age 22; 5' 9", 150 lbs. Bleached hair, jade-green eyes, light coat of scales and sharp claws.

ST 11 [10]; **DX** 15 [60]; **IQ** 12 [20]; **HT** 11 [10].
Speed 6.5; Move 6.
Dodge 7.

Advantages: Combat Reflexes [15]; Genefixed Human [0]; Hyper-Reflexes (Limitation: Cardiac stress, -40%) [9]; Hyper-Strength (Limitation: Cardiac stress, -40%) [18]; Reputation +1 (As loyal soldier, to all Triad members) [2]; Sharp Claws [25].

Disadvantages: Bad Temper [-10]; Code of Honor (Pirate's) [-5]; Duty (To Triad society, 9 or less) [-5]; Sense of Duty (To family) [-5]; Unnatural Feature (scales and claws) [-5].

Quirks: Compulsive about practicing martial arts skills; Goes to a Buddhist temple regularly; Proud; Secretly gives money to the poor. [-4]

Skills: Acrobatics-15 [4]; Area Knowledge (Chinatown)-13 [2]; Body Language-12 [4]; Escape-14 [2]; Fast-Talk-12 [2]; Guns (Machine Pistol)-18* [2]; Holdout-12 [2]; Hypnotism-10 [1]; Intimidation-13 [4]; Judo-15 [4]; Jumping-16 [2]; Karate-17 [16]; Main-Gauche-15 [2]; Merchant-11 [1]; Shadowing-12 [2]; Shortsword-15 [2]; Staff-13 [1]; Stealth-15 [2]; Streetwise-13 [4]; Swimming-15 [1]; Tactics-11 [2].

Languages: English-11 [1]; Malay-12 [2]; Mandarin (native)-12 [0].
* Includes +2 from IQ.

Note: Robert Tan's Hyper-Reflexes and Hyper-Strength are the result of biomods which put a great deal of strain on his heart. The "Cardiac Stress" limitation can be found on p. BIO137. In brief, while using the advantages in a stress situation Tan must roll vs. HT once every 10 seconds. On a failure, he loses 1d Fatigue. On a *critical* failure, he suffers a heart attack; he passes out and will die in HT/3 minutes unless someone administers CPR.

Robert Tan is a young man from an old Straits Chinese family. He has little formal education and no prospects for a respectable job. Instead, he joined a Triad society at the age of 17 and has been a loyal soldier ever since. His current role is that of a "rank 49" member, an ordinary gangster whose job is to provide muscle in support of Triad activities. He is very good at this role, having studied Pentjak Silat (see p. MA96) and become an expert shooter. He has taken on some biomods; these give him natural weaponry (sharp retractable claws), an unnatural appearance useful in intimidation (bright green eyes and a thin coat of scales), and boosted reflexes and strength.

Despite his role as a "heavy," Tan is not stupid, and he is likely to rise high in the society if he keeps his wits about him. He also has a tender side, surprising to those who don't know him well. He is a practicing Buddhist who can often be found praying in temple. He is also solicitous toward his family, bringing them money and gifts whenever he can. His parents are respectable people who don't know what to make of their wayward son, but their relationship remains a warm one.

Robert Tan is typical of the low-ranking Triad members visitors to Singapore may be unlucky enough to meet. He would be useful as a street-level Contact or Ally in a campaign set in or around the city. With a few altered traits, he could be used as a low-level criminal figure in any other Fifth Wave city.

Bukit Timah Nature Preserve

Bukit Timah is the tallest hill on Singapore Island. Along the hill's northeastern slopes is the Bukit Timah Nature Preserve, the last retreat of the island's primary rainforest. Although forest reserves stretch for some distance to the north and east, these are all *secondary* forest, replanted after rubber harvesting cleared the area in the early 1900s.

Bukit Timah and its adjoining reserves are the heart of an ambitious experiment in ecological reclamation. Ordinarily the secondary forests would require centuries to recover their former robustness. Ecologists and biotechnicians are working to accelerate the process, hoping to recover a wide stretch of true primary forest within decades or even years. This idea is not unique – similar projects are taking place on a much vaster scale in places like Brazil and Indonesia. Still, the Bukit Timah project is probably the only one of its kind that is being pursued so close to a major city. Ecologists hope to not only bring the forest to recovery, but to learn how to help wild "micro-ecologies" thrive even in the midst of a dense urban environment. Ecologists and city planners from around the world are already taking an interest.

Chinatown

It may seem strange for a city dominated by ethnic Chinese to have a "Chinatown." Even so, the district just south of the river and close to the harbor certainly qualifies.

Decades of development have driven Chinatown rents through the roof, driving out many traditional shops and small businesses. As a result parts of Chinatown are thoroughly modern, the abode of expensive restaurants and shops. Still, much of the local architecture is painstakingly authentic. There are many Buddhist temples in the district, and here and there one can still find small "traditional" businesses (calligraphers, herbalists, incense-sellers, and so on). Chinatown remains one of Singapore's most important cultural centers.

Not far from Chinatown are the Telok Ayer Towers, the tallest buildings in Singapore. The Towers are each 200 stories (over *half a mile*) in height, and provide both luxury residential accommodations and commercial offices. Some of Singapore's wealthiest residents live in the Towers, including several Chinese traditionalists who prefer to remain near Chinatown.

Chinatown is known to be a center of Triad activity (p. 106).

Johore Baharu

Immediately across the narrow Johore Strait is Johore Baharu, a Malaysian city which is intimately connected with Singapore. Johore Baharu has long been the capital of the Malaysian state of Johore. Since the rise of the TSA it has been doubly important, as the most significant point of contact between the TSA and the capitalist world.

Commerce across the straits has grown manyfold since 2080, promoting a local economic boom even while Malaysia's overall economy has struggled with the effects of anti-TSA sanctions.

One effect of the boom has been a flood of immigration to Johore Baharu from other parts of Malaysia. The current population of the city's extended metropolitan area is over 3.6 million – and almost half of that number have arrived since 2080. As a result, Johore Baharu is a hectic, brawling city, where glittering opportunity and terrible desperation exist side by side.

Tucked away in Johore Baharu's streets is the second-largest office of Malaysia's Defense Intelligence agency. Discreet efforts to penetrate Singaporean security are constant. Naturally, Singaporean intelligence and security assets are concentrated along the Johore Strait, and particularly on the causeway linking Singapore and the mainland.

Jurong

West of the main city is the suburb of Jurong. Where Singapore City is oriented toward commercial purposes, Jurong is the site of much of the island's industry. The chemical and rubber industries have declined, giving way to advanced electronics, computers, industrial biotech, and minifacturing. The budding nanotech revolution is also making its mark; many research and production facilities have made an appearance in recent years.

Jurong is the site of a number of "startup parks." These are places where the national government and various venture-capital firms maintain space for new companies. A startup firm can apply for laboratory or minifacturing facilities here, on very favorable terms. Once the new venture is profitable and growing, it usually moves elsewhere on the island, leaving space for the next newcomer. The system is connected to the SCTE (p. 110) and has been producing useful technological innovations for decades. Nanyang Technical Institute is located in Jurong, and also takes part in the SCTE.

Part of Jurong City sits on Jurong Island, just off the southwest shore of the main island. Jurong Island is largely artificial, the amalgamation of seven smaller islands early in the 21st century. It has excellent large-ship harbor facilities and is connected to the mainland by a causeway. Much of Singapore's remaining Second Wave heavy industry is located here. The old petrochemical and rubber industries still exist, although they have changed a great deal with the introduction of advanced biotech. Today the petroleum and rubber that are brought to Jurong are normally used as feedstocks for the biotechnic production of useful materials.

Sentosa Island

Sentosa Island lies just off the southern tip of the main island, and is accessible by a short causeway. For over a century it has been Singapore's foremost recreational area, packed with beaches, gardens, hotels, and theme parks.

Sentosa Island is controlled by the Sentosa Consortium, a corporation whose predecessor was founded by the national government in the early 1970s. Although it is completely privately held today, it still enjoys a close relationship with the state. Since the 2020s, the Consortium has been deeply involved in the development of digital and virtual technology as applied to modern entertainment. Today Sentosa's theme parks use a dizzying variety of VR and memetic techniques to give visitors the richest possible experience.

The Consortium also operates a *huge* virtuality node (see p. 30). The available virtual environments attract tourists, gamers, and weblife from all over the world.

University of Singapore

The National University of Singapore is located about 8 miles west of the city center, in the Kent Ridge district. Almost 200 years old, it is known throughout Southeast Asia as a major center of learning. It has a distinctly pragmatic orientation – the strongest departments are the School of Business Administration, the College of Law, the School of Computing, the School of Engineering, and the Graduate School of Medicine and Bioscience. About 25,000 students attend the University physically, while several times this number pursue degrees via telepresence. Singaporeans naturally dominate the student body, but its enrollment is drawn from all over the world.

The Singapore government regards the National University as a "secret weapon" in the competition for economic and political advantage. The University receives large state subsidies, especially in those disciplines that support business and technological development.

The National University is also the home of the Singapore Center for Technical Entrepreneurship (SCTE). This very successful program supports promising lines of research by subsidizing new corporate ventures. Any faculty member or student (even an undergraduate) may apply to start up his own company with SCTE support. Students from the colleges of law and business also participate, and may become administrators in the new firms. The state offers venture capital, work space in one of the "startup parks" in Jurong, and a streamlined process for patent approval. In exchange, the state takes a minority share in the new firm's ownership. All in all, with state assistance the University functions as an effective "incubator" for new businesses.

Current Events

The Singaporean government was recently rocked by an espionage scandal, in which the head of the country's counterintelligence operation was discovered to be in the pay of the People's Republic of China. The Unity Party leadership had hoped to quietly replace the traitor, but the story was exposed before any action could be taken to silence it. Public outrage has been volcanic; a "witch hunt" for other Chinese infiltrators may be about to begin.

Meanwhile, the fact that the spy scandal became public at all may indicate deeper troubles within the government. As far as the public knows, the story was uncovered by a maverick journalist who has since been placed under arrest for sedition. On the other hand, the journalist in question had neither the skills nor the contacts to develop such a story. The obvious suspicion is that the

story was *leaked* by a senior government official, probably as an opening move in a power struggle within the Unity Party.

Singapore has several times hosted high-level diplomatic contacts between the TSA bloc and its enemies. Another such meeting is slated to take place this year, under the cover of a General Convention on Asian Economic Development. Official delegates will attend from Australia, China, India, Indonesia, Japan, Korea, Malaysia, Thailand, the United States, Vietnam, and many other nations. The public meetings are likely to be closely watched, but the backroom negotiations and espionage will be more important.

The Sentosa Consortium is in the process of integrating next-generation VR technologies into its virtuality node, attracting new customers from around the world. The Consortium is guarding details of the new technology very closely, using trade secrecy rather than patents to protect its advantage. There have been several cases of attempted corporate espionage, thus far unsuccessful.

Singapore police are beginning a concerted campaign to infiltrate and break up Triad cells in large sections of the city. Success has thus far been mixed, but there have been several sharp confrontations between police and gang members. It's an open question whether the police will be *permitted* to be too successful, given the rumors of connections between some of the gangs and the government.

Catherine Cho — 305 points

Female human, born 2068. Age 32; 5' 3", 120 lbs. Brown hair, brown eyes.

ST 10 [0]; **DX** 12 [20]; **IQ** 14 [45]; **HT** 11 [10].
Speed 6.25; Move 6.
Dodge 5.

Advantages: Ally Group (Programmed) (Infomorphs, small group of 200-point characters, 12 or less) [120]; Attractive [5]; Genefixed Human [0]; Mathematical Ability [10]; Reputation +3 (As a brilliant scientist, 7 or less) [5]; Status 1 (Ordinary citizen) [0]*; Very Wealthy [30]; Voice [10].
* Free from Very Wealthy.

Disadvantages: Honesty [-10]; Secret (Homosexual) [-5]; Workaholic [-5].

Quirks: Awkward in romantic situations; Dresses in last year's fashions; Mechanimist; Outspoken capitalist ("greed is good"); Publicly sympathetic to the cause of pan-sapient rights. [-5]

Skills: Administration-14 [2]; Artificial Intelligence-14 [4]; Biochemistry-14 [8]; Chemistry-16 [8]; Computer Operation-15 [2]; Computer Programming-19** [8]; Diplomacy-15*** [2]; Economics-12 [1]; Electronics Operation (Sensors)-14 [2]; Engineer (Nanotechnology)-19* [10]; Games (Go)-15 [2]; Judo-11 [2]; Law-12 [1]; Mathematics-17** [4]; Meditation-13 [2]; Merchant-15 [4]; Philosophy (Zen Buddhism)-13 [2]; Physics-14 [4]; Politics-15*** [1]; Running-9 [1]; Savoir-Faire-19*** [2]; Teaching-13 [1].

Languages: English-14 [2]; Mandarin (native)-14 [0].
* Includes +2 from Mathematical Ability.
** Includes +3 from Mathematical Ability.
*** Includes +2 from Voice.

Catherine Cho is one of Singapore's national treasures, a chemist and computer-modeling expert who is fast becoming one of the world's foremost nanotech researchers. She has done postdoctoral work at the National University of Singapore, but currently spends most of her time in her own private lab facility in Jurong.

Cho's primary area of interest is that of *defense* against runaway nanotechnology. She has designed several prototype "hunter-seeker" nanobots which can search out and destroy hostile assemblers. Her company (Cho Nanoconcepts) has become one of the fastest-growing nanotech "startups" in Singapore. The Ministry of Defense is very interested in her work – and so, doubtless, are many other governments and private concerns.

In public, Cho is a dynamic advocate for capitalist politics in general and nanotechnology in particular. Her attractiveness, charm, political acumen, and teaching ability have made her a popular guest at the homes of Singapore's leaders. Although she has no political ambitions of her own, she is quite willing to speak in support of politicians of whom she approves. In private, her life is much more complex. She is secretly a homosexual, living in a country where homosexuality is socially detestable. She tries to keep her personal life private, but the effort of doing so while existing almost constantly in the public eye is a great strain.

Catherine Cho would make a good Ally (or even a Patron) in a campaign set in Southeast Asia. Not only does she have considerable personal skill and resources, she has a small group of LAI and SAI infomorphs which help her with research and business matters. Meanwhile, her technical work and political involvement put her in the midst of one intrigue after another. Both corporate and foreign intelligence agents are very interested in her.

5 PEOPLE

"I'll admit, the Spences are pretty well-off, so they can afford a lot of dependents. Let's see. There are four of them: Mr. and Mrs. Spence, their son Harold, and their daughter Marian. Mr. Spence has the infomorph in his interface implant, and another one in the old wearable he carries as a notebook. Mrs. Spence doesn't like VR, but she has a wearable too just to keep track of her medical condition, and that's running a NAI of its own. Little Marian just has her kindercomp, but Harold is into robokits and has built half a dozen. Then there's the cyberdog and Mrs. Spence's Monkey Plus. For that matter, everyone suspects the house cat is an uplift, but it won't talk about it.

"Of course, there's me, too. I am large, I contain multitudes."

– Conversation with "Whitfield," the Spence household LAI

Character Types

As the center of humanity's social and economic system, Earth is a place of dizzying diversity. There are a number of occupations, rarely found off-world, which play a significant part in Earth society.

Inappropriate Types

Some of the character types given in the ***Transhuman Space*** core book (pp. TS110-114) are inappropriate for a Fifth Wave setting on Earth. The Colonist and Explorer types are rare (although Earth does have a vast unexplored frontier under the oceans – see ***Blue Shadow***). Mangliu don't often visit Earth's surface, and the Miner/Prospector type assumes off-planet mining.

All other character types are reasonable, even for a campaign set entirely on Earth.

Arbitragist

Most human beings on Earth manage their own investments and economic activity, buying and selling whatever commodities they need through the web. However, an arbitragist is an expert in some specific field of economic exchange. By being aware of even the smallest changes in the economic environment, the arbitrageur can buy and sell goods to even out transitory market imbalances, extracting a profit from each transaction. Useful skills include Economics, Intelligence Analysis, Mathematics, Merchant, and a very high level of Research.

Arbitrageurs may work freelance, in teams, or as corporate staff. They *always* work with infomorphs – some of them quite sophisticated.

