The Three-Body Problem

INTRODUCTION

BRIEF BIOGRAPHY OF CIXIN LIU

The trauma of the Cultural Revolution, which serves as a backdrop for the events of *The Three-Body Problem*, was something Cixin Liu experienced firsthand. As a toddler, Liu's father—who had fought on the communist side in the Chinese Civil War—was fired from his job for the mere fact that his brother was anti-communist. The family relocated to the city of Yangquan, where Liu lived in fear of the near-constant violence outside his door. In search of a more peaceful existence for their child, Liu's parents sent him to live with his grandparents in Henan province. Once in Henan, Liu developed interests in space travel and weapons technology, crafting homemade gunpowder and reading up on complex astronomical theory. He started writing science fiction stories in high school, a practice he continued through college and his first job as a computer engineer at a power plant. After coming to prominence with his short story *The Wandering Earth*, Liu turned his attention to longer projects, including the serialized story that would later become *The Three-Body Problem*. Today, he is the most famous science fiction writer in China. He is also the first Asian writer to win the prestigious Hugo award, a feat he achieved in 2015 when the English translation of *The Three-Body Problem* was published.

HISTORICAL CONTEXT

The Three-Body Problem, which spans the 1960s to the early 2000s, is in many ways shaped by the traumatic events of China's Cultural Revolution. In 1966, China's leader Mao Zedong launched the Revolution in a bid to retain his power in the country's communist government. Mao and his allies urged legions of young fighters known as the Red Guards to violently shame and attack the "four olds": old ideas, old habits, old customs, and old cultures. Because academics were seen as the keepers of many such "old" belief systems, they were among the Red Guards' primary targets. As the violence escalated, China transformed into a quasi-military dictatorship, and up to two million lives were lost. Beginning in 1971, restrictions began to ease, though the Cultural Revolution only officially ended when Mao died in 1976. By the 1980s, China had effectively shed its communist past, embracing capitalism and economic expansion.

RELATED LITERARY WORKS

Though Liu's introduction to the power of speculative fiction was Jules Verne's classic *Journey to the Center of the Earth*, as an adult he cites writers George Orwell and Arthur C. Clarke as major influences. Orwell, whose most famous work is *1984*, similarly explores the relationship between politics and technology; Clarke, who helped to pen the screenplay for Stanley Kubrick's film *2001: A Space Odyssey*, is another science fiction writer who focuses heavily on space exploration. Moreover, in addition to these largely Western influences, Liu's work can be seen to continue a long tradition of Chinese science fiction. Like Liang Qichao, a prominent Chinese writer in the early 20th century, Liu's work firmly centers China as the hub of scientific thought and invention.

KEY FACTS

- **Full Title:** The Three-Body Problem
- **When Written:** 2006
- **Where Written:** Yangquan, China
- **When Published:** 2009
- **Literary Period:** Contemporary
- **Genre:** Science Fiction
- **Setting:** Beijing, China
- **Climax:** Having made contact with alien life, astrophysicist Ye Wenjie decides to knowingly betray the human race by inviting the aliens to Earth.
- **Antagonist:** The extraterrestrials of planet Trisolaris
- **Point of View:** Third Person

EXTRA CREDIT

Three-Body, Three Books. *The Three-Body Problem* is the first book in a trilogy known as *Remembrance of Earth's Past*. The second book (*The Dark Forest*) follows the United Nations' response to the threat of alien invasion, while the third book (*Death's End*) tracks the effort to send a person into space as a diplomat.

Multiple Choices. The novel is so popular that it has become mandatory reading for seventh graders in China. But when Liu was asked to fill out a middle school multiple-choice quiz about the themes and meanings of his own book, he got every single one of them wrong. By way of explanation, Liu explained that he does not try to communicate political or moral messages with his work—he's "just trying to tell a good story."

PLOT SUMMARY

It's the height of the Chinese Cultural Revolution, and for college student Ye Wenjie, the world is falling apart. Her father,

a theoretical physics professor named Ye Zhetai, has been tortured to death for his allegedly anti-Communist beliefs, and her mother, Shao Lin, was among his torturers.

A few years later, Ye Wenjie has been sent to a Mongolian labor camp, where she spends her days cutting down trees. When she befriends reporter Bai Mulin, Ye learns that humans are rapidly destroying Earth's environment. Bai wants to write to the Chinese government and urge them to slow the rate of their deforestation, and Ye offers to transcribe the letter for him. However, the letter backfires, drawing the government's ire, and a panicked Bai frames Ye for the entire thing.

Ye expects to be tortured for the letter, but to her surprise, she instead is brought to a mysterious mountain called Radar Peak. The peak, named for the giant antenna on top of it, is home to the Red Coast military base. At Red Coast, scientist Yang Weining, one of Ye's father's former students, greets her. Yang explains that if Ye works as a researcher on Radar Peak, she will be spared punishment—but once she enters the military base, she can never leave it. Without hesitation, Ye joins Red Coast.

The story jumps four decades. Wang Miao, an expert in a brand-new technology known as nanomaterial, has recently received an invitation to join a secretive group called the Frontiers of Science. Soon after, Wang is summoned to China's Battle Command Center. To his surprise, he learns that all of the nations of the world are working together to fend off some outside threat. Though the nature of the danger remains unclear, it has something to do with a rash of recent suicides in the scientific community. After being pushed by a rude police officer named Shi Qiang—and after learning that a respected physicist called Yang Dong has taken her own life—Wang agrees to join the Frontiers as a spy.

The next day, Wang begins to see an inexplicable countdown behind his eyelids. At first, Wang believes he is hallucinating, but gradually he realizes that the numbers he is seeing really do exist—he just has no clue what happens at the end of the countdown. In search of answers, Wang visits Shen Yufei, the physicist who introduced him to the Frontiers of Science. At Shen's house, Wang meets her husband Wei Cheng; he also notices that Shen is playing a virtual reality game called *Three-Body*. Shen correctly informs Wang that if he stops working on nanomaterials, the countdown will cease.

Now even more baffled, Wang logs on to the *Three-Body* website. In the game, players are transported to other eras in history, from China's Warring States period to Medieval Europe. But in the game world, the sun does not rise and set consistently. Instead, time is separated into Stable Eras (when the sun is predictable) and Chaotic Eras, when the sun might vanish for weeks or suddenly get so close to Earth that everything is scorched. Wang learns that the goal of *Three-Body* is to predict the sun's movement by correctly understanding the game planet's solar system.

Back in the real world, Wang continues to seek answers, befriending Shi Qiang and meeting with Yang Dong's mother—who is none other than Ye Wenjie. Ye reveals to Wang that the true purpose of Red Coast Base was to try to make contact with alien life, but she claims that no such contact was ever achieved, so the base was shut down.

Wang logs in to *Three-Body* again. Having studied the sun's movement and having tracked the flying stars that sometimes show up in the night sky, Wang concludes that the game's planet has three suns. However, because each of the suns has its own gravity, "their movements are unpredictable—the three-body problem."

The next day, Wang and Shi meet with Wei Cheng. Wei tells his life story, explaining that he accidentally came up with a brilliant method of solving the three-body problem. Now, a famous environmentalist named Pan Han is threatening him: Pan has told Wei that he must stop trying to solve the problem or face certain death. Sure enough, when Wang and Shi arrive at Wei's house, they discover that Pan murdered Shen.

Through all of this, Wang continues to log into the virtual reality game. He learns that the planet of *Three-Body* (now known as Trisolaris) is in constant danger of being swallowed by one of its suns. The Trisolarans have therefore decided to abandon their planet and search for another home in the galaxy.

At Shi's urging, Wang attends several meet-ups of *Three-Body* players. Over the course of these meetings, Wang is shocked to learn that Trisolaris is real, and that its residents are actually coming to Earth. Even more surprising, however, is the fact that Ye Wenjie leads a society known as the Earth-Trisolaris Organization (ETO), which aims to help these aliens in their conquest. The ETO is divided into two factions: Adventists, who believe that the Trisolarans should completely destroy humanity, and Redemptionists, who believe that humans and Trisolarans can work together to form a better world.

Ye explains that at Red Coast, she had secretly sent a message into space—and had received a reply from a Trisolaran pacifist known only as listener 1379. Though the listener had warned Ye Wenjie that if she replied, the Trisolarans would be able to track her location and invade Earth, Ye had replied anyway. After all, human beings had killed her father; what did she owe humanity?

Ye then explains how she had partnered with Mike Evans, the son of an American oil baron, to form the ETO. But in recent years, Evans has split off, hoarding communication with the Trisolarans on a special ship known as *Judgment Day*. At Shi's suggestion, the generals of the Battle Command Center agree they will intercept Evans's ship at the Panama canal—and then slaughter the ship's crew, using a net made out of Wang's nanomaterials (a project they call Operation Guzheng).

The operation is successful, and the generals learn the reality of

the Trisolaran threat. The Trisolarans will arrive on Earth in 450 years; to ensure that humans cannot fight back, the Trisolarans have figured out a way to cease all human scientific progress. Specifically, scientists on Trisolaris were able to create four super-intelligent protons known as sophons, which could jam up all the particle accelerators on Earth. These faulty machines then created theoretical chaos and thus prompted all the scientists' suicides.

Before Wang can lose hope entirely, Shi takes him to a small, locust-infested town. Shi points out that though humans have better technology than locusts, locusts have nevertheless survived human attacks for thousands of years. Wang resolves to get back to work.

CHARACTERS

MAJOR CHARACTERS

Ye Wenjie – As a bright young scientist who came of age during the worst years of the Cultural Revolution, Ye Wenjie has lived through the unspeakable. Her mother, Shao Lin, and her sister Ye Wenxue betrayed her father, Ye Zhetai, to the communist authorities, and Ye Wenjie was forced to watch as her father was beaten and tortured to death for his beliefs. Having seen the evil humans are capable of, Ye—a brilliant astrophysicist—decides to turn against humanity by collaborating with the alien invaders of Trisolaris. Later in life, she enters into a somewhat loveless marriage to her coworker Yang Weining and they give birth to a baby girl named Yang Dong. But motherhood does not soften Ye; instead, she murders Yang Weining to protect her secret communication with the aliens and collaborates with American heir Mike Evans to found the mysterious Earth-Trisolaris Organization (ETO). Only in old age (after losing Yang Dong) does Ye seem to experience any regret for her actions. Toward the end of her life, she finds moments of tenderness with her friend Wang Miao, and she tries to moderate the more extreme forces in the ETO. Primarily, though, Ye's trajectory throughout the novel shows the cyclical nature of harm: her own experience of trauma and betrayal at a young age causes her to betray humanity to the Trisolarans, reenacting her own private trauma on the entire human race.

Wang Miao – Wang Miao is a mild-mannered scientist who is one of the world's foremost experts on a new technology called nanomaterial. After being pulled into the Frontiers of Science by his colleague Shen Yufei, Wang becomes an important asset in the battle against the Trisolaran alien invaders. In his quest to understand and infiltrate the ETO, Wang often acts as the novel's protagonist. He is always motivated by decency and compassion, and as someone who works on applied science, he bridges the gap between theoretical abstraction and real-life problem solving. Perhaps most importantly, Wang makes room for life outside complex academia. He has a range of hobbies, including landscape photography, that allow him to look at the world through a new vantage point; he also has a beloved wife and young son named Dou Dou, and he treats both of them with attention and great care. So unlike most of his colleagues, when Wang finds himself struggling to understand forces beyond human comprehension, he seeks solace not in equations but in other people, like his new friends Shi Qiang and Ye Wenjie. On the other hand, however, his great sympathy for others makes the knowledge of the Trisolaran invasion—and the destruction that is sure to follow—even more unbearable for him than it is for most.

Shi Qiang – Shi Qiang (affectionately known as Da Shi) is a police officer in Beijing. Whereas most of the other characters in the novel have doctorates or important military credentials, Shi lacks a four-year college degree, having only gone to vocational school. Because of his different credentials, he often feels excluded or talked down to by other members of the anti-Trisolaran forces. Yet what Shi lacks in academic expertise, he more than makes up for with practical experience and an ability to think outside the box. Often, he is the only character who is able to solve complex problems, a skill he learned from trying to catch criminals. And while his behavior frequently borders on rude, he is also deeply caring and thoughtful, as can be seen in his friendship with Wang Miao. Lastly, while most of the other characters give up after learning the extent of the Trisolarans' plans, Shi continues to approach the situation with fortitude and wit. Shi embodies the novel's idea that life experience is just as important as theory, and that philosophical questions can get in the way of real-world solutions. As Shi puts it, "when I work at night, if I look up the sky, the suspect is going to escape."

Wei Cheng – Though Wei is first introduced to Wang Miao as the spaced-out husband of Shen Yufei, he is actually a visionary mathematician. After Wei accidentally stumbles on what he calls an "evolutionary" approach to the three-body problem, he becomes a point of fascination (and combat) for the warring factions of the ETO. In addition to his genius mathematical abilities, Wei's most distinctive characteristic is his apathy. Though abstract theories interest him, he feels too "lazy" to think about real-life situations and relationships.

Shen Yufei – Shen Yufei, a renowned Japanese physicist, introduces Wang Miao to the mysterious organization known as the Frontiers of Science. After the environmentalist Pan Han assassinates Shen, Wang discovers that Shen was intimately involved in the ETO. She led the Redemptionist faction of the organization, which views the Trisolarans with a kind of religious fervor. Shen hoped humanity would be saved—and not destroyed—by alien life. So, she encouraged her husband, Wei Cheng, to keep solving the three-body problem, hoping that Trisolarans will be able to save their own planet rather than taking over Earth.

Pan Han – Pan Han is a prominent environmentalist whose predictions of various natural catastrophes are so accurate that many believe he came from the future. He believes that human progress is actually a "cancer," and that humans cannot control or contain the technologies they invent. Therefore, in Pan's mind, what seems like creation is actually destruction. He is a prominent member of the Adventist faction of the ETO, which hopes to work with the Trisolaran invaders to bring about the death of human civilization. After Pan murders Redemptionist Shen Yufei, the ETO's leader Ye Wenjie has Pan executed. Pan gives voice to the book's thematic questions about progress, technology, and humanity's self-destruction.

Mike Evans – Born to a wealthy oil baron, Mike Evans's passion for the environment sprouted in opposition to his family's values. After witnessing the consequences of an oil spill on marine birds, Evans pioneered the theory of "pan-species communism" (in which the idea of universal human rights is extended to all forms of life on Earth). Later in life, Evans joined forces with Ye Wenjie, using his father's money to create the ETO. But while Ye hopes humanity can be helped by alien intelligence, Evans has lost all faith in people and therefore wants the Trisolarans to destroy humanity entirely. He therefore becomes the leader of the Adventist faction of the ETO, which is headquartered on his ship *Judgment Day*.

Listener 1379 – As one of the many listeners on Trisolaris, Listener 1379 lives an isolating, monotonous life—until he receives Ye Wenjie's communication from Earth. Unlike most Trisolarans, this listener does not feel that mere survival is a satisfying purpose in life; instead, he dreams of art, culture, and community. Because of these aspirations, and because he sees a chance to "make his own humble life glow," the listener replies to Ye Wenjie's message, urging her not to reply and thus to keep Earth's location secret from the Trisolarans. Eventually, the listener's brave actions inspire a larger movement of pacifism across Trisolaris. The listener embodies the novel's exploration of the role individual actions (and legacies) play in history as a whole.

The Princeps of Trisolaris – The princeps is the leader of Trisolaris as the alien society prepares to set out for Earth. Having evolved to survive the trauma and instability of Chaotic Eras, he prides himself on his "calmness and numbness" in the face of disaster. However, this same numbness allows him to commit acts of violence without hesitation, whether putting thousands of his soldiers to death or plotting to destroy all of human civilization. The princeps is thus particularly horrified by the listener's sense of empathy and moral obligation.

Ye Zhetai – Once a respected physics professor at Beijing's Tsinghua University, by the dawn of the Cultural Revolution, Ye Zhetai has become a pariah for his supposedly anti-communist beliefs. Though his wife, Shao Lin, and younger daughter Ye Wenxue turn against him, his elder daughter Ye Wenjie remains loyal. Ye Zhetai is particularly notable for his conviction that "truth emerges from experiences." He therefore embodies the novel's thematic suggestion that theory is meaningless unless it is informed by life.

Shao Lin – Shao Lin, herself a prominent physicist, is also Ye Zhetai's wife and the mother of Ye Wenjie and Ye Wenxue. Unlike her husband, Shao is capable of bending her scientific beliefs to conform to the political standards of the day. Over and over again, she chooses personal opportunism over ideological purity or community ties, as can be seen when she joins her husband's torturers or forbids Ye Wenjie to ever talk about their shared traumatic past.

Ye Wenxue – The novel first introduces Ye Wenxue as a passionate, nameless, young member of the communist Red Guard. Only later is it revealed that she is also Ye Wenjie's little sister and Ye Zhetai and Shao Lin's younger daughter. Ye Wenxue's decision to put ideological loyalty over loyalty to her family—even going so far as to inform on her father—represents one of the great betrayals of Ye Wenjie's life. At the age of 15, Ye Wenxue is killed in a skirmish between various young communist revolutionaries.

The Revolutionary Girls – Though they are never named, the four teenaged girls who lead the public torture of Ye Zhetai are important figures in the novel. When Ye Wenjie first encounters them, they represent the dangers of mob mentality: rather than keeping an open mind when Ye Zhetai questions their beliefs, the girls turn to deadly violence in the face of uncertainty. Years later, when Ye Wenjie tracks them down, the girls—now women—have all suffered in the Cultural Revolution, despite their commitment to it. And in fact, it is her exchange with these women, now broken by the very movement they devoted their lives to, that cements Ye's lack of hope for humanity.

Bai Mulin – As a reporter in Inner Mongolia, Bai Mulin and Ye Wenjie meet when they are both working for the Chinese Production and Construction Corps. Having been authorized by the government to read Rachel Carson's environmentalist book *Silent Spring*, Bai becomes motivated to write to communist leadership in protest of mass deforestation. But when his plan backfires, he frames Ye, setting in motion the events that eventually lead her to wind up at Red Coast Base. In addition to being one more person who betrays Ye's trust, Bai is notable for his fairly regular life; though his betrayal had an incredible impact on history, Bai himself is hardly memorable.

Commissar Lei – Lei Zhichang is the Political Commissar at Red Coast Base. He is a good scientist but an even better politician, and he embraces communist ideology and political symbolism in every aspect of his work. Though he initially leads the search for alien life, when Ye Wenjie actually gets a message from the Trisolarans, Lei forbids her from responding. To ensure that her secret is safe, Ye takes advantage of Lei's willingness to do dangerous tasks and kills him while he is out fixing a wire.

Yang Weining – Once a student of Ye Zhetai's, Yang Weining has always successfully avoided getting in any political trouble. As a leader at the Red Coast Base, Yang Weining pushes to reveal the base's true purpose (the search for extraterrestrial life) to Ye Wenjie. Eventually, close collaboration with Ye causes Yang to fall in love with her, and their marriage soon leads to the birth of a daughter, Yang Dong. Unfortunately, however, Yang's romantic feelings were never reciprocated, as Ye felt that their marriage was "the loneliest time" of her life. Ultimately, Ye murders Yang along with Lei in an attempt to keep communicating with the Trisolarans.

Yang Dong – Yang Dong is Ye Wenjie and Yang Weining's daughter. Born and raised near Red Coast Base, Yang grows up to be a brilliant, beautiful, and closed-off physicist. Having loved abstract theory from a young age, Yang struggles to cope—and ultimately commits suicide—when experimental data ceases to align with her theoretical expectations. As her mother Ye puts it, Yang Dong's "world was too simple" and abstract, so she could not ever handle the messiness of real life.

Ding Yi – Though he is a respected physicist in his own right, Ding is known to most of the characters as Yang Dong's boyfriend. Ding had hoped to settle down with Yang Dong, but she was always more interested in theory than in domestic life. After Yang's death, Ding befriends Wang Miao, and the two men work together to balance abstract, scientific thinking with meaningful everyday experience.

King Zhou – Historically, King Zhou was an ancient Chinese ruler who lived during the 10th century B.C.E. and is widely considered to have been a brutal and erratic king. The book presents King Zhou as a computer-generated leader in the game *Three-Body*, where he rules over the first level of the game. Like the other game leaders that will follow him (namely Mozi, Pope Gregory and Qin Shi Huang), Zhou is violent, impatient, and obsessed with his own grandeur.

King Wen – King Wen is a computer-generated character in the *Three-Body* game, likely based on the historical King Wen who served in King Zhou's court. Using the ancient Chinese oracle the *I Ching*, he makes the game's first prediction of the sun's movement. When Wen's guess is proven incorrect, Zhou has him executed.

Mozi – Mozi was a Chinese philosopher who lived and worked in the 5th century B.C.E. (during the Warring States Period). In one of the video game's many anachronisms, however, Mozi appears in *Three-Body* during the Han Dynasty period, where he has become a kind of philosopher-king. Although he is the ruler of this level of the game, Mozi also tries to predict the sun's movement. Ultimately, he is so convinced of his own theory that he ignores all contradictory evidence, even when it is right in front of him (like the flying stars).

Pope Gregory – In reality, Pope Gregory was a 15th-century leader famous for commissioning a standardized calendar (hence the name Gregorian calendar). In the novel, he appears as a computer-generated character in the medieval Europe version of the *Three-Body* game, where he serves a similar function—in this game, too, he is trying to predict the sun's motion and create a reliable calendar. However, the Pope Gregory of the game is also (like Zhou and Mozi before him) a brutal, almost maniacal leader, with a penchant for killing those who displease him.

Galileo Galilei – Galileo Galilei was a scientist during the Italian Renaissance of the 15th and 16th centuries. He is considered to have founded modern physics and modern astronomy, in addition to pioneering the concept of gravity. Like Pope Gregory, he is a character in the medieval level of the *Three-Body* game. In the video game, he emphasizes the need for observation and experiment while also dismissing all Eastern thought as unscientific. He thus undercuts his argument for rationality with his irrational prejudice.

Leonardo da Vinci – In the real world, da Vinci was a prominent painter and engineer and a contemporary of Galileo. In the novel, he is another person whom Wang meets in the medieval Europe version of the *Three-Body* game. Perhaps because he is an artist, the story presents da Vinci as more patient and open-minded than some of his crueler colleagues.

Emperor Qin Shi Huang – As a historical figure, Qin Shi Huang was the founder of the Qin Dynasty, which ruled over China from 221 to 206 B.C.E. Emperor Qin was widely known for his violent method of rule, a history that is reflected in the novel. For example, he orders several hundred soldiers to be executed simply because they fail to perform a complicated flag-waving maneuver correctly. Qin also harbors immense anger and antipathy toward the West, foreshadowing an East-West divide that the novel explores in a Cold War context.

Albert Einstein – In reality, Einstein was a brilliant physicist best known for formulating the theory of relativity. In the novel, he makes two appearances. First, though Einstein become a much-hated figure in the Cultural Revolution, Ye Zhetai remembers stories of the great scientist's earlier visit to China. Rather than engaging in theoretical conversation, Einstein was preoccupied with more human problems (like starvation) that he encountered on the ground. Second, Wang Miao meets a computer-generated version of Einstein in his final trip through the *Three-Body* game—and here, too, Einstein despairs, focusing not on science's possibilities but on its limits.

General Chang – General Chang is the leader of the Battle Command Center, which is readying Earth to fight back a potential invasion from Trisolaris. Chang is often the first to introduce critical information, whether that is knowledge about the rash of suicides in the scientific community or the existence of the sophon. Though he frequently spars with lower-ranking members of the team like Shi Qiang, Chang is open to collaborating with whomever has the best idea.

Colonel Stanton – A high-ranking officer in the United States, Colonel Stanton works alongside General Chang to try and fight back against the impending Trisolaran invasion. Stanton has lived through many important historical events, but this new threat completely shifts his perspective, as he tells Wang Miao that "it all seems so insignificant now."

Fu Xi – Fu Xi is one of the computer-generated characters who appears the first time Wang plays *Three-Body*. In the game, he is a black-clad figure who incorrectly believes that the son is an angry god, one who could be hypnotized by swinging **pendulums**. When Fu Xi's theory proves incorrect, King Wen puts him to death.

Feng – Feng, who is Hunter Qi's daughter-in-law, meets Ye Wenjie when she is recuperating at the hunter's house. The two women have babies around the same time, and Feng helps nurse and care for the infant Yang Dong. Feng is tender and unintellectual, and she becomes a rare soothing presence in Ye Wenjie's life.

Sha Ruishan – Sha Ruishan is a former student of Ye Wenjie to whom Wang goes in order to try to monitor the shift in the cosmic background radiation. Sha tells Wang a bit about Ye Wenjie's life. He is also skeptical this sort of shift in the cosmic background radiation is even possible, and astonished when it actually occurs.

MINOR CHARACTERS

Follower – As his name suggests, Follower is King Wen's companion and the person who introduces Wang to the *Three-Body* game. Follower offers insight into life on Trisolaris. He complains that living during a Chaotic Era is like "hell," and he dehydrates himself in front of Wang Miao.

Aristotle – Aristotle, an ancient Greek philosopher who dabbled in everything from zoology to economics, is one of the most renowned thinkers in all of human history. *The Three-Body Problem* introduces Aristotle as a computer-generated character in the titular video game; this version of the philosopher is stubborn, literal-minded, and cruel.

Isaac Newton – Newton is famous for having invented calculus and developed Galileo's theory of gravity. In the novel, he works with Wang Miao and Emperor Qin Shi Huang to create a giant human computer, hoping that such a machine will allow him to solve the three-body problem.

Von Neumann – Wang Miao meets Von Neumann while he is playing in the Qin Dynasty-inspired round of the *Three-Body* game. Given his particular sense of humor and his familiarity with computer technology, Wang realizes that Von Neumann is another real human being playing the game, not a computer-generated figure.

Xu Bingbing – Xu Bingbing is a computer specialist who works closely with Shi Qiang and other members of the Battle Command Center. Xu is also responsible for monitoring the *Three-Body* game. Like Shi, she is skeptical of alien or supernatural forces, believing instead that everything "must be the work of people."

Professor Ruan – After being tortured for her allegedly anti-communist intellectual pursuits, Professor Ruan—Ye Wenjie's most beloved mentor and teacher—committed suicide. Ruan's decision to die wearing lipstick and high heels (both of which had been used to publicly humiliate her) signals her rebellion, even in death, against the Cultural Revolution.

Director Zhang – Director Zhang is in charge of the Chinese government's branch in Inner Mongolia, where Ye Wenjie is assigned as a laborer. After Bai Mulin frames Ye Wenjie for his seditious letter, Zhang immediately believes her guilty, refusing to even hear her side of the story.

Cheng Lihua – Cheng Lihua is a high-ranking official in China's government during the Cultural Revolution. She pushes Ye Wenjie to inform on various other scientists, and her initially warm demeanor turns icy when Ye refuses to cooperate.

The Interrogator – In the present day, this unnamed interrogator presses Ye Wenjie to explain her decision to make contact with the Trisolarans. The interrogator is particularly interested in exploring Ye's relationships with her father Ye Zhetai and former husband Yang Wenining.

Hunter Qi – A well-respected hunter in the mountain town near Radar Peak, Qi takes Ye Wenjie in as she is recovering from childbirth.

Dou Dou – Dou Dou is Wang Miao's toddler-aged son.