Artist

The entertainment industry is one of the largest sectors of the Fifth Wave economy, and it's driven by artistic creativity. There's plenty of work for all levels of talent, from the ordinary artists who crank out formulaic works, all the way up to brilliant celebrities who command seven-figure incomes. A good Appearance, Charisma, and Voice are all useful. Aside from some Artistic skills to specialize in, the successful artist can use Law, Merchant, and Savoir-Faire.

Botboss

Botboss is a slang term for anyone whose primary job is to supervise cybershells. The term is rather disparaging, implying that the worker is good for little else. It's true that many "cybershell monitors" have relatively low skill, enough to perform routine maintenance on the machines and help them through minor difficulties. Others have considerable training and practical experience working with infomorphs. Botbosses need to be able to concentrate on their jobs even when nothing goes wrong for long periods, so Attentive or Single-Minded are useful. Skills include Administration, Artificial Intelligence, Computer Operation, Electronics Operation, and Mechanic.

Eloi

Earth's leisure class is large, powerful, and rather unpopular among people who aren't members. Many English-speaking citizens of Earth refer to the leisured as "Eloi," after the pretty and rather helpless creatures in a famous H.G. Wells novel. The term is misleading, as many leisured people have reached their status through decades of hard work – and sometimes ruthless struggle. As with the Dilettante type, Age, Contacts, Independent Income, Status, and Wealth are all appropriate advantages. Useful skills include Economics, Law, Merchant, Politics, and Savoir-Faire. Many super-elderly people acquire some level of medical training in order to understand their own condition and treatment; this implies some level of Diagnosis.

Freehand

A *freehand* is a freelance VT worker, someone who can use augmented reality and v-tag technology to perform skilled labor even though he lacks the basic skills himself. Using a wearable VR interface, a freehand can often perform even complex tasks under the guidance of an AI. Freehands tend to be from the underemployed class (p. 37). VT workers have no special advantages or skills, although they tend to pick up the skills they "practice" during their work. Low levels of Architecture, Engineer or Mechanic are all appropriate even without formal training in those fields.

Isolate

Isolates (p. 36) are individuals who reject the melange of cultures typical of Fifth Wave public life, and deliberately try to cut themselves off from physical or virtual contact with mainstream society. Some Isolates form communities (either on the web or in physical space) dedicated to a common ideology. Isolates are not necessarily personally reclusive; they just don't like living surrounded by people who are *different.* Isolates are often Chauvinistic or Intolerant, and some even have Fanaticism. Those living in isolated communities may have Primitive. Useful skills include Agronomy, Computer Operation, Driving, Electronics Operation, Mechanic, and various Outdoor skills (notably Survival).

Public Eye

A *public eye* is an individual who uses advanced technology to monitor events and actions of public interest, usually publishing the results to the web. Unlike Investigators and News Hounds, most Public Eyes are self-designated and freelance. Many of them have other sources of income (investments or a "day job") and handle their investigations on their own time. Although their approach makes them less effective than an experienced investigator, there are a *lot* of Public Eyes on Earth, and they often pick up stories that more formal institutions might miss. Contacts are useful, and might include other Public Eyes (for an example of an organization of Public Eyes, see the *Argus Society,* p. 84). Useful skills include Bard, Computer Operation, Electronics Operation (especially Sensors), Intelligence Analysis, Research, Video Production, and Writing.

Troubleshooter

Troubleshooters are the archetypal adventurers of the Fifth Wave world. Most troubleshooters work for a specific patron, a corporation, government agency, or wealthy individual. They travel around the world, representing their "principal" and solving problems on its behalf. Troubleshooters tend not to be highly technical (one can always hire technical talent) but they are adept negotiators and always ready to apply force when necessary. Social and Thief/Spy skills are particularly useful, and most troubleshooters will be skilled with personal weapons and tactics.

Webmaster

Webmasters are the telecommunications experts of the 21st century. They understand the computer hardware, network connections, software, and protocols that knit modern civilization together. Their job is a hard one, since the web has grown far too complex for any human being to understand even a small segment. Still, with plenty of support from their allied infomorphs, webmasters keep the world working. Of course, some webmasters *are* infomorphs. Mathematical Ability is very useful. Critical skills include Computer Operation, Computer Programming, Electronics (Communications), and Mathematics. Experts in network security (or *dishonest* webmasters) will also have Computer Hacking.

Earthside Racial Templates

The 11 billion people living on Earth display a bewildering variety, with thousands of basic genetic types modified by bioengineering, cybernetics, and nanotechnology. The racial packages described here are only some of the most common to be found specifically on Earth.

Econiche Templates

Even while humanity was colonizing the solar system, it was also moving to inhabit the last remaining wilderness areas on Earth itself. Just as several variant human types appeared in space, others were designed to live comfortably in regions of the homeworld which had long stood empty. Such designs usually came at a cost in general ability. None of these "econiche" types ever appeared in large numbers, since the hostile environments for which they were designed could also be handled through more mundane technology.

Drylander Parahuman — *35 points*

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

Advantages: Decreased Life Support 1 [10]; Filter Lungs [5]; Nictating Membrane 1 [10]; Night Vision [10]; Resistant to Poison [5]; Temperature Tolerance 5 (Comfort zone between 35° and 140°) [5]; Very Light Scales [0].

Disadvantages: Skinny [-5]; Unnatural Feature [-5].

Features: Taboo Traits (Genetic Defects, Mental Instability). Transgenic features (Catlike eyes which reflect light at night, light coat of scales).

Date: 2077. ***Cost:*** $85,000.

Drylanders were designed to live comfortably in some of the world's most arid regions, tending wilderness preserves or assisting in desert-reclamation projects. They appear nearly human from a distance, but have a number of transgenic features that become apparent up close. The type's metabolism has been carefully altered to conserve water and deal with wind-blown dust. The large eyes have been radically modified, giving them keen night vision and protecting them with a nictating membrane. As a result, Drylanders can function quite well in the cool desert night, and many of them prefer a nocturnal existence.

Drylanders were first developed in the United States. Many of the subspecies still live in the southwestern U.S., but others have spread to desert and steppe zones all over the world. The largest communities today are in western Australia and in northern Africa, where major desert-reclamation projects are underway.

Misha Parahuman — *19 points*

Attribute Modifiers: ST+1 [10]; HT+1 [10].

Advantages: Disease-Resistant [5]; Fur [4], Metabolism Control 1 (Limitation: For hibernation only, -50%) [3]; No Appendix [0]; Resistant to Poison [5]; Temperature Tolerance 10* (Comfort zone between -75° and 70°) [9].
* One level free with Fur.

Disadvantages: Bad Temper [-10]; Overweight [-5]; Sleepy (50% of the time) [-10]; Staid [-1].

Features: Taboo Trait (Genetic Defects).

Date: 2055. ***Cost:*** $69,000.

This parahuman type was one of the first human subspecies to be created. The type borrows a great deal from ursid genetics, giving it thick body hair (effectively fur), strong resistance to cold, and a moderate ability to hibernate. Side effects of the modifications include a bearlike temperament and an increased need for sleep year-round. Mishas can function without special clothing or equipment in temperatures as low as -75°. When the temperature gets below -60°, however, they feel a strong urge to find shelter and hibernate. This occasionally helps them to survive extreme conditions, but it can be inconvenient when there is work to be done. Drugs and other treatments can mitigate the hibernation urge, but have undesirable side effects.

Misha parahumans were first developed in Russia, and are still most common in Siberia. Mishas (and the nearly identical Kodiak type) have spread to Alaska, Greenland, northern Scandinavia, Nunavut, and Antarctica. Although their tolerance for warmth is almost as good as an unmodified human's, they do prefer colder climates and are rarely found in the tropics. They find employment in all kinds of cold-weather industries.

Ranger Parahuman — *60 points*

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

Advantages: Absolute Direction [5]; Acute Hearing +2 [4]; Acute Taste and Smell +3 [6]; Cast Iron Stomach [15]; Discriminatory Smell [15]; Disease-Resistant [5]; No Appendix [0]; Resistant to Poison [5].

Disadvantages: Bad Temper [-10]; Light Sleeper [-5]; Overconfidence [-10].

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

Date: 2079. ***Cost:*** $110,000.

This parahuman type is fairly recent, depending as it does on several radical modifications of the basic human sensorium. The goal was to produce a genotype which would be able to survive in almost any wilderness environment, alone and with a minimum of technical support. A magnetic-field sense was borrowed from migratory birds, and several sequences for acute hearing and smell were also added. The digestive system and metabolism were upgraded to allow the consumption of almost anything organic. The genotype's unusual senses are not perfectly integrated into the brain, leading to irritability and chronic insomnia. Meanwhile, subtle tinkering aiming for a self-reliant attitude may have been too successful.

Ranger-series parahumans have begun to appear in the Amazon basin and in the wilderness regions of Canada, Russia and the United States. They often find employment as wilderness preserve rangers, scientists, or guides. In recent years several Isolate communities dominated by this parahuman type have been founded.

Homo Superior Templates

Adaptation to a specific ecological niche is only one goal met by genetic engineering, and not the most common. The most frequent approach is to give the variant type greater general capability, making it "human, only more so." In 2100, most of Earth's population is made up of these *Homo superior* variants. The Alpha, Ishtar, and Metanoia-series upgrades are the most common, but others have appeared recently on Earth.

Brownie Parahuman — *19 points*

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

Advantages: Acute Vision +1 [2]; Acute Hearing +2 [4]; Catfall [10]; Disease-Resistant [5]; Longevity [5]; No Bone Degeneration in Zero-G [3];

Disadvantages: Disturbing Voice [-10]; Reduced Move 1 [-5]; Unattractive [-5].

Features: Taboo Traits (Genetic Defects, Mental Instability). Brownies are about 3 inches shorter than average for their ST, but they also average 15 lbs. heavier than an unmodified human of their height.

Date: 2055. ***Cost:*** $44,000.

One of the earliest attempts to engineer humans for increased health and longevity was the Brownie variant. Rather than tinker with the inner workings of cell biochemistry, the Brownie's designers chose to improve gross human physiology.

A Brownie appears strange in a world where so many people have been designed for tall, slender attractiveness. Brownies are short and stocky, with heavy layers of muscle and fat padding torso, upper arms, and upper legs. Their spines are curved, giving them a naturally forward-leaning posture. Their knee joints have been re-engineered to bend in both directions, giving them a slow, awkward-looking gait. Their voices sound muffled and nasal, the result of tracheal reconfiguration.

Strange as it may seem, all these modifications tend to make the Brownie tough and durable. Brownies are very resistant to disease, falls and other accidents, and the slow progress of time. They *age* just as quickly as unmodified humans do, but their bodies simply don't wear out as rapidly. Although the first cohorts of the subspecies are not yet old enough to demonstrate their durability, most estimates indicate that the average Brownie can expect to live well over a century with minimal medical intervention (and therefore very low medical costs).

There are about 1 million Brownies in the world today, mostly in Europe and the United States. A surprising number have made their way into space – the template's modifications to skeletal structure have made Brownies nearly immune to bone-mass loss in zero-G. Although the merits of the design are rarely questioned, the Brownie template is unpopular due to its odd and unfashionable appearance.

Herakles Parahuman *171 points*

Attribute Modifiers: ST+3 [30]; DX+4 [45]; IQ+2 [20]; HT+4 [45].

Advantages: Attractive [5]; Extended Lifespan 1 [5]; Early Maturation 1 [5]; Immunity to Disease [10]; Immunity to Poison [15]; Longevity [5]; No Appendix [0]; Rapid Healing [5]; Reduced Sleep [10]; Reproductive Control [2]; Sanitized Metabolism [5].

Disadvantages: Bad Temper [-10]; Increased Life Support (Double food intake) [-10]; Overconfidence [-10]; Proud [-1]; Unusual Biochemistry [-5].

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

Date: 2086. ***Cost:*** $221,000.

Pushing the limits of genetic technology, the Herakles series represents one of the most elaborate *Homo superior* designs available in 2100. The first cohorts are only now approaching adulthood. The expense of the genotype (and its apparent problems) have limited the type's appeal. There are only about 10,000 Herakles parahumans alive, most of them in Greece.

The muscles, skeleton, and nervous system have all been engineered for maximum performance. The immune system and overall biochemistry have been broadly modified to allow virtual immunity to toxins, infectious disease and cancers. Several changes to cell structure allow dramatic extension of lifespan. Finally, modifications to the brain allow a Herakles to get by with very little sleep.

The sum of these modifications appears to have stretched the state of the art in human gengineering to its limit. Next-generation designs will probably supplement genetic alteration with symbiotic viruses or other techniques. For now, the Herakles is plagued with minor metabolic and psychological problems.

Ideal Templates

The *homo superior* variants are designed for greater capacity, health, and lifespan, but this does not always satisfy would-be rebuilders of humanity. Often a redesign of the human genotype is motivated by ideology; the engineers are driven by a desire to change "human nature" itself. Such variant forms can be quite distinctive.

Ariadne Parahuman *47 points*

Attribute Modifiers: IQ+1 [10]; HT+1 [10].

Advantages: Altered Sex Ratio (Female-only births) [0]; Attractive [5]; Combat Reflexes [15]; Disease-Resistant [5]; Longevity [5]; No Appendix [0]; Reproductive Control [2]; Sanitized Metabolism [5]; Sexual Orientation (Lesbian) [0].

Disadvantages: Overconfidence [-10].

Features: Taboo Trait (Genetic Defects).

Date: 2066. ***Cost:*** $97,000.

One of the more controversial ideal-parahuman types has been the Ariadne, first developed in the 2060s in the United States. Some social movements of the time called for the complete emancipation of women from male domination – through the creation of a human subspecies that would not require males to survive or reproduce. The Ariadne subspecies fell short of that goal, as genetic engineering was unable at the time to produce true parthenogenesis. Even so, with modern reproductive technology the new subspecies has been able to get by. Ideological fervor has allowed Ariadne communities to survive despite their inability to reproduce themselves "naturally."

Today there are about 200,000 Ariadnes. Most of them live in Isolate communities or have emigrated to the space colonies. Although most of Earth's Fifth Wave societies have relaxed their intolerance of the Ariadne lifestyle, such prejudice has been intense at times. Most Ariadne communities remain convinced that they are persecuted and cannot live safely in the global society. Ariadne scientists are among the leaders in reproductive modifications.

For the most part the Ariadne genotype is a typical *Homo superior* type, slightly above the human average in intelligence and overall health, engineered for longevity and disease resistance. The "fight-or-flight" response has also been carefully improved to give the variant superior emergency reflexes. The controversial aspects of the variant are in its reproductive systems. Ariadnes cannot become pregnant unless they wish to, and they *cannot* bear male children. Male fetuses are spontaneously aborted by an autoimmune reaction by the time they reach the hundred-cell stage. Meanwhile, the brain and hormonal mechanisms responsible for gender identity have been subtly modified, giving Ariadnes a strong predisposition toward homosexuality. Not all Ariadnes function as homosexuals, but most of them are at least bisexual, and fully heterosexual individuals are quite rare.

Ariadne II: The product of collaboration between Earth-bound Ariadnes and geneticists on Margaret Station (p. TS37), the new version of the genotype will attain reproductive self-sufficiency once the first cohorts reach adulthood. Add Early Maturation 1 [5], Extended Lifespan 1 [5], Parthenogenesis [0], and Versatile [5]. *62 points (2086, $112,000).*

Avatar Parahuman 53 or 77 points

Attribute Modifiers: *Male Avatars:* ST+3 [30]; HT+2 [20]. *Female Avatars:* DX+1 [10]; HT+2 [20].

Advantages: *Male Avatars:* Alertness +2 [10]; Disease-Resistant [5]; Handsome [15]; High Pain Threshold [10]. *Female Avatars:* Beautiful [15]; Disease-Resistant [5]; Voice [10].

Disadvantages: *Male Avatars:* Overconfidence [-10]; Proud [-1]; Unnatural Feature [-5]. *Female Avatars:* Shyness (Mild) [-5]; Unnatural Feature [-5].

Skills: Racial Skill Bonus (Sex Appeal +3) [3].

Features: Taboo Traits (Genetic Defects, Mental Instability). Females also have Taboo Trait (Aggressiveness). Both sexes have exaggerated sexual characteristics. Males are blatantly muscular with abundant body and facial hair, while females are very curvaceous and have soft, delicate facial features.

Date: 2061. ***Cost:*** $127,000

The male Avatar template costs 77 points. The female template costs 53 points. Cost of the genotype is $127,000 for a child of either gender, since all of the sex-linked characteristics for both genders must be encoded in the genotype.

Like the Ariadne, the Avatar design was motivated by social conflicts over gender roles. Rather than try to redefine what it meant to be masculine or feminine, this design reinforces typical gender stereotypes. As such, it is an exercise in sexual *dimorphism,* in which the physical and psychological differences between males and females of the subspecies are exaggerated. Male Avatars are strong, robust, alert, stoic in the face of pain, and strongly egoistic. Female Avatars are dexterous, soft-voiced, and retiring. Both sexes are engineered for great physical attractiveness, and have extreme secondary sexual characteristics which make their masculinity or femininity almost fiercely obvious.

The Avatar design is a fairly early variant, having first appeared in the Middle East. It has been surprisingly popular, even outside the strongly patriarchal cultures where it was first marketed. Today it can be found almost everywhere in Africa, the Americas, Europe and the Middle East. There are about 500,000 Avatars today.

Male Avatars tend to gravitate toward high-risk occupations such as the military, while female Avatars (especially those who overcome their natural Shyness) are often successful as diplomats, negotiators or entertainers.

Guardian Parahuman 135 points

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

Advantages: Attractive [5]; Charisma +4 (Limitations: Scent-based, -20%; No effect on nonhumans, -5%) [15]; Combat Reflexes [15]; Disease-Resistant [5]; Early Maturation 1 [5]; Extended Lifespan 1 [5]; Fit [5]; Hard to Kill +2 [10]; Longevity [5]; Pheromone Control [25]; Voice [10].

Disadvantages: Overconfidence [-10].

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

Date: 2081 (?). ***Cost:*** $185,000.

Officially, the Guardian parahuman template never existed. Just before the Pacific War, Chinese propaganda claimed that the template was being developed as a product of the TSA's "Special Projects" division. The design was supposedly part of an attempt to create a genetic elite to rule over humanity. TSA leadership denied the charge, and Chinese officials never produced proof for the world community. Nevertheless, rumors persist that a number of Guardians were actually conceived, and may have grown to maturity in hiding since the end of the Pacific War.

If rumors are correct, the Guardians (the name comes from Plato's *Republic*) were engineered for two major goals. The first was natural durability. Guardians were to be slightly faster and more robust than unmodified humans, with cardiovascular modifications to make them fit and tough. The second goal was *mastery* of other human beings. Their mental balance was designed for personal pride and a willingness to command others. Physically attractive, with pleasant voices, they would be engaging from a distance or over a telecom channel. In person, they would be *magnetic,* the result of glands releasing dominance and sexual pheromones. These glands would not become functional until after puberty, but they would be under the Guardian's conscious control.

If any Guardians are alive, they are likely approaching adulthood, ready to take up a role on the world stage. Another possibility is that there are Guardian children growing up ignorant of their heritage, but about to come into their full powers as adults. Both possibilities are among the modern world's minor nightmares.

Helot Upgrade — *12 points*

Attribute Modifiers: HT +1 [10].
Advantages: Disease-Resistant [5].
Disadvantages: Broad-Minded [-1]; Humble [-1]; Staid [-1].
Features: Taboo Traits (Aggressiveness, Genetic Defects, Mental Instability, Unattractiveness).
Date: 2080. ***Cost:*** $37,000.

Sometimes called "Social Man," the Helot genetic template was developed in China about 2080. Its supporters claim that the upgrade makes human beings much better able to live in a crowded urban civilization, reducing aggressive and selfish impulses without curtailing overall intelligence. Detractors point out that these traits are exactly what a would-be ruling elite would desire, making the human population more docile and tractable.

In fact, several recent experiments with totalitarianism have used the Helot genotype in an attempt to prevent popular uprisings. The outcome of the experiment is unclear, since the first Helot cohorts are only now reaching adulthood. About 250,000 Helots exist today, most of them in central Africa, southeast Asia, Indonesia, and Peru. Elsewhere Helots are few, since the genotype is unpopular among parents who have a choice of genetic template for their children.

Helot II: A more elaborate version of the Helot genotype is rumored to have been developed by TSA scientists just before the Pacific War. This template would have involved a complete restoration of the vestigial human vomeronasal organ, allowing the variant form to be strongly influenced by pheromones. According to anti-nanosocialist propaganda, the TSA elite planned to use dominance and sexual pheromones as a tool of political control; people with the "Helot II" genotype would have been particularly vulnerable to such an attack. The Helot II upgrade would have been similar to the original template, but with the addition of DX +1 [10] and four levels of Weak Will (Limitation: Only against pheromonal control, -75%) [-8]. The overall point cost would be 14 points, and the monetary cost $39,000.

Kouros Parahuman — *32 points*

Attribute Modifiers: IQ+1 [10]; HT+1 [10].
Advantages: Disease-Resistant [5]; Hermaphromorph [2]; Language Talent +4 [8]; Light Menses [1]; Longevity [5]; No Appendix [0]; Reproductive Control [2]; Sanitized Metabolism [5]; Versatile [5].
Disadvantages: Attentive [-1]; Combat Paralysis [-15]; Unnatural Feature [-5].
Features: Taboo Traits (Aggressiveness, Genetic Defects, Mental Instability). Facial features and body shape are strongly distinctive, but not recognizable as either masculine or feminine.
Date: 2082. ***Cost:*** $82,000.

Cultural struggles over "gender politics" have often bred extremism, such as that which gave rise to the Ariadne parahuman design (p. 116). One response to the gender wars has been to withdraw from the field of combat entirely. For example, members of the "asexual" movement of the 2060s used bodysculpting and other techniques to remove all sexual characteristics, expressing not only a rejection of gender politics but a rejection of gender itself. In the early 2080s a variation of this ideology gave rise to the Kouros-series design.

Kouros parahumans are true functional hermaphrodites, able to perform either the male or female role in sex or reproduction. Indeed, a Kouros can reproduce alone. The physical appearance of a Kouros is distinctive and not in any sense androgynous. Facial features and body shape were each designed to be significantly different from either male or female norms. The result is sometimes considered attractive but is often disturbing to non-Kouros humans.

In an attempt to give the Kouros a distinctive mindset that was neither "masculine" or "feminine," the designers concentrated on creativity and communication skills. One unplanned side effect is a breakdown in emergency-response reflexes, which often causes the Kouros to "freeze" in stressful situations. The oldest cohorts of the new subspecies have reached adulthood, and have almost universally avoided military service (but are showing some promise in linguistics, diplomacy, and the creative arts). There are about 50,000 Kouros in the world at present.

Mahatma Upgrade — *39 points*

Attribute Modifiers: DX+1 [10]; HT+1 [10].
Advantages: Attractive [5]; Autotrance [5]; Composed [5]; Disease-Resistant [5].
Disadvantages: Attentive [-1].
Features: Taboo Traits (Genetic Defects).
Date: 2057. ***Cost:*** $64,000.

One of the earliest genetic templates designed to fulfill a human ideal, the Mahatma upgrade first became popular in the late 2050s. Research dating back to the turn of the century revealed that certain kinds of "religious" experience had an identifiable neurological basis. Based on the Alpha-series upgrade, the Mahatma received careful adjustments to brain structure and neurochemistry, making them particularly open to this kind of mystic insight.

Mahatmas are emotionally stable and good at tasks that require concentration. These traits alone would make the template popular, since they significantly improve chances of success in the classroom or workplace. However, Mahatmas are also prone to certain altered states of consciousness, from simple meditative calm to a deep identity-blurring trance.

There are about 5 million Mahatmas today, working in a variety of professions. They do seem statistically more likely to be openly devout, or to follow a religious profession. On the other hand, their greater sensitivity to mystic experience does not seem to lead them toward any one specific ideology. Statistically, Mahatmas tend to have the same religious backgrounds as those around them.

Sigma Parahuman — *70 points*

Attribute Modifiers: DX+1 [10]; IQ+2 [20]; HT-1 [-10].
Advantages: Enhanced Time Sense [45]; Lightning Calculator [5]; Mathematical Ability [10]; Reduced Sleep [10].
Disadvantages: Attentive [-1]; Overconfidence [-10]; Stuttering (Limitation: Super-fast speech, no penalty when speaking with others with Enhanced Time Sense, -10%) [-9].
Features: Taboo Trait (Genetic Defects).
Date: 2079. ***Cost:*** $120,000.

One branch of the Transhumanist movement was led by the "cyberprophets," pop-culture philosophers who claimed that the ultimate end of human evolution would be in communion with machine intelligence. To that end, in the early 2070s they commissioned the Pandora parahuman design (p. BIO51) in an attempt to build humans who could think as *quickly* as a sophisticated AI. The Pandoras were a mixed success at best, so the sponsors attracted considerable controversy when they purchased the Sigma design as an extension of the Pandora template. Despite the cloud over their conception, the first Sigmas have reached adulthood and are showing promise as scientists, engineers, and web managers. There are about 80,000 Sigmas.

The emphasis of the Sigma design is on cognitive speed and mathematical ability. The speed of information processing across neurons has been increased, and the brain's structure has been modified to grant greater mathematical and abstract-reasoning ability. An unplanned but desirable side effect has been to make almost all Sigmas lightning calculators. Modifications to the brain's sleep centers have enabled them to get by with very little sleep for days on end. Unfortunately, all these modifications to the brain have led to borderline mental instability. Further, the interface to the brain's speech centers has still not been perfected. While Sigmas do not exactly stutter, they have great difficulty slowing their speech patterns down when conversing with non-Sigmas, and this has much the same effect.

Earth-Based Bioroid Models

There are dozens of specialized bioroid models in production on Earth. Some of the more common examples follow.

Hecate — *24 points*

Attribute Modifiers: ST+2 [20]; HT+2 [20].
Advantages: Bioroid Body [0]; Breath-Holding 2 [4]; Discriminatory Smell [15]; Extra Encumbrance [5]; Filter Lungs [5]; Immunity to Poison [15]; Nictitating Membrane 1 [10].
Disadvantages: Selfless [-10]; Short Lifespan 5 [-50]; Unattractive [-5]; Unnatural Feature [-5].
Features: Transgenic Features (hairless, bright lemon-yellow skin, eyes with nictating membrane, thick muscles around the mouth and nose).
Date: 2093. ***Cost:*** $69,000.

The Hecate model is designed to work on the cleanup of hazardous materials, especially in cases where human-level initiative and intelligence are required. They can enter hazardous areas with minimal protective equipment, sensing directly what toxins are present in the area. They can analyze the situation and act when standard hazmat cybershells fail. Hecate bioroids are almost immune to poisons, although corrosives and certain bioactive chemicals can still damage them. Since they are unlikely to survive long in any case, Hecates are designed with very short active lifespan.

The Hecate model is widely considered a moral abomination, even in nations which accord bioroids no civil rights. Institutions which use them are likely to suffer protests and other forms of bad publicity.

Spartan — *85 points*

Attribute Modifiers: ST+5 [60]; HT+1 [10].

Advantages: Bioroid Body [0]; Combat Reflexes [15]; Extra Encumbrance [5]; High Pain Threshold [10].

Disadvantages: Short Lifespan 1 [-10]; Unattractive [-5].

Features: None.

Date: 2084. ***Cost:*** $160,000.

The Spartan is a typical high-end combat bioroid, with hormone-boosted muscles, reinforced skeleton, reduced pain response, and sharpened reflexes for emergency situations. The most attractive feature of the Spartan is its ability to use heavy infantry support weapons *alone,* without mechanical or personal assistance. The Spartan model was developed in the United States, and is now widespread throughout the Americas. Versions of it can be found in China and have also been pirated by the nanosocialist states.

Xenocop — *88 points*

Attribute Modifiers: DX+1 [10]; IQ+1 [10].

Advantages: Alertness +2 [10]; Attractive [5]; Bioroid Body [0]; Combat Reflexes [15]; Extra Fatigue +3 [9]; Fit [5]; Hard to Kill +2 [10]; Increased Speed 1 [25]; Voice [10].

Disadvantages: Attentive [-1]; Selfless [-10]; Short Lifespan 1 [-10].

Features: Taboo Traits (Mental Instability, Unattractiveness).

Date: 2089. ***Cost:*** $138,000.

The Xenocop bioroid design is intended for police and paramilitary situations rather than open combat. Xenocops must be able to work within human communities, overcoming any anti-bioroid prejudice and making contacts with informants. When on patrol, they are alert, tough, and *fast,* able to run down most suspects in short order.

Xenocops were first developed in the United States, but they have become popular in most bioroid-using nations. They are commonly employed by large police departments and private security firms.

Uplifted Animals

In recent years, the trend toward uplift of animal species has accelerated. Few observers have been able to keep track of all the existing uplift projects, the more so since some of them are being undertaken in secret. It is possible that *every* animal species of above-average intelligence is in the process of being raised to sentience. The following are some of the new species being produced on Earth today.

Ganesh — *305 points*

Attribute Modifiers: ST +240 (Limitation: No fine manipulators on all ST above 15, -40%) [192]; DX+2 [20]; IQ-2 [-15]; HT+6 [80].

Advantages: Acute Hearing +1 [2]; Alertness +1 [5]; DR 4 [12]; Extra Flexibility (One limb) [5]; Extra Hit Points +22 [110]; Extra Reach (One limb) [10]; Less Sleep 4 [12]; PD 3 [75]; Penetrating Call [5]; Peripheral Vision [15]; Subsonic Speech [20].

Disadvantages: Bad Grip [-10]; Cannot Jump [0]; Chummy [-5]; Dull [-1]; Horizontal [-10]; Inconvenient Size [-10]; Increased Life Support 2 [-20]; Innumerate [-5]; Mute [-25]; No Depth Perception [-10]; One Fine Manipulator [-15]; Reduced Dodge -7 [-105]; Slow Eater [-10]; Social Stigma (Valuable property) [-10]; Staid [-1]; Stress Atavism (Mild, uncommon) [-6].

Date: 2081. ***Cost:*** $351,000.

Ganeshes are uplifted Asian elephants. The name is common everywhere *except* South Asia; Hindus consider it impious to refer to these genetic constructs by the name of a deity. In India, they are simply called "uplifted elephants." Ganeshes have become popular work animals in much of Southeast Asia. They are very intelligent, hard-working, patient, and affectionate toward their handlers. Effective beasts of burden, they can assist intelligently with forestry, land reclamation, or construction jobs. Note that the cost of the template is for a zygote engineered from scratch – naturally bred ganeshes are *much* less expensive.

Genetic engineering has reduced the size of the male ganesh's tusks until they are no longer effective as strikers (female ganeshes have no tusks at all). Other modifications raise the ganesh's trunk ST slightly, raise its IQ by 2 points, and remove the Bestial and Presentient disadvantages. Side effects include Stress Atavism and reductions in sensory acuity, robustness, and walking speed. All other advantages and disadvantages are those of wild elephants.

Ganesh characters can raise their body ST by buying more ST using the No Fine Manipulators limitation. To raise their trunk ST, they can buy off the limitation from more of their natural ST.

Monkey Plus — *-87 points*

Attribute Modifiers: ST -7 [-60]; DX +3 [30]; IQ -3 [-20]; HT +3 [30].

Advantages: Acute Hearing +2 [4]; Alertness +3 [15]; Brachiator [5]; Decreased Life Support [10]; Extra Arm (No attack) [5]; Fur [4]; Increased Speed [25].

Disadvantages: Chummy [-5]; Inconvenient Size [-15]; Innumerate [-5]; Reduced Hit Points -7 [-35]; Semi-Upright [-5]; Short Arms [-10]; Short Lifespan 2 [-20]; Sleepy (50% of the time) [-10]; Social Stigma (Valuable property) [-10]; Stuttering [-10]; Weakness (Cold temperatures, 1d per 30 minutes) [-10].

Date: 2082. ***Cost:*** $50,000.

Since the late 2070s, monkeys have become very popular pets in several Fifth Wave nations. The Monkey Plus template represents several nearly identical varieties of uplifted monkey, designed to be curious, friendly household companions. Monkey Plus has actually not had much success on the open market – these uplifted monkeys are very "high-maintenance," requiring almost constant attention and social interaction.

The root stock for a Monkey Plus may be any of several varieties of New World monkey; capuchins and spider monkeys are the most popular. Engineering has made the monkey slightly larger and more robust, supporting a larger brain. IQ has been raised by 1, and the Bestial and Presentient disadvantages have been removed. A crude but workable voice box gives the Monkey Plus the ability to speak. All other traits are those of wild monkeys. The Monkey Plus template is probably too low in point value to make for a good PC, but uplifted monkeys do make good Dependents and low-point-value Allies.