TERMS

Trisolaris – Trisolaris, aptly named for having three suns, is a planet located four light-years away from Earth. Because each of the planet's suns has its own gravity, their different gravitational forces repel and attract each other, giving the planet an irregular orbit around the suns and creating periods of extreme heat and cold known as Chaotic Eras. In order to adapt to these unbearable conditions, the residents of Trisolaris (known as Trisolarans) have evolved the ability to dehydrate and rehydrate their bodies. Humans don't know much about life on Trisolaris, though it is clear that the society is ruled by a single leader known as **the princeps**. Unlike humans on Earth, the Trisolarans do not prize art, democracy, or emotion. The most valued traits on Trisolaris are "calmness and numbness," because those are the traits best adapted to survival. The Trisolaran religion is centered on a giant pendulum monument at the planet's capital.

Stable Era – Every so often, only one sun lies within the orbit of Trisolaris. When this is the case, Trisolarans are treated to rare moments of peace and regularity known as Stable Eras. During

Stable Eras, the leader of Trisolaris gives the order for all citizens to be rehydrated, and the Trisolarans celebrate, replanting their farms and rebuilding their cities. And indeed, because they allow for comfortable temperatures and a dependable schedule, Stable Eras are the only time when civilization on Trisolaris can thrive. However, it is difficult to know when a Stable Era will begin or end; it could be weeks, months, or even years between Stable Eras. For that reason, many of the great minds of Trisolaris—and all of the players of the *Three-Body* virtual reality game—devote their lives to trying to predict the timing of Stable Eras.

Chaotic Era – Whenever Trisolaris is not in a Stable Era, it is plunged into another Chaotic Era. Some Chaotic Eras are incredibly cold, because none of the three suns is close enough to Trisolaris to provide any warmth; some are incredibly hot, as two or more suns enter the Trisolaran orbit. During Chaotic Eras, the population of Trisolaris dehydrates, and the planet turns into a frozen wasteland or a scorched desert. As **Follower** (a character in the *Three-Body* game) puts it, living in a Chaotic Era is like "walking through hell."

Tri-solar Syzygy – A tri-solar syzygy is an extremely rare event in which all three of Trisolaris's suns line up with the planet itself. Because of the extreme heat emanating from the three suns, Trisolaris is immediately scorched, so no Trisolaran has ever lived to record the history of such an event. When **Wang Miao** plays the *Three-Body* game, he witnesses Civilization Number 183 get destroyed by a tri-solar syzygy—and Wang reflects that such days are "the most terrifying catastrophes of all."

The Great Rip – The "great rip" is the term Trisolarans use to describe the traumatic destruction of their planet, which occurred during Trisolaris's Civilization Number 191. During this civilization's existence, the Trisolaran suns crashed into the planet, ripping it in two. All life on the smaller fraction of the torn planet ceased to exist, meaning that nearly high of the planet's population had died. Though the remaining Trisolarans were eventually able to rebuild, their planet was now flanked by a giant moon—a reminder of the recent great rip and a promise that such a rip would almost certainly again. And indeed, after more research and discovery, the Trisolarans realized that many great rips had already occurred, reducing their planet to less than 10 percent of its original size.

Earth-Trisolaris Organization (ETO) – The Earth-Trisolaris Organization (abbreviated as the ETO) is a group led by astrophysicist **Ye Wenjie** and founded by wealthy American **Mike Evans**. Members of the ETO believe that humanity is fundamentally broken and incapable of saving itself, and so the organization aims to prepare Earth for the impending Trisolaran invasion. However, the members of the ETO are far from unified in their goals and beliefs. Instead, the group has splintered into Adventists and Redemptionists (though, tellingly, leader Ye Wenjie does not identify with either faction). After flying under the radar for a long time, by the time the novel begins, all the world's most powerful governments are targeting the ETO.

Adventists – The Adventists believe that humanity is so corrupt and evil that it deserves to be completely destroyed by the Trisolaran invaders. **Mike Evans** is the leader of the Adventist faction—in fact, his entire purpose of founding the ETO with **Ye Wenjie** was to ensure the destruction of the human race. The Adventists are headquartered on Evans's ship *Judgment Day*, where they work to intercept Trisolaran communication from their Redemptionist counterparts. After Evans, the most prominent member of the Adventists is environmentalist **Pan Han**.

Redemptionists – Unlike the Adventists, Redemptionists believe that humanity can be improved—but that in order to do so, humans need to learn from the superior Trisolaran civilization. To the Redemptionists, the creatures of Trisolaris are a kind of god (whom they call the Lord), and any message from these creatures is treated as a religious text. Unlike the Adventists, the Redemptionists (most prominently physicist **Shen Yufei**) want humans to solve the three-body problem so that the Trisolarans can still have a home on their own planet.

Cultural Revolution – The Cultural Revolution, which lasted from 1966–1976, was a period in Chinese history when Communist leader Mao Zedong launched a series of "purges" to preserve his power. Many of these purges targeted academics, like the character **Ye Zhetai**. The Revolution depended mostly on young people, many of whom were seduced by the promise of clear ideals and built-in community and were then organized into violent factions known as Red Guards. The Revolution resulted in mass starvation and the deaths of hundreds of thousands to millions of people (estimates vary). Its traumatic legacy lingered long after Mao died and the country transitioned to capitalism.

Frontiers of Science – The Frontiers of Science is a mysterious global organization that brings together high-level scientists, many of whom focus on abstract theory. As physicist **Ding Yi** explains, the group tries to examine the limits of science, finding cases or places where normal scientific laws do not hold up. Because the Frontiers of Science caused so many experts to lose their faith in scientific theory, many of those who were involved committed suicide.

V-suit – A V-suit is a virtual reality suit that gamers use when playing games like *Three-Body*. The V-suit allows gamers to feel game temperatures as if they are really experiencing them, an especially important feature for *Three-Body* players who want to get a real sense of the extreme heat and cold in a Trisolaran Chaotic Era.

Pan-Species Communism – Pan-Species Communism is a new belief system invented by wealthy heir **Mike Evans**. After seeing the havoc wreaked on sea birds during an oil spill, Evans

argued that the idea of universal human rights should be extended to all forms of life, but especially to plants and non-human animals.

Operation Guzheng – Operation Guzheng is the name given to the multi-government plan to intercept the mysterious Trisolaran messages, located on the ship *Judgment Day*. The plan, which is masterminded by policeman **Shi Qiang** and American **Colonel Stanton**, involves using a net of **Wang Miao**'s invisible nanomaterial technology to slice the *Judgment Day* into pieces. The code name comes from a Chinese string instrument known as a Guzheng, in which the strings are sharp and thin (just like Wang's nanomaterial).

Sophon – A sophon is a super-computer contained in a proton (hence the name, which combines the word proton with the word "sophia," the Latin word for wisdom). After a complex process of trial and error, the Trisolarans were able to unfold a 9-dimensional proton into two dimensions, program it with incredible amounts of data, and refold it. The Trisolarans then sent the sophons to earth, where these tiny particles could enter into laboratories and confuse humans' experimental results, therefore stalling all scientific progress. The sophons are also intelligent enough to report back all information on earth to Trisolaris, effectively meaning that humans are constantly being surveilled by the Trisolarans.

THEMES

In LitCharts literature guides, each theme gets its own color-coded icon. These icons make it easy to track where the themes occur most prominently throughout the work. If you don't have a color printer, you can still use the icons to track themes in black and white.

TECHNOLOGY, PROGRESS, AND DESTRUCTION

Over the course of *The Three-Body Problem*, various characters develop mind-boggling new technologies: protagonist Wang Miao creates a razor-sharp, invisible, new substance known as nanomaterial, for example, while astrophysicist Ye Wenjie figures out how to use the sun's rays to contact alien life. But even as the book dives deep into the mechanics of human invention, it also suggests that every new technology has the potential for violence and destruction. Wang's nanomaterial is used to saw a ship's entire crew into pieces, for example, while Ye's decision to contact extraterrestrials eventually heralds the end of human civilization. Over and over again, what initially seems like technological advancement or ideological progress is actually more harmful than beneficial. Or as Ye Wenjie puts it, "I started the fire, but I couldn't control how it burnt."

Progress, as the book's environmental scientist Pan Han likes to say, is often a "cancer"—people can invent a machine or conceive of an idea before they can fully understand (or control) the impact of their invention. On one level, then, the novel functions as a cautionary tale about the dangers of technology, as what seems like human progress can actually lead to terrible destruction. But the reverse is also true: for the characters in *The Three-Body Problem*, moving technologically backward can allow for emotional growth. When Ye Wenjie gets to know the villagers in a small mountain community, for instance, she learns to feel a sense of responsibility for others. Similarly, when Wang Miao spends time with his friends and talks to them over drinks about humanity's troubles, he returns with a new sense of purpose and clarity. Therefore, just as technological advancement doesn't always lead to progress, the novel hints that a *retreat* from technology does not always lead to decline.

SCIENTIFIC DISCOVERY AND POLITICAL DIVISION

The Three-Body Problem follows the United States, the USSR, and Communist China racing to find extraterrestrial life at the height of the Cold War. Although these different superpowers share a common scientific goal, science acts not as a unifying force but as something that only sows more division among the powerful governments. In China, where the novel is set, the government is clear in its intention to recruit aliens as allies against the Russians and Americans, and people across the globe agree that the "significance" of even symbolic contact with extraterrestrials "would be comparable to an overwhelming advantage in military and economic power." On a geopolitical level, then, the governmental thirst for power ends up overshadowing the broader value of scientific discovery. But the same is true on a smaller scale, as individual scientists—even those who resent or oppose their governments—find that policies they may not even believe in disallow or alter their work. As a scientist during the Cultural Revolution, astrophysicist Ye Wenjie has to disavow theories or discard useful experiments simply because those experiments have the wrong kind of "political symbolism." And when inventor Wang Miao finds himself obsessed with a virtual reality astronomy game, he learns that even in the alternate reality of the game, his scientific theories have to be altered or rejected based on ideological context. Ultimately, then, *The Three-Body Problem* suggests that seemingly objective scientific discovery is always shaped by human beliefs. Rather than creating a set of shared facts, scientific discovery therefore often acts as fodder for political strategy that ultimately leads to an even more divided reality.

TRAUMA AND CYCLICAL HARM

Throughout *The Three-Body Problem*, characters who have been traumatized and betrayed (especially as young people) reenact that trauma on the people around them. During the Cultural Revolution, intellectuals inform on one another in order to avoid violence themselves. American oil scion Mike Evans, who has had a terrible relationship with his father, copes with that pain by plotting for the destruction of humanity. And though astrophysicist Ye Wenjie betrays the entire human race, giving the alien civilization of Trisolaris information about how to find and conquer her home planet, she only does so because trauma and loss have shaped her own life. As a teenager, she witnessed her father, Ye Zhetai, get bludgeoned to death after her mother and sister reported him to the authorities. And later in life, when Ye allowed herself to trust her new friend Bai Mulin, he, too, betrayed her to the communist authorities. Each new heartbreak caused Ye to lose faith in other human beings, and without a family or a confidante to rely on, these various betrayals and losses "dissolved into her blood, where they would stay with her for the rest of her life." Therefore, when Ye endangers all of humanity by collaborating with the Trisolarans, her choice to do so stems from her inability forget the hardships that she herself has suffered. Through Ye, Evans and others, the novels suggests that betrayal literally lives in peoples' "blood," highlighting just how thoroughly the effects of a traumatic past can impact how one moves through the world. *The Three-Body Problem* thus demonstrates the cyclical nature of harm: people hurt humanity because humanity has hurt them, and an individual's trauma (especially trauma suffered at a young age) can have a lasting impact on society at large.

THEORY VS. LIVED EXPERIENCE

Many of the characters in *The Three-Body Problem* spend their lives thinking about abstract theory, but many of them then struggle to merge these theories with the complexity of the real world. Scientist Ye Wenjie comes from three generations of theoretical astrophysicists. Mathematician Wei Cheng devotes his life to solving the impossible problem of the book's title. And, finally, protagonist Wang Miao spends all of his free time on a video game that asks players to theorize the rules of another planet's solar system. Each of these thinkers is able to conceive of brilliant new ways of looking at the world. But thinking of these theories in practical, everyday terms proves difficult—especially during the aftermath of the Chinese Cultural Revolution, when certain communist ideas were supposed to apply to both everyday life and scientific fact. All of the novel's characters must then struggle with the question posed by Ye Zhetai, Ye Wenjie's father, at the beginning of the book: "should philosophy guide experiments, or should experiments guide philosophy?"

Arguably, *The Three-Body Problem* answers this question in the figure of Shi Qiang, a crafty policeman without a college education. When faced with the threat of alien attack, many of the world's most acclaimed theoretical minds cannot respond to the crisis at hand. But Shi, who boasts of his ability to focus only on what's in front of him, is able to rise to the occasion. And as other characters like Wang Miao follow Shi's lead, they begin to realize that abstract ideas are actually complicated and enriched by the messiness of everyday life. Indeed, theory is meaningless unless it incorporates fact, observation, and experiment. The novel thus shows that paying attention to lived experience is a scientific necessity.

HISTORY AND LEGACY

The characters in *The Three-Body Problem* aspire to shape the course of history. On a geopolitical level, China, the United States, and the USSR (the three superpowers at the heart of the Cold War) all hope to prove that they alone are "the heroes [...] of history." Part of their impetus to search for aliens in the first place is to find a neutral party who will validate this view. And perhaps most tellingly, even extraterrestrials are not immune from the desire to leave behind a legacy, which the book suggests is quite literally universal. For example, listener 1379—a creature on the alien planet of Trisolaris—becomes obsessed with getting a "chance to make his own humble life glow." But while regular human beings, political leaders, and extraterrestrials alike all want to leave their mark on history, none of these figures can predict how their attempts to shape the world will actually play out. Ye Wenjie, an astrophysicist who makes humanity's first contact with extraterrestrials, is vilified, China faces certain destruction at the hands of the aliens it has summoned, and the alien listener's work is completely undone by the humans he communicates with. Thus, even as *The Three-Body Problem* explores the powerful desire to leave a legacy, it also makes clear that, while it's possible to *impact* the course of history, it's not necessarily possible to control it.

SYMBOLS

Symbols appear in **teal text** throughout the Summary and Analysis sections of this LitChart.

ALONG THE RIVER DURING THE QINGMING FESTIVAL

A famous Chinese painting dating from the 11th century, *Along the River During the Qingming Festival* represents how perception can be misleading. Wang Miao first encounters the painting in a class on information theory, where his teacher compares the detailed artwork to a plain photograph. Wang's teacher explains that although the painting depicts a bustling

environment, and the photograph depicts a blank sky, the photograph—made up of thousands of pixels—actually contains much more information. In other words, what seems complex is actually quite simple, and what seems simple is filled with hidden complexity. And indeed, as the impending Trisolaran invasion forces Wang Miao to question everything he thought he knew, he often reflects that the human world (like the world of the painting) is somehow "superficially complex." True understanding, Wang fears, belongs only to the Trisolarans.

At the same time, however, *Along the River During the Qingming Festival* is a spectacular piece of art, made famous for centuries because of it captures human beings in a moment of celebration and community. Unlike on Trisolaris, where the drive to survive has so thoroughly trounced the impulse to create any kind of beauty or festivity, people on Earth still value these things. Thus, even as the painting symbolizes humanity's failure to understand the true complexity of the universe, it also shows how people continue to find joy in their confusion.

PENDULUMS

Throughout the novel, pendulums symbolize the idea that history is more circular than linear, and that individuals are powerless to alter that circular narrative. Initially, the residents of Trisolaris constructed a field of giant pendulums with the hope that such a monument could appease an angry sun god. But this project failed, as did all other Trisolaran attempts to save their homeland from destruction. What had begun with the promise of a new beginning for Trisolaris thus became to look like a "tombstone" for the dying planet. Just as a pendulum swings back and forth, endlessly repeating the same movement, the Trisolarans' "history had made a long circuit and returned to its starting place." In emphasizing the circular nature of history, *The Three Body Problem* then also complicates the idea of progress. Though the giant pendulums initially seemed to be a technological advancement, by the time Wang Miao actually encounters the monument, the Trisolaran solar system has become so chaotic that the pendulums now swing erratically, in every direction and without rhythm. So, in addition to noting the circularity of history, Wang also reflects that though the pendulum was built because of a "yearning for order," it has now come to symbolize "the surrender to chaos."

QUOTES

Note: all page numbers for the quotes below refer to the Tor Books edition of *The Three-Body Problem* published in 2016.

Chapter 1 Quotes

❝ The weapons attacking her were a diverse mix: antiques such as American carbines, Czech-style machine guns, Japanese Type-38 rifles; newer weapons such as standard issue People's Liberation Army rifles and submachine guns, stolen from the PLA after the publication of the "August Editorial"; and even a few Chinese *dadao* swords and spears. Together, they formed a condensed version of modern history.

Related Characters: Ye Wenxue

Related Themes:

Page Number: 10

Explanation and Analysis

This passage, one of the very first in the book, describes the various kinds of weaponry used by warring factions of young people in China's Cultural Revolution. In addition to grounding readers in place and time—at the height of political conflict, when the once-unified People's Liberation Army had splintered into many bands of rabid, teenaged communists—this opening suggests just how much violence defines human "history" as a whole. Whether it is *dadao* swords from pre-industrial China, or American guns from World War II, weaponry is essential to every culture in every era.

On the one hand, then, this paragraph shows that time and again, new technology (from a spear to a submachine gun) is really about finding new ways to hurt people—this kind of scientific creation is inseparable from destruction. But on the other hand, this dark opening suggests that the divides behind such violence are often overblown or insubstantial. In a moment of conflict, weapons from the East are just as effective and cruel as weapons from the West; members of the different communist factions may differ on some ideological points, but they unite around the shared goal of harming each other. Thus even as nations fight amongst themselves (or turn to bitter civil war), they are linked by a seemingly universal impulse towards violence.

❝ Should philosophy guide experiments or should experiments guide philosophy? [...] Truth emerges from experience.

Related Characters: Ye Zhetai (speaker), Shao Lin , The Revolutionary Girls

Related Themes:

Page Number: 15

Explanation and Analysis

Even as physics professor Ye Zhetai is brutally tortured by some of his former students (in what was known in the Cultural Revolution as a "struggle session"), he refuses to give up his most deeply held scientific beliefs. Whereas Ye Zhetai's young, fanatical students want to fit everything to the simplistic version of communism they are fed in government propaganda, their professor understands that true theory most be rooted in real "experience"—and that real experience is much more complex than any mass-marketed "philosophy." This tension between abstract ideology and lived experience (which also includes "experiment" and first-hand observation) is an essential theme throughout the novel.

Interestingly, however, Ye Zhetai also recognizes that there are cases in which philosophy can "guide" or reshape experimental results; in these moments, people are so committed to (or blinded by) a set of beliefs that their very reality is altered by their preconceived notions. And as the novel will later suggest, even the most seemingly objective science always runs the risk of being skewed by ideology.

Chapter 2 Quotes

❝ Without intending to, Bai became a key historical figure. But he never learned of this fact. Historians recorded the rest of his uneventful life with disappointment. He continued to work at great production news until 1975, when the Inner Mongolia Production and Construction Corps was disbanded. He was then sent to a city in Northeast China to work for the science association until the beginning of the eighties. Then he left the country for Canada, where he taught at a Chinese school in Ottawa until 1991, when he died from lung cancer. For the rest of his life, he never mentioned Ye Wenjie, and we do not know if he ever felt remorse or repented for his actions.

Related Characters: Bai Mulin , Ye Wenjie

Related Themes:

Page Number: 33

Explanation and Analysis

In a moment of panic, Bai Mulin betrays Ye Wenjie to the communist authorities, putting her in danger to save himself—and setting off the chain of events that eventually leads to the Trisolaran invasion of earth. But while Bai's decision to betray Ye has great consequences, Bai himself lives an "uneventful" life, "disappoint[ing]" in its ordinariness. Having acted out of weakness, Bai never finds any great strength or succeeds in any great accomplishments; instead, he lives out his days in middle management, shifting between countries and political regimes without ever taking a side or leaving a real mark on those around him.

For the first time—but not for the last—the novel thus highlights the gap between an individual's actions and the ripple effects those actions can have; Bai has none of the traits that should allow him to make history, yet entirely by accident, he shapes the future of earth. But this passage is also interesting for its lack of clarity around whether or not Bai ever "repented." The narrative begins with violence, trauma, and betrayal, and as she gets older, Ye Wenjie's experience with this pain causes her to lose more and more faith in humanity. But what if Bai tried to make amends and it was simply lost to the historical record? And if he failed to do so, what might an apology have healed in Ye Wenjie? In other words, Bai's betrayal changed history, but could remorse have similarly altered the future?

Chapter 4 Quotes

❝ Chang gave him an inscrutable smile. "You will know more soon. Everyone will know. Professor Wang, have you ever had anything happen to you that changed your life completely? Some event where afterward the world became a totally different place for you? [...] The entire history of humankind has been fortunate. From the Stone Age till now, no real crisis has occurred. We've been very lucky. But if it's all luck, then it has to end one day. Let me tell you: it's ended. Prepare for the worst."

Related Characters: General Chang (speaker), Wang Miao

Related Themes:

Page Number: 65

Explanation and Analysis

After being summoned to the mysterious Battle Command Center, where he encounters military leaders from every large nation working in tandem, Wang hears this shocking assessment from Chinese General Chang. In addition to hinting at a completely world-altering disaster, Chang also forces Wang to reconsider the scale of history. Comparatively, Chang waves away the various wars and natural disasters that have plagued humanity as "no real crisis." But for the people who lived through these traumatic events, such upheaval was certainly not viewed as "fortunate" or "very lucky."

On its surface, therefore, this paragraph shows that on a large scale, it is impressive that human history has been able to continue relatively uninterrupted for so many centuries. But buried within this passage is a juxtaposition of abstract knowledge (humans have been "fortunate" as a species) with lived experience (which makes room for the pain and suffering all people have gone through). Readers will later learn of the impending alien invasion, which will indeed make the world feel like "a totally different place." Yet for any individual going through a crisis, whether it is political or personal, the world *feels* "totally different"—whether it actually is or not.

Chapter 6 Quotes

❝ The farmer hypothesis on the other hand has the flavor of a horror story: every morning on a turkey farm, the farmer comes to feed the turkeys. A scientist turkey, having observed this pattern to hold to that change for almost a year, makes the following discovery: every morning at 11, food arrives. On the morning of Thanksgiving, the scientist announces this law to the other turkeys. But that morning at 11, food doesn't arrive; instead, the farmer comes and kills the entire flock.

Related Characters: Wang Miao

Related Themes:

Page Number: 74

Explanation and Analysis

As Wang dives deeper into the swirl of information coming from Shen Yufei and the Battle Command Center, he begins to question his reality, recalling the metaphorical story of "the shooter and the farmer." The farmer half of the metaphor shows how every group—whether it is a gaggle of turkeys on a farm or a particular nation in the Cold War—places itself at the center of its conceptual universe.

The turkeys believe themselves to be the heroes of their own narrative, so when they hear that food is served at a certain time, they imagine they are the ones being served. But in fact, they are food for the real protagonist of the story, the "farmer." This anecdote thus shows how such egotism, while natural, can also be dangerous—by focusing solely on themselves, the turkeys also make themselves vulnerable to the farmer, who barely even registers the turkeys as conscious beings.

It is also worth noting that the turkey who leads his group astray is labeled a "scientist." Though this scientist turkey is doing his best and making sense of the data around him, he cannot see the full picture; even though he follows the steps of the scientific method, his conclusion is incorrect. In a novel so filled with science and scientists, this potential for error is particularly troubling (which Wang himself recognizes).

Chapter 7 Quotes

❝ King Wen now pointed at Wang, his eyes sparkling. "Now you know the goal of this game: to use our intellect and understanding to analyze all phenomena until we can know the pattern of the sun's movement. The survival of civilization depends on it."

"Based on my observations, there is no pattern to the sun's movement at all."

"That's because you do not understand the fundamental nature of the world."

Related Characters: King Wen , Wang Miao (speaker)

Related Themes:

Page Number: 101

Explanation and Analysis

As he nears the end of his first round of the *Three Body* video game, Wang learns his goal as a player: to "know the pattern of the sun's movement." The fact that this knowledge is critical to civilization's survival suggests a larger statement of the purpose of science—namely, scientific discovery and experiment is essential to the continuation of human history and development. For a novel so grounded in the legacy of Cold War nuclear standoff, in which science is seen to threaten humanity as much as save it, the video game thus provides a new (and opposing) perspective.

But perhaps more importantly, this conversation between Wang and the computer-generated character of King Wen is deeply ironic, especially in the context of the novel's back half. Though Wen believes that understanding the "fundamental nature of the universe" will reveal the sun's pattern, Wang (and many others) are able to discover this fundamental nature—and still, it remains impossible to predict the sun's movement. Thus while Wen expresses tremendous faith in science here, by the end of the book, this hopeful statement will in retrospect only illustrate the potential futility of science.

Chapter 8 Quotes

❝ Her father left behind some records. She listened to all of them and finally picked something by Bach as her favorite, listening to it over and over. That was the kind of music that shouldn't have mesmerized a kid. At first, I thought she picked it on a whim, but when I asked her how she felt about the music, she said she could see in the music a giant building, a large, complex house. Bit by bit, the giant added to the structure, and when the music was over, the house was done [...] I failed. Her world was too simple, and all she had were ethereal theories. When they collapsed, she had nothing to lean on to keep on living.

Related Characters: Ye Wenjie (speaker), Yang Dong , Yang Weining , Wang Miao

Related Themes:

Page Number: 65

Explanation and Analysis

After her daughter Yang Dong kills herself in the face of unpredictable experimental results, Ye Wenjie reflects on her daughter's absolute devotion to theory. Rather than playing around as a little girl, Yang Dong spent her days listening to Bach music—not because she found it beautiful, but because she was so impressed with its almost mathematical structure. Rather than being present in her daily life, then, Yang Dong was always drawn to the built, "ethereal" world of ideas.

Fascinatingly, though, Ye does not see this theoretical world as complex; instead, she views it as overwhelmingly "simple" (echoing a sentiment Ye Zhetai had expressed earlier about his wife Shao Lin). Rather than acknowledging the messiness of everyday existence, Yang Dong retreats only to the composed, "simple" order of Bach and astrophysics. This inability to assimilate new, contradicting information then makes it impossible for Yang to go on living when her theories fail; rather than growing and changing, Yang can only exist in stasis or not at all.

Finally, buried deep within this passage is another prong of the novel's thematic focus on trauma. As readers will later learn, Yang Dong's father Yang Weining was killed (by her mother) before she was born. The fact that the Bach records belonged to her absent parent then implies that Yang Dong's love of this music is also about processing a loss she cannot quite comprehend—and trying to connect to a parent she has never known.

Chapter 9 Quotes

❝ Could it be that every previous great disaster, including the two World Wars, was also the result of reaching the end of ghostly countdowns? Could it be that every time there was someone like me, who no one thought of, who bore the ultimate responsibility?

Related Characters: Wang Miao (speaker)

Related Themes:

Page Number: 128

Explanation and Analysis

After he sees the universe flicker a Morse Code continuation of the "ghostly countdown" only he can see, Wang begins to contemplate his own role in history. Though he has not asked for nor participated in the countdown, Wang still feels "ultimate responsibility" for whatever impending disaster General Chang and others seem aware of. In other words, merely by having knowledge (in the form of the countdown) that no one else has, Wang begins to see himself as a shaping force in history.