Neo-Pinniped *4 points*

Attribute Modifiers: ST +3 (Limitation: No Fine Manipulators, -40%) [18]; DX +2 [20]; IQ -2 [-15]; HT +4 [45].

Advantages: Acute Taste and Smell +2 [4]; Amphibious [10]; Combat Reflexes [15]; Early Maturation 1 [5]; Enhanced Move (Swimming) [10]; Faz Sense (Limitation: Underwater only, -30%) [7]; Fur [4]; Oxygen Storage [14]; Pressure Support [5]; Sharp Teeth [5]; 3D Spatial Sense [10].

Disadvantages: Chummy [-5]; Color Blindness [-10]; Distractible [-1]; Dull [-1]; Horizontal [-10]; Inconvenient Size [-10]; Increased Life Support [-10]; Innumerate [-5]; No Fine Manipulators [-30]; Reduced Move (Running) -3 [-15]; Short Arms [-10]; Short Lifespan 2 [-20]; Social Stigma (Valuable Property) [-10]; Stress Atavism (Mild, uncommon) [-6]; Stuttering [-10].

Date: 2079. ***Cost:*** $50,000.

A neo-pinniped is an uplifted sea lion, usually from one of the North American species. They are employed for a variety of shallow-water tasks, by corporations as well as the U.S. and PRA navies. They are playful and independent creatures, but they can quickly learn to perform complex tasks and have meaningful conversation with humans. When not on duty, neo-pinniped groups are showing signs of developing a complex and alien culture of their own.

Genetic engineering has increased the sea lion's natural IQ by 2 and removed the Bestial and Presentient disadvantages. A working voice box has been added, allowing the neo-pinniped to speak human language (indistinctly and with difficulty). Side effects include a loss of sensory acuity and mild Stress Atavism. All other traits are similar to those of wild sea lions.

Cybershell Templates

The following are two of the many cybershell types often encountered in the Fifth Wave nations.

Cyberdog *104 points*

Attribute Modifiers: DX+2 [20]; HT+2 [20].

Advantages: Acute Hearing +2 [4]; Acute Taste and Smell +2 [4]; Absolute Direction (Limitation: Uses GPS, -20%) [4]; Claws [15]; Discriminatory Smell [15]; DR 2 [6]; Enhanced Move (Running) [10]; Extra Legs (Four legs) [5]; Fur [4]; Machine Body [37]; Night Vision [10]; Radio Speech (Enhancement: Radio and infrared, +20%) [30]; Sharp Teeth [5].

Disadvantages: Horizontal [-10]; Mistaken Identity [-5]; No Fine Manipulators [-30]; Reduced Hit Points -4 [-20]; Short Arms [-10]; Social Stigma (Valuable property) [-10].

Features: Complexity 5-7 small computer.

Date: 2063. ***Cost:*** $13,000 + computer.

The Gemini Volksrobotics "Phydeaux" is designed to look and act like a household pet. The cyberdog always has soft fur and appealing features, but doesn't necessarily resemble a dog; the external styling can be made to match a very large cat, a fox, a bear cub, even a fantasy creature. Internal machinery mimics the body heat, breathing, and pulse of a real animal, although a close examination will reveal the cyberdog's mechanical nature.

A cyberdog is often kept in homes that have children, acting as a guard, faithful companion, and teacher. The internal AI can speak, or interface with household systems to provide complex visual displays. At night, the cyberdog's keen senses and sleepless nature make it a superb household guardian. 35 lbs., 3' long.

Wingbot *163 points*

Attribute Modifiers: ST -6 [-50]; DX +4 [45]; HT +2 [20].

Advantages: Absolute Direction (Limitation: Uses GPS, -20%) [4]; Acute Vision +3 [6]; DR 3 [9]; Enhanced Move 3 (Flight) [30]; Enhanced Move (Running) [10]; Filter Lungs [5]; Flesh Pockets (3 lbs. capacity) (Limitation: Machine, -60%) [5]; Flight (Limitations: Winged flight, small wings, -10%; Cannot hover, -15%) [30]; Gadget (Drug injector, LC 6) [5]; Machine Body [37]; Night Vision [10]; PD 2 [50]; Peripheral Vision [15]; Radio Speech (Enhancement: Radio and laser, +40%) [35]; Telescopic Vision 2 [12]; Weapon (Electroshocker, LC 5) [10].

Disadvantages: Dependency (Maintenance, common, monthly) [-5]; Inconvenient Size [-15]; Limited Endurance (No more than six hours) [-10]; Mistaken Identity [-5]; Mute [-25]; No Sense of Smell/Taste [-5]; Reduced Hit Points -10 [-50]; Social Stigma (Valuable property) [-10].

Features: Complexity 5-7 small computer.
Date: 2078. ***Cost:*** $24,000 + computer.

The Kenzaki Robotics *Tengu* is a multipurpose cybershell, suitable for bodyguard, perimeter security, and microbot delivery functions. It is physically delicate and weak, but very fast even when confined to the ground. In the air, it can reach speeds of up to 80 miles per hour, its mobility limited only by the requirements of winged flight. It has two arms, with an electroshock device installed in one (treat as a shock glove, p. TS155) and a pneumatic drug injector in the other; these are generally used as nonlethal weapons in defense of the robot's owner. Cargo compartments in the body and each wing are designed to carry up to 3 lbs. of microbots, which can be delivered by the cybershell in either walking or flying modes.

If the wingbot stays on the ground, it can stretch out its battery charge for up to 30 hours. The batteries are depleted after only about two hours of flight. 45 lbs., 3' long.

Digital Transference

Weblife characters (especially gypsy spirits; see p. 33) may have the Transference advantage (p. CI68). This represents the parasite infomorph's ability to partially assume the identity of a host AI. The rules mechanics for attributes, advantages, and disadvantages are all as given for the standard Transference advantage.

When weblife takes over a host AI, it does not lose access to the victim's memories; those are stored in permanent media which the invader can use just as well as the host. As a result, the invader may acquire *both* Physical and Mental skills previously held by the host. The rules for skill acquisition remain the same. The invader must "forget" previously held skills in order to free up points for the new ones. The new skills may be learned at no better than (host's level)-1. This feature makes Transference extremely powerful, as the parasite can now count on being able to mimic the host closely. Express it as "Retains access to hardware's stored memory" (+80%).

This form of Transference uses a different mechanism for infection. Instead of "exchanging bodily fluids," the invading infomorph must successfully gain unlimited access to the target computer with Computer Hacking (pp. 128-130). The target computer's hardware must be complex enough to run the weblife character's program. Thus the Transference advantage comes with an Accessibility limitation: "Only on sufficiently complex computers accessible over the network" (-30%).

The total cost of this form of Transference is 60 points.

Weblife

Most forms of weblife are, almost by definition, examples of emergent intelligence. Weblife may be a "natural" evolution of the web, but this doesn't mean that human authorities appreciate its existence. Aside from a few digital creationists, most people regard weblife as a nuisance or an active threat. Complex weblife must usually cultivate stealth and subversive tactics in order to survive at all.

Free Meme — *17 points*

Attribute Modifiers: IQ-2 [-15].
Advantages: Doesn't Sleep [20]; Eidetic Memory 1 (Limitation: No skill bonus, -70%) [9]; Enhanced Time Sense [45]; Lightning Calculator [5]; Mathematical Ability [10]; Single-Minded [5]; Unaging (Limitation: IQ only, -75%) [4]; Unfazeable [15].
Disadvantages: Clueless [-10]; Dead Broke [-25]; Fanaticism [-15]; Hidebound [-5]; Low Empathy [-15]; Parasite [-15]; Staid [-1]; Status -4 [-20]; Undiscriminating [-1].
Skills: Computer Hacking at IQ+3 [20]; Computer Operation at IQ+3 [6].
Features: Digital Mind; Taboo Trait (Self-Awareness); Complexity 4 program.

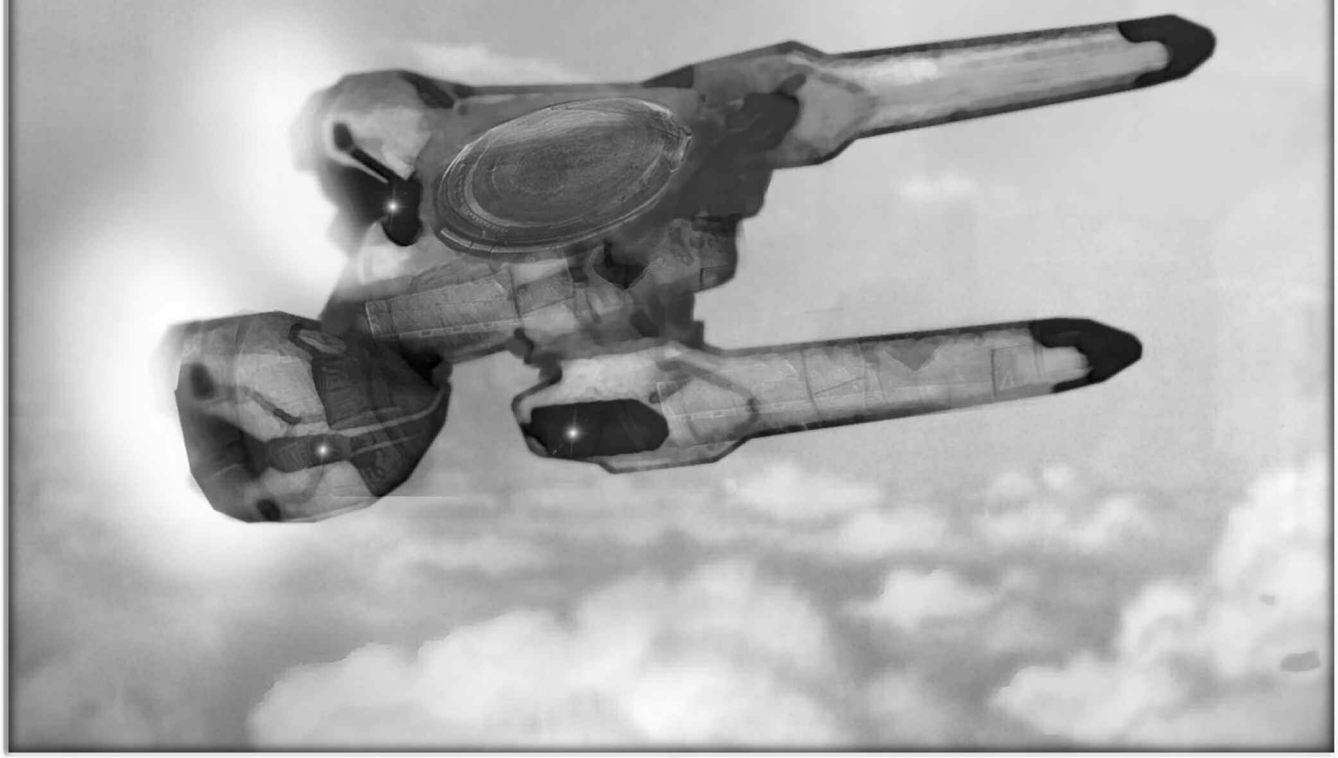
This template represents some of the most complex free memes to be found in Earth's web. These strongly resemble low-level NAI systems, with several critical differences. They have no Extra Life advantage from digital backup (while they can be backed up with their host systems, they have no way to control when the backup will be activated). The Parasite disadvantage represents the free meme's dependence on an existing AI system of greater Complexity.

Free memes exist to reproduce themselves and to spread a specific concept (the Fanaticism disadvantage represents this ideational obsession). By themselves they make poor PCs, but they might be useful as NPC allies. Also, a more complex Emergent Intelligence sometimes forms around the nucleus of a successful free meme.

Gypsy Spirit — *+45 points*

A gypsy spirit is a sapient AI program which has taken up a nomadic existence on the web. To design such a character, begin with any LAI or SAI template with the Emergent Intelligence option, or with a Ghost Mind Emulation or Shadow Mind Emulation template. Then add Transference (Retains access to hardware's stored memory, +80%; only on sufficiently complex computers accessible over the network, -30%) [60] and Parasite [-15]. The final cost for the template increases by 45 points.

6 TECHNOLOGY



*BrainStorm cackled to himself. The **federales** were so smug, but they still didn't know from security. It had been simple to introduce a corruptor virus into a public web server operated by the Treasury Department. Now it was eating away at the server's defenses, even causing the AI to get careless and forgetful. Any minute now it would be time to launch the Safecracker exploit, and BrainStorm would own the box. How best to announce his coup to the world? Had to be smooth about it, or the elite would never recognize his win . . .*

Lost in his reverie, BrainStorm didn't immediately notice the flag his wearable had started raising in the periphery of his visual field. The NAI soon took stronger measures, causing the display wall in front of him to beep and flash red. What was going on? Oh, just a flood of e-mail messages coming in. Some marketing spammer must be trying to fill out a quota. BrainStorm lit off his "get lost" autoreply software, wiped the queue and went back to watching the progress of his virus.

*It never occurred to him that he had just sent out a dozen messages stamped with his computer's authentication codes. Or that the software he had downloaded from the web to mask his codes was fatally flawed. Or that the U.S. Treasury Department might have the tools necessary to see through the tissue-thin deception. His subconscious mind toyed with the notion that the hack had been too easy, but he shrugged that off, too. Everyone knew the **federales** were incompetent.*

Soon he heard the hum of motors in the driveway, and the firm knock on the door. By then, of course, it was too late.

For the most part, the same technologies are used on Earth as anywhere else in the solar system; the items described in the ***Transhuman Space*** core book are all available. This chapter describes several technological features which are not *unique* to Earth, but which are much more common there than elsewhere.

Computers and Computer Intrusion

The Earth web segment is by far the largest and most complex. The sheer density of information technology on Earth makes it a fertile environment for computer intruders. Even if "hacking" is much more difficult in 2100 than it was in 2000, the Earth web remains a very target-rich environment. This section includes detailed rules for computer intrusion (and defense) in the ***Transhuman Space*** setting.

General Concepts

In the ***Transhuman Space*** setting, the dynamics of computer use have changed considerably since 2000.

The most important change is that all computers run AI operating systems, and can be considered *characters* in

Gaming User Identification

Under most circumstances, gaining access to a computer system should be simple enough to require no game mechanics. If the potential user is who he claims to be, and isn't working under any handicap that might obscure his identity, then he should simply gain access by going through the normal identification procedure.

Occasionally, user identification may present an obstacle in the course of an adventure. Perhaps the user is legitimate, but he's forgotten his passwords or his biometric profile has somehow been changed. Or perhaps the user is an intruder, trying to fool an infomorph into believing that he is someone else, without benefit of the proper identifying information. In either case, infomorphs in all but the most sensitive positions are permitted to try and ascertain the truth despite discrepancies in the identifying information.

The following procedure should only be applied if, in the GM's judgment, there is a significant chance that the infomorph might be confused as to the identity of the user claiming access privileges. If there is no possibility for confusion, the GM should simply rule that the infomorph recognizes (or fails to recognize) the user.

Identifying a Legitimate User

If a legitimate user is trying to gain access, but is unable to identify himself properly, the GM may make a roll against the infomorph's Computer Operation skill. This roll may be modified by the outcome of each of the following identification methods: password, facial recognition, thumbprint, retina print, voice print, and DNA pattern. Use the following modifiers for *each* test that was applied.

No discrepancy: Passphrase was recited without mistakes, user's appearance is correct down to the last freckle, fingerprints match perfectly, and so on. (Again, if all tests were passed without discrepancies, no roll should be made.) *+2.*

Minor discrepancies: User stumbles while reciting the passphrase but gets it substantially correct, a cold or high-quality voice distorter has changed his voiceprint slightly, the user has radically changed his hairstyle or undergone minor biosculpt surgery without updating the database, and so on. *-1.*

Significant discrepancies: User makes significant errors while reciting the passphrase, he has laryngitis or is speaking through a low-quality voice distorter, his facial bone structure has been altered, his fingerprints or retina print have been altered, he has undergone genetic therapy, and so on. *-3.*

Major discrepancy: User could not recite the passphrase at all, or there is no similarity between expected and actual biometric patterns. *-6.*

If the skill roll succeeds, the infomorph will allow access to the legitimate user. This process normally takes 1d seconds. On a critical success, the infomorph will be "convinced" of the proper course of action at once.