This passage therefore raises two questions. First, does knowledge—whether it is scientific or not—always come with some sort of agency or "responsibility?" And second, what is the role of an individual in history? After all, just as Bai Mulin is a frustratingly uninteresting subject for historians, Wang is someone "who no one thought of." What does it mean to make history, and can one make history without ever knowing it?

Chapter 10 Quotes

❝ Buddy, when I work at night, if I look up at the sky, the suspect is going to escape. [...] To be honest, even if I were to look at the stars in this sky, I wouldn't be thinking about your philosophical questions. I have too much to worry about! I gotta pay the mortgage, save for the kids' college, and handle the endless stream of cases [...] You think that's not enough for me to worry about? You think I've got the energy to gaze at stars and philosophize?

Related Characters: Shi Qiang (speaker), Wang Miao

Related Themes:

Page Number: 132

Explanation and Analysis

While Wang panics about the strange flicker he has just

witnessed in the universe's radio waves, Shi offers a more practical view of life. Though many of the novel's scientists and theorists try to understand their world at the largest scale, this critical passage shows how Shi's more narrow focus allows him his own kind of insight and problem-solving capability. Big philosophical questions can distract from what's right in front of you; by metaphorically looking down at the ground instead of up at the sky, Shi is able to catch suspects and understand human psychology in a way no other character in the novel can.

Mostly, then, this passage shows the value of experiential (as opposed to theoretical) knowledge. But interestingly, Shi's statement also suggests the tremendous degree of privilege that undergirds all of these abstract crises. Wang, Ding Yi and others like them can focus on the abstract because they do not need to consider the daily strains of pinching pennies or physical labor. Thus even as scientists in the Battle Command Center use their work to unite China with the U.S. and Europe, the novel also suggests that theory—and the real-world remove it entails—is inherently divisive along class lines.

Chapter 11 Quotes

"The Stable Era will continue. The universe is a machine. I created this machine. The Stable Era will continue. The universe…"

Wang turned his head. The voice belonged to Mozi, who was already on fire. His body was encased within a column of tall, orange flame, and his skin crinkled and turned into charcoal. But his two eyes still shone with a light that was distinct from the fire consuming him. His two hands, already burning pieces of charcoal, held up the cloud of swirling ashes that had once been his calendar.

Related Characters: Mozi (speaker), Wang Miao

Related Themes:

Page Number: 148

Explanation and Analysis

Mozi, ignoring much of the observable data around him (like the flying stars), creates a physical model of the universe—and he believes so passionately in his invention that he refuses to renounce his prediction of a Stable Era, even as a scorching sun burns him to death. On one level, Mozi's crazed determination demonstrates the issues that arise when scientists try to fit experience to philosophy (instead of the other way around). Rather than assimilating new information into his theory, Mozi clings to his established beliefs so desperately that they kill him—and destroy the world around him.

On another level, however, this passage also begins to get at the brutality that is sometimes a corollary of scientific research and discovery. Mozi is desperate to claim credit for this machine, which (as Wang has earlier realized) is actually kept running by enslaved labor. The fire burning in Mozi's eyes as he claims credit for "creat[ing] this "machine" of a universe thus warns against the dark side of science. Some researchers want to discover something new so badly that they will distort reality—or worse still, destroy other people—to do so.

Chapter 13 Quotes

It's important to take the time out of our busy schedules to do something entirely unrelated to our immediate needs. This project has allowed us to give some thought to issues we have never had time for. Indeed, we can think through them only when we take a sufficiently high vantage point. This alone is enough to justify the Red Coast project. How wonderful it will be if the universe really contains other intelligences and other societies! Bystanders have the clearest view. Someone truly neutral will then be able to comment on whether we're the heroes or villains of history.

Related Characters: The Interrogator , Ye Wenjie

Related Themes:

Page Number: 172

Explanation and Analysis

This quotation is excerpted from a (largely redacted) government report on the Search for Extraterrestrial Intelligence (SETI) taking place at Red Coast Base. First, this report—which grounds the research in a Cold War context as the Americans, Soviets, and Chinese rush to make contact with outer space—reflects the government's prioritizing of big picture ideas over daily reality. By moving to a "sufficiently high vantage point," the communist leaders are able to snag a potential military victory. But by ignoring "immediate needs," the government is also ignoring the millions of people facing starvation or violence in China at this moment.

Even more importantly, however, this passage shows just how much seemingly objective science can actually be used for political ends. Rather than trying to improve society, the Chinese are desperate to speak with aliens so that these

outsiders can validate China in the fight against its enemies. In other words, the Chinese are excited to strike up yet another proxy war—just as superpowers in the Cold War sought to entice smaller countries to take sides, the Chinese now want this "truly neutral" alien party to become biased allies.

And finally, this passage—though it seems to offer friendship—in fact reflects just how divisive humans tend to be. Though the report celebrates unknown "other intelligences and other societies," the Chinese are feuding with all the societies they actually *do* know. This image of a peaceful relationship with extraterrestrials is, upon a closer look, a complete fantasy. After all, if humans are this alienated from each other, how will they possibly get along with actual aliens?

Chapter 14 Quotes

From time to time, I would gaze up at the stars after a night shift and think that they looked like a glowing desert, and I myself was a poor child abandoned in the desert [...] Sometimes I thought life was precious, and everything was so important; but other times I thought humans were insignificant, and nothing was worthwhile. Anyway, my life passed day after day accompanied by this strange feeling, and before I knew it, I was old. It's hard to predict the future. I live my life day to day.

Related Characters: Ye Wenjie (speaker), Wang Miao

Related Themes:

Page Number: 179

Explanation and Analysis

As Ye Wenjie tells Wang Miao her life story, she reflects on the second half of her time at Red Coast Base: having engaged in the search for aliens, Ye was devastated to find that getting in contact with such creatures was nearly impossible. Though it is never explicitly stated, this passage can be seen as an example of a trauma response. Though the actual circumstances are completely different, Ye feels that the lack of an answer from aliens is in some way repeating the loneliness she felt after her father's death (and her mother's betrayal). In particular, Ye recalls feeling "abandoned" as a "poor child" would—language which suggests her inability to shed the loss and fear instilled in her as a young girl growing up in the Cultural Revolution.

This passage is also notable for its focus on the different scales at which time passes. On the one hand, when Ye is able to focus on the present, she finds daily life meaningful ("so important"). But when Ye zooms out, thinking in more abstract, galactic terms, she loses this sense of meaning and falls back into despair. No wonder, then, that as she grows older, Ye ultimately chooses to live her life focused more on "day to day" experience than broad theory; though quotidian life is not always fascinating, it is at the very least "worthwhile." Perhaps this shift in perspective is why the elder Ye Wenjie is more generous and at peace than her younger self ever was.

Chapter 15 Quotes

"This is Galileo," said Aristotle. "He advocates understanding the world through observation and experiment. He is an unimaginative thinker, but his results demand our attention."

"Mozi also conducted experiments and observations," Wang said.

Galileo snorted. "Mozi's way of thinking was still Eastern. He was nothing more than a mystic dressed as a scientist. He never took his own observation data seriously, and he constructed his model based on subjective speculation. Ridiculous!"

Related Characters: Aristotle , Wang Miao, Galileo Galilei (speaker), Mozi

Related Themes:

Page Number: 183

Explanation and Analysis

After making his username "Copernicus" for the Three Body game, Wang Miao enters a Western version of the game, where he is met by Galileo, Aristotle, and Leonardo da Vinci, among others. In this conversation, Galileo echoes the message the book has put forward since Ye Zhetai: "observation and experiment" are necessary to form coherent theories. More importantly, however, Galileo's disdain reflects a particular kind of scientific prejudice (and perhaps racism). Rather than collaborating across nations and cultures to solve these pressing problems, Galileo dismisses discoveries from outside his own region as "mystic" and "subjective."

This refusal to cooperate (and this tendency to dismiss science from other places and cultures) suggests that rather than being purely objective and rational, science is just as prone to prejudice as any other field. Moreover, Galileo's dismissal of "Eastern" science foreshadows the Cold War tensions between communist China and capitalist America. All throughout history, the novel suggests, the East and

West have used research and science not to prevent conflict but to justify it.

Chapter 16 Quotes

❝ I then introduced a third sphere, and to my astonishment, the situation changed completely. Like I said, any geometric figure turns into numbers in the depths of my mind. The sphereless, one-sphere, and two-sphere universes all showed up as a single equation or a few equations, like a few lonesome leaves in late fall. But this third sphere gave "emptiness" life. The three spheres, given initial movements, went through complex, seemingly never repeating movements. The descriptive equations rained down in a thunderstorm without end.

Related Characters: Wei Cheng (speaker)

Related Themes:

Page Number: 193

Explanation and Analysis

A brilliant theorist in a completely loveless marriage, Wei Cheng—perhaps more than any other character in the story—dedicates his life entirely to theory instead of experience. But unlike Ye Wenjie and Yang Dong, Wei Cheng is able to find meaning and beauty in the abstract "emptiness" of the three-body problem. Crucially, as soon as the math problem becomes unpredictable, "never repeating" itself, Wei is soothed by it instead of disturbed by it.

This complex approach to the three-body problem (which another character will later refer to as "evolutionary") suggests that, whether in theory or in life, joy and purpose come from a lack of predictability. It is thus telling that as soon as Wei embraces this complexity, he begins to think of a "thunderstorm," a natural phenomenon and one that is often associated with intensity of feeling. For Wei, theory has at last taken on true, life-sustaining meaning. But at the same time, if theory is just as messy as real life, it likely cannot ever really solve the problems it claims to respond to.

Chapter 17 Quotes

❝ Below them, a magnificent phalanx of thirty million Qin shoulders was arrayed on the ground. The entire formation fit inside a square six kilometers on each side. As the sun rose, the phalanx remained still like a giant carpet made of 30 million terra-cotta warriors. But when a flock of birds wandered above the phalanx, the birds immediately felt the potential for death from below and scattered anxiously in chaos. Wang performed some computations in his head and realized that even if the entire population of earth were arranged into such a phalanx, the whole formation would fit inside the Huangpu District of Shanghai. Though it was powerful, the phalanx also revealed the fragility of civilization.

Related Characters: Wang Miao, Von Neumann , Emperor Qin Shi Huang

Related Themes:

Page Number: 215

Explanation and Analysis

In his fourth round of the Three Body game, Wang works with Von Neumann and Emperor Qin Shi Huang to create a human computer (in hopes that such a machine will allow them to solve the dreaded mathematical problem). Though there is some beauty in the "giant carpet" of human forms, the mention of frightened birds recalls the earlier moment when the radio waves from Radar Peak caused a flock of birds to drop down dead while in mid-flight. In both cases, humanity's capacity to do harm—not just to themselves but to other species—is dangerously clear.

But even as this description shows peoples' capacity for brute force, it also emphasizes just how vulnerable humans really are. Throughout the novel, many scientists and leaders have preached the necessity of unity. But as Wang is able to calculate, even a completely unified world is a "fragile" one. In other words, if humans can easily defeat species smaller than them, they are perhaps just as easily defeated themselves.

Chapter 18 Quotes

"What is your impression of the Aztecs?"

"Dark and bloody," the author said. "Blood-drenched pyramids lit by insidious fire seen through dark forests. Those are my impressions."

The philosopher nodded. "Very good. Then try to imagine: if the Spanish conquistadors did not intervene, what would have been the influence of that civilization on human history?"

"You are calling black white and white black," the software company vice president said. "The Conquistadors who invaded the Americas were nothing more than murderers and robbers."

"Even so, at least they prevented the Aztecs from developing without bound, turning the Americas into a bloody, dark great empire. Then civilization as we know it wouldn't have appeared in the Americas, and democracy wouldn't have thrived until much later. Indeed, maybe they wouldn't have appeared at all. This is the key to the question: no matter what the Trisolarans are like, their arrival would be good news for the terminally ill human race."

Related Characters: Wang Miao

Related Themes:

Page Number: 229

Explanation and Analysis

After Wang beats the first level of the Three Body game, he is invited to a meet-up for players from all over the country, many of whom are prominent figures in their own right. In this conversation, the various participants split along ideological lines. The famous author and respected philosopher dismiss Aztec civilization—and, by comparison, present-day humanity—as ruthless and unsophisticated; they take an ignorant view of Aztec history to argue that destroying a "dark" and "bloody" civilization is ultimately a sign of morality and progress. By contrast, the software executive cannot abide using violence to justify violence. If the Spanish logic for conquering the Aztecs was that the Aztecs killed people, then how are the Spanish "murderers" any better themselves?

This debate then raises a larger conversation about what counts as civilization—what marks human progress? Disturbingly, the majority of the people at the meet-up seem to believe that whichever side is further from nature is the side most deserving of victory; one of the key points the philosopher uses against the Aztecs is that they still lived in "forests," in direct contrast to the deforestation that forms a motif in the novel. For both the Spanish conquistadors and the Trisolarans, then, the frightening argument here is that a technological advantage automatically equates to a moral one—an argument that Wang Miao privately, and strongly, disagrees with.

Chapter 19 Quotes

"The big moon. When I was little it was still hot. When it rose to the middle of the sky, I could see the red glow from the central plains. But now it's cold…Haven't you heard about the great rip?"

"No. What's that?"

Einstein sighed and shook his head. "Let's not speak of it. Forget the past. My past, civilization's past, the universe's past—all of it too painful to recall."

Related Characters: Albert Einstein , Wang Miao (speaker)

Related Themes:

Page Number: 232

Explanation and Analysis

In his final time playing the Three Body game, Wang encounters a computer-generated version of Albert Einstein, who explains "the great rip": a few years prior, Trisolaris's three suns had crashed into the planet, ripping it in half. Now, what once had been part of the populated, lively planet is "the big moon," a dead mass in the sky that reminds everyone of "the past" they are trying so desperately to forget.

In one sense, therefore, the large moon in the sky is a physical embodiment of the lasting effects of trauma—at every moment, the residents of Trisolaris are confronted by their greatest loss quite literally hanging over them. And at the same time, this passage also helps to elucidate the link between personal trauma and national (or even planetary) history. The deeply intimate loss that Einstein suffers is inextricable from the societal loss that all Trisolarans feel when they are forced to confront the dead other half of their planet. Though much of the novel has focused on how little agency humans have over history, now it is clear how much impact history at a grand scale can make on even the most quotidian details of human life.

Chapter 21 Quotes

"I'm Raphael, from Israel. Three years ago, my fourteen-year-old son died in an accident. I had his kidney donated to a Palestinian girl suffering kidney failure as an expression of my hope that the two peoples could live together in peace. For this ideal, I was willing to give my life. Many, many Israelis and Palestinians sincerely strove toward the same goal by my side. But all this was useless. Our home remained trapped in the quagmire of cycles of vengeance. Eventually, I lost hope in the human race and joined the ETO. Desperation turned me from a pacifist into an extremist."

Related Characters: Ye Wenjie , Pan Han

Related Themes:

Page Number: 253

Explanation and Analysis

As Wang Miao takes in his first meeting of the ETO, he begins to differentiate between the Redemptionist faction (which hopes for a peaceful union between humans and Trisolarans) and the more violent Adventist faction, which wants the Trisolarans to destroy humanity entirely. In this passage, Wang gains insight into why people would feel so passionate about the openly self-destructive Adventist cause.

As this man explains, unity across ideological divides is nearly impossible; even when individuals make great sacrifices (like donating their children's organs), hatred and prejudice persist. No scientific advancement—like kidney donation—or collective action can bridge such a bitter divide. And if escaping these "cycles of vengeance" is truly impossible, then, as Raphael reasons, the only way out is to destroy humanity entirely—to take the ultimate revenge.

In addition to showing the pervasiveness of conflict in human life, this passage, too, contains a message about the cyclical nature of harm. Raphael was hurt and disillusioned, so he joined a group (the Adventists) that could hurt and disillusion others. So while the history of technology moves in a straight line, the history of human beings is itself a "vicious cycle," in which pain replicates itself across time and generations.

Chapter 22 Quotes

"You want to aim a super powerful radio beam at the red sun. Have you thought about the political symbolism of such an experiment?"

Yang and Ye were both utterly stunned, but they did not think Lei's objection ridiculous. Just the opposite: they were horrified that they themselves had not thought of it. During those years, finding political symbolism in everything had reached absurd levels. The research reports you turned in had to be carefully reviewed by Lei so that even technical terms related to the sun could be repeatedly revised to remove political risk. Terms like "sunspots" were forbidden.

Related Characters: Commissar Lei (speaker), Ye Wenjie , Yang Weining

Related Themes:

Page Number: 264

Explanation and Analysis

In this flashback to Ye's first years at Red Coast Base, it becomes clear that in addition to being funded by the Chinese communist government, every level of Red Coast's work was shaped through its political affiliations. Science (and particularly more mathematical disciplines such as astrophysics) is often thought to be objective, a rational discipline based purely on emotionless data and experiment. But this conversation reveals that that could not be further from the truth—instead, every level of Ye's work is determined by politics and ideology. From the language she uses to the experiments she is allowed (or forbidden) to conduct, Ye's science is meant not to reveal the world as it is but to affirm how her government wants it to be.

In this case, red is the color most associated with communism across the world (and in China, red is especially prominent in the name and dress of the Red Guard). Therefore, to shoot any sort of beam at the red sun would be to symbolically attack communist thought—hence why Lei forbids Ye from doing so.

Chapter 23 Quotes

The insanity of the human race had reached its historical zenith. The Cold War was at its height. Nuclear missiles capable of destroying the earth ten times over could be launched at a moment's notice, spread out among the countless missile silos dotting two continents and hiding with ghost-like nuclear-powered ballistic missile submarines patrolling deep under the sea a single Lafayette- or Yankee-class submarine held enough warheads to destroy hundreds of cities and kill hundreds of millions, but most people continued their lives as if nothing was wrong.

Related Characters: Ye Wenjie

Related Themes:

Page Number: 270

Explanation and Analysis

As Ye Wenjie explains her life story to Wang Miao, she tries to justify her decision to contact the Trisolarans by placing it in historical context. This passage neatly illustrates several of the novel's major themes. First, though there is plenty of technological progress on display here (from the silent submarines to the nuclear warheads), all of this invention exists for the sheer purpose of destruction—a perfect embodiment of one of the novel's central thematic paradoxes.

Secondly, Ye's assessment makes devastatingly clear the dangers of ignoring historical change in favor of individual experience. Though humans are responsible for bringing themselves to the verge of extinction, they are too concerned with the minutiae of daily life to pay attention to—or put a stop to—this danger.

Lastly, the joining of science and politics is clear here, particularly in the names of the missiles: Lafayette is a famous general from the American Revolution, while Yankees are a classic symbol of U.S. patriotism. Even as these new technologies have the potential to destroy the entire world, they also work to represent or recall highlights from various nations' pasts.

Chapter 24 Quotes

"Who was that young woman's mother?" Wang asked.

Da Shi grinned. "Fucked if I know. Just a guess. A girl like that most likely has mother issues. After doing this for more than twenty years, I'm pretty good at reading people."

Related Characters: Wang Miao, Shi Qiang (speaker), Ye Wenjie

Related Themes:

Page Number: 282

Explanation and Analysis

Just before one of Ye Wenjie's henchwomen can detonate a nuclear bomb, Shi Qiang is able to stop her in her tracks with a comment about her long-lost mother. But in this later conversation with Wang Miao, Shi reveals that he had no idea about the girl's family situation; it was merely an educated guess, based on his many years of successfully "reading people."

First, then, this passage affirms Shi's claim throughout the novel: that there are special kinds of knowledge to be gleaned from paying attention to people instead of science, experience instead of theory. But perhaps less obviously, Shi's success reflects a larger pattern among the members of the ETO. Like Ye Wenjie herself, the young woman in question feels betrayed or abandoned by her mother; readers will later find out that the same is true of Mike Evans with his father. A pattern then begins to come into focus—many of the people who lose hope for humanity and join the ETO do so in response to their own childhood trauma. But rather than sharing this pain with each other, the members of the ETO focus only on their political and scientific agenda, leaving it to outsiders like Shi to discover this connective tissue.

Chapter 26 Quotes

Then she substituted the universe in Feng's heart for the real one. The night sky was a black dome that was just large enough to cover the entirety of the world. The surface of the dome was inlaid with countless stars shining with a crystalline silver light, none of which was bigger than the mirror on the old wooden table next to the bed. The world was flat and extended very far in each direction, but ultimately there was an edge where it met the sky [...] This toy-box-like universe comforted her and gradually it shifted from her imagination into her dreams [...] in this tiny mountain hamlet deep in the Greater Khingan Mountains, something finally thawed in Ye Wenjie's heart. In the frozen tundra of her soul a tiny, clear lake of meltwater appeared.

Related Characters: Ye Wenjie , Feng

Related Themes:

Page Number: 295

Explanation and Analysis

While Ye recovers from the birth of Yang Dong, she stays with Feng, a villager in the town near Red Coast Base. Feng has no concept of astrophysics and one night wonders why the stars do not fall out of the sky, a question that then allows Ye to reconceive of the universe in this "toy-box" way. Rather than seeing the sky as vast and unknowable, as she does in her capacity as a scientist, Ye now sees something contained ("there was an edge") and knowable (like "the mirror on the old wooden table next to the bed"). And so rather than feeling alone and abandoned, as she once did when contemplating outer space, Ye begins to feel connection and companionship.

Two major themes of the novel thus come together in this passage. The "frozen tundra" of Ye's interior life—created by tremendous trauma and terror—is able to melt because she moves from theory into experience, from the abstract into the intimate. In her friendship with Feng, Ye is at last able to be present, letting go of her threatening past and turning towards a quieter future where she has friends and a new baby girl. Thus even as *The Three Body Problem* focuses on the cycles of trauma and the dangers of theory, it also shows that attention to simple, everyday detail can break those painful cycles.

❝ There was a movie called Maple recently. I don't know if you've seen it. At the end, an adult and a child stand in front of the grave of a Red Guard who had died during the faction civil wars. The child asked the adult, "Are they heroes?" The adult says no. The child asked, "Are they enemies?" The adult again says no. The child asks, "Then who are they?" The adult says, "history."

Related Characters: The Revolutionary Girls (speaker), Ye Wenjie

Related Themes:

Page Number: 302

Explanation and Analysis

After a painful reunion with her mother Shao Lin, Ye tracks down the group of revolutionary girls who had tortured and ultimately killed her father. But rather than feeling purely angry or self-righteous, Ye is shocked to see just how much these girls, too, have been hurt by the Cultural Revolution: they have lost limbs, families, and even each other (there are only three now where once there were four). As the girls explain, after such a prolonged period of violent upheaval, the line between "heroes" and "enemies" is increasingly blurry; the divisions that once seemed so clear are no longer distinguishable, much less important.

But perhaps the most interesting thing about this anecdote is the idea that what once seemed to be unavoidable division later becomes just one more story in "history." Just as people lose control over their individual legacies, potent ideological debates and group rivalries are similarly resolved—or erased—by the passage of time.

Chapter 27 Quotes

❝ Now is truly the age of mass extinctions! So, my child, what you're seeing is nothing. This is only an insignificant episode in a much faster process. We can have no seabirds, but we can't be without oil. Can you imagine life without oil? Your last birthday, I gave you that lovely Ferrari and promised you that you could drive it after you turn 15. But without oil, it would be a pile of junk metal and you would never drive it. Right now, if you want to visit your grandfather, you can get there on my personal jet and cross the ocean in a dozen hours or so. But without oil, you'd have to tumble in a sailboat for more than a month…These are the rules of the game of civilization: the first priority is to guarantee the existence of the human race and their comfortable life. Everything else is secondary.

Related Characters: Mike Evans (speaker), Ye Wenjie

Related Themes:

Page Number: 307

Explanation and Analysis

As Mike Evans recounts the story of his life to kindred spirit Ye Wenjie, he recalls with horror his father's selfish prioritizing of "the human race" above all other species. Like Ye, Evans—who becomes the other co-founder of the Earth-Trisolaris Organization—has developed a hatred of all humankind, and like Ye, Evans's feelings can be traced back to a complicated relationship with a parent. The prominence that Evans gives to his father is thus further proof that the pain of childhood has lifelong effects, not only on the person directly impacted but also on the people around them.

Perhaps even more notable, however, is the way Evans's father defines progress. For him, progress is equal to an advance in technology, preferably one that can add convenience (the jet) or glamor (the "lovely Ferrari") to daily life. But in order to maintain this definition of progress,

Evans's father must both acknowledge and completely discount the loss that stems from these inventions; in order to make themselves artificially fly, humans have deprived "seabirds" of their natural right.

In addition to highlighting one of the novel's central paradoxes—in which technological creation also means destruction—this passage also shows how selfish this narrow view of progress is. As in the story of the shooter and the farmer, Evans's father believes that every other group is "secondary" to his own needs. But while that allows this oil baron a measure of financial success, the narrative has made clear that anyone who centers only their own small perspective is also tremendously vulnerable to outside forces—because they cannot see them coming.

Chapter 29 Quotes

The ETO had once tried to develop membership among the common people, but these efforts all failed. The ETO concluded that the common people did not seem to have the comprehensive and deep understanding of the highly educated about the dark side of humanity. More importantly, because their thoughts were not as deeply influenced by modern science and philosophy, they still felt an overwhelming, instinctual identification with their own species. To betray the human race as a whole was unimaginable for them. But intellectual elites were different: Most of them had already begun to consider issues from our perspective outside the human race. Human civilization had finally given birth to a strong force of alienation.

Related Characters: Ye Wenjie , Mike Evans

Related Themes:

Page Number: 317

Explanation and Analysis

At the meet-up earlier in the novel, Wang Miao had been surprised to see that most of the other new recruits to the ETO were brilliant thinkers (from a world-renowned philosopher to an experimental author). Now, that coincidence is revealed to be part of a larger pattern. Only "intellectual elites" have the capacity (or, seen through an alternate lens, the time and resources) to begin to view the human race in the abstract, "as a whole." But while many theorists take this zoomed-out view, most people focus on their own individual relationships and experiences. And seen from up close, humankind is easier to love—whether it is Feng helping Ye care for her young daughter or Shi taking Wang out for much-needed drinks, an attention to quotidian life allows for a much kinder picture of humanity.

On the one hand, then, this passage highlights the gap between lives focused on theory versus those who dwell on day-to-day experience. But on the other hand, this passage also introduces the word "alienation," referencing the way humans feel about each other after decades of painful conflict and debate. This is a particularly clever word choice in the context of the impending Trisolaran invasion: humans are so alienated from each other that they are willing to put all their trust in actual aliens.

Chapter 30 Quotes

If I tell you more, you really won't be able to sleep. Forget it. What's the point of worrying? We should learn to be as philosophical as Wei Cheng and Shi Qiang. Just do the best within your responsibility. Let's go drinking and then go back to sleep like good bugs.

Related Characters: Ding Yi (speaker), Wang Miao, Wei Cheng , Shi Qiang

Related Themes:

Page Number: 330

Explanation and Analysis

After several days spent trying to understand the Trisolarans and the humans who would welcome them, Wang is at last getting to the awful truth—a reality so frightening that if he hears it, he "won't be able to sleep." As scientists, Wang and Ding are naturally inquisitive people, observing problems around them and searching for answers. But now, Ding suggests that this scientific mindset will no longer serve humanity. After all, if they are just "bugs" compared to the much more technologically-advanced Trisolarans, then what is the point of these men gaining knowledge—beyond realizing how powerless they are?

Instead, Ding advocates for a more experiential way of life, in which basic needs like sleep and small pleasures like a night out with friends are given priority. And furthermore, Ding returns to the idea that humans have a "responsibility" to each other. In contrast to the political conflict and technological arms race that defined much of the 20th century, therefore, Ding is suggesting a more collective, collaborative model of dealing with global problems.

Chapter 31 Quotes

❝ The second time I came to Panama was in 1999, to attend the ceremony for the handover of the canal to Panama. Oddly, by the time we got to the Authority's building, the Stars and Stripes were already gone. Supposedly the US government had requested that the flag be lowered a day early to avoid the embarrassment of lowering the flag in front of a crowd…Back then, I thought I was witnessing history. But now that seems so insignificant.

Related Characters: Colonel Stanton (speaker), Wang Miao

Related Themes:

Page Number: 341

Explanation and Analysis

As Wang and United States General Stanton prepare for the Adventist *Judgment Day* ship to be sliced in two, Stanton tries to distract Wang by sharing his eyewitness memories of historical events. But as he speaks, Stanton is amazed to realize that the various power struggles—over territory, technology, and even symbolic value—have now been rendered "so insignificant" by the Trisolaran threat. But conversely, even as Stanton reflects on the shifting scale of history, he is turning what is itself a major historical moment into a more contemplative, everyday event; in other words, the gap between history and the everyday is much less clear than it initially seems.

The other thing worth noticing in this passage is how similar Stanton's description of history is to General Chang's earlier reverie (in which he mused that "from the Stone Age until now, no real crisis has occurred"). Though the United States and China have been at odds for decades, their leaders are in fact very similar men—once more implying how futile so much of the worst political conflict actually is.

Chapter 32 Quotes

❝ The metallic Trisolaran spirit has infiltrated each of our cells and solidified. You really believe it can melt again? I'm an ordinary man living at the bottom of society. No one would pay any attention to me. My life is spent alone, without wealth, without status, without love, and without hope. If I can save a distant, beautiful world that I have fallen in love with, then my life has not been wasted.

Related Characters: Listener 1379 (speaker), The Princeps of Trisolaris

Related Themes:

Page Number: 354

Explanation and Analysis

After intercepting Ye's message from earth with a pacifist warning, listener 1739 is caught and interrogated by the princeps of Trisolaris. In this quotation, the listener explains his reasoning: the Trisolarans live in so much constant danger that they no longer value anything not directly related to their own survival. For most residents of this unstable planet, there is neither "love" nor "beauty" nor anything to make each day count—suggesting that as with human beings, these alien creatures need to find meaning in quotidian life in order to make their existence worthwhile.

But if this passage is in part about the need for companionship and aesthetic pleasure, it is also yet one more look into the way trauma manifests itself. Early in the text, Ye Wenjie's pain "dissolve[s] into her blood"; now, the Trisolarans' "metallic" view of life has "infiltrated" their cells and "solidified" there. In each passage, pain and suffering literally reconfigure biology (not to mention psychology) so that past loss becomes an inescapable part of the present. And just as Ye's trauma results in her betrayal of all earth, the "metallic" Trisolaran spirit leads the Trisolarans to contemplate the destruction of the human race without any remorse.

Chapter 33 Quotes

❝ "Even in nature, the destruction of universes must be happening at every second—for example, through the decay of neutrons. Also, a high energy cosmic ray entering the atmosphere may destroy thousands of such miniature universes…You're not feeling sentimental because of this, are you?"

"You amuse me. I will immediately notify the propaganda console and direct him to repeatedly publicize the scientific fact to the world. The people of Trisolaris must understand that the destruction of civilizations is a common occurrence that happens every second of every hour."

Related Characters: The Princeps of Trisolaris (speaker)

Related Themes:

Page Number: 370

Explanation and Analysis

As the princeps experiments with the creation of the

sophon particles (which are highly intelligent proton computers), he begins to understand that intelligent life exists at—and is destroyed at—many levels and scales. But rather than feeling "sentimental" about this fact, the princeps uses this shifting sense of scale to minimize the importance of other civilizations and worlds (as can be seen in the staccato, hyper-rational tone of his conversation with a scientific expert). In many ways, then, this passage represents the most dramatic exploration of a pressing question throughout the novel: what counts as history? How does anyone know whether the collapse of their civilization will be a blip or a turning point to future generations?

Interestingly, the princeps also mentions "propaganda" here; just like the Chinese government did for Ye Wenjie at the heart of the Cold War, the princeps is concerned that all scientific work represent a very specific political message (that the destruction of earth is a good thing). Even on an alien planet, therefore, it is clear that science is never fully objective; like their human counterparts, the Trisolarans bend every discovery to their own symbolic needs.

Chapter 34 Quotes

❝ Look at them, the bugs. Humans have used everything in their power to extinguish them: every kind of poison, aerial sprays, introducing and cultivating their natural predators, searching for and destroying their eggs, using genetic modification to sterilize them, burning with fire, drowning with water. Every family has bug spray, every desk has a flyswatter under it…this long war has been going on for the entire history of human civilization. But the outcome is still in doubt. The bugs have not been eliminated. They so proudly live between the heavens and the earth, and their numbers have not diminished from the time before the appearance of the humans.

Related Characters: Wang Miao, Ding Yi , Shi Qiang

Related Themes:   

Page Number: 387

Explanation and Analysis

In this penultimate section of the novel, Wang and his new friends—having been labeled "bugs" by the more technologically-advanced Trisolarans—reflect on the tenacity of these pesky creatures. Though bugs seem small and stupid, they prove worthy adversaries for humans in this centuries-long "war." First, then, the persistence of bugs shows that technological progress is not sufficient to wipe out another species; though each society invents its own bug sprays and flyswatters, the bugs evolve just as much as their human hunters do. So, from the perspective of bugs, human history is not a history of progress so much as it is a history of stalemate.

But by centering the bugs who "so proudly live between the heavens and the earth"—and by describing them with such lofty rhetoric—the novel also emphasizes (for the last time) the importance of real, lived, experience. In the abstract, bugs are insignificant and easy to eliminate. But on the level of daily life, bugs persist in "every desk" and every kitchen, outdoors and indoors, across continents and cultures. Though theory would predict that humans could easily defeat bugs—just as theory would predict that Trisolarans would easily defeat humanity—in reality, "the outcome is still in doubt."

SUMMARY AND ANALYSIS

The color-coded icons under each analysis entry make it easy to track where the themes occur most prominently throughout the work. Each icon corresponds to one of the themes explained in the Themes section of this LitChart.

CHAPTER 1. THE MADNESS YEARS

It's 1967, the peak of the Chinese Cultural Revolution, and two factions of communist revolutionaries are in a standoff. The older revolutionaries look with fear on the younger revolutionaries; the younger group is like a "pack of wolves on hot coals, crazier than crazy." Besides, while the older fighters only have guns, the young fighters have explosives, which could be detonated at any time. A beautiful teenage girl stands on top of a building and waves a flag. Moments later, she is shot and killed. Yet the girl dies happily, believing that she is "passionately sacrificing herself for an ideal."

The Cultural Revolution was a period of tremendous upheaval in China, as different groups of young people accused each other and their elders of disloyalty to the communist government. By starting its narrative in 1967, at the peak of the violence, the novel shows just how divisive and violent humanity can become; even the most seemingly youthful and innocent members of society are capable of great destruction.

Around the same time, young revolutionary students at Tsinghua University (in Beijing) are rebelling against their teachers, whom they label as "bourgeois reactionary academic authorities." Many of the professors have either killed themselves or abandoned their beliefs when faced with this mass humiliation and torture. But Ye Zhetai, a brilliant physics professor, refuses to bend to the demands of the Cultural Revolution. To get him to change his mind, his former students are forcing him into a "struggle session," in which he is physically tormented while the entire student body watches.

Historically, many of the worst atrocities in the Cultural Revolution were directed at academics, in part because academia values ideological complexity—and China's communist party wanted no such nuance. For Chinese intellectuals in this era, therefore, the Revolution became a question of choosing either abstract, philosophical, belief or immediate safety. Most professors chose safety; that Ye Zhetai prioritizes his beliefs speaks to his extraordinary integrity and strength.

A group of two college-aged men and four high school girls accosts Ye Zhetai with accusations. When he remains silent, the girls bring Ye Zhetai's wife, Shao Lin, onstage. Shao has turned against her husband, and she berates him for teaching Albert Einstein's theory of relativity because it is "anti-dialectical" and therefore against communism. While Shao humiliates him, Ye reflects on the fact that his wife has always been "too smart" to work as a theorist. Specifically, she has always been too attuned to the political implications of scientific thought. For example, in the years leading up to the Cultural Revolution, she began changing the names of theorems to fit the accepted political narrative.

Shao Lin's betrayal of her husband epitomizes a phenomenon that was common throughout the Cultural Revolution; families were often split either by ideological differences or by one person's decision to protect themselves at the expense of another. It is also worth noting the idea that theory, even at its most advanced, requires a special kind of naivete. Whereas Ye Zhetai often gets lost in the abstract principles of his work, Shao Lin understands that these ideas are only one part of the equation—unlike her husband, she remains attuned to the real-life context of her work in addition to the work itself.

In reality, though, Shao's father (a wealthy, prominent scholar in pre-revolutionary China) met Einstein in person, a meeting he considered the definitive moment of his life. Rather than discussing physics, the two men talked about the starving child they encountered on their path. Later, Shao's father would muse that "in China, any idea that dared to take flight would only crash back to the ground. The gravity of reality is too strong."

Even though Einstein is one of the scientists most associated with progress and discovery, his first appearance in the book is tied not to human success but to human failure; scientists can conceptualize relativity, but they cannot figure out how to prevent children from starving. This passage also begins to contrast the theoretical "flights" of abstract scientific work with the heavy complexity of "reality."

The students at Tsinghua begin to beat Ye Zhetai with a copper belt. As they do so, Shao and her husband debate whether philosophy or experiment should guide scientific theory. Ye Zhetai believes that "truth emerges from experiences," whereas Shao and the students argue that "it should be the correct philosophy of Marxism that guides scientific experiments."

This harrowing scene spotlights the novel's focus on the gap between theory and real experience. Whereas the communists want to promote simple, incontestable ideology, Ye Zhetai emphasizes the importance of "experience"—of confusing, lived-in "truth." Only ideas built on observation and daily life, Ye Zhetai believes, can have real meaning.

The girls double down on their interrogation of Ye Zhetai. As they fight over the Big Bang Theory, Ye Zhetai admits that he believes in the possibility of a god. This further inflames the revolutionaries, who believe that religion is antithetical to communism. Pushed into a frenzy, the young girls begin to attack Ye Zhetai. Within minutes, Ye Zhetai is dead. Shao Lin begins to cackle as if she has lost her mind, while the rest of the students flee the auditorium. Only one person remains—Ye Wenjie, Ye Zhetai's daughter.

There are several notable things happening in this scene. First, this is the first time the characters start to question whether there is other intelligent life in the universe—a question that will prove essential throughout the book. But more than that, this exchange is notable for its suggestion that human beings, when faced with things they do not understand, turn not to collaboration but to anger and violence. And finally, this moment marks the introduction of Ye Wenjie, as she witnesses not only her father's death but her mother's participation in it.

Left alone, Ye Wenjie finds that "the thoughts she could not voice dissolved into her blood, where they would stay with her for the rest of her life." She tries to go home, but when she does so, she only hears her mother Shao's insane laughter. Instead, she goes to the house where her former advisor Professor Ruan lives. Like Ye Zhetai, Ruan has been tortured for her beliefs; the revolutionaries have tormented her for wearing heels and smeared lipstick across her face. When Ye Wenjie arrives at Ruan's house, she sees that Ruan has taken her own life. She also sees that Ruan chose to wear lipstick and heels when she died.

In this critical quotation, the experience of trauma literally reshapes Ye; after watching her father be beaten to death, betrayal and despair will be in Ye's "blood" forever. Without anyone to trust or confide in, Ye can never leave her trauma in her past, and instead it must "stay with her," informing her every decision and response. It is also worth noting the simple but symbolic resistance of Professor Ruan wearing the very items she was targeted for at the moment of her suicide; though the gesture is small, it demonstrates her tenacity in the face of powerful force.

CHAPTER 2. SILENT SPRING

Two years later, Ye Wenjie is working in the Greater Khingan Mountains, an isolated forest in Inner Mongolia. Ye Wenjie is helping cut down trees to make grain fields as part of the government's Production and Construction Corps. As she sees the trees fall, she is haunted by memories of her father's death. The scale of the deforestation makes the events of the Cultural Revolution feel small and unimportant. Ye reflects that this massive environmental destruction is a kind of "madness."

One of the major goals of the Cultural Revolution was to increase China's industrial production, which in practice often meant widespread deforestation and development. Ye's rich imagery links the harm human beings are doing to their environment to the harm they are doing to each other—and more specifically, Ye's experience of personal loss now shapes the way she sees everything, from the natural environment to the political actions around her.

Ye Wenjie is stopped in her thoughts by Bai Mulin, a reporter for the Corps newspaper. Mulin points to the rings on the trees, asking the workers to think about how much history they have just cut down. Most of the other workers do not care, but Bai recognizes a kindred spirit in Ye Wenjie; they share a sadness that this once-fertile region has become a barren desert. Bai tells Wenjie about an American book known as *Silent Spring*. The book is considered reactionary, but certain government officials (like Bai) have been allowed to read it. Bai explains that *Silent Spring* has inspired him to write to the government in protest of its environmental destruction. He then lends the book to Ye Wenjie, warning her to be careful with it.

Silent Spring, written by environmentalist Rachel Carson in 1962, focused on the negative effects of pesticide use (particularly as it impacted animals). The book was tremendously influential in the United States, which is probably one of the reasons it was considered so controversial in communist China. The fact that Bai Mulin trusts Ye with such an illicit item also seems to signal a degree of connection and understanding between the two characters.

As Ye Wenjie reads the book, which is about the damaging effects of pesticide use, she begins to believe that human beings are fundamentally evil. Eventually, she decides that humanity can never have a "moral awakening" of its own accord; instead, it must depend on some "outside force" to wake up to its own evil.

This passage marks a critical turning point in Ye's thinking. After having been personally disillusioned by what happened to her father, Ye now loses faith in humanity entirely. But rather than driving her to religion or spiritual belief, Ye's desire for an "outside force" will later push her in a more scientific (and more dangerous) direction.

After finishing the book, Ye returns it to Bai at his home near Radar Peak. Though Radar Peak is ostensibly a military base, it is actually much more mysterious; there is a giant antenna on the top of the mountain, and when the antenna is extended, animals panic and humans fall ill. Sometimes, even the weather itself changes. Radar Peak is also heavily guarded, and the people in charge have great power within the communist government.

Tellingly, the most important thing on Radar Peak is an antenna. Antennas are typically used for communication across long distances, and so the fact that this antenna is so heavily guarded suggests that some kind of top-secret communication is occurring here.

Bai shows Ye the letter he plans to write to the Chinese leaders in Beijing. Ye thinks the letter is beautiful, so when she notices how much Bai's hands are shaking, she agrees to copy it down for him. While she writes, Bai wonders how someone as highly educated as Ye—who trained as an astrophysicist—can just throw away her skills in a place like the Greater Khingan Mountains. Ye feels a moment of comfort with Bai, and it is the first time she has felt comfort since her father was killed. But then she leaves his house and is confronted again by the "steel glint" of the antenna on Radar Peak.

This passage juxtaposes two different forms of communication: the letter writing, which represents intimacy and comfort, and the "steel glint" of the antenna, which signals danger and the unknown. This juxtaposition perhaps reflects the reality that every time Ye starts to find real, human connection with someone, that connection is overshadowed by the more mysterious form of contact happening on Radar Peak.

Three weeks later, Ye is called in to meet with Director Zhang, who runs the Division Political Department of Inner Mongolia. Zhang shows Ye Bai's letter to the government, and he accuses Ye of writing it herself; he then explains that since this letter is considered to go against the principles of the Cultural Revolution, Ye will be severely punished. Ye tries to clarify the situation, but she quickly realizes Bai has framed her—and that she is helpless to defend herself.

This betrayal is particularly devastating because Bai was the first person Ye had been able to trust since her mother betrayed her father. It is particularly interesting that Bai does not seem like a fundamentally evil man. Indeed, rather than vilifying Bai, the novel suggests that the pain he causes is another ripple effect of the Cultural Revolution: betrayal is necessary for survival.

Though Bai had not initially intended to frame Ye (only doing so when he realized he was going to face punishment), his actions will have tremendous import: historians would often write about the impact of this 1969 exchange. Still, Bai lived the rest of his life in relative normalcy, eventually moving to Canada and dying of lung cancer. He never acknowledged or apologized for what he had done to Ye.

Throughout the novel, various characters reflect on their own individual impact on the world. But though Bai's actions would change the course of Ye Wenjie's life—which, in turn, would shape all of human history—Bai himself is completely unremarkable. Thus the gap between an individual's actions and the effect of those actions emerges with particular force here; even the most average people can have extraordinary impact.

Ye is transported to a women's prison, in part because "by birth and family background" she is already considered politically suspect. In the jail, Ye is interviewed by a beautiful, seemingly kind young woman named Cheng Lihua. Cheng believes that Ye is merely confused because she has read "too many books." Cheng then presents Ye with a document to sign, but Ye, not yet trusting Cheng's kindness, insists on reading the document first.

Though Ye Wenjie does not have quite her father's extensive background in academia, her own time as a college student is enough to automatically make her suspect. And just as Ye is distrusted by most people around her, she now begins to distrust everyone and everything, as can be seen in her skepticism of Cheng Lihua's seeming kindness.

The document is all about Ye's father, Ye Zhetai—and worse still, the source for the report is Ye Wenxue, Ye's younger sister. Wenxue is a deeply passionate Red Guard, to the point that she has even incriminated her own father. As Ye reads on, she realizes that the report is about her father's involvement in the mysterious double-bomb project of 1964. If Ye signs the document, it will be used to torture or even execute her father's former colleagues. With this in mind, Ye refuses to sign.

In addition to being betrayed by her mother Shao Lin, Ye now comes to terms with the fact that her younger sister also abused her family's trust by giving private details to government investigators. Though Ye does not seem to care very much for her father's former colleagues, she is so disgusted by her sister's behavior that she will not sign the document.

Cheng explains that if Ye signs the document, she will be let off the hook for supposedly writing Bai's letter. However, if Ye does not sign, she will be prosecuted as an active counter-revolutionary and will face cruel punishment. Still, Ye will not sign. Frustrated, Cheng grabs a bucket of cold water and pours it all over Ye. In the cold air of the Inner Mongolian winter, Ye begins to get so chilly that she starts to hallucinate.

Once again, Ye's fundamental distrust of humanity is confirmed: though Cheng Lihua initially appeared to be warm, she is now (quite literally) icy. This moment also illustrates the casual brutality that was so prevalent during the Communist Revolution.

First, Ye sees her sister, Wenxue, waving a flag on top of a building. Ye recalls that Wenxue was killed two years ago in a conflict between Red Guard factions. Ye then pictures Bai Mulin, Cheng, and her mother Shao Lin waving the flag—and then she blacks out.

Though she is never explicitly named, it is now clear that Ye Wenxue is the passionate teenager from the very first scene. But rather than mourning her sister's loss, Ye Wenjie sees her as merely one of the many figures—alongside Bai and her mother—who have broken her trust terribly. Not for the last time, Ye's various traumas begin to blur together into a narrative about humanity as a whole.

CHAPTER 3. RED COAST I

Ye wakes up to the sound of roaring; she is on a helicopter, still incredibly sick from her time freezing in the ice water. She is greeted by two men with caps from the PLA (People's Liberation Army), who ask her about a particular paper she wrote in college. The two men introduce themselves as Lei Zhicheng, who is the Political Commissar at Red Coast Base, and Yang Weining, who is the chief engineer there. Ye is shocked to see Yang—he was one of her father's students. However, while Ye Zhetai was always eager to focus on theory, Yang preferred to focus on the real world because "it's easy to make ideological mistakes in theory." Yang eventually distanced himself from Ye's father.

The PLA was the armed department of the Chinese communist government, so it is surprising and frightening for Ye to now find herself in the company of two PLA soldiers. The bigger surprise, however, is that Ye must now face her father's former student. Unlike Ye Zhetai, Yang Weining was able to shape his scientific work to fit political ideology; rather than trying to build a theory around lived experience, Yang understood his goal to be to build a theory centered on communist ideology.

As she falls back to sleep, Ye hears the two men discussing her. Though they are hesitant to take her on given her checkered political past, there is no other option; whoever takes this job will need to be sequestered at the base, meaning they can have no connections to the outside world. Ye drifts off to Lei and Yang debating some mysterious project.

Though Ye does not fully understand what the two men are discussing, it is clear that her isolation is what makes her such a valuable candidate for this mysterious project. At this moment in her life, Ye is completely alienated from humanity: she has no family, no significant other, and not even any close friends.

When she finally gets off the helicopter, Ye realizes where she is: on top of Radar Peak. Lei explains to her that despite the severity of her crime, she has been given "the opportunity to redeem herself through hard work." But after Lei leaves, Yang cautions Ye that once she joins the research at Radar Peak, she can never leave it. Without hesitating, Ye accepts; Radar Peak gives her an opportunity to be separated from the rest of the world.

For most people, the reclusive nature of Radar Peak would be daunting, but Ye sees this isolation as an opportunity. After all, for someone so disgusted with humanity, what could be better than a chance get away from it?

Yang starts to take Ye on a tour of the building, but she wants to wait outside, staring at the giant antenna. Suddenly, the whir of the various machines on the base gets quiet, and the antenna begins to transmit an electric signal. Ye feels her face itch, and the sky takes on a dim glow. A flock of birds, mid-flight, drops down dead. Ye tries to understand what the antenna is pointing at, but she cannot.

The antenna again proves itself to be capable of quite ominous destruction: whatever force it is transmitting kills birds instantly. Most tellingly, however, the fact that the antenna is pointed at an indeterminate point suggests once more that the point of Radar Peak is to contact some very distant, unknown source.

CHAPTER 4. THE FRONTIERS OF SCIENCE

More than 40 years later, two cops and two PLA officers come to find Professor Wang Miao. The officers want to know whether Wang has had any contact with a secretive organization known as the Frontiers of Science, which is made up of prominent intellectuals from around the world. One of the cops, a reckless man named Shi Qiang, harasses Wang to give more information. Eventually, the other officers intervene, inviting Wang—who is an expert in nanotechnology—to a secretive meeting. When the officers leave, Wang overhears them talking about the "Battle Command Center," adding to his confusion.

Though there are still PLA officers, China in the early 2000s is a very different place from China at the height of the Cultural Revolution. Science is now more highly valued, and while there is still some danger in speaking out against the government, communist ideology no longer dictates every aspect of theory. It follows, then, that scientist Wang Miao is now able to peacefully collaborate with the government (unlike Ye Zhetai before him). It is also worth noting the contrast between brash Shi Qiang and mild-mannered, cautious Wang.

That afternoon, Wang arrives at what he guesses is the Battle Command Center. He is surprised to see that the room is a mess, and that everybody he encounters seems to be under-slept and overwhelmed. The group is a mix of generals—some of whom, shockingly, are from NATO—police officers, and prominent academics. The leader of the group is Chinese general Chang Weisi. Wang also spots the policeman Shi in the crowd.

Though the Cultural Revolution is over, China is still on rocky diplomatic terms with the United States and other Western nations. But all of these countries, normally so opposed to each other, have come together—suggesting that there is some global crisis beyond anything Wang Miao can imagine.

Shi inquires about Wang's specialty, a new field called nanomaterials. Wang explains that the material he makes is so strong that one strand of it could cut through a car. Shi immediately begins to think about how such a technology could be used to commit crimes, annoying Wang.

Again, the distinction between the scientific Wang and the more practically-minded Shi comes to the fore. Still, it is useful to understand that Wang works in applied science; unlike the physicists in the first part of the novel, Wang applies theory to tangible materials in order to create new products. Therefore, Wang embodies the novel's attempt to bridge the gap between abstract and practical thought.

The meeting begins, and Wang is baffled to find that General Chang refers to the NATO officer (and some CIA spies) as "comrades"; moreover, it seems as if everybody in this room is on the same side. Shi immediately begins to antagonize General Chang, complaining that the police are being kept out of the loop of information. Chang reminds Shi that he was recently suspended from the police force, but he has to admit that Shi's unscrupulous, crafty techniques are useful in this "time of war."

Though there is a "war" happening, all of these various military leaders—who would normally be facing off against each other—appear to be working in unison. Instead, the division within the room is not between different countries but between people of different status; for example, Shi resents that people seem to talk down to him because he lacks the impressive credentials of his colleagues.

Wang does not understand what kind of war is being referenced, and he begins to question his own sense of reality. General Chang explains that there has been a pattern of attacks on scientists, and he asks Wang to look at a list of prominent physicists. Wang is familiar with the last name, and Shi picks up on this fact.

As he will continue to do for the rest of the story, the normally objective Wang struggles to make sense of what is happening around him. At the same time, though, more details of the current conflict are coming into focus, including the fact that high-level physics seems to be at the center of the issue.

An avid landscape photographer, Wang recalls a particularly striking day in the lab. In the midst of all of his machinery, he had seen a beautiful woman. Later, he learned the woman was Yang Dong, a private, brilliant physicist and the final name on Chang's list. Since that day, Wang pictured Yang Dong at the center of all his photographs, as her stunning presence seemed to complete all of his work.

In addition to introducing the closed-off figure of Yang Dong, this passage offers key character clues about Wang Miao. Unlike many of his colleagues, Wang has a hobby in landscape photography; while his work focuses on distant theory, he also is able to get some distance from his job and appreciate the beauty of the everyday world around him.

To Wang's horror, Chang reveals that all of the physicists on the list have killed themselves within the last two months; Yang Dong killed herself merely two days ago. Yang Dong's boyfriend Ding Yi presents Wang with Yang's suicide note, in which she laments that "physics has never existed, and will never exist." Ding explains that as physics got more complex, the original theories started to break down. The Frontiers of Science was trying to use physics to figure out the limit of what was knowable. Though many of its members behaved as if the organization were a cult, it was in fact a formal research group.

Though Wang understands almost nothing about the Frontiers of Science, it is clear that whatever research the organization is pursuing has had massive implications for the scientists involved and for the world around them. In particular, Yang Dong's fear that "physics has never existed" suggests that the organization has made some new, terrifying scientific discovery—one so profound that it requires a military response from all of the world's largest nations.

Wang explains that he was introduced to the Frontiers of Science through Shen Yufei, a Japanese physicist of Chinese descent. Her arguments were fascinating, but while Wang was interested in the debates and theories discussed in the meetings, he ultimately decided that he did not have time. Now, however, General Chang asks him to join the Frontiers, because they need someone on the inside of the organization to understand what is really going on. Wang initially refuses, but Shi mocks him for being weak—and in his anger, Wang rashly agrees to join.