If the infomorph fails its IQ roll, it will remain unconvinced that the user is who he claims to be. What happens next depends on the situation. The infomorph will normally not allow the user to gain access, and may be programmed to report the incident to someone. It may try to find another legitimate user to vouch for the one who just tried to gain access. If all else fails, most systems have physical fail-safes that will reset the access control system. The difficulty of reaching and using these fail-safes depends on the security of the system.

Detecting an Intruder

If the potential user is actually an intruder, then the same procedure applies – but in this case, failed tests actually help the infomorph make the right decision, while passed tests will tend to fool it. Make the same roll against Computer Operation, but apply the *negative* of each modifier (for example, if the intruder recites the correct password, the infomorph will get a -2 penalty to the roll instead of a +2 bonus).

If the infomorph succeeds in its Computer Operation roll, it will recognize that the intruder is trying a deception, and will deny access. This process again takes 1d seconds, or will happen immediately on a critical success. If the infomorph fails its IQ roll, it will be convinced of the intruder's claims, and will grant him access.

their own right rather than tools. All interactions among computers and their "users" can be described in terms of character skills, rather than the mechanical behavior of computer programs. In particular, infomorphs use their Computer Operation skill to apply their various built-in security mechanisms. AIs in high-security positions will buy their Computer Operation skill up to high levels.

Another important factor is that human (or near-human) users rarely "log on" to remote computer systems across the web. Instead, a human will physically interact with his own computer, and the infomorph inhabiting the computer will handle any cross-web communication on his behalf. If the human user's identity becomes important, then the infomorph will vouch for him.

Note that the physical hardware of any computer system is here called a *cybershell,* whether it is a mobile piece of computerized equipment or an immobile system such as a mainframe or desktop machine. The software loaded into a cybershell is controlled by the *infomorph* or AI operating system "inhabiting" it.

User Identification

For most potential computer users, the first step is to gain physical access to a cybershell. The infomorph running the cybershell will demand some level of proof that the user is who he claims to be, and is authorized to issue commands or ask for data. In effect, the infomorph must be *convinced* to grant access, and the difficulty of that task depends on the sensitivity of the computer's functions or stored data.

Passwords

Almost all infomorphs still use passwords to help identify users. In 2100, passwords are usually quite long; in fact, the term *passphrase* is more common. For some low-security applications, a passphrase is the *only* check that an infomorph makes of a user's identity.

Naturally, an attacker can use various methods to learn a passphrase. He may persuade or trick the owner into revealing it. He may also *guess* it, although this is generally much more difficult than it was a century ago. Many computers require their owners to use passphrases that are too long or obscure to guess easily. "Brute force" attacks that involve repeated guessing are also ineffective, as no infomorph is likely to allow more than two or three access attempts before locking the attacker out.

Biometrics

Most infomorphs in 2100 rely on *biometric* methods, which measure aspects of the user's body and physical behavior. Biometric scanners are standardized and very common (p. TS151). An infomorph may "register" a new user by measuring his facial structure, reading his retina or fingerprints, taking an extensive voiceprint, or reading his DNA from a tissue sample. Later, the user must be physically present and able to produce the correct physical or genetic patterns in order to use the computer.

In general, assume that any low-security application uses facial recognition, voice printing, a retina print, or a thumbprint. Medium-security applications may use as many as all four of these at once. A check of these biometric parameters takes no more than three or four seconds to perform once the user is in the computer's physical presence. High-security applications will also require a microscopic tissue sample to check DNA sequences; this takes up to 10 seconds depending on the thoroughness of the check.

Biometric methods are not foolproof, of course. An attacker can mimic facial structure using disguise or biosculpt technology. Certain devices can also be used to fool scanners (see box, p. 126). Note that a common security tactic is to place all of a computer's biometric instruments in full view of one of its video pickups. Even a very stupid AI will become suspicious if biometric information appears correct, but it *sees* the user pressing something other than his own thumb to the scanning pad . . .

Note that many people will have trouble with biometric identification. Clones or identical twins will present very similar or even identical biometric profiles. Meanwhile, anyone with the Mistaken Identity disadvantage (usually representing bioroid, bioshell, or cybershell bodies which are manufactured to look identical) will confuse biometrics. As a result, even a correct biometric profile is not usually considered *proof* of identity. Biometrics are almost always combined with a passphrase.

Data Authentication

When one infomorph "talks" to another across the web, the problem of identification still remains. Every time an infomorph receives data, it must be able to verify that it knows and trusts the source.

Identity Codes

Every cybershell has a set of specific *identity codes.* Identity codes use a variation on the system of public and private encryption keys described on p. TS148. Public-key encryption systems are set up so that keys come in pairs. A message can be encrypted with one key of the pair, after which it is theoretically very difficult for anyone to decrypt it unless he already has the other key. The security holds because it is equally difficult to derive one key from its mate. This allows one key to be made public, without fear of compromise so long as the other is kept private.

Biometric Tools

The following tools are sometimes used by criminals or covert agents to fool biometric sensors. Most of these devices are Legality Class 1 (see p. B249).

Bioglove

A *bioglove* is a biomod construct resembling a close-fitting glove made out of human skin. It is grown from a genetic template provided by a given individual, and has that person's fingerprints, palm prints, and DNA pattern. When worn, it appears to have normal biological function (body temperature, blood flow, and so on). Anyone wearing it can fool biometric devices using those parameters into accepting him as the person who provided the template. No Sleight of Hand roll is needed; it is almost impossible for even an alert observer to notice that the bioglove is in use.

Biogloves are Fifth Wave technology, and may not be available in many parts of the world. A bioglove requires a good DNA sample and a full set of finger and palm prints from the person to be mimicked. It takes two weeks to grow. Once grown, it must be worn or kept in a nutrient solution or it will die within 24 hours. $10,000.

Skeleton Thumb

A *skeleton thumb* is a pocket-sized device which can be used to defeat retina and fingerprint scanners. One end is the size and shape of an eyeball, and lights from within to display a retina pattern. The other end has the shape of a thumb, and has a memory-plastic pad which can be reconfigured to match a thumbprint. Both ends of the device can fully simulate the presence of a living organism, including body heat and blood flow in the "retina" or "thumb" being presented. New prints can be downloaded into the device (although acquiring the correct prints can be a challenge). The user may need to use Sleight of Hand skill to prevent an observer (or an AI) from detecting use of the device. $5,000, 0.25 lbs., A (1 year).

Skeleton Tongue

This biomod transplant alters the user's vocal cords, allowing him to precisely mimic any familiar sound. This grants the Mimicry advantage [15]. Once the user has memorized a person's voice and has had a chance to practice it, he will be able to fool voiceprint scanners as if using a high-quality voice distortion device (see below). $30,000 (4 weeks to grow, 4 weeks recovery).

Voice Distortion Device

This pocket-sized device can be programmed to precisely distort the user's voice, causing it to sound like someone else's. The result may fool voiceprint scanners. The device must be held close to the user's mouth, and is difficult to use discreetly. Extensive recordings of a person's voice must be available to construct a program for the device. A *cheap* voice distortion device can be found almost anywhere in the world, but will not fool all voiceprint scanners: $1,000, 0.25 lbs., A (1 month). A high-quality device is Fifth Wave technology and may not be available everywhere, but can fool even the most advanced scanners: $5,000, 0.25 lbs., A (1 month).

Computer identity codes are actually the private keys in a public-key encryption scheme. These keys are assigned in the factory, are normally fixed for the life of the hardware, and are embedded in special tamper-proof microchips. The public keys matching the identity codes are published to central data servers on the web, which are (presumably) trusted by everyone. For example, Gemini Volksrobotics has arrangements with over two dozen *authentication services,* operated by banks, local and national governments, telecommunications companies, security agencies, and legal firms all over the world. Whenever Gemini ships a cybershell to a customer, it also registers the cybershell's public keys with those authentication services. Each public key is registered with a different service, so that if one has to be discarded the others can still be used.

Using Identity Codes

Once a cybershell is activated and placed on the web, its AI operating system can use its identity codes to help prove its identity to other infomorphs. Each piece of data it sends over the web is encrypted using one of its identity codes as the encryption key. The infomorph has no access to the actual codes – all it can do is choose which code to use for each packet of data to be sent. The actual encryption process takes place in isolation in the microchip.

Any infomorph receiving the data can contact the appropriate authentication service, acquire the matching public key, and try to decrypt the data. If the decryption works, the recipient can be fairly certain that the data came from the claimed source. If not, then the data can be safely ignored.

A variation on this method exists, for cases where a given cybershell is only likely to send data to a limited set of other cybershells. In this case, the public keys matching its identity codes are not published to the web – they are hand-loaded into the memory of the other cybershells by some secure method. This prevents any attacker from manipulating the identification process by breaking into the public authentication servers.

Breaking Identity Codes

Intruders are often interested in breaking the identity-code scheme. Identity codes are to web communication what passwords and biometric tests are to physical interaction with a target computer. If an intruder can fool his target into believing that his data comes from a trusted

source, then he may be able to affect the target without actually having to break into it.

The identity-code scheme relies heavily on the trustworthiness of public authentication services. A good authentication service will immediately repudiate any key as soon as there is evidence that it's been used fraudulently.

Authentication services use extremely high-grade security on the systems storing the public keys. This is not so much to protect the keys themselves (after all, they *are* public). Instead, the security serves to prevent intruders from inserting their own keys. An intruder who gained access to an authentication service's records could generate his own public-private key pairs, substitute the public keys for those registered in the service, then use the private keys to enable his computer to impersonate one of the cybershells whose records had been altered.

Lacking access to the authentication service, an attacker can try to "clone" a target cybershell by duplicating the microchip storing its identity codes. If the attacker has physical access to the cybershell, he can attempt to remove the microchip, open it, and read it directly. This requires a roll against Electronics Operation (Computers) skill, usually at a substantial penalty (-4 is appropriate for most systems, while well-engineered systems may impose a -8 or worse). The task takes an hour. On a success, the codes are read. On a failure, the codes are not read and the chip is rendered unreadable.

Once an identity-code chip has been opened, it will no longer function even if it's put back in place. Instead, the attacker will need to fabricate a new chip with the desired identity codes. This can be done using a 3D printer (see p. TS153) and materials costing about $1. Putting the new chip in place requires about five minutes and a simple Electronics Operation (Computers) roll. Once a cybershell's identity codes have been read, the attacker can manufacture a chip permitting *any* cybershell under his control to impersonate the "cloned" machine.

Access Control

The user identification and authentication methods described above are used to drive a computer's system of *access controls*. Whenever a potential user presents himself to a computer, it classifies him into one of several categories. This classification depends on *who* originated the input, *where* it came from, and *how confident* the computer can be that no deception is taking place. The AI grants a specific level of access to a potential user depending on what category he falls into. In this context, a "user" may be another infomorph, acting independently or on behalf of one of its own users.

Note that the level of access a given user has may vary from moment to moment. For example, even the administrator of a computer system may be required to be physically present at the system's terminal in order to gain full access. If he uses another computer to send data from a remote location, the system may refuse to grant him all (or *any*) of his usual privileges.

For a legitimate user, access control systems represent privacy and security for information. For an intruder, access control is an obstacle to be overcome. If the intruder can fool the user identification or identity-code systems (using techniques described above), then he can masquerade as a legitimate user under the normal access control scheme. Otherwise, he needs to circumvent access control by "hacking" the target (p. 128-130).

No Access

If a potential user has *no access* to a computer system, then it will not accept any data or commands from him. A biosapient being will not be able to use the system's voice interface or other terminal devices. An infomorph will be ignored if it tries to make contact.

For example, a computer used to store a corporation's private financial information will grant no access to non-employees. Even if the financial server is connected to the global web, it will ignore all data sent to it by anyone who can't prove himself to be an employee of the firm. Infomorphs that can't prove that they are acting on behalf of an employee will also be unable to send data to the financial server.

Data Access

If a potential user has *data access* to a computer system, then it will accept and store data from that user. At most, the system will examine the data to see whether it should be stored or discarded – the system will not *act* on the data in any way.

For example, the message server for a small corporation may permit any infomorph to send it data from anywhere on the web. It will examine that data to see if it is in a legitimate message format, and discard it if not. Messages will simply be stored for the employees to read at their convenience – the computer will not execute any programs or commands that an outsider might send.

Limited Access

A potential user with *limited access* actually has an "account" on the computer system. He can send it data and expect the computer to act upon it; he can send commands and expect them to be carried out. Control is usually limited to specific operations that are directly related to the user's job or role. In particular, the user will *not* be able to change the computer's access controls. He will not be able to set up, alter, or delete user accounts.

For example, children usually have only limited access to the household AI. It will converse with them, find information for them, or run games or other entertainment software. It will not serve data or software that has been forbidden by their parents, give them access to their parents' private data, or allow them to substantially reprogram its access controls.

Unlimited Access

A user with *unlimited access* is the owner or administrator of a computer system. He can use the computer's command codes to force it to perform *any* action, including setting up user accounts, manipulating or deleting data, sending data onward to other computers, and so on. Every computer has at least one administrator, who may or may not be its owner.

The infomorph running a given cybershell is a special case. In theory it has unlimited access to the cybershell and its resources. In practice, most infomorphs have the Reprogrammable Duty disadvantage, strictly limiting their behavior. A computer's AI operating system *may* be given some level of administrative responsibility, if the computer's legal owner has specifically permitted the infomorph to act in that role. Otherwise, its only independent role in the access-control system is that of gatekeeper – it determines what other people are authorized to use the system. An infomorph *without* the Reprogrammable Duty disadvantage always has completely unlimited access to its own cybershell.

Computer Intrusion

If an attacker wishes to gain unauthorized access to a computer system, the first line of attack is usually to masquerade as a legitimate user. He uses various means to discover who has access and what they must do to gain that access. He then tries to trick the target system's identification systems, working either in the system's physical presence or from another computer elsewhere on the network.

If this deception isn't feasible, then an attacker must try to "hack" the target, circumventing its access control systems entirely. Such an attack is normally launched across the web. It is rarely easy, but it is usually *possible.* Identification and access control systems only provide security if the machinery works exactly as designed – but this is rarely the case.

Even in 2000, computer hardware and software were fiendishly complex. The operating system for a typical (Complexity 2) personal computer of the time consisted of several *million* lines of code. Since all of this code was written (and had to be double-checked) by human programmers, it was impossible to ensure that there were no errors anywhere. And indeed, errors were constantly being discovered in software that was in common use. Some of those errors allowed attackers to gain unauthorized access to the system running the software. Such an error in design or programming was called a *vulnerability.* The process of taking advantage of a vulnerability was called *exploiting* it (and a specific technique for doing this was usually called an *exploit*).

In the past century, technology has developed methods for producing code that are far more powerful than the "assembly-line" techniques of 2000. Powerful AIs write major applications, and also check them for errors. Most software is built up from basic code modules that have already seen plenty of testing and use. On the other hand, software is much more complex than it was, and most programs are self-modifying in order to adapt to local conditions. This is particularly true of the AI operating systems used in almost all computers.

Almost all computer systems still exhibit vulnerabilities, and it is still possible to exploit them to gain unauthorized access. The major change in "hacking" over the past century is that every intrusion problem is now unique. In 2000, a single vulnerability might affect millions of systems around the world; an attacker could learn one exploit and use it against all of those targets with no modification. Today, since every system has a different design and software load, no one exploit is likely to work against more than a tiny fraction of the available targets. This makes the choice of exploit much more difficult. Meanwhile, computer systems today are much more "fault-tolerant" than they were in the past – even if a vulnerability is triggered, the consequences are not as likely to be drastic.

Computer Hacking

The Computer Hacking skill covers any attempt to gain access to a computer system, not by posing as a legitimate user, but by exploiting a vulnerability of the system. It's assumed that each roll against Computer Hacking represents one intrusion attempt mounted across the web, from a single computer to which the intruder has unlimited access. The intruder must be able to *reach* the target system from his own machine (i.e., it cannot be on a separate network).

Each hacking attempt requires a Quick Contest of Skills, pitting the intruder's Computer Hacking against the target infomorph's Computer Operation. The intruder may use his own Computer Hacking skill or that of his base system's infomorph. Indeed, the intruder may *be* an infomorph, although it should be noted that infomorphs with the Honesty disadvantage do not normally develop Computer Hacking skill. A variety of modifiers apply to the Computer Hacking roll, as follows.