Shi's ability to persuade Wang to join the Frontiers of Science relies on a kind of reverse psychology; clearly, Shi is very skilled when it comes to understanding (and manipulating) the people around him. And though it is not elaborated on in the novel, there is also a particularly masculine competition at stake; Wang is motivated to join the Frontiers in part because he lusts for Yang Dong and in part to prove his strength to Shi.

After the meeting ends, General Chang walks Wang to his car. Wang remains baffled by the whole ordeal, and Chang will not offer him any clarity. He only reflects that "the entire history of humankind has been very fortunate [...] but if it's all luck, then it has to end one day. Let me tell you: it's ended." Wang gets into a car that the General provides for him, but rather than going home, Wang instructs the driver to drive to Ding Yi's house.

Here, the novel continues to explore the difference between everyday life and larger historical narrative. What began as a completely ordinary day in Wang's life now marks the turning point between the happy years of human history and the "end" of such good fortune—in other words, what seemed mundane has now become life-altering. Moreover, this passage forces readers to reflect on the scale of history. The events that once seemed tragic are, by comparison to this unknown future, merely blips.

CHAPTER 5. A GAME OF POOL

When Wang arrives at Ding's apartment, he sees that it is unfurnished other than a large pool table. A drunken Ding explains that while he had hoped the new place might encourage Yang Dong to start a family, in reality, "she was like a star, always so distant." Ding encourages Wang not to get further involved in the Frontiers of Science.

Ding Yi's comparison of Yang Dong to a star is telling: Yang was so consumed by her work that in many ways, she became it. Several of the characters in the novel will struggle with this same problem, as it proves difficult to balance high-level scientific work with human intimacy.

Ding invites Wang to play pool with him, and the two men discuss how the balls on the table are reminiscent of particles colliding in a particle accelerator. Using the pool balls as an example, Ding explains that in physics, scientists assume that the key principles "are invariant across space and time." But Ding explains that recently, super high-powered particle accelerators disproved this assumption, forcing scientists to realize that there are no laws of physics that apply in all conditions.

In simpler terms, the machines physicists are using—called particle accelerators—no longer provide consistent experimental results. Instead, the data is different every time, making it impossible to form or prove reliable theories about matter.

Wang begins to understand that if there are no universal laws of physics, then the discipline itself ceases to exist; this degree of uncertainty caused many scientists, including Yang Dong, to give up on work and life. Before Wang leaves, Ding gives him the address of Yang Dong's mother. Ding explains that Yang's mother lives alone, and he encourages Wang to visit her.

If physics revolves around creating laws for the universe and then applying them, the absence of such laws means the science itself has collapsed. For someone like Yang Dong, whose entire life was centered on her work, this collapse is devastating. But though Yang only valued her work, there were many people—like Ding Yi and Yang's mother—who valued her life on its own terms, and who are then crushed by her loss.

CHAPTER 6. THE SHOOTER AND THE FARMER

The next day, Wang takes his camera into the city to shoot some landscapes. Normally, he prefers to capture peaceful scenes, but today he feels too chaotic to do that. As he snaps photos, he reflects on the theory of the shooter and the farmer. In this theory, a skilled hunter shoots bullets into a paper target, spacing each shot out by 10 centimeters. If there were small sentient beings living on the target, they might incorrectly assume that there was a hole in the universe every 10 centimeters.

The metaphor of the shooter and the farmer is all about perception. The shooter part of the theory suggests that people will try to form assumptions based on their own immediate experiences—but that those experiences can sometimes be misleading. As a landscape photographer, Wang is acutely aware that every human image or perception tells only a partial story; there is always something just out of frame.

On the other hand, "the farmer" part of the theory imagines a farm in which "food arrives" at 11 every day. On Thanksgiving Day, the farmer explains this theory to his turkeys, but rather than getting food at 11, the turkeys are slaughtered as food for the humans; the turkeys had been expecting to be served without realizing that they themselves *were* the food. Wang begins to doubt his own perceptions.

The farmer part of this story then demonstrates how people always center themselves in their own narratives. Both the turkeys and the farmer believe that they will eat at 11, but the turkeys do not realize that to the farmer, they are the meal. The turkeys' self-involvement ultimately marks their downfall: though they think they are the heroes of the story, they are actually the victims.

Wang comes home and develops his film, only to discover what appears to be a countdown in the center of the negatives. No matter what the picture looks like, the countdown appears (so if the background is black, the countdown is white, and vice versa). A panicked Wang realizes that the countdown is giving him 1,200 hours, or about 50 days—for what, he does not know.

Wang's peaceful hobby has now become a source of great anxiety—though Wang has taken the pictures, he no longer has any control over them. Plus, the seeming irrationality of the numbers flies in the face of Wang's normally rational, methodical way of thinking.

When his wife and son return home, Wang asks them to take pictures with his film camera (though he does not want his wife to take pictures of his son Dou , lest the awful countdown appear on the child's face). To his relief, no numbers develop on the pictures taken by his family members.

Unlike Yang Dong, Wang always puts his family first. He protects his son even in a moment of intellectual crisis, displaying his tenderness and sense of duty to others.

In an attempt to diagnose the problem, Wang takes apart his camera and adds a new roll of film; still, the numbers appear whenever he takes a picture. Wang then borrows a different kind of camera from his neighbor, but it doesn't help—the numbers still appear on every photograph he takes (though they do not appear on the pictures his family members take). Wang realizes this is not a problem that can be solved with a reasoned, technical approach. As his wife breaks down into sobs at her husband's turmoil, Wang decides to call Shen Yufei.

In this passage, Wang effectively conducts a series of experiments on his camera to figure out the issue. But this scientific approach leads nowhere, forcing Wang to contend with the idea that the countdown is more supernatural than natural. And interestingly, the fact that the camera is the source of Wang's stress adds to the novel's more general anxiety that technology has a dark side.

Wang arrives at Shen's house, which is lovely and expensive, though Wang does not understand where she makes her money. He is greeted by Shen's husband, a seemingly spaced-out man named Wei Cheng. Though Wei has nothing to do with the Frontiers of Science—nobody even knows if he is employed—he spends all day laboring on a fancy computer. Wei takes Wang to Shen's room.

Shen Yufei is clearly high up in the Frontiers of Science, so Wang hopes she will be able to provide him answers. But instead, her house just generates more questions: why can she afford such a beautiful home on a researcher's salary? And why is she married to this secluded, bizarre man?

When Wang enters, he sees that Shen is wearing a V-suit, which is a kind of virtual reality suit that allows players to feel physical sensations when they play video games. Shen is playing a game on the website www.3body.net, which is surprising, given that she does not seem to be the gaming type. Once Shen logs off, Wang explains his situation to her. She seems completely unfazed by what he has told her; instead, she simply tells him to abandon his work on nanomaterials.

Shen is a very serious woman, so it seems incongruent that she would be playing a game; it is this cognitive dissonance that leads Wang to remember the name of the game. Even more shocking, however, is Shen's seeming understanding of what Wang is going through—in addition to being a leader in the Frontiers, Shen has some greater knowledge of the universe that Wang does not.

As Wang moves to leave, he notices another car pull up, and a man named Pan Han gets out of the car. Pan is a famous environmentalist; he has risen to prominence because of his accurate predictions about various biological problems created through new methods of farming. For much of his career, Pan argued that "technological progress was a disease in human society." Wang sees Shen and Pan speak, but Shen does not let Pan into her house.

Ye Wenjie and Bai Mulin were consumed with anxiety about the environment in the 1960s, but humans' destruction of their planet has only gotten worse since then. Pan Han's understanding that progress can actually be a "disease" is thus shared by many of the novel's characters. Also worth noting is that while both Shen and Pan are respected scientists, they appear to be on poor terms with each other.

On his way home, Wang runs into Shi, causing him to believe Shi is following him. Exhausted by his strange day, Wang falls asleep as soon as he gets back to his house. He dreams of the countdown all night—only to find, when he wakes up in the morning, that the horrifying numbers are now a constant part of his field of vision. Wang decides to take the day off from work to meet with an ophthalmologist. The doctor is amused by Wang's paranoia, and he thinks that Wang is probably just overtired; as a cure, he prescribes taking more time off from work.

In a horrifying twist, the countdown has moved from external objects (photographs) into Wang's own body, as the numbers now appear in his eyes. Still, Wang refuses to believe that this is a problem outside of the domain of normal science; instead, he consults an eye doctor, hoping to find solace in someone else's professional, scientific expertise.

Wang decides to go to his lab, where they are working on developing a new, extra strong nanomaterial. Unfortunately, the machine they are using to create this new material has been malfunctioning, and Wang's team has been begging him to take a break for weeks. Though Wang has previously refused, he now tells his lab director to shut down the machine for a couple of days. Wang tries to reassure himself that his change of heart has nothing to do with the ominous countdown ("I'm not giving in"). However, as soon as he tells the lab director to stop the machine, the numbers disappear.

Wang does not want to admit how much these strange numbers have affected him, yet he is desperate to get rid of them—so desperate that he indeed follows Shen Yufei's advice and shuts down his lab. The reality that the countdown actually stops when he does this suggests something supernatural (or at least superhuman) is at work.

Angrily, Wang calls Shen Yufei to demand answers, and Shen implies that some form of higher power is involved. Rather than buying into Shen's explanation, Wang demands to see the countdown at a larger scale because "the shooter and the farmer should be able to manipulate matters at a scale that humans cannot." Shen gives Wang a chart of Morse code and tells him to find a place where he can measure the cosmic microwave background—and to check that measurement three days from now between one and five in the morning. In that time, Shen promises, "the entire universe will flicker" for Wang.

Again, the story of the shooter and the farmer reminds Wang that his own perceptions are limited—and that this limited perception makes him vulnerable. In order to help him trust that the countdown is real, therefore, Wang demands to see it at a much larger scale. That Shen Yufei can make the entire universe "flicker" then hints that she herself can control the universe—or that she knows someone who can.

CHAPTER 7. THREE BODY: KING WEN OF ZHOU AND THE LONG NIGHT

To find a place where he can observe the cosmic microwave background, Wang calls Ding Yi for help. Ding again advises Wang to consult Yang Dong's mother, who is herself a retired astrophysicist. After he hangs up, Wang's mind drifts to Shen Yufei and the video game she was playing on www.3body.net. He decides to grab a V-suit from his office and play the game himself. He logs on with the ID "Hairen."

In order to understand what is happening around him, Wang has begun building a network of confidantes—again, he is a more social creature than many of his fellow scientists. Wang's first username "Hairen" is a Chinese word that translates to "man of the sea."

As soon as Wang enters the game, he feels his V-suit turn cold. The landscape appears deserted and barren until two men approach and introduce themselves. One of the men explains that he is King Wen of the Warring States Period, while the other introduces himself as Wen's Follower. Wang is confused—in real history, King Wen lived long before the Warring States Period began. But rather than clarifying, King Wen and Follower just show Wang their complicated sand clock (which is like a giant hourglass); though the clock is heavy and they are on a long journey, they tell Wang this is their only way of measuring time.

V-suits are useful because they give players the ability to feel completely immersed in the environment of their game; therefore, every time Wang is playing the Three Body game, he is experiencing the game's temperature. Just as the suit modulates Wang's temperature, his introduction to the game immediately toys with his sense of time. King Wen is a real historical figure—he was a nobleman in King Zhou's court in the 10th century B.C.E.—but here, he is in the wrong era.

Wang suggests that rather than using the sand clock, King Wen and Follower could just tell time by the sun. Wen is shocked by this idea, as he reminds Wang that they are "in the midst of a Chaotic Era." Follower complains of being unbearably cold, and Wang assures him that he will get warmer when the sun comes up—but this, too, is greeted with shock. Wen informs Wang that in this world, time is divided into Chaotic and Stable Eras. There is no way to know when the sun will rise in a Chaotic Era, as it does not follow any regular pattern. And though the sun rises consistently in a Stable Era, there is also no way to know when a Stable Era is about to end and a Chaotic Era is about to begin.

This critical passage begins to break down how the world of the Three-Body game operates. Sometimes, the sun rises and falls with regularity, just as it does on earth. But sometimes, the sun abandons all rhythm entirely; it could rise or fall at any minute, throwing the world into chaos. In addition to the rapid heating or cooling that can occur when the sun appears or vanishes too quickly, this constant instability takes an emotional toll.

Wang notices the sun start to rise and set in several different points in the sky, surprising him. Because the three men are not speaking to each other much, Wen flips the sand clock up and down, speeding up the passage of time in the game. Wang checks the game sidebar and notices that his health bar is getting dangerously low.

Just as the sun changes its timing, it also changes its directionality (whereas on earth, it always rises in the east and sets in the west). But in a neat twist, though time on the Three-Body planet is unreliable, the game can be sped up or slowed down with regularity to allow players to maximize their experience.

All of a sudden, the sun rises. Before Wang can celebrate, however, he realizes that the sun is getting closer and closer, scorching the earth; the three men have to find shade behind a rock to avoid being burned alive. Follower declares that living in a Chaotic Era is like "walking through hell," and King Wen decides that the only option is to dehydrate Follower.

Wang is beginning to experience the constant fear of living in a Chaotic Era—at any moment, the world could freeze or begin to burn up. It follows, then, that someone like Follower has begun to despair that they are in "hell."

Follower lays down on the ground and discharges all the water from his body, until his form has "lost its shape like a melting candle." King Wen picks up Follower and asks Wang to carry him to their destination, explaining that when a dehydrated body is placed in water, it rehydrates again. Wang realizes that all the man-shaped wisps he has been seeing along their journey are in fact dehydrated bodies.

In order to survive the harsh conditions of a Chaotic Era, the residents of this planet have evolved to be able to dehydrate and rehydrate their bodies. Dehydration is basically a kind of hibernation; the dried-out bodies do not feel hot or cold or hunger, and so can survive even the worst climate shifts.

The two men continue along their path, and game time speeds up. Eventually, King Wen notices two flying stars in the sky and he celebrates: two flying stars always heralds the return of a Stable Era. Wang wonders if the appearances of three flying stars would be even better, but King Wen gets scared at the very idea (though he will not say why).

These flying stars will prove to be an important clue as Wang begins to figure out what is happening in this odd world. It is critical to remember that there is some correlation between the presence of two flying stars and the sun's stable rising and falling.

As Wen predicted, a Stable Era has begun. Wen explains that during a Chaotic Era, all of humanity is dehydrated; during a Stable Era, they rehydrate and return to build cities and farms. Therefore, a Stable Era is the only time when civilization is able to advance, and so it is of utmost importance to predict when such an era will begin and end. King Wen explains that the goal of the game is to be able to create a calendar of Chaotic and Stable Eras. Wen has his own idea for a calendar, and right now, he is visiting King Zhou at his palace at Zhao Ge in order to share his vision.

Here, the goal of the game comes into focus: as a player, Wang's objective is to create a calendar for this tricky solar system. Because dehydration is a kind of hibernation, the people of this planet can only create life and make discoveries when they are rehydrated into a prolonged Stable Era—but not every Stable Era is prolonged. For civilization to advance, therefore, it is essential to know not only when a Stable Era is approaching but how long that era will be.

As they at last approach King Zhou's palace, Wang hears a sound like thunder—and he realizes it is actually the sound of many giant **pendulums** swinging in the air. Wen shows Wang the thick walls of King Zhou's palace, explaining that these walls allow him to survive the Chaotic Eras, when all of the other citizens are dehydrated.

Wang has arrived in the capital. He learns that this planet is ruled by a single leader, who takes responsibility for giving the orders to dehydrate and rehydrate the populace—and who therefore must survive even the most awful Chaotic Eras.

The two men arrive in the Great Hall, where they see King Zhou on his throne. Next to him there is a man clad in all black. Zhou explains that Fu Xi, the man in black, believed that the sun was an angry god. By building the pendulums, Fu Xi claimed, society could tame the sun and make it appear at regular intervals. However, the Chaotic Eras returned—and to punish Fu Xi for being wrong, Zhou orders him to jump into the boiling cauldron. Fu Xi follows the order and submerges himself in the scalding water.

Now, Wang understands that the giant pendulums reflect an old religious system; however, the Chaotic Eras have persisted, so this religion has collapsed. As Fu Xi is killed, Wang also realizes that the punishment for making an incorrect guess about the nature of the solar system is certain death—and that King Zhou is a brutal, unsympathetic leader.

King Wen then presents his own calculation, which relies on the ancient Chinese oracle, *The I Ching*, and the philosophy of yin and yang. After performing a series of calculations, Wen gives King Zhou a rough calendar. Using the sand clock, Wen speeds up time in the game long enough for several of his first predictions to come true with at least some degree of accuracy. King Zhou vows to build a monument to Wen.

Since Fu Xi's belief system has been disproved, Wen now gets a shot at explaining the universe. Here, it becomes clear why game time must be able to speed up: in order to verify peoples' predictions, the game must jump months or even years into the future to track the sun's movement and see if it aligns with the proposed calendar.

Eventually, the sun rises at the beginning of what Wen has predicted will be a prolonged Stable Era. Zhou gives the order to rehydrate, and Wang watches as soldiers enter thick-walled buildings known as dehydratories to haul the dried bodies out. When the bodies are thrown into a nearby lake, they rehydrate and rejoice, hugging each other and dancing (though some notice that pieces of their bodies are missing, having been torn while they were dehydrated). Immediately, the rehydrated people begin to plant food on farms and rebuild cities.

For the first time since playing the game, Wang sees a joyful, populated version of this planet. Immediately, the rehydrated people do the work of creating a civilization: there is limited time in this Stable Era, so the society must do as much as it possibly can to progress.

Eight days later, however, the sun does not rise—Wen was wrong, and the Stable Era is already over. Zhou gives the order to dehydrate, and he tells Wen that he, too, must jump into the scalding cauldron. Just then, someone sees three flying stars in the sky, which King Wen explains signals a period of extreme cold. King Zhou advises Wang that he should leave the game as it's "no longer fun after it gets to this point."

There are three key things to note in this passage. First, every time people are rehydrated, they run the risk of being exposed to dangerous solar conditions—so rehydrating for eight days is almost tragic. Second, like Fu Xi, Wen is going to be put to death for his incorrect theory; science and violence, not for the last time, are linked here. And most crucially, while two flying stars signal a Stable Era, there is also some correlation between three flying stars and a period of extreme cold.

After several weeks of intense snow and dry ice, civilization freezes to death. A game pop-up tells Wang that "Civilization Number 137 was destroyed by the extreme cold. The civilization had advanced to the Warring States Period before succumbing." The game invites Wang to log on in the future. Before he signs off, he notices the three flying stars, spinning around him in the night.

In the game, each new civilization advances to a different stage before it collapses due to a particularly brutal Chaotic Era. Every time a player logs on, then, they are entering a new civilization at a new level of progress. And every time a civilization ends, the game (temporarily) ends, too.

CHAPTER 8. YE WENJIE

Though Wang logs off, he cannot stop thinking about the Chaotic Era. He reflects on a day in school, when he learned about information theory. To illustrate the concept, his professor showed the class two images: a painting called **Along the River During the Qingming Festival**—which was filled with many details—and a photograph of a wispy cloud in the sky. Surprisingly, the photograph contained more information because "its entropy […] exceeded the painting's by one or two orders of magnitude." Wang reflects that the *Three Body* game is the same way; though it seems simple, the game is actually quite complex.

Entropy is a lack of order or predictability, so whereas a painting will always be composed and planned by a human being, even the simplest real-life image—like the wispy cloud—has more entropy (because it is not man-made or planned). When Wang reflects that the Three Body game feels similarly unpredictable, he is also intuiting that the video game is in some way real, as messy and complicated as life is. Furthermore, this comparison places a celebrated 11th-century painting against a brand-new video game—and shows how the more recent invention is by far the more complex one. Even in the world of art and entertainment, technology has progressed dramatically.

Wang arrives at Yang Dong's mother's apartment complex, per his conversation with Ding Yi. He sees an old woman struggling with her groceries and guesses correctly that this is Yang's mother. Upon offering to help her, Wang learns that Yang's mother is in fact the scientist Ye Wenjie. Ye brings Wang up the stairs into her apartment, and he sees that she is watching several neighbors' young children. Wang observes that Ye is a natural grandmother, and he wonders if she was sad that Yang Dong never had children.

This older Ye Wenjie is very different from the one introduced earlier in the book. Whereas young Ye was distrustful and isolated, this old woman is warm and a natural caretaker. Though the elderly Ye longs for connection, Wang reflects that the last stage of her life has been defined by loss—and readers know that, in fact, every stage of Ye Wenjie's life has been tragic and traumatic.

Ye shows Wang to Yang's room (though Ye calls her daughter by the pet name Dong Dong). Wang is surprised to find that the room, which Yang Dong lived in even as an adult, is almost entirely bare—the only furniture is made of tree stumps. On Yang's desk, there is a picture of her as a little girl; she is standing with her mother on a mountain with a giant antenna in the background, and Wang notices that Yang looks terrified in the picture.

Again, the sparse room signals that Yang's focus on her work left no room for other pursuits or personality traits. Two things in particular stand out here: the tree stumps and the picture with the antenna. The tree stumps link Yang Dong to the mass deforestation that her mother witnessed as a teenager; the antenna makes it clear that Yang spent her childhood at the fearsome Radar Peak.

Just as Wang sees a birchbark notebook on Yang's desk, Ye walks into the room. She shows Wang what is in the notebook: some strange, abstract drawings Yang Dong made as a child. Ye expresses regret that she introduced her daughter to such abstract scientific concepts at a young age. "Her world was too simple," Ye reflects, "and all she had were ethereal theories. When they collapsed, she had nothing to lean on to keep on living." Though Wang reminds Ye that many scientists are dying by suicide, Ye believes that Yang should have been extra flexible and resilient because she was a woman.

The theme of theory versus lived experience once more comes into focus here: theory is "simple" and satisfying, but it is also "ethereal" and impossible to depend on. Instead, an appreciation of contradiction is necessary to enjoy life and "keep on living." Ye Wenjie's thoughts on gender are also important to take in. Both Ye and Yang were women in a primarily male world, and Ye's model of flexibility is a far cry from the competition and mockery Wang experienced in the largely male Battle Command Center.

Before he leaves, Wang asks Ye where he can observe the cosmic background radiation (as Shen Yufei instructed him to do). Ye recommends a place in the suburbs of Beijing, and she tells Wang she will put him in touch with a former student who works there. Before Wang leaves, Ye observes that he looks tired, and she gives him some ginseng to feel better. Wang, deeply touched by this gesture, promises to visit Ye again.

Ye's sweetness to Yang further distances her from the young version of herself introduced earlier in the text. At the same time, it is possible that Ye understands something about why Wang is tired—and that, as one of the world's foremost astrophysicists, she knows more than she is letting on.

CHAPTER 9. THE UNIVERSE FLICKERS

To get to the Chinese Academy of Sciences' National Astronomical Center (where he can observe the cosmic background radiation), Wang drives up a steep mountain. As he approaches, he sees many parabolic antennae, and he thinks of the picture of Ye Wenjie and Yang Dong. When he finally gets to the center, Wang is greeted by Sha Ruishan, who is Ye Wenjie's former student. Wang explains that he has come to "see the overall fluctuation in the cosmic microwave background."

Though the National Astronomical Center has nothing to do with Radar Peak, the antennae at both places symbolically link them—and the sense of foreboding associated with the Radar Peak antenna is perhaps present here as well.

Sha laughs at this request—the cosmic background radiation changes so slowly (over millions and millions of years) that it would be impossible to observe any fluctuation in a single night. Still, to humor Wang, Sha agrees to help him in his task, and he pulls up the monitor for the Cosmic Background Explorer (COBE), an out-of-date probe. Sha explains that if the kind of fluctuation Wang is talking about were to actually happen, the flat green line on the monitor would turn red and start coming out in waves. Again, Sha tells Wang he thinks such a shift is impossible.

Shen Yufei has told Wang that the universe will "flicker" for him; since normally the cosmic background radiation is stable, any noticeable change would effectively amount to such a "flicker." Sha Ruishan's reaction suggests just how unlikely this would be. Implicitly, then, such a flicker would certainly signal some superhuman force at work.

Since Wang does not expect the fluctuation to start until one in the morning, he and Sha agree to get a drink. While they talk, Sha summarizes Ye Wenjie's life—he recaps the loss of her father Ye Zhetai, her stint in the Greater Khingan Mountains, and then a strange time of her life when she seemed to disappear entirely. Eventually, in the 1990s, Ye Wenjie reemerged and began teaching physics at Tsinghua University. Only recently did people learn that Ye Wenjie actually spent those middle years at Red Coast Base.

In addition to filling Wang in on the part of Ye's backstory that readers already know, this passage shows just how much Wang enjoys (and relies upon) socialization. As in this scene, he often fills in the gaps and learns information over late-night drinks with a new friend.

As one in the morning approaches, the two men make their way back to the observatory. Sure enough, the line on the COBE monitor has turned red and has become a waveform. Sha is shocked, and so he checks other, more up-to-date radiation probes, all of which show a similar shift. Wang begins to track the lengths between the peaks of the waves, and he realizes that the universe is giving him a message in Morse code. Using the Morse code chart Shen Yufei gave him, Wang comes to realize that the universe is continuing to give the countdown that he saw in the photographs.

Somehow, Shen Yufei understood exactly how and when this giant shift would happen in the universe; in fact, she was so sure of it that she was able to give Wang the necessary information on Morse code in advance. And sure enough, the dots and dashes of the background radiation waves correspond exactly to the numbers of the countdown behind Wang's eyes.

In a panic, Sha decides that Wang must get his hands on a pair of 3K glasses, which allow people to see the background radiation through their own eyes. Sha tells Wang that he cannot continue to accompany him on his quest, as it is too disturbing. Before Wang drives off to pick up the 3K glasses, Sha remarks that "strange things have been happening to scientists lately." Ominously, Wang replies that "it's my turn."

Like some of the generals at the Battle Command Center, Wang is becoming aware that he is an individual at a historic, potentially world-altering crossroads. As Wang discovers, this is a lonely position; people like Sha would rather distance themselves than confront the massive, uncertain changes around them.

To get the 3K glasses, Wang drives to a nearby planetarium. When he arrives at the building, which has a transparent exterior, he marvels that the universe is "transparent; as long as you were sufficiently sharp-eyed, you could see as far as you liked. But the farther you looked, the more mysterious it became." Wang enters the planetarium and picks up five pairs of the glasses from a staffer.

Like he did with the story of the shooter and the farmer and the painting of the Qingming Festival, Wang begins to question his own perceptions. Just as the planetarium is misleadingly transparent, Wang must come to terms with the fact that the more he begins to examine the reality of the universe, the less he understands it.

As his eyes adjust to the glasses, Wang considers that the radiation is the leftover energy from the Big Bang Theory, millions and millions of years ago. Quickly, Wang realizes that the universe is indeed flickering, reminding him of a beating heart. He is aware of a "strange, perverse, immense presence that could never be understood by human intellect." In a state of panic, he takes the glasses off and tries to readjust to the world around him.

Wang's suspicion of a superhuman force seems to be confirmed by what he sees through the 3K glasses. At the same time, however, the flickering causes him to think of a human heartbeat—the things that he cannot understand with "human intellect" he can therefore relate to on a more emotional or intuitive level, even if they frighten him.

A few hours later, Wang leaves the planetarium and dials Shen Yufei. When he asks her what happens at the end of the countdown, she tells him that she does not know. He wonders if before every global catastrophe (like World War II), one individual has experienced a countdown like this—and has felt his sense of powerlessness before impending doom. Wang finds himself in front of a church, but he cannot pay attention to the beautiful domed ceiling or the touching choir music because he can only picture the pulsing background radiation. Just as Wang begins to cry, policeman Shi Qiang appears, smoking a cigarette.

More clearly than ever before, Wang begins to consider his place in what seems sure to be a global disaster. His limited human agency is contrasted first with the mysterious countdown, and then with the spiritual power of a church—but rather than finding solace in the idea of a higher power, it only reminds Wang of the mysterious, pulsing, tangible evidence of how little he understands.

CHAPTER 10. DA SHI

Shi Qiang (or Da Shi, as his friends call him) reveals that he has been following Wang, which Wang finds strangely comforting. Seeing that Wang is in bad shape, Shi decides to take him out to drinks. While the two men eat fried foods and do shots, Wang explains what has happened to him over the past 24 hours. Shi is not as troubled as Wang is, because he is too busy with the pressures and stresses of daily life to think about the universe; as he puts it "when I work at night, if I look up at the sky, the suspect is going to escape." Shi encourages Wang to drink more and sleep off his panic.

This vital passage illustrates the difference between police officer Shi and many of the scientists he works with. While the astrophysicists look to the sky to find meaning or answer questions about the nature of the universe, Shi is quite literally on the ground, focused on what is in front of him and on getting his job done; while someone like Yang Dong clings to theory, Shi values lived experience above all. This attitude makes him the perfect confidante for Wang—in a moment of existential panic, Shi is able to offer good food, alcohol, and practical advice.

Wang falls asleep in his car for a few hours, and when he wakes up, he is relieved to see that he has parked near Beijing's Forbidden City—the world feels "classical and stable" again. Quickly, though, the panic returns, and Shi urges Wang to continue to drink and sleep until he is more capable of facing the facts. When Wang presses Shi for more information, Shi explains that he is also being kept in the dark, but he finally agrees to tell Wang what he knows.

Wang's desire to be reminded of an earlier, more "stable," era in history reveals just how much the flickering universe has unsettled his worldview. But again, Shi keeps Wang focused and on task by reminding him to engage in basic human necessities: rest and relaxation.

Shi lists a series of strange events that have been happening lately. In addition to the development of the Frontiers of Science and the wave of suicides, there has been a bunch of crimes committed against academic institutions. Also, environmental activists have become increasingly bold in their techniques, and big budget movies now all have rustic, pastoral themes. Lastly, there has been a rash of cults led by well-funded cult leaders. All these facts have led Shi to conclude that someone is out to destroy scientific research entirely, a conclusion that even General Chang has come to agree with. Shi is proud that he has figured this out, even though he has a less impressive degree than many of the soldiers and scientists he is working with.

Scientific progress, it seems, is being called into question from all sides, whether it is scientists abandoning their research or laypeople turning to bizarre cult leaders instead of respected experts. Interestingly, then, this moment in history parallels the moment the book began in, when the Cultural Revolution was forcing scientists to cease or change their work entirely. Also, Shi's explanation begins to show the value he brings to the Battle Command Center: just as scientists organize experimental data into theory, Shi has a remarkable ability to put far-flung facts together into a coherent human narrative.

Wang asks Shi about the "war" General Chang claims to be fighting, but Shi does not know much about it. All he understands is that China is working closely with NATO to stop this threat, in an almost unheard-of alliance; moreover, men who are never scared seem suddenly terrified. Curiously, Shi explains that abstract science (like the kind Yang Dong worked on) has come to seem particularly frightening.

The Cultural Revolution overlapped with the height of the Cold War, when communist China was at odds with the free-market U.S. But now, the countries that were enemies are friends—and the frightening, divisive theories do not emerge out of politics, as before, but out of abstract science.

Since Wang's work on nanomaterials is applied science, he wonders why Chang and the others have called on him. Before Wang can fall back into despair, Shi encourages him to go back to work and to try and play the *Three Body* game in his spare time. Shi promises to be in touch, and he drives away before Wang can say thank you.

Here, Wang begins to emerge more clearly on a spectrum of thought: he has more scientific expertise than someone like Shi, but his mindset is more grounded in reality than someone like Yang Dong. This mindset will prove immensely valuable as he dives deeper into the world of Three Body.

CHAPTER 11. THREE BODY: MOZI AND THE FIERY FLAMES

On his way home, Wang buys a V-suit, and as soon as his wife is asleep, he logs back in to *Three Body*. Immediately, Wang is back in front of King Zhou's palace, though this time it looks Aztec instead of Egyptian; he is instinctively certain that "eons ha[ve] passed." Wang travels to the flat space at the top of the pyramid, where he observes a series of telescopes and various models of the universe. He also notices a strange machine, powered by enslaved people, in which a copper sphere is moved seemingly at random.

Wang has earlier learned that each time he logs into the game, he will enter a new civilization at a different stage of progress. Here, he also learns that the game can shift geographies; whereas he began the first level in the Middle East, he is now in (what looks like) Mesoamerica. And, tellingly, Aztec civilization reached its peak in the 1400s, about 4000 years after the height of Egyptian civilization, so it would seem that time is moving forward.

A tall man approaches Wang and introduces himself as Mozi. Mozi explains that no civilization has been able to survive the onslaught of Chaotic Eras, but that Civilization Number 139 progressed all the way through to the Steam Age. Mozi shows Wang the skeleton of the famous philosopher Confucius—Confucius, too, tried to predict the pattern of the sun, using his conception of order and propriety. The sun rose when Confusion said it would, but then it suddenly dimmed and vanished; a single flying star then appeared. This story confuses Wang, as it disrupts his idea of what might be causing the Chaotic Eras.

Mozi is based on an actual philosopher and ethicist from Chinese history. In real life, Mozi passionately debated the famed scholar Confucius, so their relationship in the Three Body game parallels their historical one. Also worth noting: as Wang gets new information about what might be causing the Chaotic Eras, he changes his theory to fit his observations, rather than forcing the information to fit his theory.

Mozi tells Wang that they are now in the Han Dynasty. Unlike the various thinkers who have come before him, Mozi is certain that he has solved the mystery of this universe. He tells Wang that he believes the universe is comprised of two nesting, hollow spheres "floating in a sea of fire." The light of the sun and stars comes through holes in the spheres of the universe. The spheres move irregularly because they are propelled by the sea of fire.

Just as the Aztecs came after the Egyptians, the Han Dynasty rose about 200 years after the end of the Warring States period. Science is progressing, too: unlike the more abstract theories of Fu Xi, King Wen, and Confucius, Mozi is actually trying to build a workable model of the universe. Like Wang, he is interested in viewing science through a tangible, material lens.

When Wang asks questions about this model, he finds Mozi's answers unsatisfactory, especially because Mozi wants to completely ignore the flying stars. As Wang asks more questions, he realizes that the copper sphere he saw was actually a physical replica of Wang's model; a clerk stands inside to keep track of the spheres as they spin. Mozi explains that once the clerk records the movements within the model, they will be able to create an accurate calendar—achieving "the dream of hundreds of civilizations before us."

Whereas Wang works to bring each new data point into his theory, Mozi does the opposite, willfully ignoring the information around him. Worse still, Mozi's model relies on the enslaved labor of others; his determination reflects the cruelties people are willing to enact in the name of science.

Mozi informs Wang that according to his calculations, a long Stable Era is about to begin. As the passage of time in the game speeds up, Wang sees the world begin to rehydrate. While Mozi celebrates, Wang uses a telescope with a black shade to observe the sun. He notices that the sun in the game is very different from the sun on earth; this sun has a small core, while what appears to be the edge of the sun is really just scattered light from the center. This realization makes Wang certain that the "game designers had hidden a vast amount of data within the superficially simple images, just waiting to be revealed by players."

Wang is beginning to understand that the purpose of the game is to force its players to interpret their surroundings; like real life, there is messy complexity in every detail of the game-generated planet. This wealth of information shows just how advanced the game technology (and the people who made it) must be.

For the next 10 days, Wang observes the sun and the flying stars. One day, however, the sun does not rise, and Wang wonders if the civilization will collapse. Mozi is not concerned, boasting that "my predictions cannot be wrong"—and just as he says this, the sun does indeed start to rise. But the sun rises so fast that it sets the world on fire almost immediately. Though Mozi is already aflame, he continues to insist that "the universe is a machine. I created this machine." Wang realizes that he, too, is burning up. The sun disappears, and the sky returns to darkness.

Mozi's unwillingness to match his theory to reality is so strong that even as the sun scorches him to death, he cannot admit his fault. Mozi's determination demonstrates how willing people are to invent something new—and also, how what seems like progress can actually be deeply destructive.

The game ends, and Wang gets a message encouraging him to log on again. Wang takes off his V-suit, troubled by the notion that *Three Body* is somehow more real than reality. He muses that the real world has come to seem like the "superficially complex"—but actually very simple—painting called **Along the River During the Qingming Festival**.

Because the game is so rich with information and mystery, Wang no longer trusts his own lived experience. But, as always, the comparison to the painting is a reminder that the world Wang lives in, though in some ways simple, is also a place of great beauty and joy.

The next day, Wang goes to work to distract himself, though he cannot hold off his sense of panic for long. After work, he decides to visit Ye Wenjie again at her home. When Wang tries to bring up what happened to Ye during the Cultural Revolution, she waves him off, explaining that "it's all in the past" and that her age has given her a strange sense of perspective. Instead, she chooses to tell Wang about her time at the Red Coast base.

Whereas Wang is beginning to idealize the past and dread the future, Ye Wenjie has almost no interest in talking about her earlier life. Still, the two have formed an unusual but touching bond, further proving how different the elderly Ye is from her younger, more isolated self.

CHAPTER 12. RED COAST II

When she first started at Red Coast, Ye was not allowed to do anything but a few technical tasks. Though her father had been interested only in theoretical physics, Ye had learned computer science and electrical engineering, so she was able to do some basic maintenance in the Transmission Department. Still, she felt lonely and confused about her placement: she was the only person not in military uniform, and her political past made people suspicious of her.

Scientific work is often considered objective, but Ye's experience at Red Coast Base shows at every level how science can be politicized. Even though the Chinese government needs experts, Ye's expertise—and her connection to her brilliant father—automatically forces her to do work beneath what she is capable of.

Many of Ye's colleagues in Transmission were actually very skilled computer scientists, but they were so bored by the work that they played dumb; that way, they could be transferred to another department. Over time, then, more people left and Ye rose to prominence. Even better, security stopped supervising her work as closely. Still, there were many systems and areas on the base that Ye was not allowed to access.

Ye is patient and flexible, and this work ethic makes her an increasingly trusted employee. But Ye's willingness to devote herself to even the most frustrating tasks can also be read as another symptom of her trauma: she is so desperate to shut herself off from humanity that she will do anything to get some space.

During this time, Yang Weining—who was politically suspect because of his past in academia—often took out his frustration on Ye. Commissar Lei, on the other hand, started to be kinder to Ye. One day, he finally explained the purpose of Red Coast Base. The antenna created a kind of large-scale microwave, but rather than heating up frozen foods, its radiation was pointed at enemy space vessels. In this way, the Chinese could take down the American and Soviet satellites. Just as Lei finished explaining this to Ye, Yang Weining approached and accused Lei of sharing information he was not supposed to. Though technically Lei was of higher rank, Ye still worried that he could get in trouble.

Here, the connection between scientific discovery and political division becomes even clearer. Ye is working in the time of the Cold War, when each major power in the world was trying to invent new and ever-more-deadly technologies; China lagged behind the U.S. and USSR, and so was always trying to catch up. Rather than trying to communicate with each other, then—as an antenna would normally suggest—these various nations are trying to destroy each other.

The next day, Ye was transferred from the Transmission Department to the Monitoring Department. Unlike the simple machines in Transmission, Monitoring was quite technologically advanced. Mostly, it was designed around a giant radio receiver that could pick up very faint or distant signals. Commissar Lei explained to Ye that the purpose of the Monitoring Department was to be "the eyes of Red Coast"—to pay close attention to any communication in space between enemy vessels. Again, Yang Weining threatened to report Lei for sharing this information with Ye.

As Ye rises in the ranks, she encounters an increasingly blurry line at Red Coast Base between what is communication and what is conflict—a confusion that reflects the constant uncertainty of the Cold War itself. It is also worthwhile to note the tension between Yang and Lei, each of whom seems to have a very different idea of what Ye should be told—and that in turn implies that Ye is not getting anything close to the full story.

Nevertheless, Lei continued to talk to Ye about what was happening at the base. He told her that she had been selected because she had successfully predicted some solar activity in college, and often, Red Coast's information was being interrupted or confused by solar flares. Lei also confessed that he was hoping his own trust in Ye would gradually be shared by other officers of the base, which would allow her to advance—in other words, that one day she would become "*Comrade Ye.*" Ye found herself surprisingly moved by this trust.

For the first time, Ye sees a path towards trust and human connection—and better still, that path is through the science she loves so much. Interestingly, Ye works on the sun's movement and solar flares, suggesting that there is some link between what she does in the 1960s and the Three Body game Wang Miao is playing in the early 2000s.

Ye struggled more in the Monitoring Department than she had in Transmission, in part because the machines were much more advanced. More than that, though, the longer Ye worked in Monitoring, the more confused she became about Red Coast's activities. For example, though they intercepted transmission from a threatening American satellite, Yang Weining showed no interest; instead, he redirected Ye and her colleagues to focus their signal monitoring elsewhere. Another time, Ye saw that the frequencies Red Coast was emitting were much lower than the frequencies necessary to effectively heat and destroy enemy satellites.

The stated goal of Ye's project is completely at odds with what she is actually doing. This lack of interest in the enemy satellites, combined with the strange squabbling between Yang Weining and Lei, makes it more and more clear that Red Coast Base is up to something much more mysterious than what Ye was initially told.

Out of the blue, Ye was summoned to the main office at Red Coast Base. When she saw that a group of officers was waiting for her, she was immediately reminded of her horrible experience in the Khingan Mountains, when she had been accused of sedition for writing Bai's letter. Now, though, the officers were not angry. Instead, Commissar Lei explained that Yang Weining had long been petitioning to reveal the truth behind Red Coast Base to Ye—finally, they were going to drop the cover story.

In addition to confirming Ye's suspicions that she is involved in something she does not actually understand, this passage reveals just how constantly Ye must confront her earlier trauma. At every moment, she is reminded of terrifying episodes in her past, even when such a comparison is unnecessary.

Before Ye could come to terms with the fact that she had been lied to, all the other officers exited, leaving Ye and Yang Weining alone together. Yang Weining offered Ye one final chance to refuse the knowledge about what was really happening at Red Coast, but Ye was determined to hear the truth.

For someone who has spent so much of her life being betrayed, it is hard to overestimate the impact of yet one more breach in trust; Ye's decision, though immediate, is therefore far from calm or rational. But if this decision is a trauma response, it is also evidence of Ye's scientific mind: like her father Ye Zhetai, she will seek the truth at any cost.

CHAPTER 13. RED COAST III

A series of documents, formatted as a report from the 1960s, explains what happened at Red Coast Base. Some of the most specific, sensitive information has been redacted. To begin, the report distinguishes between "gradualistic" and "saltatory" modes of science. In gradual science, theoretical results are slowly applied to the real world; in saltatory science, fundamental theory is immediately put into practice (as in the case of the atomic bomb). Saltatory science thus often leads to what the report deems a "technology leap." At the time the report was written, both NATO and the Soviet Union were trying desperately to achieve these rapid technology leaps.

First, it is important to note the formal shift here. To talk more about the geopolitical ramifications of the characters' decisions, the novel lets content dictate form—that is, rather than continuing to be immersed in the narrative, readers are confronted with a high-level government report. This report makes clear the stakes and scale of such "leaps" in scientific discovery—any invention is capable of changing the world, and most (like the atomic bomb) do more harm than good.

The report then argues that the Chinese, too, should be trying to make saltatory discoveries. There are four categories in which a technology leap could occur: physics, biology, computer science, and the search for extraterrestrial intelligence (SETI). The report suggests that not very much research has happened in SETI, and that the Chinese should devote more resources to this quest.

The competitive nature of China's research illustrates just how political science can be: China's communist government is not trying to improve human welfare or solve real problems so much as they are trying to best their rivals. In a crafty sort of metaphor, the book thus suggests that different nations are so alienated from each other that real aliens are more likely to be a given nation's allies than other human beings.

In the second section of the report, the anonymous author cites the work various other countries are doing to look for alien intelligence. Some examples include: the United States' Project Ozma in West Virginia, the Arecibo Observatory in Puerto Rico, and the USSR's attempt to build a new kind of radio telescope system. Though much of this section has been redacted, some analysis about the potential political implications of contacting extraterrestrial life remains intact. In the report, Chinese Central Leadership suggests that "others have already sent their messages out into space. It's dangerous if extraterrestrials hear only their voices. We should speak up as well [...] It's not possible to get the truth by listening to only one side."

There are several crucial points in this passage. First, the various sites of SETI research listed are real, historical places, showing that the search for alien life was very much a part of actual Cold War politics. Second, the redacted sections of the report reflect the amount of secrecy and distrust in governance during this period. And most importantly, the Chinese leaders' desire to make contact with aliens stems entirely from their desire to present themselves in a positive light. Rather than viewing science as something objective, therefore, this section shows its immense symbolic and narrative potential.

Section three of the report reveals the ultimate goal of Red Coast Base: to search for alien life and potentially make contact with it. In addition to listing out some of the technical specifications of Red Coast equipment, this section also explains that the base created its own "elemental linguistic code" that could be understood by any society with an understanding of basic math. This code could then allow scientists in China to communicate with any somewhat advanced alien civilization.

After all of the misdirection, it turns out that the antenna on Radar Peak was indeed being used for communication (just not with people). Fascinatingly, math now becomes the language of communication, suggesting that STEM fields are somehow more universal than the linguistic and literary codes different groups of humans have invented for themselves.

The fourth section of the report discusses what the content of the message sent into space should actually be. The first draft of the message criticizes both the U.S. and the USSR as imperialist superpowers and encourages extraterrestrial life to ignore these countries' "lies." The second draft of the message, run through China's central government, was less obviously propagandistic. Instead, this final draft explains that though human civilization has done great things, it has also created vast inequality and strife. In the end, the message sent out to extraterrestrials expresses China's desire to collaborate with alien life to build an ideal civilization.

In this fourth piece of the report, the Chinese strategize about how to win over any potential extraterrestrials they might encounter. Rather than directly attack their enemies, the Chinese try to present themselves as having the moral high ground and opting out of conflict. This is ironic given that the whole reasoning behind China's outreach to alien life is driven by Cold War power politics.

Finally, the fifth section of the report emphasizes that though this work will not have immediate consequences, it is important for China to think in the long term. The report concludes by celebrating that "bystanders have the clearest view," and so "truly neutral" aliens will "be able to comment on whether we're the heroes or villains of history."

This striking closing comment brings into focus China's desire to use science as a way of making history. By being the first nation to contact aliens, the Chinese hope that they will get to become "heroes" in this new, outside narrative. Rather than winning their victory on a battlefield, therefore, the Chinese will win it in a laboratory.

CHAPTER 14. RED COAST IV

Wang is confused why the Red Coast Project had such a high security clearance; after all, only in recent years had society decided that contacting extraterrestrials was likely a bad idea. This shift in thinking occurred when Bill Mathers of the RAND Corporation published his theory of "contact as symbol." According to this theory, if one country made contact with aliens—even if that contact was not substantive—"the significance would be comparable to an overwhelming advantage in economic and military power." Thus, any contact with aliens would widen already-existing divides and intensify human conflict, so humanity decided to stop trying to reach extraterrestrials.

Though Bill Mathers and his theory are fictional, the RAND Corporation is a real place, a think tank that works primarily with the U.S. armed forces. This theory suggests the psychological effects of one nation accomplishing what others cannot—even the idea that only one nation could be capable of contacting aliens could damage its competitors' psyches dramatically. Just as they did with nuclear weapons, then, earth's various countries therefore decided it was safest to mutually agree to stop trying to reach aliens.

Ye then tells Wang about the theory that there are three types of civilizations. Type I civilizations can master the total energy output of the earth; Type II civilizations can output as much energy as a star; and Type III civilizations can output as much energy as a galaxy. Two Type I civilizations would not be able to create radio signals strong enough to reach each other across space. Because of this fact, Ye Wenjie resigned herself to the idea that Red Coast would probably never make contact with aliens—and more than that, she and her colleagues gave up hope that any kind of alien life even existed.

In this categorization of civilizations, human beings like Ye Wenjie assume that any other alien civilization will likely not be any more advanced than humanity is; since humans can only master Type I energy output, they can only imagine aliens at the same level. For Ye, this means one more disappointing relationship: rather than finding companionship in alien life, she has to relinquish the idea that such a thing will likely ever happen.

Over time, Red Coast's security clearance was removed, and the base took on other, unrelated projects under the leadership of Commissar Lei. It was during this time that Ye married Yang Weining. Eventually, though, an accident on the base killed both Lei and Yang Weining; shortly after that, Yang Dong was born. A few years later, the base was turned over to civilian use and then abandoned.

The source of the terror Wang saw on Yang Dong's face in her childhood photo now comes clear: in addition to having the deeply traumatized Ye as her mother, Yang never got to meet her father. And through all of this, the base where she had grown up—her only home—was abandoned and made unlivable.

Ye begins to reflect on the personal difficulties of studying alien life. She tells Wang that when she realized there was no other life in the universe, she began to feel like "a poor child abandoned in the desert," believing that humanity was an "accident." Before Wang leaves, Ye tells him that she now lives her life "day to day." As Wang looks at this old woman, he thinks with pity of the loss she has suffered.

Ye now directly contrasts her younger self with her current, more resigned state. The younger Ye could not see past her trauma; she was a permanent "child," haunted by the sense of abandonment that had set in during the height of the Cultural Revolution. But as an old woman, she has found comfort not in science but in everyday life, whether that involves helping Wang or taking care of her neighbors' kids.

CHAPTER 15. THREE BODY: COPERNICUS, UNIVERSAL FOOTBALL, AND TRI-SOLAR DAY

While Wang travels home, the events of the past two days and the knowledge he has just acquired about Red Coast start to blend together. He logs in to *Three Body*, creating a new ID for himself: Copernicus. The Western username transports him to a Western-style world with a Gothic palace and ancient Greek clothing. He enters the Great Hall of the palace to find several men sitting around a table. They introduce themselves as Pope Gregory, Aristotle, and Galileo.

Nicolaus Copernicus was a Polish astronomer in the Renaissance era. He was the first to accurately understand the solar system, realizing that the earth rotates around the sun (and not vice versa). In real life, Pope Gregory then used Copernicus's calculations to create a reliable calendar. It makes sense, then, that Wang would choose Copernicus as his username, as he is similarly trying to understand this planet's solar system and craft its calendar.

Galileo mocks the Eastern focus on "meditation" and "epiphany," explaining that he prefers to understand the world "through observation and experiment." Wang explains that Mozi also used observation and experiment, but the Western scholars scoff at this. Wang then tells the men that he has created a model of the universe; though he does not yet have a calendar, he hopes this model will allow them to predict the pattern of the sun.

Unlike Hairen, Copernicus is a Western name, and Wang is now clearly in the West—and surrounded by some of the greatest minds of Western science. Galileo's dismissal of Eastern thought is blatantly prejudiced, but it also shows that the East/West divide at issue in the Cold War in fact stretches back centuries. And at the center of this political divide are competing claims to scientific method and truth. Specifically, Galileo (falsely) claims that Western schools work with data while Eastern scholars fail to incorporate observation into their theories.

Nervously, Wang argues that the world of the game has three suns. He suggests that "under the influence of [the suns'] mutually perturbing gravitational attraction, their movements are unpredictable—the three-body problem." Stable Eras occur when the game planet revolves around one of the suns in a consistent orbit. But when one or more of the other suns comes too close, its gravitational pull disrupts the game planet's steady orbit and sends it into a Chaotic Era. In other words, Wang says, "this is a football game at the scale of the universe. The players are the three suns, and our planet is the football."

In this critical passage, Wang puts the various pieces of his experience together to form a theory of the game planet's solar system: namely, it has three suns, each of which impacts the others' trajectories. Wang's reflection that society is like a football and the suns are the players emphasizes just how little agency individuals have. Instead, everyone is at the mercy of forces (like gravity) far beyond their control.

The scholars burst out laughing, and Pope Gregory orders his servants to burn Wang. Galileo questions why nobody has ever seen three suns; Wang explains that the flying stars in the distance are actually the other suns. Wang also explains why three flying stars in the distance make for extreme cold: that means all three suns are far away from the planet.

Like Mozi and Zhou, Pope Gregory is unwilling to be challenged. In real life and in the novel, ideas about the solar system are particularly fraught—since the sun is so essential to cosmology and religion, changes in solar science have profound philosophical impacts. Yet Wang's theory is worth listening to because he assimilates all of the various observations he has made throughout his gameplay.

Aristotle still pushes back; he argues that there cannot be three suns because no one has ever seen three suns in the sky at the same time. Leonardo da Vinci interrupts, suggesting that some societies may have seen three suns and just not lived to tell the tale. Wang agrees, arguing that "tri-solar days are the most terrifying catastrophes for our world." Still, the scholars are not convinced, and Pope Gregory calls for Wang to be burned, with the same strange glee that King Zhou once had.

Though many characters have advocated for using experience to form theory, here, Aristotle takes that too far by arguing that something cannot be possible unless someone has seen it. Though Pope Gregory is similarly simplistic in his approach, da Vinci argues for more patience and complexity—perhaps because his background as an artist allows him to see things in a more multifaceted light.

As the scholars prepare to burn Wang, da Vinci explains that if Wang's avatar is killed in the game, he can never log in again. But before Wang can be thrown into a cauldron, three suns appear in the sky, devastating the world. As the planet collapses, a message appears in the game, informing Wang that Civilization 183 was "destroyed by a tri-solar day." But because Wang has "successfully revealed the basic structure of the universe," he is now able to log on to the second level of the game.

Indeed, a terrifying tri-solar day arrives, proving Aristotle wrong. But perhaps more notable is the fact that once a player dies in the game, they can never log on again. Most games want players to engage as long as possible, but this one tries to weed them out—suggesting that there is something far more than entertainment at stake here.

CHAPTER 16. THE THREE-BODY PROBLEM

As soon as Wang logs off, he gets a call from Shi asking him to come to his office. When he arrives, he is met by computer specialist Xu Bingbing and Wei Cheng, Shen Yufei's spacey husband. Wei explains that his life is in danger, though General Chang and the rest of the Battle Command Center do not know this yet. At Shi's urging, Wei begins to tell Wang his life story.

It is probably no accident that this phone call arrives as soon as Wang beats the Three Body game's first level. Instead, the immediacy of the events—and the fact that all of these various characters know each other—suggests that Wang is involved in something much larger and more omnipresent than he realizes.

As Wei tells it, he was always a lazy person, ever since childhood. Though he had an amazing, inborn aptitude for geometry—shapes immediately became numbers in his mind—he was too lazy to ever apply this gift. Eventually, Wei got a series of degrees, but when he finally got a job at a college, he was too bored to take teaching seriously. Instead, he went to a Buddhist monastery to find some peace and meaning in his life. The abbot at the monastery encouraged Wei to embrace his sense of emptiness: "you must use this existential emptiness to fill yourself."