Multiple Attempts: -1 per previous or concurrent attempt against the same target, unless a significant amount of time has passed since the last attempt (GM's discretion, but probably days or weeks).

Prior Access: If the intruder currently has *no access* to the target system, -8. If he only has *data access* to the system, -4. If he already has *limited access* to the system, +0.

Target Knowledge: If the intruder knows nothing about the target system except that it exists, -8. If the intruder knows the specific make and model of the target system's hardware, but nothing about its software load, -4. If the intruder knows who produced the target's AI operating system but knows nothing else about the software, -2. If he knows who produced the AI *and* knows at least half of the major applications being run on the target system, +0.

Describing Access Control

Whenever a specific computer system is likely to become important to the GM's campaign, he may want to consider specifying how its access controls are set up. Ths is especially true if the adventurers are likely to try to break into the system . . .

When defining an access control structure, it's usually easiest to begin with the limited-access level. Who are the system's normal users, and how must those users identify themselves to gain privileges? Each limited-access account can only access certain data or call on certain system functions – define those restrictions as well. Bear in mind that many low-security systems are designed for convenience; users do not want to have to recite a passphrase or use DNA testing to access routine functions.

Once the limited access has been defined, consider who might have unlimited access to the system. How thoroughly must people prove their identity to the system before it grants them unlimited access? Can they use unlimited access from a remote location, or must they be at the system's own terminal?

Finally, determine whether any other potential users have data access or no access. In most cases, a computer system will accept data from *everyone* or it will accept data from no one but its defined users. This depends on whether the defined users have any legitimate reason to want certain kinds of data from almost any source. For example, a public data server will usually accept mail messages from any source (of course, the owners of a system may block out mail from specific sources if they wish).

Example: Wearable Computer

Jay Hsieh owns a wearable virtual interface, built into his mirrorshades. The interface is a Complexity 5 tiny computer, running a NAI-5 operating system.

Jay Hsieh is designated as the only person (other than the NAI) to have *any* access to the wearable. Jay can use limited access any time while wearing the computer. When he puts it on, it scans his retinas before permitting him to use it. By speaking a three-word passphrase while wearing the computer, Jay can gain unlimited access and act as its administrator. The NAI operating system always has unlimited access, but Jay has not given it permission to do anything except in response to his commands.

Example: Home Computer

The household computer owned by Carmen Smith and her domestic partner Miranda Jones is a Complexity 6 small computer, running a LAI-6 operating system.

Carmen and Miranda each have limited access under most circumstances. They can use this access from anywhere in their home with spoken commands. The computer uses voice-printing to verify each command. When they are away from home, they can call the household computer on a cell phone – in this case, the computer uses voice-printing *and* verifies that the identity code of the cell phone is correct. Finally, they can contact their home computer across the web. The infomorph will accept data from any infomorph claiming to represent them, but it requires a specific passphrase before it will grant access. When using limited access, each woman can use common files and software, but each also has her own private files which are off-limits to the other.

All of the household appliances have their own form of independent limited access to the household main system. This access is controlled by each subsystem's identity code. The functions that can be performed with it are strictly limited. For example, the only thing the refrigerator can do is inform the household computer that certain food stocks are low, and ask it to place an order for more.

Carmen is designated as the only person to have unlimited access (Miranda doesn't want to be an administrator). Carmen can only use unlimited access if she is at the computer's main terminal in the living room. The computer scans her face and thumbprint before granting unlimited access, and she must type in a passphrase.

All other potential users have *no access* to the household system. Any other person or computer sending unsolicited data to the system will be ignored. Mail and other data intended for the Carmen/Miranda household is stored on a public data server, and will only be delivered when the household system itself initiates contact.

Example: Military Control Server

A Complexity 9 macroframe used by the U.S. military for command-and-control functions is running a SAI-9 operating system. Military units use the system to exchange information and orders, and the AI itself performs analysis on information that passes through its "hands." The macroframe is *not* connected to the global web, but is connected to a separate high-security network of U.S. military computers.

About 50 military officers have limited access to the macroframe. They may work at one of the system's terminals, which are kept in locked rooms in a secure area. To gain limited access, a user must meet all six identification tests (passphrase, facial recognition, voice print, thumbprint, retina scan, and DNA sample). Alternatively, they may use other computers to contact the macroframe over the military network. The macroframe has a list of legitimate identity codes for other computers from which it will permit users to work – but every one of those computers *also* requires the same identity verification procedures.

Three military personnel with high-level security clearances are designated as the macroframe's administrators. These employees have unlimited access, but only if they are working at the machine's main terminal. The server uses all six identification methods to verify their identity as well. The infomorph, being fully sapient, knows all three administrators well and has had many social conversations with them while they are on duty. It is likely to become suspicious if one of its administrators behaves out of character, even if all identification measures check out.

Time Taken: The amount of time taken in each attempt at Computer Hacking imposes another modifier, according to the following table. This represents time spent performing careful probes of the target, analyzing the results, choosing and modifying an exploit, testing the exploit offline, and so on.

Time Taken	*Modifier*
Up to 1 minute	-24
Up to 2 minutes	-16
Up to 5 minutes	-12
Up to 10 minutes	-8
Up to 20 minutes	-4
Up to 1 hour	+0
Up to 2 hours	+2
Up to 5 hours	+4
More than 5 hours	+6

If the intruder wins the Quick Contest (and did not roll a critical failure), then he has avoided detection. The degree to which he has gained access to the target depends on his own skill roll. On a success, his access is improved by one level. No access becomes data access, data access becomes limited access (giving the intruder privileges matching those of any other typical user), limited access becomes unlimited access. On a critical success, the intruder's access is improved by *two* levels. He can now interact with the target system as if he had legitimate access on the new level. Failure means that nothing happens, but the intruder can try again. On a critical failure the attack is automatically noticed.

Once an intruder sets off alarms in the target system, either through his own clumsiness or a failure to overcome AI defenses, he will probably have to start over from scratch. He will lose any access he already has, and the infomorph or its owners will try to trace his attack back to its source.

Virtuality Services

The following rates are typical for services from a virtuality node (p. 30).

Virtuality node account: Allows a customer to access node services and rent virtual spaces for his own use. The account itself is usually about $2/month, but this only buys minimal service. Most VR environments maintained by the node are covered by a fee-for-service system.

Virtual conference room: $1/hour per 10 participants.

Virtual shopping mall: $1/hour per 5 customers or service representatives. Customers generally are not charged for visiting virtual malls; the costs are absorbed by merchants.

Virtual cruise: $1/hour per participant (minimum). Elaborate or exclusive "cruises" can be up to $5/hour.

Digital kingdom access: $2/hour (minimum). Small, exclusive digital kingdoms run by famous artists can cost up to $20/hour to access. Players who attain positions of power within the simulation can sometimes have their fees reduced in return for their contribution to ongoing plots. Some players even become managing artists themselves, earning an income from their participation.

Vehicles

A bewildering variety of transportation is available in Fifth Wave societies. This section describes some of the most common civilian vehicles that might be used by adventurers.

Alvarez Motors Oruga Off-Road Vehicle

The *Oruga* is a typical multipurpose vehicle, fully functional on the highway but also capable of reaching isolated wilderness settlements. It and similar models are very popular in outback regions worldwide. Aside from the crew and passenger seats, the ORV has two bunks for long trips or camping.

Subassemblies: Body (+4), six off-road wheels (+2).

Powertrain: 160-kW turbo ceramic engine, 160-kW wheeled drivetrain with all-wheel drive, and 16 E-Cell (320 kWh) batteries.

Fuel: 140-gallon self-sealing alcohol fuel tank provides 24 hours of full-power output from ceramic engine. Energy bank can provide drivetrain power for 2 hours, and otherwise powers all auxiliary systems.

Occupancy: 1 NCS, 3 NS, see above *Cargo:* 115 cf

Armor	**F**	**RL**	**B**	**T**	**U**
All:	3/8	3/8	3/8	3/8	3/8

Equipment

Body: Long-range radio, 12-mile PESA [F], 4.5-mile AESA [F], small cheap Complexity 5 computer, environmental control system, 4 crashwebs, remote-controlled hitch.

Statistics

Size: 13' long *Payload:* 4,112 lbs. *Lwt.:* 10,333 lbs.
Volume: 600 cf *Maint.:* 71 hours *Price:* $79,120

HT: 12/600. *HP:* 600 [Body] 5 [each Wheel].

gSpeed: 90 *gAccel:* 5 *gDecel:* 10 *gMR:* 0.75 *gSR:* 4
Moderate GP. Off-road speed 30.

Design Notes

The ORV was built with the WVMDS (from ***Transhuman Space: In the Well***). It has an Extra Large body and wheels with a medium aluminum frame. Armor is aluminum. There is 3.08 cf of waste space in the body.

Civilian Smartcar

This design is for a typical personal automobile in the Fifth Wave nations. Automotive design philosophy has changed considerably in the last century. Most people use their cars only occasionally – but when they do, they want to get where they are going *quickly.* Thus the typical modern "smartcar" performs about as well as a fast sports car of 2000. In most jurisdictions, it is illegal to approach the smartcar's maximum speed while under manual control; instead, the car's AI drives while in constant contact with local traffic-control systems. This suits most drivers, who feel safer knowing that their vehicle (and everyone else's) is under computer control.

Naturally, an AI-controlled car offers many other conveniences. It can be told to find itself a parking space (paying any fee out of the owner's credit account), it can be called for a pickup over the web, it never gets lost or takes an inefficient route, it can avoid snarls by consulting with traffic control, and so on.

Subassemblies: Body (+3), four standard wheels (+1).
Powertrain: 100-kW ceramic engine, 100-kW wheeled drivetrain, and 6 E-Cell (120 kWh) batteries.
Fuel: 50-gallon self-sealing alcohol fuel tank provides 13 hours of full-power output from ceramic engine. Energy bank can provide drivetrain power for 1.2 hours and otherwise powers all auxiliary systems.
Occupancy: 1 NCS, 3 CS *Cargo:* 25 cf

Armor	**F**	**RL**	**B**	**T**	**U**
All:	3/5	3/5	3/5	3/5	3/5

Equipment

Body: Medium-range radio, 4 1.5-mile PESAs [F/L/R/B], small cheap Complexity 5 computer, environmental control system, 4 crashwebs.

Statistics

Size: 9' long *Payload:* 1,590 lbs. *Lwt.:* 3,267 lbs.
Volume: 165 cf *Maint.:* 130 hours *Price:* $23,725

HT: 12/131. *HP:* 131 [Body] 30 [each Wheel].

gSpeed: 140 *gAccel:* 5 *gDecel:* 20 *gMR:* 1.75 *gSR:* 4 High GP. Off-road speed 25.

Design Notes

The smartcar was built using the WVMDS. It features a light aluminum midsize body and wheels with aluminum armor. Wheels have improved suspension, improved brakes, all-wheel steering, and smartwheels. There is 4.53 cf of waste space in the body.

Variants: A common variant is a sport-utility vehicle smartcar with off-road tires – useful in regions where the road network has been allowed to decay. Change tires to off-road. *Price:* $27,475. *Ewt:* 1,757 lbs. and *Lwt:* 3,347 lbs. Tire HP becomes 45 each. Performance is unchanged.

Columbia Aerospace CA-11 Long-Range Personal Aircraft

The CA-11 is a passenger aircraft popular with small to mid-sized corporations and wealthy individuals. It has an operational range of about 4,500 miles between refueling stops, more than sufficient to cross the North American continent or to visit Europe or Hawaii. With one or two stops almost any destination on Earth can be reached. The aircraft's ducted-fan engines are driven by a gas turbine rigged to burn cheap, relatively clean alcohol fuel. The CA-11 is capable of VTOL performance, and can even land or take off from water.

Fuels

The great era of fossil fuels has long since passed. Although petroleum-based fuels are still available, they are too expensive for everyday use. In any case, environmental regulations have caused most Earthside civilian transport to switch to alcohol fuels, produced by high-yield grain crops and cheap biotech-enhanced fermentation processes. Many short-range or low-performance vehicles use hydrogen fuels, or run exclusively on battery power. Those few vehicles that still require gasoline or diesel fuel use a synthetic replacement. Vehicles may also use fission or even fusion power, but this is usually restricted to large ocean-going vessels.

On Earth in 2100, fuel prices per gallon average as follows (see p. VE90 for more details).

Fuel	*Cost*
Alcohol	$0.5
Aviation Gas	$2
Hydrogen	$0.1
Jet Fuel	$3
Synthetic Gasoline	$5

The pilot uses Piloting (High-Performance Airplane) skill. The vehicle has computerized controls (with a duplicate control set for a copilot). With a skilled AI loaded into the onboard computer, the CA-11 can fly itself.

Subassemblies: Body (+5), two standard wings (+3), three retractable wheels in body (+2).

Powertrain: Four 2,000-kW ducted fans in vectored-thrust configuration (two in each wing), 8,000-kW standard gas turbine, and 80 kWh battery.

Fuel: One 1,000-gallon and two 275-gallon ultralight self-sealing alcohol fuel tanks provide 2.9 hours of full-power output from gas turbine.

Occupancy: 2 RCS, 6 RS *Cargo:* 120 cf

Armor	F	RL	B	T	U
All:	3/5	3/5	3/5	3/5	3/5

Equipment

Body: Long-range radio, 45-mile AESA [F], 26-mile PESA [F], flight recorder, IFF transponder, small Complexity 6 computer with backup, compact fire extinguisher system, vehicular parachute (32,000 lbs.), 8 crashwebs, limited life system (8 man-days).

Statistics

Size: 35' long. *Payload:* 12,990 lbs.
Ewt: 17,521 lbs. *Lwt.:* 30,511 lbs.
Volume: 1,676.5 cf *Maint.:* 17 hours *Price:* $5.5 million.

HT: 10/545 *HP:* 545 [Body] 145 [Wing] 49 [Whl]

gSpeed: 400 *gAccel:* 20 *gDecel:* 15
gMR: 0.5 *gSR:* 3
Extremely High GP. No off-road speed.
wSpeed: 20 *wAccel:* 20 *wDecel:* 10
wMR: 0.75 *wSR:* 7
aSpeed: 1,605 *aAccel:* 21 *aDecel:* 16
aMR: 3.9 *aSR:* 6
Stall speed 0.

Design Notes

The CA-11 features a light foamed alloy structure with superior streamlining. The structure is robotic, responsive, smart and sealed. Volumes/areas are body 1,330 cf/726 sf, wings 280 cf/386 sf (140 cf each), wheels 66.5 cf/98 sf. hDrag is 976. aDrag is 93. There is 3.85 cf of waste space in the body.

Eurospatiale Dumont Commuter Transport

The *Dumont* is the most popular commuter aircraft in Europe and the Americas. It is cheap and efficient, very popular among local airlines and small corporations. In the Americas, many Isolate communities which have poor road connections to the outside world maintain a *Dumont* for occasional trips to civilization.

The *Dumont* has an operational range of about 1,000 miles between refueling stops. The aircraft's ducted-fan engines are driven by a gas turbine rigged to burn cheap, relatively clean alcohol fuel. The airbus is capable of VTOL performance with a standard cargo load, and can land or take off from the water.

The pilot uses Piloting (Vertol) skill. The vehicle has computerized controls (with a duplicate control set for a co-pilot). With a skilled AI loaded into the onboard computer, the airbus can fly itself.

Subassemblies: Body (+5), four pods (+0), three retractable wheels in body (+2).

Powertrain: Four vectored-thrust 1,600-kW ducted fans, 6,400-kW standard gas turbine, and 80 kWh battery.

Fuel: One 850-gallon ultralight self-sealing alcohol fuel tank; 2 hours of full-power output from gas turbine.

Occupancy: 2 RCS, 10 CS *Cargo:* 130 cf

Armor	F	RL	B	T	U
All:	3/5	3/5	3/5	3/5	3/5

Equipment

Body: Long-range radio, 45-mile AESA [F], 26-mile PESA [F], terrain-folowing radar, flight recorder, IFF transponder, small Complexity 6 computer with backup, compact fire extinguisher system, vehicular parachute (26,000 lbs.), 12 crashwebs, limited life system (12 man-days).

Statistics

Size: 35' long. *Payload:* 9,930 lbs.
Ewt: 15,028 lbs. *Lwt.:* 24,958 lbs.
Volume: 1,195 cf. *Maint.:* 44 hours. *Price:* $820,782.