There is a fascinating parallel between Wei Cheng's description of his life and Yang Dong's almost fanatical dedication to her theory. For both characters, experiences pale next to the fascinating ins and outs of theory. But for both, while theory can be engrossing, it cannot take away the "existential emptiness" created by a lack of human connection.

As he fell asleep that night, Wei imagined a sphere to symbolize his emptiness. When that initial empty sphere reminded him of death, he pictured a second sphere. Unfortunately, in this image, the spheres' separate gravities always pulled them into a stable rotation around each other, which also made Wei think of death. Only when he introduced a third sphere into his mind did the emptiness take on unpredictability and a kind of life. The three spheres danced in Wei's mind until he fell asleep.

Ironically, Wei shuts himself off from many of the pleasures of life, only finding real meaning through mathematics. Unlike most mathematical thinkers, however, Wei finds joy and excitement in unpredictability—only when geometric theory denies him easy answers does it start to become as textured as lived experience.

Wei had effectively discovered the three-body problem on his own. Though years earlier, a mathematician named Henri Poincaré had declared the problem unsolvable, Wei believed a new kind of approach might work—namely, an evolutionary algorithm. Such an algorithm would at each moment lay out the options for what could happen next in the three bodies' motions, and it would "preserve the advantaged" possibilities over the disadvantaged ones in order to form more accurate predictions.

The idea of an evolutionary algorithm further links what Wei studies to life and human experience; evolution is a theory that comes out of natural science and that is meant to describe the way organisms grow and change. Wei's solution to the three-body problem is therefore incredibly complicated: rather than providing a blanket template like Copernicus did, Wei's equation must be constantly updated as it "evolves."

Such an algorithm would take a tremendous amount of computing power, and Wei only had paper at the monastery. Still, Wei worked tirelessly, discarding his notes as he went. A few days later, a young woman—Shen Yufei—came to Wei's room, holding his scrap paper and telling him he was "brilliant." Shen promised to help Wei get the computing power he needed to work on the three-body problem. Wei felt stirrings of attraction for Shen.

Most of the couples in the novel are linked by science: Shao Lin and Ye Zhetai, Ye Wenjie and Yang Weining, Yang Dong and Ding Yi, and now Wei Cheng and Shen Yufei. This pattern perhaps suggests a tendency to prioritize work or abstraction over intimacy and romance. It is notable, then, that both Wang and Shi are married to people outside of their fields (or at least not explicitly in their fields).

That night, Wei saw Shen praying at a temple on the monastery grounds. When he got closer, he heard her say, "Buddha, please help my Lord break away from the sea of misery." When Wei asked Shen if this Lord was part of Buddhism, she said no and hurried away. With the help of another monk at the monastery, Wei concluded that if Shen was praying to Buddha to help a mysterious Lord, then this Lord must actually, tangibly exist.

In the time of Copernicus and Pope Gregory, conversations about the solar system were inexplicably linked to religious belief—so it is unsurprising that the same would be true here. But in this passage, readers are forced to grapple with a nearly impossible question: what does it mean to believe in a faith that is in some way visible or tangible?

Though the monks warned him against it, Wei left with Shen. Soon after, the two were married, though there was never any real passion or love; Shen was only interested in solving the three-body problem. While Shen worked on the Frontiers of Science, Wei was trying to improve his algorithm. For the most part, the two had lived in peace—until yesterday.

Though Wei is working on the three-body problem, he himself is not actively involved in the Frontiers. It can then be inferred that Shen likely married Wei in order to have access to his research, potentially sharing it with the Frontiers for her own ends.

Wei says that yesterday, a man called him and told him that unless he stopped researching the three-body problem, he would be killed. Then, later that night, Shen had threatened her husband with a gun, telling him that if he stopped working on the problem, she would kill him herself. Shen told him that he would become "the savior of the world" if he successfully solved the three-body problem. But if he stopped, he would be a "sinner." "If someone were to save or destroy the human race," she said, "then your possible contribution or sin would be exactly twice as much as his." Shi, Wang, and Wei are all confused by this strange language.

Like Shen's comment about the Lord in the Buddhist monastery, her phrasing "twice as much" suggests that she is going off more than faith—there is some real, live entity that she is trying to protect. And, tellingly, for the first time since Ye Wenjie's youthful anger, the question of saving (or destroying) the human race has resurfaced. What seems like a purely theoretical question in fact has life or death consequences—for someone like Wei, but also potentially for humanity as a whole.

To continue the investigation on Wei's behalf, Wang leaves with Shi and Xu Bingbing (the computer specialist). As they drive away, Xu mentions the Three *Body* game to Wang and explains that she is responsible for monitoring it. When Wang asks for more information, however, Xu explains that she does not understand where the game has come from. Wang is startled by the coincidence, but Xu assures him that they must believe Shi's famous slogan: "all this must be the work of people." Wang begins to believe that Xu and Shi are both lying to him.

In addition to Wang's increasing certainty that the three-body game is part of a larger sea change (one that Shi is likely involved in), this passage is important for its emphasis on "the work of people." On the one hand, the novel has demonstrated many times that human agency is limited, and that larger, unseen forces are always at play. And on the other hand, Shi's practical, intuitive, humanist approach to life allows him to find solutions and patterns when others cannot.

Wang, Xu, and Shi arrive at Shen's house, but they are too late—she has already been shot and killed. Shi nervously tries to figure out who committed the crime. Wei is not very upset, even when Shi tells him that the murderer probably wanted to kill Wei most of all. Wei admits that there were a few other things he was "too lazy" to tell Shi at first.

Wei's strange laziness even in the face of his wife's death once more illustrates the danger of a life so wholly devoted to theory. All Wei cares about are the shapes inside his mind; the people and relationships around him cannot measure up.

Now, Wei confesses that when Pan Han had arrived at this house, he and Shen had fought. They had spoken of warring sides in a conflict; they mentioned the Adventists and the Redemptionists, and though both groups wanted to bring the Lord to earth, each group had a very different expectation of what would happen when the Lord arrived. Specifically, Pan wanted the Lord to punish humanity, whereas Shen seemed to want no such thing. Wei realizes that the voice that threatened him on the phone probably belonged to Pan.

Shen and Pan are two of the most respected scientists in the world, but the way they are speaking sounds more cultish than scientific. Though much is uncertain, two things seem true to Wang. First, it is likely that Pan was the one who killed Shen. And second, the question of whether humanity deserves to be punished, raised at the beginning of the book, is perhaps now a literal quandary instead of a conceptual one.

Wei gives Wang a disk with all of his mathematical work on the three-body problem; he encourages Wang to publish the disk under his own name, because he is "a good man, a man with a sense of responsibility." Wei explains that he is filled with a sense of doom—sunrise now seems like sunset to him. "And," he tells Wang, "it's all because God, or the Lord she talked about, can't even protect Himself anymore."

Not for the last time, Wang's essential goodness and sense of duty to others impacts how the other characters treat him. And it is also worth noting the idea of sunrise as doom, especially because the novel is so concerned with the sun's movements. Most important, however, is the suggestion that this spiritual force, however powerful, is also vulnerable—an idea that flies in the face of conventional theology.

CHAPTER 17. THREE BODY: NEWTON, VON NEUMANN, THE FIRST EMPEROR, AND TRI-SOLAR SYZYGY

Wang logs on to *Three Body* again. This time, the great palace is an Egyptian pyramid, but when he notices two soldiers dueling, they are in Western garb; the game's version of the East has combined with its version of the West. When another man interrupts the fighting soldiers, he learns that the duelers are actually Isaac Newton and Gottfried Leibniz, and they are fighting over who invented calculus. Newton predicts that with the invention of calculus, it will be easy to solve the three-body problem—but the third man, who introduces himself as Von Neumann, is not so sure.

Now, the distorted history of the game begins to more closely parallel what is happening in real life; just as China and NATO are joining forces in Wang's present day, the East and West of the game are coming together. In real life, Newton invented calculus centuries before Wei Cheng lived, but in the game, the history of scientific discovery does not always proceed in the same order that it did on earth.

Wang explains that a computer will help them solve the equation, but Newton has never heard of such a thing. Instead, Von Neumann suggests that they can perform the complicated calculations necessary to solve the three-body problem using human beings. As he talks, Wang realizes that Von Neumann is another real player in the game, not a computer-generated character. Von Neumann and Newton want to present their idea to Qin Shi Huang, Emperor of the Qin Dynasty.

Just as calculus took longer to invent, so, too, did computing technology—which is why creating a sort of human computer becomes necessary. It is also key that Wang is now encountering other real, human, players (like Von Neumann); for the first time, readers learn that this is actually a giant multiplayer game.

When the three men enter the palace, they are greeted by Qin Shi Huang, who has the "same eyes" as King Zhou and Pope Gregory. Qin tells the men to ask for help from Europe, as Europe and China are at war and right now, and "the wisdom of Westerners is terrifying." Qin has given up on conquering Europe, but Von Neumann—whom Wong has deduced is Chinese—suggests that understanding the three-body problem is more powerful than winning any war ever could be.

This section reiterates, in a new way, several of the most prevalent ideas in the novel. Once again, the East and the West are at odds with each other, and once again, technology and science prove to be at the heart of the conflict. In history, Qin lived in the 200s B.C.E., and Newton lived in the 1700s. The fact that these two men are together (and squabbling over many of the same things that divide Wang's world) suggests that these issues persist across time.

Von Neumann asks for three soldiers to demonstrate his idea for a human computer. When Qin offers to give 3,000 soldiers, Von Neumann pushes back; he believes that the East is falling behind in science because it has not realized that "even the most complicated objects of the universe are made from the simplest elements." Finally, Von Neumann gets three soldiers and labels them "Input 1," "Input 2," and "Output." He gives them each a white flag and a black flag.

On a basic level, this scene shows how Von Neumann and Wang create a human computer, coopting much of the coding language prevalent in computer science; since both men are from the 2000s, they both know the modern terminology. But on a deeper level, this passage is once again getting at the idea (expressed by the painting of the Qingming Festival) that what seems complicated is often simple—and vice versa.

Von Neumann teaches the soldiers how to act like a computer: depending on what color flags each of the Input soldiers holds up, the Output soldier will hold up a different flag. Using this system, Von Neumann has the three soldiers create all the different possible "gates" in computer science. He explains that with millions of soldiers, they can string these gates together to compute very complicated equations in minimal time. Once Von Neumann's idea is accepted, the passage of time in the game speeds up, and a giant square of soldiers is assembled. While there are millions of people, they do not take up very much space. Wang realizes that "though it was powerful, the phalanx also revealed the fragility of civilization."

As the computer continues to build, Wang reflects on both the ingenuity of human beings and their ultimate "fragility." Though civilizations can create everything from grand palaces to complex computing systems, they ultimately can't completely understand or control the world around them.

Qin Shi Huang gives the order ("Computer Formation"), and the soldiers get into formation—they have effectively formed a giant motherboard. Von Neumann and Wang explain all the different parts of a computer operating system to Qin, and they tell Qin how these parts can be recreated in soldier form. They call the operating system "Qin 1.0."

Tonally, there is some humor in this—it is a ridiculous anachronism to imagine Emperor Qin as the namesake of an operating system. But also, this juxtaposition shows how power has changed over time. Where once power was determined by military might, now it is largely centered around technology.

The time has come to test the machine. The black and white flags wave and surge as each input is transformed into an output. At one point, however, the surge stops; there has been some confusion. To the horror of Wang and Von Neumann, Qin orders all of the people in the area where the human computer stopped to be executed.

Qin's brutality mirrors that of Zhou, Mozi, and Pope Gregory before him, but it also has real-life roots. In history, Emperor Qin is famous for being one of the most violent and erratic leaders of China.

After a successful test, Newton asks the massive collection of people to run the three-body problem. As the flags wave and flip, Qin reflects on the Western criticism that the East suppresses creativity. He argues that "a large number of men yoked by severe discipline can also produce great wisdom when bound together as one." Before Qin leaves, he reminds the men that no good fate awaits them if their experiment fails.

Again, the East-West divide resurfaces, but this time, Qin adds another layer: he argues that the West's focus on individualism prohibits some advancements that can only be made through collaboration. This emphasis on collaboration perhaps hits home for Wang, who has thus far been trying (and often failing) to connect various isolated actors.

The game time speeds up again, and for 16 months, the human computer performs calculations. Finally, the computer spits out a prediction that a year-long Stable Era is about to begin. This time, though, there is no one for Qin to rehydrate, as all of the people and resources in the empire have been spent making this one computer. Yet rather than despair, Qin celebrates—just as Newton predicted, the sun begins to rise, heralding the return of a Stable Era.

Just like Mozi's experiment relied upon slavery, Qin's devotion to his project has tremendous human costs. This is one of the novel's big questions: what happens when science, even science ostensibly conducted for human benefit, demands such destruction?

Unfortunately, Qin's joy does not last long. His astronomy minister informs him that an extremely rare tri-solar syzygy is approaching, in which all three of the suns are in a straight line. The feeling of gravity begins to diminish, and everything starts to float and come apart.

Since the suns each have their own gravity, when they approach the planet so quickly, it becomes literally impossible for the planet's residents to stand their ground. The timing of this catastrophe also seems to hint that discovery is futile—each human victory is compromised by another natural surprise.

The people and things on the game planet begin to rise so far that they leave the atmosphere, and each person becomes an amorphous blob. Wang notices that the three suns are stacked together, like a "bright eye in the universe." The game ends, and the message informs Wang that "Civilization Number 184 was destroyed by the stacked gravitational attractions of a tri-solar syzygy," but that because of the invention of calculus and the computer, this society was able to begin solving the three-body problem. Wang logs off.

Further complicating the idea of individual agency, this passage flips the very human form on its head. Human beings become shapeless blobs, while the universe itself resembles an "eye:" thought and perception, it would seem, might lie not with people but within the universe that houses them. The idea of a universe that is itself intelligent will reappear later in the novel.

Seconds later, Wang gets a call from a stranger who explains that he is an administrator of the game. He asks Wang for his age, education, and employer, and tells Wang that if he refuses to give out this info, he will be permanently shut out of the game. Though the stranger will not answer any of Wang's questions, he does invite Wang to a meet-up for players of the game on the following evening.

This is a momentous development: though the game and Wang's real life have come closer together, they have not yet met. But now, Wang will meet other people who have advanced through the game, confirming his idea that the game has (potentially terrifying) real-world import.

CHAPTER 18. MEET-UP

For the meet-up, Wang arrives at small coffee shop. He is surprised to see that there are only six other people there, and that they are a variety of ages. Wang recognizes two of the others: one man is an expert in combining Eastern philosophy with modern science, and the one woman in the room is a famous avant-garde novelist. Wang learns that one of the other men is a vice president at a giant software company; another is a high-level executive at the State Power Corporation; another is a reporter; and the last one is a scientist. The players are all quiet, preoccupied with the strangeness of *Three Body*.

All of the people at the meet-up are experts in their fields, and all of them work in jobs that require large-scale, critical thinking. Three Body *is designed in part to weed players out (by refusing to let them reenter the game if they guess wrong); now, Wang sees that most of the players who achieve his level are members of the most elite classes.*

The organizer of the meet-up arrives, and Wang is shocked to see that it is Pan Han. Surreptitiously, Wang texts Shi, who tells him to "play the fanatic" in the meeting. As Pan opens the floor, each of the players talks about how obsessed they have become with the game as a whole. One player has made it to Civilization 203, which makes Wang realize that the game progresses differently for each individual player.

Wang was first introduced to the Three-Body game through Shen Yufei, but now the game seems to be helmed by Pan Han—who is likely responsible for Shen's death. From this strange collection of facts, it can be inferred that Pan and Shen were at one point working together, even if now they are opponents.

Finally, one of the gamers asks the question on all of their minds: is the game a game or a reality? Pan explains that the world depicted in the game, known as Trisolaris, really does exist. Though the Trisolarans do not really look like humans, they are capable of dehydrating and rehydrating themselves. And the Trisolarans really did form a human computer, though their bodies allow them to communicate much more quickly than humans' bodies ever could.

Wang has long suspected that the complexity of the game is too lifelike to be totally made up. And indeed, this passage reveals that the game planet is in fact a real planet. Rather than an invention, the Three-Body game is merely a way for human beings to understand a planet they have never been to. At the same time, not everything about the game is completely accurate. For example, the characters in the game appear as humans, when in reality Trisolarans are a different life form entirely.

Though one player muses about how expensive the game must have been to create, Pan does not indulge this line of thinking; instead, he merely comments that the goal of the game is "very simple and pure: to gather those of us who have common ideals." Pan then asks everyone assembled at the meet-up how they would feel if Trisolarans were to enter earth.

If at first players were weeded out by their critical thinking skills, now Pan is eliminating players based on their personal beliefs. This test of ideology is not dissimilar from some of the interrogations that happen at the beginning of the book, during the height of the Cultural Revolution.

The avant-garde author and the reporter both immediately celebrate such an idea—they both believe that "human society is incapable of improvement," so it is necessary for some external force to intervene. The philosopher and scientist join in, comparing the situation to the Spanish conquering of the Aztecs; though that conquest was bloody, the philosopher argues that a world governed by the Aztecs would have been even more violent. The software company executive and the power company executive are horrified, pointing out that the Spanish conquistadors completely destroyed Aztec society. 11001

In this critical moment, Ye Wenjie's original fear—that humanity is incapable of a "moral awakening" on its own terms—resurfaces. The comparison to the Spanish conquest of the Aztecs is particularly loaded: who gets to make decisions about what cultures are morally wrong versus which ones are morally upstanding? Does the violence of the Aztecs (or, in this comparison, of human beings) justify the greater violence of Spanish (or alien) invaders? And can conquest ever lead to cohabitation, or is it always destined to end in destruction?

At last, Pan asks Wang to weigh in. Wang says he agrees with the author, the scientist, the reporter and the philosopher. Pan then dismisses the executives and turns to the other five people who remain—"We are comrades now," he declares.11001

In addition to the fact that Wang is now a member of this mysterious society, it is worth noting that it is the creative types—instead of the businessmen—who choose to join Pan. Also, the use of the word "comrades" once more links this moment to the fervor of the Cultural Revolution in the 1960s.

CHAPTER 19. THREE BODY: EINSTEIN, THE PENDULUM MONUMENT, AND THE GREAT RIP

Wang logs in to the game again, but this time, it looks totally different. Instead of the great palace, Wang sees what looks like the grey United Nations (UN) building; instead of stone dehydratories, the dehydratories are now all made of mirrors. Weirdest of all, there is a giant sun in the sky, yet the earth is not burning and no one is panicked. Wang realizes that what appears to be a sun is actually a moon, reflecting the light of one of the real suns. As he approaches the UN building, Wang sees an old man playing violin.

The game has now moved into the modern era, with more recent institutions (like the UN) and more contemporary scientists (like Einstein). But interestingly, the game has shifted in other ways, too, as can be seen in the giant moon and the dehydratories made from mirrors. This shift suggests that players are now being exposed more to the reality of the planet of Trisolaris.

Wang realizes that the violinist is actually Einstein, and the two men begin to talk. Einstein hints at an event called "the great rip" in which the moon was created, but he cannot elaborate because it is "too painful to recall." Einstein expresses his belief that his theory of relativity could have perfected earlier attempts to solve the three-body problem, but no one would listen to him—so now he sits here, hopelessly playing Mozart.

Here, the game and Wang's experience on earth begin to parallel each other even more closely. Just as real-world scientists like Yang Dong are giving up hope that they will be able to find real clarity in theory, the fictionalized Einstein has given up on science altogether, instead turning to the violin for solace. This passage also reflects the lasting effects of trauma. In this case, Einstein's worst memory is quite literally omnipresent, a haunting moon in the sky.

Wang tries to enter the UN building, but Einstein tells him that no one is inside. Instead, Wang realizes that everyone is gathered behind the building, looking out at a modernized version of the giant **pendulums** from King Zhou's time. Upon his arrival, everyone greets Wang as "Copernicus, the man who crossed five eras." But when Wang enquires about these more modern pendulums, he is upset to learn that they are actually a "tombstone" for Trisolaris.

Though it is disorienting, Wang must continue to sort out what is invented for the purpose of the game and what is a real feature of Trisolaris; the pendulum monument, he realizes, is in the latter category. But rather than signaling faith in the future, as the pendulums did back in Zhou's era, the monument now reflects the same hopelessness that Einstein expressed.

Desperate to restore hope, Wang presents his evolutionary algorithm to the crowd—but they all laugh him off, explaining that many people have arrived at more sophisticated predictions of the suns' movements. A scientist explains that all these predictions have proved is that the three-body problem has no useful solution, because it is endless chaos. Wang is struck by the sense that "history had made a long circuit and returned to its starting place."

In this passage, science is dealt its most crushing blow: even Wei's brilliant, messy, almost life-like theory cannot respond to the chaos that is Trisolaris's reality. All human ideas of progress, which make sense when the world is stable and predictable, fall to pieces on a planet where light, warmth, and even gravity are unpredictable. In addition to making Wang rethink the basic rules of science, then, this revelation also forces Wang to see history as a "circuit" instead of a line.

Wang notes that this civilization has evolved to such an advanced state that it should be able to protect itself against Chaotic Eras; after all, this version of Trisolaris has computers and knowledge of the atomic bomb. But the scientist explains that the moon dashed any hopes of Trisolaran survival. Civilization 191 had seen a frozen flying star early on. Though they did not know it yet, that star would herald a terrifying fact: the suns were about to collide into the planet. And indeed, soon after, the suns tore the planet in two. Though life on the mother planet of Trisolaris did eventually recover, the whole process took 90 million years.

As Wang is quickly figuring out, even the most advanced technology cannot protect against the randomness of the universe. The fact that Trisolaris was ripped in two also recontextualizes the moon Wang had seen at the beginning of the chapter; rather than just being a new detail, the moon is actually the other half of Trisolaris, rendered lifeless by the giant split.

Worse still, scientists have realized that the Trisolaran stellar system once had 12 planets, 11 of which had been destroyed by the crashing suns. In less than 1,000 years, then, scientists calculated that Trisolaris was doomed to be swallowed by the gaseous layer of a sun. The Trisolarans feel that God has gambled with them, and that in order to survive, they too must "gamble."

In other words, this section shows that the three suns will continue to split Trisolaris in two until there is nothing left. Faced with such an existential crisis, the Trisolarans abandon scientific methods and logic, instead trying to rely on luck and a more intuitive mode of survival.

Someone starts the giant **pendulum**, and Wang is shocked to see that unlike on earth, this pendulum does not move regularly—the gravity of the moon pulls it every which way. Wang wonders if this movement represents "the yearning for order, or the surrender to chaos." As Wang begins to cry, a pop-up message announces that the goal of the game has changed—"the new goal is: Head for the stars; find a new home." Wang logs off, but then he logs on again—only to find another message. This message tells him that the situation is urgent, and that the game is about to shut down forever. Even more strangely, the message announces that "*Three Body* will now go directly to the final scene."

The world of the game and the real world are now collapsing entirely. And similarly, Wang can no longer tell the difference between a theoretical idea and a practical solution—what is an attempt to bring "order" to the world versus what is an embrace of disorder. Most importantly, though, this final game scene shows that the Trisolarans really are planning to leave their planet and expand outwards; to use the previous metaphor, the Spanish are on their way to the Aztecs.

CHAPTER 20. THREE BODY: EXPEDITION

When Wang logs on again, he sees a completely bare landscape—there is no palace, only a series of stones. Quickly, though, Wang realizes that the stones are actually human heads; all of the Trisolarans on the planet have gathered here, and they are all looking at the sky. Wang follows their gaze. At first, he thinks he sees stars, but he quickly realizes he is looking at the Trisolaran Interstellar Fleet.

Symbolically, this section completely blurs the lines between what is alive and what is inanimate. What looks like stones are actually people; what seem to be stars are actually ships. Wang's earlier struggle to distinguish what is real is now that much more difficult.

A man next to Wang explains that the fleet is headed towards the closest star, four light-years away. The ships accelerate, and the people around Wang fall quiet; only their descendants will ever know whether the fleet has succeeded. Another pop-up message appears: "*Three Body* is over. When you have returned to the real world, if you remain true to the promise you've made, please attend the meet-up of the Earth-Trisolaris Organization." The message tells Wang that a follow-up address will be in his email.

Though many of the characters have philosophized about history and progress, here, those ideas take on new meaning—the Trisolarans of today must contort themselves for the survival of generations not yet born. History, in other words, is not a given; it is made by people protecting their descendants (like on Trisolaris) or making big decisions (like the one Wang is about to make on earth).

CHAPTER 21. REBELS OF EARTH

About 300 people gather at the next Three Body meet-up, which is hosted in an abandoned chemical plant. Wang sees that in the center of the room, three metal spheres moving around each other at random serve to recreate the problem at hand. But most of the attendees are focused on Pan Han, who climbs on top of a table. When someone asks Pan if he murdered Shen Yufei, he replies without hesitation that he did, calling her a traitor.

At last, Wang is beginning to put together the pieces of this secret society (which he now knows to be the Earth-Trisolaris Organization, or ETO). Shen and Pan were both members of the society, but they were from opposite factions—and since they hated each other enough to kill, it is clear that these factions are violently at odds.

A fight breaks out, as many of the attendees accuse Pan of using the Environmental Branch of the society for his own personal gain. Though Pan was supposed to create environmental disasters to make humanity loathe itself, mostly he just got famous through his predictions. A chorus of voices break out, calling for different next steps and again using those words "Adventist" and "Redemptionist." Just as Pan is about to call for Three Body believers to incite a global rebellion, revealing themselves to the world, the commander of the Earth-Trisolaris Organization (ETO) walks in. Wang is shocked to realize that the commander is none other than Ye Wenjie.

Now, some of the strange occurrences that Shi Qiang worked to make sense come together—namely, the slew of environmental disasters was in fact part of a larger plot to make humans more sympathetic to alien invasion. At the same time, though, Pan's desire to leave an individual legacy has interfered with his ability to successfully carry out this plan. But more important than any of that is the fact that Ye Wenjie is in charge. And though that may be surprising behavior from such a sweet old woman, it also makes perfect sense—after all, it was she who first believed that humanity must be saved or stopped by an outside force.

Ye begins with the traditional call-and-response: she cries out "eliminate human tyranny," and the crowd responds, "the world belongs to Trisolaris!" Then, Ye begins to interrogate Pan, telling him he has broken the organization's key code of conduct by killing Shen. Pan defends himself by saying that if Wei had discovered a solution to the Three Body Problem, the Trisolarans would never come to Earth.

Clearly, this organization hopes to bring the aliens to earth. But now it seems that one faction (of which Pan is a member) wants the Trisolarans to abandon their planet entirely, while one faction (led by Shen) wants to solve the three-body problem, thus allowing the Trisolarans to remain at least partially in their home.

But Ye is not satisfied. Instead, she has Pan repeat the organization's plan of action, which states that humans can no longer solve their own problems or maintain control of their own inventions. Therefore, they call on outside actors—the Trisolarans—to come to earth and redeem society. Pan wants Ye to declare herself an Adventist, but Ye does not believe that the Adventist faction shares the organization's overall mission.