HT: 10/479. *HP:* 479 [Body] 21 [Pod] 43 [Whl]

gSpeed: 400 *gAccel:* 20 *gDecel:* 15
gMR: 0.5 *gSR:* 3
Extremely High GP. No off-road speed.
wSpeed: 20 *wAccel:* 20 *wDecel:* 10
wMR: 0.75 *wSR:* 7
aSpeed: 600 *aAccel:* 19 *aDecel:* 12
aMR: 3 *aSR:* 5
Stall speed 0.

Design Notes

The *Dumont's* frame is light foamed alloy structure with good streamlining. The structure is robotic, smart, sealed and responsive. Wheels have improved brakes. Armor is metal matrix composite. Volumes/areas are body 1,100 cf/639 sf, pods 10 cf/28 sf each, wheels 55 cf/87 sf. There is 0.73 cf of waste space in the body and 0.13 cf of waste space in each pod. There is no access space for the pod fans. hDrag is 854. aDrag is 209.

Verodyne Sea Skimmer Luxury Hydrofoil

The *Sea Skimmer* is designed as a luxury craft, suitable for wealthy patrons who enjoy traveling the world by sea. Accommodations include 10 cabins and a 200-sf common room. The bridge is particularly roomy and well-appointed, with an extra 320 cf of access space. There are four bridge stations, two of which have duplicate maneuver controls (the other two manage the sensors and navigation).

Subassemblies: Body (+7), hydrofoils (+5).
Powertrain: Two 4,000-kW hydrojets, one 8,000-kW standard gas turbine, and 200 kWh battery.
Fuel: Four 3,250-gallon self-sealing alcohol fuel tanks provide 24.6 hours of full-power output from gas turbine.
Occupancy: 4 RCS (and see above) *Cargo:* 400 cf

Armor	**F**	**RL**	**B**	**T**	**U**
All:	3/5	3/5	3/5	3/5	3/5

Equipment

Body: Long-range radio, IFF transponder, 5-mile radar (surface search, no targeting) [F], 1-mile active sonar (no targeting), precision navigation instruments, compact fire extinguisher system, environmental control system (10 people), small Complexity 6 computer with backup.

Statistics

Size: 50' long. *Payload:* 87,400 lbs.
Ewt: 87,088 lbs. *Lwt.:* 174,488 lbs. *Volume:* 14,500 cf
Maint.: 34.3 hours *Price:* $1.36 million.

HT: 8/2,438. *HP:* 2,438 [Body] 688 [Hydrofoils]

wSpeed: 150 *wAccel:* 20 *wDecel:*2.5
wMR: 0.25 *wSR:* 6
Draft 4.4 feet.

Design Notes

The *Sea Skimmer* features a light aluminum frame with average hydrodynamic lines. Hull is smart and waterproof. Armor is aluminum. Volumes/areas are body 12,610 cf/3,251 sf, hydrofoils 1,890 cf/917 sf. Hydrojets and access space are located in hydrofoils. hDrag is 312. Base wSpeed is 50 mph. There is 36.23 cf of waste space in the body.

7 CAMPAIGNS

Transhuman Space can at times be an overwhelming environment, almost too rich in options to provide a well-focused and enjoyable game. This chapter attempts to provide a starting point for Earth-based campaigns.

Tone and Style

There is no "default style" for an Earth-based campaign, but the following suggestions may provide inspiration.

Life in the Fast Lane

Keep the pace up. Events take place very quickly, and (with technological help) people are used to reacting with the same speed. Technological and social change are constant. Aside from fringers and Isolates, everyone on the Fifth Wave is constantly being bombarded by data and memes.

The Cosmopolitan World

Adventures on Earth should take advantage of the cosmopolitan nature of Fifth Wave society. Although national borders are still relevant, they are rarely *obstacles* to human activity. Even ordinary citizens can expect to travel overseas on a regular basis, while adventurers will do so constantly. PCs should be drawn from a variety of nationalities, and their adventures should take them all around the world. When they're not traveling, they can be interacting with citizens of other nations through the web.

Everyone's Different

Eleven billion people are within reach, and every one of them is unique. Every NPC the party meets should have features distinguishing him from every other. These can include nationality, ethnic origins, genotype, the presence or absence of biomods, age (and therefore generational background), relationships with infomorphs, ideology, religious beliefs, preferred clothing styles, choices of leisure activity, and even favorite foods.

Complexity Is Your Friend

The world of 2100 is considerably larger and more complex than that of 2000. There is room for any theme and any style of play; indeed, there is room for multiple themes and many styles of play in the same campaign. Use that complexity to make your campaign constantly fresh. If you've used the same adversary or plot device too many times, you can always take things in a completely new direction.

A corollary of the setting's complexity is that individual adventurers will not necessarily be in a position to affect Earth as a whole. Don't feel obligated to give the PCs too much influence. Their struggles will certainly be important to *them,* but the homeworld will muddle along regardless. There don't need to be any Master Villains scheming to conquer the world or Insidious Plots likely to transform it – only 11 billion people, some of them admittedly quite remarkable, going about their daily business.

Not Your Father's Cyberpunk

The ***Transhuman Space*** setting shares some conventions of the "cyberpunk" style: transnational economic and political blocs, dense information networks (including a rich virtual reality), technological alteration of the human mind and body, the diversification of humanity. This shouldn't be a surprise; although cyberpunk has declined as a literary *fad,* its style and conventions continue to drive much modern science fiction.

Of course, there are several important differences between the Earth of ***Transhuman Space*** and that portrayed in most cyberpunk fiction. Although there is a place for a "punk" sensibility in the setting – plenty of people are young, streetwise, and alienated – that theme isn't dominant. The Earth of 2100 is a complex and multifaceted environment, with room for every conceivable personal or cultural style.

Meanwhile, the picture of Earth portrayed here is essentially an *optimistic* one. Certainly, technological and social change has not always been for the better, and there is plenty of conflict in the setting. Still, there is a distinct sense that for all its problems, the human condition is no longer one of tragic futility.

Naturally, GMs running campaigns on Earth are free to portray the setting as they please. For those wanting greater moral ambiguity, the upcoming ***Broken Dreams*** should provide plenty of ideas.

Campaign Seeds

Several campaign themes are particularly appropriate for an Earth-based campaign.

Politics

Politics makes the world go round, in this era just as in any other. Many campaigns can center around international diplomacy, national politics, or corporate intrigue.

Setting up a campaign in which the PCs are politicians is a considerable challenge. Real political leaders have considerable power, but they are not the kind of people who go on adventures. Instead, perhaps one of the group can be a political leader, while the others are aides, police or media contacts, allied military officers, and so on. Set a political mystery to investigate or a crisis to solve, in which the group's diverse skills and interests can come into play.

Alternatively, the adventurers can all be nonpoliticians but involved with a government, dealing with the situations caused by political maneuvering at the highest level. Perhaps the group shares a Patron who is himself a political figure, or perhaps the PCs are out for their own advantage. Such a campaign begins to resemble an espionage situation, with the targets being rival leaders, political conspirators, rebels, and so on.

Espionage

Earth is full of secrets, and the PCs are just the ones to ferret them out. All kinds of intelligence activity take place on earth: diplomatic or military espionage between nation-states, infiltration of organized crime groups, the maneuverings of secret special-interest groups, corporations trying to steal trade secrets, and so on.

For a realistic campaign, the operators should be employed, directly or indirectly, by a specific corporation or intelligence agency. The campaign should most likely be serial in nature, following the exploits of the group as it pursues fixed long-term goals. A more episodic and cinematic approach can involve transhuman "super-spies" who span the globe rooting out earth-shaking secrets and foiling the schemes of master villains.

The spy's way of life has changed surprisingly little over the past century. Although technology has brought many new ways to ferret out *technical* secrets, the most important information is still locked away in human hearts and minds. Old-fashioned "human intelligence" is still critical, the kind that requires informants, undercover operation, and careful tradecraft.

Despite its concentration on late-20th-century spycraft, ***GURPS Espionage*** offers many insights in how to structure and manage a spy campaign.

Fortune Seekers

When all else fails, you can always try to make money. Fifth Wave Earth is a place of great economic opportunity – all you need is a good idea, some venture capital, and the willingness to take risks.

The most likely premise for a fortune-seekers campaign is the small start-up firm, organized around some technical innovation. The group definitely needs one or two technologists ready to use the Invention rules (p. B186, or the more detailed version on p. CI125). An administrator and an advocate will be useful, to deal with money issues and the law. As soon as production starts, at least one security expert might come in handy. All of these will naturally come with infomorph allies, and some of the PCs might well be infomorphs.

The GM shouldn't allow the campaign to bog down in too much record-keeping. He should work with the players to come up with a *business plan.* This is a rough document describing how the PCs will proceed, what equipment they'll need, what expenses they can expect, how they'll market their products, and so on. The *players* should do most of the work here, with GM input presented through short roleplaying episodes.

Black Ops

Okay, maybe the world just *looks* bright and optimistic, because the Men in Black are on the job. Or maybe the Company has long since stopped trying to win the war, and the world is in the hands of the Greys . . .

GURPS Black Ops portrays a circa-2000 world in which every horrible conspiracy theory is true. Aliens are hiding on Earth and *harvesting* human beings while they prod us into developing starflight on their behalf. Nasty vermin infest out-of-the way places, including hordes of dog-sized cockroaches and brain-eating parasites. Vampires and werewolves feast on human flesh. Dinosaurs still live in remote areas and pose a threat to any human moving into their territory. Against all these threats stands the Company, a super-secret government agency that employs the world's best action heroes. Their job is to seek out the truth and kill it.

At first glance, the ***Black Ops*** universe shares almost nothing with ***Transhuman Space.*** It's dark, gritty, and fantastic, substituting action-adventure for social speculation and technobabble for hard science. On the other hand, there's certainly plenty of room on the transhuman Earth for conspiracy theories. Strange monsters born of genetic engineering gone awry may be hiding in the wilderness (and with human populations more dispersed, there's more chance for people to come into contact with critters). The web offers a new place for horrors to hide and influence helpless human minds. Meanwhile, there must be *some* reason why human technology has advanced so quickly over the past century – maybe the Greys *are* causing it!

The cinematic tone of ***Black Ops*** can fit the world of 2100 too. Transhuman characters can easily reach the super-high levels of power that Black Ops need. ***Black Ops*** offers a number of suggestions for character-driven, high action roleplaying which can carry over to ***Transhuman Space.***

Time Travel

The ***Transhuman Space*** setting, especially Earth, is a fine destination for time travelers. It may even make a good *base* for chrononauts. Perhaps some experiment in high-energy physics has led to time-travel technology, and the discoverers are starting to explore (and tamper with) the past.

Several of the campaign ideas from ***GURPS Time Travel*** could be adapted to this setting. Perhaps the Time Corps (p. TT48) is fighting against a Hive descended from one of the totalitarianisms of the 20th century. The Time Research Unit of *In the Cube* (p. TT67) could be placed at any major university of 2100. Finally, the Infinite Worlds campaign (p. TT83) is based in an "optimistic cyberpunk" setting which could almost be an early ***Transhuman Space*** world.

The GM should remember that ***Transhuman Space*** characters are likely to have innate advantages as the result of biomod or implant technology. Also, weapons and general equipment are more advanced than the TL8 assumed in most of the ***GURPS Time Travel*** campaign seeds. This doesn't mean that the historical past can't present a challenge, but the GM may have to plan his adventures more carefully. Of course, maybe there are time travelers coming from the *future* as well.

A somewhat weaker version of the time-travel adventure can involve *virtualities* designed as historical dramas (p. 30).

The purpose of the business plan isn't to force players to spend all their game time in bookkeeping – instead, the business plan is a *campaign plan* for the GM. Once it's complete, he has a blueprint for the roleplaying challenges he can throw at the players! During the following adventures, the GM should present complications and problems to solve. The technology won't work quite correctly, hirelings will turn out to be liabilities, competitors will try to steal or stop the project, government regulators may interfere, some of the PCs may have personal problems, and so on. If the party succeeds, the business plan stays intact, and the GM can use it to hand out money rewards for the partners. If they fail, well, business is always a gamble . . .

If the players aren't interested in this level of detail, an alternative is to allow them to play employees of a larger firm. The PCs may function as a smaller "business unit," guided by a corporate Patron and rewarded for their contributions. Just as in real life, this offers the party greater security but less command over its own destiny.

Mercenaries

Earth offers a lot of opportunity for freelance adventurers. Mercenary soldiers can find employment in one of the petty wars and insurgencies that are constantly under way. Lacking a war, mercenaries can keep busy in lawless areas, applying force in support of government or corporate interests. Not all mercenaries need to be soldiers, of course. Many activities involve freelance consulting: advocacy, hazmat control, intelligence gathering, network engineering or security, even political activism. An interesting variant might be a team of international disaster-recovery experts dealing with foreign-aid workers around the globe.

The mercenary campaign is the closest match to a "traditional" roleplaying situation: a small team of PCs taking on a series of well-defined missions. Characters should be drawn up with complementary skills, allowing each to play a distinctive role in support of the team. The PCs will usually operate as employees of a formal business, a mercenary or consulting firm. If the employer is small enough, team members can also play administrative roles, and will have to develop their own employment opportunities. Members of larger groups can take their employer as a Patron, will receive assignments from their superiors, and might be able to advance within the organization.

Mercenary campaigns work best in episodic format, in which each adventure stands as an isolated event. Most adventures will take place in the same region of the world, although mercenary groups with special skills or a very good reputation may be offered jobs anywhere. The GM should develop a few repeating NPCs: contacts, other mercenaries, the team's superiors, interesting adversaries. Otherwise, the situation and the roster of important NPCs will change from adventure to adventure.

New Societies

On the Fifth Wave, adventurers can not only rebuild themselves, they can rebuild society to suit their own taste. Many people set out to build a community of their own, centered around personal ideals or a specific political ideology. Some of these "pilgrims" go out to the colonies – but there is plenty of room on Earth for new social experiments.

A new-society campaign can require a lot of planning on the part of players and GM. The players should agree what kind of community their characters are interested in setting up. Is it based on common business interests, an ideology, a new religion? Is it organized solely over the web, or do its members live and work in physical proximity? Who are the community's friends, and who are its enemies?

The GM needs to plan challenges for the PCs and their fellow community members. Perhaps the community isn't in complete agreement regarding its methods and purpose, leading to power struggles. Most special-interest societies have enemies, people who regard their ideology or their activities as a threat. And even the most innocuous Isolate society needs to make a living, earning needed resources and carving a settlement out of the wilderness.

New-society campaigns work best in a serial format, in which characters and plot elements carry over from episode to episode. The GM will need lots of well-developed NPCs: other members of the fellowship, the community's most frequent contacts with mainstream society, and so on.

Transhuman Illuminati?

Technologies may change and nations may fall, but conspiracy theories go on forever. With all that has happened in the past century, it's still possible to suspect that secret societies exist, manipulating world events behind the scenes.

Given how fragmented the world's power institutions have become over the past century, it's hard to believe that any one conspiracy could be managing things. On the other hand, it's quite easy to project a conflict between various Illuminated groups onto the world stage in 2100. Perhaps the Round Table or the Bavarian Illuminati are behind the rise of the European Union. The Cathars might be promoting the science of memetics as a method for undermining all organized religions and ideology. The Assassins might be the secret masters of the Islamic Caliphate (or perhaps they're manipulating fascist Iran for reasons of their own). Given the sheer power of the global web, one could argue that the Network has already *won* the struggle for power. And who knows *what* the Alphans or the Servants of Cthulhu may be meddling with?

Psionics

Transhuman Space tries to adhere to a "hard SF" approach. The technologies and social changes in the setting are grounded in careful research, and intended to be at least moderately plausible. Psionics doesn't fit that mold. Still, the possibility of psionic talents *does* fit the basic premise of transhumanist thought: that scientific discovery will allow human beings to transcend their limits.

If the GM wishes to introduce psi powers into his campaign, he needs to consider the power level and type of the abilities he is willing to allow. Very high-powered psi may not be *unbalanced* against other transhuman traits – but it will certainly make the campaign more complex. Much of the psionic *technology* found in ***GURPS Psionics*** would likely unbalance the campaign by undercutting some of its basic assumptions.

The Virtuality Campaign

The sheer density of the Earth web provides a complete secondary environment for adventure. A lot happens in virtual space, from casual social and business contact all the way to whole digital kingdoms. As a result, it's feasible for an adventuring group to be made up of people living all over Earth who have never *physically* met.

PCs in a virtuality campaign should all be designed with access to good VR hardware and infomorph allies (indeed, this campaign style works well with plenty of infomorph adventurers). Some thought should be given to *why* the group's members are working together. Perhaps they are employees of a global consulting firm, who often cooperate across the web. They may tend toward the wrong side of the law, organizing their less-than-legal activities in virtual space (especially likely for a team of network intrusion experts). Maybe they are members of a network polity, a special-interest group which meets only in virtual space. Or perhaps they are simply friends, each of whom has a lifestyle which often leads to adventure and can call on the others for help.

Virtuality campaigns require considerable care in plot management on the part of the GM. One useful plot device is to cut one member of the group off from the others, forcing him to deal with a situation in the "real world" in such a way that none of his friends can physically help. The drawback to this, of course, is that other players might be unable to take part in the action and may become bored. This is an extension of a common problem with infomorph characters, who may be unable to participate physically in *any* situation unless operating a mobile cybershell. Fortunately, the web offers ways for everyone to stay involved in the current plot thread. Even those who are not physically present can watch through the active character's VR interface, offering advice or cross-web support as needed.

Virtuality campaigns can work just as well in episodic or serial style. As usual, the GM should construct a stable of interesting NPCs to serve as repeating contacts, allies, and adversaries. One interesting feature of any campaign involving virtual space is that the identity of other characters can often be concealed. The authentication technology operating on most of the web makes it difficult to openly lie about one's location – but virtual avatars can conceal almost anything about personal appearance and disposition.

One style of virtuality campaign centers around the artificial worlds available in virtual space. Participation in digital kingdoms and similar VR environments is important to many people, and VR entertainment is a major industry. Skilled participants can gain considerable status and become involved in intrigues in the "real" world. Taken to an extreme, this kind of campaign can be difficult to take seriously – why play a character who is playing a character? Still, if events in virtual space are tied to events in the mainstream campaign, the two can provide an interesting multilayered environment.

Alternate Eras

The backstory for ***Transhuman Space*** offers many options for roleplaying. The GM may set the main body of his campaign in one of these earlier periods. One interesting approach may be to shift back and forth between the past and present, using related characters to develop historical events as they affect the world of 2100.

Near Future

Games set in the first few decades of the 21st century may provide a good compromise between present-day familiarity and science-fictional speculation. This is the era of the "technothriller," in which familiar characters deal with familiar plotlines using increasingly powerful gadgets. Through 2030 or so the world is little changed. Major human transformations and high-powered AI are still years or decades in the future. The United States is still the world's dominant nation, although the decline in American power is increasingly significant as time passes.

Naturally, the most interesting adventures during this period may be those involving the reach for space. Other ***Transhuman Space*** books focus on the colonial push, but the early drive behind the expansion was naturally an Earth-based phenomenon. For military or espionage-driven campaigns, there were major wars in the Balkans, the Middle East, and in Antarctica. Other adventures could be arranged around the diplomatic realignments in the

Far East. Players with a more entrepreneurial bent could venture into the Third World, establishing a biotech sanctuary or other new venture.

Biotech Outbreak

The 2040s through 2070s are the period in which transhumanism first surges into the public consciousness worldwide. This era is the one in which the familiar environment of the late 20th century decisively gives way to the exotic world of ***Transhuman Space.***

This is an era of relatively little open warfare, aside from localized conflicts such as the Andes War. Of course, such small wars are often the best settings for military roleplaying. Military personnel are often the first ones to work with new technologies, in this case VR interfaces, bioconstructs, and cybershells.

On the home front, this is the time of great new ideologies: infosocialism, the Majority Cultures movement, Preservationism, Transhumanism, and so on. Many countries risk violent internal upheaval, from the nanosocialist revolutions in Southeast Asia to the Russian civil war. Those that avoid civil war still suffer from fierce social and political strife. Crime rates surge and require police response. Political intrigues speed up and turn vindictive. Clashes between generations, cultures, and philosophies are epidemic.

The Overturn

By the time of the Overturn, the "Fifth Wave" society described in this book is finally making its appearance. For all the technological and political change, the *mood* of the time is much like that of our own: peaceful, prosperous, very fast-paced, and rather cynical. This is the period during which the "human race" really begins to diversify, with parahumans, bioroids, sapient cybershells, and animal uplifts appearing all over the place.

The main international conflict is between the nanosocialist states and everyone else; this conflict may be the best source of adventures in the period. The Pacific War itself is the largest military conflict of the century, and provides opportunities for national and mercenary units alike. Nations which are not directly involved in the War will be involved in proxy conflicts, diplomatic maneuvering, or espionage.

The Cryonics Campaign

One of the attractive aspects of the ***Transhuman Space*** setting is that it can allow players to play *themselves.* Given the technological and social assumptions of the setting, it's possible for anyone alive at the turn of the century to survive until 2100. Even if geriatric medicine or digital uploading fail, anyone can have himself frozen for later revival . . .

Players taking this option may want to start by describing their *real* selves in ***GURPS*** terms. There are a number of ways to approach this (the appendices from ***GURPS Who's Who 1*** offer many useful insights). In general, attribute scores should be kept within reason – even a 12 or 13 represents an exceptional individual in a world where most people fall between 9 and 11. Most advantages and disadvantages also represent extremes; most people have mental disadvantages at the quirk level if at all. Don't bother recording Allies, Contacts, Dependents, and other social traits that represent other people; those relationships will almost certainly change or disappear in the course of a century. A skill used in a daily job should likely be known at a 12 or higher. On the other hand, skills should rarely exceed 13 or 14 unless the person being described is a true master of his profession, well-respected by other experts.

Once a player is satisfied with his personal character writeup, he can extend it to the year 2100. This requires a decision of *how* he could have survived that long. Anyone surviving the whole of the 21st century will have to have been very lucky (whether this merits the Luck advantage is up to the GM). He will also have needed plenty of money, either to afford maintenance in cryonic suspension or to pay for expensive life-extension technology. Players placing their future selves in the ***Transhuman Space*** setting should seriously consider a high level of Wealth.

If a person from 2000 A.D. spent some time in "cold sleep," then he will have missed many years in terms of skill development. In fact, a present-day individual who is revived just before 2100 may have a hard time adjusting to the changes in society (the Clueless disadvantage may be appropriate). Some former freeze patients will have Amnesia. Note that it is not yet possible even in 2100 to revive a cryonics patient *in his own body.* Characters like these must begin existence as digital uploads, presumably using some version of the Ghost Mind template.

Characters who have survived using more sophisticated technologies, remaining active throughout the century, may have a variety of backgrounds. In most cases they will have had *decades* to pick up new skills, as well as social advantages such as Allies or Contacts, Wealth, and so on. By definition, everyone alive in 2000 will be a member of the Relic Generations in 2100 (p. 29). Players should consider how their future selves might behave as super-elderly, wealthy, powerful figures – movers and shakers of the ***Transhuman Space*** setting. Of course, not all players will be comfortable with such a role, nor will it fit in all campaigns. Bear in mind that not all of the super-elderly fit the stereotype, and characters who break the mold in some way can be very interesting to play.

Adventure Seeds

The following adventure ideas should provide a good beginning. The "current events" sections in Chapter 4 and the national entries in Chapter 3 may provide more ideas.

Free Range

The PCs are contacted by an unusual client, a weblife AI. The rogue wishes them to investigate a corporation which operates a honeypot network (p. 32) as a "free range" for captured weblife. Apparently some weblife has gone into the honeypot network but has never come out. Meanwhile, the corporation is building a considerable reputation for its innovative software designs . . .

Hacker Hunt

A corporation involved with sensitive military work is suffering repeated computer intrusion attempts. So far no classified data has been exposed, but it's only a matter of time. Unfortunately, the intrusions appear to be originating in an unfriendly country, and the police there are unlikely to take any action. The PCs are hired to go there, find the intruders, discover proof of their identities, and *discourage* them. Of course, the intruders may be connected to the enemy government, in which case the hunt may turn very nasty.

Maple Leaf Rag

The PCs are hired as security consultants by a minor Canadian political figure. Their principal is a passionate advocate of Canadian reunification, who plans to spend the next few weeks traveling all over the country's former territory. He will give speeches and meet with local social leaders, trying to convince everyone of the merits of his position. The consultants' job is simply to protect him, and they expect it to be an easy task, since he has no enemies and is widely regarded as an unimportant figure. Then an assassination attempt happens. Then another . . .

Sergeants' Revolt

In a small and unstable country, the current government has invested heavily in bioroid soldiers in order to guarantee a loyal army. Unfortunately, they forgot to keep the human officers in line, and a coup appears imminent. The bioroids may very well have plans of their own. PCs can be local figures, or foreigners caught up in the turmoil.

Survivalists

While investigating strange sightings in a wilderness area, the adventurers come across an isolated valley inhabited by survivalist cybershells. The free machines are not necessarily hostile to human beings, but they believe in remaining isolated so that any disaster overtaking the human world will not affect them. They may react violently to the intrusion. Alternatively, they may strike a bargain with the intruders, offering alliance in exchange for help in keeping their secret. They may have critical resource needs that they can't provide for themselves, giving them good reason to seek outside allies.

The Seven Cybershells

A small settlement (possibly an Isolate community or a village in an underdeveloped country) is threatened by outside attack (from bandits, national troops gone rogue, or corporate raiders). The villagers have no allies. Instead, they find or build seven cybershells, offering them freedom and protection in exchange for their help against the invaders.

GLOSSARY

The following terms were introduced in this book, and are more or less common on Earth in 2100 (at least in English-speaking nations).

arbitragist: A businessman who specializes in buying and selling items to take advantage of short-lived market imbalances. Usually deals on his own behalf, not as a broker for others.

biotech sanctuary: Place where local law or policy permitted radical experimentation in biological or genetic science in the early part of the 21st century. Many significant advances (and some disasters) took place in the biotech sanctuaries.

cyberdemocracy: Rising political form, in which advanced AIs are used to help the citizens of a democratic society exercise power directly rather than through elected representatives.

cybershell: A piece of computerized equipment, designed to be teleoperated or run by an AI operating system.

decivilization: Trend toward the abandonment and dismantlement of dense urban areas.

developed nations: Nations at or near the leading edge of technological and economic development. In terms of the "wave" terminology, the developed nations include the Fifth Wave societies, and may include some of the Fourth Wave societies as well (depending on context).

developing nations: Nations which are far behind the leading edge of technological and economic development.

eloi: Disparaging term for a member of the leisure class.

exploit: To take advantage of a design or programming flaw in a computer system, gaining unauthorized access. As a noun, *exploit* can mean a specific technique for taking advantage of such a flaw.

freehand: Unskilled laborer who uses AI assistance and VR tags to help him perform skilled tasks.

fringer: Member of any social group which stands outside mainstream society. Fringers include criminal elements, Isolates, and others who wish to avoid the formal structures of modern society.

generational style: Complex of beliefs and behavior patterns shared by a large number of people born within the same few years, but not shared with people born in different eras.

gray goo: The byproduct of a runaway nanotechnology disaster. "Gray goo" is normally used as a tag-phrase for all the supposed dangers of nanotechnology.

hyperdeveloped nations: Nations which are leaders in some area of technological or economic development. The term is somewhat disparaging, implying that local development has been excessive.

infomorph: The AI operating system managing a given cybershell.

infosocialism: Original term for the political philosophy now usually called *nanosocialism.*

Isolate: An individual who chooses to live alone or in a small community, as far away from urban settlement as possible. Isolates often subscribe to unusual beliefs and have detached themselves from mainstream society in order to practice those beliefs in privacy.

kindercomp: A very common piece of computer equipment, a cybershell and infomorph designed to act a child's companion and teacher.

meme: An idea, or more precisely a unit of cultural information. *Meme* is defined as analogous to *gene,* the unit of information in biological inheritance.

memesplicer: Slang term for a specialist skilled in applying the principles of memetics in order to manipulate individuals or groups. A psychotherapist or propagandist.

memetics: A subfield of psychology, focusing on the semantic content of ideas and the means by which they can be most efficiently spread through human populations. Related to such early disciplines as advertising, pedagogy, and religious proselytism, but made rigorous by a thorough understanding of how the human brain stores and handles information.

mobot: A mobile cybershell.

nanosocialism: Political philosophy first stated by the Australian academic Kyle Porters in 2034. Porters called for the state to seize ownership of all copyrights and patents, and claimed that only the state could properly reward innovation, while still distributing the benefits of such innovation fairly to all.

Old Transhumanists: Surviving members of the earliest Transhumanist movements, dating back to before the turn of the 21st century. The Old Transhumanists were among the first to investigate the potential of life-extension technology, and some of them survived to play a leading role in the Transhuman Awakening and subsequent social trends.

Overturn: Historical period circa 2070-2084, during which the established international order was "overturned" in favor of the modern world system.

parahuman, econiche: A parahuman design intended to live in climate or terrain hostile to unmodified human beings.

parahuman, ideal: A parahuman design intended to meet or promote the demands of a specific ideology.

pelagiculture: Deliberate husbandry of oceanic life forms (fish, kelp, and so on) for the harvesting of food and other resources.

replacement migration: Migration of people from regions of growing population density to regions of static or shrinking population density. Many nation-states which are suffering from a relative lack of native births encourage replacement migration as a matter of policy.

Transhuman Awakening: Historical period circa 2050-2070, characterized by worldwide social upheaval and the first widespread acceptance of Transhumanist principles.

ubiquitous computing: Concept under which computing resources are constantly and transparently available to any citizen.

uplift: Process of granting sapience to animal species.

virtuality node: Data service which specializes in offering a variety of VR environments to its customers.

vulnerability: A design or programming flaw in a computer system, which might allow an attacker to gain unauthorized access or degrade the system's performance.

Wave: Popular term for the technological complex determining the nature of an entire civilization.

web: The global (and Solar System-wide) network of intercommunicating computers.

weblife: Software agents and infomorphs which exist independently in the web and are capable of self-reproduction.

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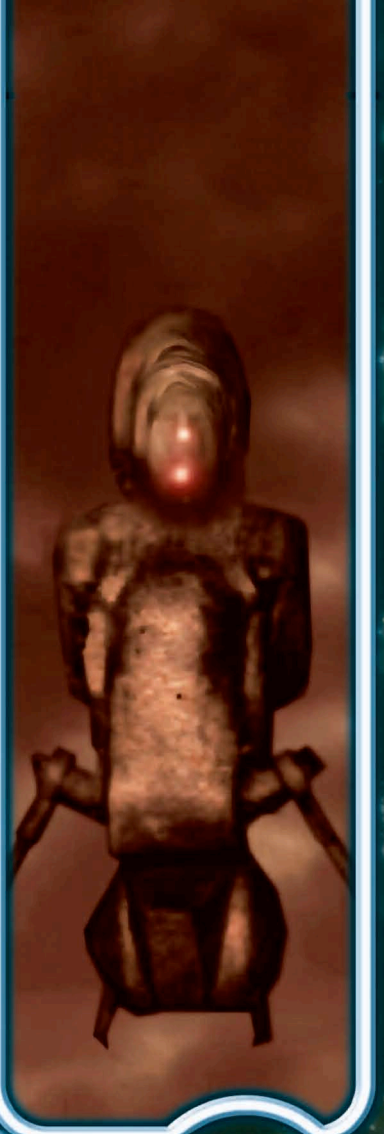
INDEX

The Homeworld

The Third Wave was information. The Fourth Wave was biotech. The Fifth Wave is a combination of nanotechnology, memetics, and artificial intelligence, and it's changing mankind more than the first four Waves put together. ***Transhuman Space: Fifth Wave*** is an overview of our home planet at the end of the 21st century. Most humans (and other sapient life) still live on Earth, doing business, raising families, and fighting wars just as they have always done. Humanity and its partners may be scattering into deep space, but Earth is still the center of the human universe . . . crowded, busy, fast-moving and still picking up speed.

- Nation-by-nation overview of Earth.
- In-depth coverage of the hyper-advanced Fifth Wave societies.
- Close-in descriptions of three of Earth's most important cities.
- New racial packages.
- Cutting-edge technology, such as Earth's massive virtuality nodes.
- Rules for network intrusion and defense.
- Land, sea, and air vehicles of interest to adventurers.

Welcome home. It's different here.



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

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Transhuman Space designed by David Pulver

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