Pan's cohort are known as the Adventists, which means that Shen's group must be the Redemptionists. Yet Ye, even though she is the leader of the ETO as a whole, does not subscribe to either group. Also worth noting: the group's mission directly articulates the idea that humans cannot manage their own technological progress, one of the novel's major themes.

An Israeli man makes his way to the front of the crowd. The man recalls how he lost a child and donated his kidney to a Palestinian girl in the hopes of pacifying the conflict between the two peoples. But when the conflict did not stop, the man became so convinced of humanity's evil that he grew determined to destroy it entirely. This total destruction, he reveals, is the true mission of the Adventists.

Like Ye, this Israeli man has seen just how much harm ideological divides can cause—and like Ye, his trauma causes him to loathe people. But whereas Ye originally hoped to awaken humanity to its own evil, this man—like Pan and the rest of the Adventists—simply hopes the Trisolarans will wipe humans out altogether.

Ye explains that the Adventist faction was started by a man named Mike Evans; she does not agree with Adventist theory. Worse still, the Adventists have created a Second Red Coast Base, where they can receive messages from the Trisolarans. Rather than sharing those messages with the entire ETO, however, the Adventists have kept that communication hidden; they have also communicated back to the Trisolarans in secret.

There have been many giant ideological rifts throughout the novel: between powers in the Cold War, between different Red Guard groups in the Cultural Revolution, and now between the Adventists and Redemptionists. And as with all of these divides, the split within the ETO has made secrecy the norm, as the Adventists now refuse to share their information with their more hopeful colleagues.

As Pan begins to panic, Ye calmly berates him for killing Shen Yufei simply because she was a Redemptionist. Before Pan can run, one of Ye's henchwomen snaps his neck; his body spasms and he dies. Ye announces that she trusts the rest of the people in the room are Redemptionists.

Though Ye herself tries to distance herself from each faction, her quick murder of Pan shows that, ultimately, she is more aligned with the Redemptionists than she is with the Adventists.

When Ye notices Wang Miao, she introduces him to the group. She also explains that the Lord's first priority is to eliminate nanomaterials, the very technology Wang works on. As Wang looks around in shock, Ye begins to tell him the rest of the story of Red Coast Base.

Now, Wang understands why Shen encouraged him to stop his work—the countdown was a Trisolaran trick meant to make him cease his progress on what the aliens undoubtedly view as a threatening technology. Moreover, it now becomes obvious that the real "Lord" Shen used to refer to was actually the Trisolarans.

CHAPTER 22. RED COAST V

As soon as Ye learned of the true mission of Red Coast, she devoted herself entirely to the base. Because of what she had studied in college, she was put in charge of minimizing the solar outages that plagued the base's monitoring operations. Though Ye made little progress on this front, she quickly stumbled on an unusual fact—every so often, the radio activity on the sun would pause and the surface of the sun would get completely calm. This strange fact caught Ye's attention, but try as she might, she could not explain it.

In addition to emphasizing Ye's youthful isolation and dedication to her work, this flashback shows just how skilled a scientist Ye really is. She is able to notice small details and, rather than ignoring them or rushing to explain them, she works to incorporate them into a larger theory.

Even though Ye was discouraged, she did not want to quit her research; she knew that if she did, she might lose access to some of the many foreign books she so enjoyed. Instead, she continued to spend time in the base library, going there late at night when no one else was around. One night, she stumbled on a journal article that referenced two moments of strong electromagnetic radiation on Jupiter. The dates seemed familiar to Ye, so she cross-referenced them with the Red Coast operations diary.

While the emphasis on the search for extraterrestrial life is itself a result of political divides, it also opens ideological doors for Ye—only through her official research can she gain access to knowledge and perspectives from outside communist China.

Sure enough, Ye realized that each time there was a flare on Jupiter, 16 minutes and 42 seconds later, there was a similar flare on the earth. After doing some quick calculations, Ye began to understand that the sun was acting as a mirror—and thus as an amplifier—for radio waves. In other words, a radio transmitter as strong as the one at Red Coast Base could make itself stronger by using the sun as a super-antenna. Humans could then send radio signals beyond the power capacity they currently had as a Type I civilization.

On Trisolaris, the sun(s) are usually a threatening thing, approaching to scorch or tear the planet. But on earth, the sun is life-giving—and for Ye, it proves to be key to cracking the difficult research problems she has been struggling with. This dual symbolism shows just how much each individual's viewpoint changes how they approach the natural facts around them.

To test her idea, Ye had to go through a great deal of red tape, including getting scientific files from the US that would normally be banned and appeasing Commissar Lei, who feared that Ye's work was veering too far from theory. Worst of all, Lei worried that pointing a "superpowerful radio beam at the red sun" would have unintended "political symbolism." Still, Ye refused to give up on her mission.

Red is an immensely meaningful color in Chinese communism (hence the term Red Guard); pointing a radio beam at the red sun could therefore look like a veiled, symbolic critique of communism. The fact that even standard research must be analyzed for potential meaning in this way shows just how much politics shapes science.

One day in the fall of 1971, Ye decided to try out her idea on her own. Nobody else in the room was paying any attention to her; either they were shutting down for the day or taking a break, so "no matter how historians and writers later tried to portray the scene, the reality at the time was completely prosaic." With maximum power turned on, Ye transmitted a signal to the sun.

Just as Bai Mulin never imagined his actions would have world-altering consequences, Ye's profound decision feels like a part of normal ("prosaic") life. This detail suggests that history only makes sense in retrospect; in the moment, individuals rarely realize what effects their actions will have.

As soon as she sent the signal, Ye rushed to Yang's office to ask him to monitor any return signals. Yang quickly realized what Ye had done and was amazed by her discovery—in their excitement, the two shared a rare moment of tenderness. Twenty minutes later, however, no signal had echoed back to them. Depressed by her failure, Ye grabbed some cold leftovers and sat on the edge of Radar Peak. Her eyes welled with tears. Little did Ye know that while she wept, the signal she had sent out was already crossing Jupiter's orbit. Though she wouldn't learn it for years, Ye had successfully sent a message into space.

As has often been the case, Ye is a scientist who can find moments of connection primarily through work—when she believes her work has failed, her bond with Yang evaporates as quickly as it began. But though Ye thinks she has failed, she has in fact succeeded in reaching the Trisolarans, changing the course of human destiny forever. Once again, therefore, individuals—even those who are trying to create change—are unaware of the impact they actually have.


CHAPTER 23. RED COAST VI

For eight years, Ye continued to live and work at Red Coast Base in peace. With time on her hands, Ye was at last able to reflect on the horrors she had endured: "nightmarish memories, like embers coming back to life, burned more and more fiercely, searing her heart." Ye had hated humanity ever since she read *Silent Spring*, but now she read history books and philosophy books that confirmed her feelings. The news, which was filled with updates on the Cold War-era nuclear standoff, was even more horrific. And closer to home, the forests just below Radar Peak were still being cut down and burned, tangible proof of humanity's evil.

Perhaps more than anywhere else in the novel, this passage shows just how much Ye Wenjie's childhood trauma continues to trouble her—rather than subsiding, it grows "more and more" intense. This trauma then shapes the way she views everything else in her life; whether it is the news or the deforestation happening in front of her, Ye processes all stimuli through the "nightmarish memory" of her father's death.

Yang fell in love with Ye and proposed marriage to her, even though it cost him some of his political status. Ye accepted mostly because she felt grateful to Yang for bringing her to Radar Peak. Soon after the wedding, Ye fell into a depression, struggling to find her sense of purpose. Late at night, she would sit alone in the monitoring room, seeing wave after wave of noise from the universe go by, unchanging. To Ye, "this was the loneliest time."

Worse still, these horrific memories—and the distrust they have wrought—prevent Ye from making a meaningful connection with any other human. Rather than seeking companionship in her marriage, Yang's love only enhances Ye's feelings of loneliness; instead, she continues to look to science and technology for comfort.


One night, however, Ye saw a slight difference in the wave's shape, perceivable only by someone with her level of expertise. The computer system told her that the signal was recognizable and decipherable, much more than any other signal ever had been. She turned on the deciphering system, and within moments, she had access to a file with a message from another world.

At the height of the Cold War, when Ye is working, humans have almost ceased to be able to communicate with each other; the Soviets, the Americans, and the Chinese are able to get through to each other only through the threat of violence. But now, Ye finds herself able to communicate with actual extraterrestrials—perhaps the ultimate demonstration of how much humans can alienate each other.



The message read: "Do not answer!! Do not answer!!!" As Ye read on, she discovered that the message had been written by a pacifist in another world. The message's author explained that if nobody replied to his message, creatures on his planet would never be able to find the source of the original signal. If someone did reply, however, their "world would be conquered!!"

The fate of all people on earth is at stake in these messages (not to mention the fate of the Trisolarans). And yet, this universe-changing conversation plays out between two individuals, each with their own past experiences and priorities. The book therefore forces readers to wonder: how would this conversation be different if the person on the other end were not a pacifist? Or if Ye had had a more peaceful childhood?

Ye's mind raced with the realization that there was other intelligent life in the universe—and moreover, that such life was nearby, only four light-years away. More messages came in, and Ye learned of the existence of Trisolaris and of the civilization that had been reborn over and over again. When she had opened all the messages, Ye downloaded them and put them in a separate, secret file. Then she typed a quick message into the Red Coast transmitter.

Though Ye's loneliness could not be placated by the man next to her in bed, the knowledge of other intelligence—especially one scientifically advanced enough to communicate back—instantly comforts her. The fact that Ye then keeps this message secret from all other humans further cements just where her loyalties lie.

Through the chilly morning air, Ye walked across the base to get to the transmission main control room. As the sun rose, Ye pointed the giant antenna towards it, ignoring the sleepy glances from the two men on duty. Knowing that "the entire fate of humanity was now tied to [her] slender fingers," Ye pressed the transmit button. Her message invited the Trisolarans to earth, explaining that humanity was no longer capable of solving its own problems.

In this crucial moment, Ye makes good on her resolution from the beginning of the novel: she invites a (potentially destructive) outside force to earth in the hopes of reforming humanity. In addition to affirming how culpable humans are in their own downfall, the language around Ye's "slender fingers" juxtaposes the seeming powerlessness of any given individual with the immense impact that one such person can have.

When Ye awoke several hours later in the base hospital, she realized she had fainted. Yang was sitting next to her, his face filled with concern. As Ye collected herself, taking in the "newly risen sun," a doctor informed her that she was pregnant.

The sun has allowed Ye to communicate with potentially life-destroying aliens, and the sun is a terrifying force on Trisolaris. But now, the "risen sun"—like Ye's sudden pregnancy—symbolizes new life, thereby juxtaposing humanity's ability to create with its tendency to destroy.

CHAPTER 24. REBELLION

Ye finishes her story as the members of the ETO look on with rapt attention. She then explains that the Trisolarans want Wang to stop his research because it could allow humans to create giant ladders through space, potentially preventing the Trisolaran fleet from landing safely. Wang, lashing out in confusion, asks Ye how her daughter died—but she will not answer. Instead, she says only that "compared to our Lord, everything we do is meaningless. We're just doing whatever we can."

As her reaction to the mention of Yang Dong shows, Ye uses science to hide from the pain and loss of real life. But though abstract scientists find much of reality "meaningless," Wang's more applied science provides potential practical solutions—and solace—in a moment of massive uncertainty. Wang is therefore much more of a threat to the Trisolarans than his more theoretical colleagues.

At that moment, a group of soldiers and police officers—led by Shi Qiang—burst through the doors. Shi tells the ETO rebels that because they have decided to treat all humanity as their enemy, the police will stop at nothing to take them down. The young woman who snapped Pan's neck rushes to the spheres at the center of the room and explains that they are actually nuclear bombs. If Shi and his colleagues do anything to hurt Ye, the woman says, the bombs will be detonated.

In a neat twist, the book makes one of its major themes literal: the three spheres (meant to represent the mathematical three-body problem) are actual nuclear bombs, showing how technological questions can tangibly be weaponized. Also, the nuclear bombs once again link this more modern period to the legacies of the Cold War standoff.

Shi tries to figure out a way to disarm the woman without setting off the bomb. Shi then calls to the young woman, telling her that he has a letter from her mother. While she is distracted, Shi is able to shoot the bomb before she can detonate it; the only person the bomb kills is the woman herself. The room breaks out into chaos as people on both sides start shooting, and several people are wounded in the crossfire. After the violence dies down, Wang takes Shi to the hospital. In the ambulance, Wang asks who that young woman's mother was—and Shi just laughs. "A girl like that most likely has mother issues," he explains. "After doing this for more than twenty years, I'm pretty good at reading people."

Unlike all of the other characters in the novel, Shi's great skill is "reading people"—while the rest find meaning in abstraction, Shi finds it in the details and quirks of everyday human behavior. It is also worth noting how childhood trauma once again shapes behavior; the young woman, clearly struggling to cope with the absence of her mother, finds her plans upended by the mere mention of this memory.

CHAPTER 25. THE DEATHS OF LEI ZHICHENG AND YANG WEINING

An interrogator asks Ye Wenjie a series of questions about some murders she is said to have committed. Ye confesses to the crimes, which happened on October 21, 1979; she explains that she was motivated to kill Commissar Lei and her husband Yang Weining upon realizing that Lei, too, had gotten the message from the Trisolarans.

Just as it did with the earlier report, the book again shifts form to mirror content. In this case, Ye is so removed from the emotional costs of her husband's death that the novel similarly shifts to a passionless tone, moving from third-person narration to a cut-and-dried interrogator's report.

Though Lei had read the aliens' message—and had discovered Ye's attempt to keep the message secret—he did not know that Ye had already replied to it. Lei told Ye that he wanted to protect his friend Yang and the child Ye was pregnant with, so he did not want to prosecute her. But Ye saw through this ruse—really, Lei just wanted to be the first person to discover extraterrestrial life.

Though Ye sees only a selfish desire for legacy behind Lei's decision, readers should not immediately trust Ye's perspective. Though Ye feels no such compassion for other people, it is possible that Lei really did care for his friend Yang and their unborn child.

Ye was determined to keep her secret safe. To do so, she decided to tamper with one of the wires for Radar Peak's signal receiver. When the receiver stopped working, the base technician assumed incorrectly that it was an issue with the part of the wire hanging over Radar Peak. The base technician reported the error to his superiors. As Ye had predicted, Lei, wanting to prove himself a good comrade, volunteered to take a look at the part of the wire that dangled dangerously over the cliff.

Here, Ye ingeniously (and quite cruelly) makes use of communist political symbolism for her own ends. Knowing that Lei will want to humble himself in front of his employees, she forces him to put himself in a dangerous situation in order to save face.

Just before Lei could check the dangling wire for defects, Yang showed up and offered to help him. Yang and Lei put on their harnesses and, using the base's rope, climbed over the edge of the cliff. Seeing no way to save Yang while killing Lei, Ye cut the rope, sending both men to their deaths. Ye tells the investigator that in the moment of the murders, she felt only calm, even when she saw the water beneath Radar Peak turn red with her husband's blood.

The same rational, objective mind that allows Ye to succeed in the sciences also enables her to feel zero guilt or sadness at her husband's death. But more importantly, for the first time, readers are faced with undeniable proof of Ye's brutality. This violent action shows how trauma can be cyclical: because Ye has lost so much, she no longer feels guilt or compunction about causing others to feel similarly.

CHAPTER 26. NO ONE REPENTS

No one ever suspected Ye of the murders, and life went on as usual. One day, near the end of Ye's pregnancy, a group of local children showed up at her door; Ye was surprised to learn that the base had recently lowered its security clearance. The children had heard that Ye was a brilliant scientist, and they wanted her help preparing for the National College Entrance Exam, which had once again been opened to all.

Many of the details in this passage imply that China is slowly exiting the peak of the Cultural Revolution. Education, considered suspect during the 1960s, is opening up again. And rather than the intense secrecy once associated with Red Coast, the base has now become accessible to the public.

After Ye helped those first children, more and more local kids came to visit Ye and seek her advice. One time, a teacher even came to her door, enthralled by this "bona fide *scientist*!" From then on, when Ye was overwhelmed by a sense of loneliness, her newfound community would usually surprise her with some homegrown vegetables or a pot of hot dumplings.

Just months earlier, Ye believed that the only way she could ever find company was with alien life. But in this touching scene, she finds herself immersed—for the first time—in real community, dealing not with abstract ideas but with the sweet particulars of daily life.

At last, it was time for Ye to give birth. There were complications with her pregnancy, so she had to be taken off-base, to the local hospital. While she was in labor, Ye hallucinated hot suns and flying stars. She lost a life-threatening amount of blood in childbirth, but the villagers volunteered over and over to donate their blood to replenish hers.

This passage is a study in contrasts: while Ye's mind is filled with flying stars, symbolizing her use of science to betray the human race, she is kept alive by the kindness of other human beings. Thus while the novel has frequently shown how people can be self-destructive, it now shows a more generous side of humanity.

After Ye had the baby—Yang Dong—she was too weak to take care of herself, and she had no relatives who could take her in. Instead, a local man named Hunter Qi brought her into his home, and Ye lived with Qi's peaceful family for six months. Ye grew especially close to his daughter-in-law Feng, who helped Ye nurse Yang Dong. During this time, Ye found that she had a lot in common with the women in the village, and she was surprised and touched to see how much the men respected her.

Tragically, Ye had lost all of her family by her early twenties, so the fact that Hunter Qi welcomes her as a surrogate daughter is especially meaningful (and likely very healing). It is also worth taking in that this is one of the first times Ye has been around other women (besides her mother and sister). Though it is never explicitly stated, it is possible to infer that getting a break from her largely male world also helps to open up Ye's perspective.

This brief period of happiness felt almost foreign to Ye. Feng had a child around the same time as Ye, and the two women would watch their children play peacefully late into the night. Sometimes, Ye would dream that she herself was a child again, and she would awake with tears in her eyes. When Feng asked questions like, "Why do you think the stars in the sky don't fall down?" Ye would give simple, soothing answers. In this quiet town in the Greater Khingan Mountains, "something finally thawed in Ye Wenjie's heart."

Surprisingly, Ye's friendship with Feng allows her to prioritize human connection over scientific truth (as can be seen in her almost childlike explanation of the stars). But while this friendship is lovely, it is also deeply ironic: though Yeis finally "thaw[ing]" and beginning to find some compassion for humanity, her betrayal has already been accomplished.

A few years later, Ye received notice that she and her father had both been politically rehabilitated. To ensure that Yang Dong got a good education, Ye found a job teaching physics at Tsinghua University and returned to Beijing with her daughter. Ye was amazed at the degree to which the Cultural Revolution seemed to be truly over, wondering if this was the end of "the madness." At the same time, Ye could not forget the message she had sent to the Trisolarans, though at this point it seemed like that communication had been in another lifetime. Indeed, Ye was so shocked at her own betrayal that she forgot about it, distracting herself from her past.

Once more, the novel highlights the gap between individual action and historical change. The very conditions that caused Ye to contact the Trisolarans—namely, the constant violence of the Cultural Revolution—have changed for the better. But Ye cannot undo her actions, nor can she come to terms with them. Ye's predicament thus reflects the long shadow of trauma; though Ye may not be hurting to the same extent she once was, her own hurtful actions are not at all ameliorated.

Meanwhile, Ye's mother, Shao Lin, had recovered and had married a man in the Education Ministry; as the Cultural Revolution ended, this man had risen in prominence, and Shao was now an important woman in her own right. One day, Ye brought Yang Dong to visit her grandmother. Though the visit was nice, Ye felt an "invisible wall" guarding her mother.

Ye Zhetai had always known his wife was opportunistic, and Shao's prominence both during and after the Cultural Revolution shows just how well she is able to survive and adapt. Though Ye has been able to find some new patience and faith in the Mongolian mountains, her sense of alienation from her mother is as strong as ever.

Before Ye could leave, Shao's husband stopped her on the street, warning her not to talk about her father or "pursue historical debts" with her mother. When Ye looked up, she saw Shao's face in the window, egging this new husband on. Ye picked up Yang Dong and left, never to return.

Rather than a reconciliation, Ye finds herself betrayed yet again by her mother (a relationship that both impacts and reverberates in Ye's relationship with her own daughter). It is useful to track the novel's use of the word "historical": history, the novel demonstrates, can exist on a grand scale, but it can also exist on an intimate one.

Eventually, Ye even managed to locate the revolutionary girls who had murdered her father. When Ye finally met up with them, the women were still wearing the uniforms they had worn on that fateful day decades earlier. At the same time, they all looked very different—they had become old, battered, and ill. When the women saw Ye, they refused to repent, explaining that despite devoting their lives to the cause they, too, had suffered in the Cultural Revolution. Indeed, only three of the girls had survived; the fourth had lost her life working in a labor camp. This exchange renewed Ye's resolve. Rather than feeling guilt about her betrayal of humanity, "she finally had her unshakeable ideal: to bring superior civilization from elsewhere in the universe into the human world."

Earlier, Wang has reflected that "history had made a long circuit and returned to its starting place." Now, a similar "circuit" happens in Ye's mind: her moment of trust in humanity is broken by the realization that victimizers can be victims—and vice versa. It is Ye's understanding that trauma is a universal part of the human experience that cements her desire to bring non-humans to earth. And like the young Red Guards at the beginning of the novel, Ye is now guided only by a passionately-felt, "unshakeable ideal."

CHAPTER 27. EVANS

Upon returning to Tsinghua, Ye was asked to help the university pick a site for a large radio astronomy observatory. Eventually, she settled on a quiet, hilly village in northwest China. The once-beautiful place now felt barren: most of the hills had been deforested, and erosion had caused the ground to break and slide. Ye was surprised, then, to hear of a mysterious foreigner named Bethune who was planting trees up in the hills, hoping to restore birds to the area.

In this small village, Ye sees just how much humans are quite literally destroying the earth; the ground is beginning to slide out from under them. But if the deforested trees remind Ye (as they always have) of the loss of her father, this scene also makes clear that when one part of a natural ecosystem is destroyed, the other parts similarly collapse. Thus deforestation means the death not only of trees but of the birds who live in them.

Her curiosity sparked, Ye asked the villagers to introduce her to this stranger up in the hills. To her surprise, Ye saw that the man was a white American; he introduced himself not as Bethune but as Mike Evans, and he explained that he was trying to save lives. When Ye asked which people Evans was trying to save, he asked Ye, "Why does one have to save *people* to be considered a hero? Why is saving other species considered insignificant?" Evans believed that humans did not deserve "saving"; instead, he wanted to focus on protecting vulnerable animals.

There are two critical ideas in what Evans says. First, he presents a (slightly different) version of Ye's philosophy that humankind is beyond saving. Second, Evans ostensibly decenters humanity as a whole from the historical narrative—but even as he claims to turn the focus away from people, he is also deeply concerned with his own heroism. Even someone who hates the course of human history, then, can desperately want to participate in it.

In this village, Evans's particular goal was to save a dying breed of swallow. Though the bird was about to go extinct, no one seemed to care because "they're not as crowd pleasing as giant pandas." After a few months of planting trees for the swallows, however, Evans ran out of money. As he explained to Ye, though his father was a billionaire, he refused to bankroll any of his son's environmental projects.

Again, Evans's bitter comparison of the swallows and pandas demonstrates how arbitrary even the most altruistic science actually is. Though environmentalists might claim to want to help the earth, even they are influenced by their own personal preferences (for example, prioritizing cuter animals over more nondescript ones).

Evans told Ye the story of his life: his father had made his money as an oil executive. When Evans was 12, there was a gigantic oil spill from one of his father's tankers, and Evans himself saw the sea birds covered in black goo, dying. Despairing, Evans sought guidance from his father—but instead of offering comfort, the oil executive suggested that because so many species were going extinct, no actions really mattered anymore. Evans's father thus taught his son his rules for "the game of civilization: The first priority is to guarantee the existence of the human race and their comfortable life. Everything else is secondary."

Evans's story parallels Ye's: just as Ye was shocked to see her mother betray her father, Evans is horrified to watch his father turn his back on the world around him. For both leaders of the ETO, then, childhood trauma lies at the source of their hatred of their compatriots. And on the opposite end of the spectrum, Evans's father's love of the "human race" also reflects a particularly naïve view of "civilization": just as swallows are dependent on trees, humans are dependent on the plants and animals they kill, and so focusing only on humans at the expense of other life forms is deeply damaging.

For Evans, this moment shaped his worldview—but rather than accepting his father's philosophy, he devoted his life to rebelling against it. As he grew older, Evans formulated the philosophy of "Pan-Species Communism," which extended the idea of universal human rights to all species on earth.

Though Evans is from the capitalist West, his use of communism as a framework for animal rights still suggests yet another way in which the legacies of the Cold War continue to shape the characters' thinking. And as always, though Evans's philosophy has wide-reaching impacts, it is deeply rooted in his small-scale, intimate, relationship with his father.

Years went by, and Ye and Evans did not speak. Finally, though, Evans reached out, and they agreed to meet on the same hill where they had first encountered each other. Though Evans's trees had grown, deforestation had moved even more quickly, and the forest was almost bare. When Ye asked, she learned that the forest was falling so fast because two villages were competing for the logging profits.

The constant deforestation, a running motif throughout the book, now becomes tangible proof that what people believe is progress is in fact destructive. As Ye sees in the logging competition, the desire for individual profit and success will ensure that any technology is put to harmful use.

In the years that had gone by, Evans's father had died and left Evans all of his money. But money did not soothe Evans's fears: rich countries would keep shifting polluting industries to poor countries, and poor people would keep exploiting natural resources just to stay alive. Evans had once hoped that the East would allow Pan-Species Communism to thrive; though Christianity tells the story of the Ark of Man, Buddhism prioritizes saving all life. But by this time, Evans was realizing that people everywhere are "the same."

Throughout the text, everyone from Galileo to Commissar Lei has asserted that there is an unbridgeable divide between the East and the West; indeed, that conflict is at the heart of much of Ye's science. But here, Evans comes to terms with the fact that such a divide does not actually exist—and that rather than coming together over shared values, what really links all people is a kind of universal selfishness.

Ye agreed, expressing her belief that humanity's only hope to save itself comes from an outside force. She then confessed to Evans her contact with the Trisolarans. When she finished, Evans promised to devote his resources to the cause, and the two shook hands, becoming "comrades."

Ye's confession to Evans marks another critical historical moment: what begins as a conversation becomes the founding of the earth-shattering Earth-Trisolaris Organization (ETO). Two traumatized adults, having found a shared ideology with which to process their trauma, have changed the universe forever.

CHAPTER 28. THE SECOND RED COAST BASE

More years passed, and Ye and Evans did not speak. Eventually, though, Ye was brought to the Second Red Coast Base, a ship floating in the middle of the Atlantic. Like Radar Peak, the ship had a giant parabolic antenna in the middle of it. Later, Ye would learn that the ship—which Evans had bought with his father's money—was called *Judgment Day*.

Though Evans has revealed that the divide between East and West is overblown, it is still important to note the contrast between the Adventists and the Redemptionists. The Adventists are based in the West and draw on a Judeo-Christian framework (as evidenced by the name Judgment Day); the Redemptionists are based in the East and (as Shen suggests) are more closely aligned with Buddhism.

Evans explained to her that he had gotten back in contact with the Trisolarans, and that their interstellar fleet had already set sail—it would arrive on earth in 450 years. Gesturing to the other people on the boat, Evans introduced Ye to the first members of what he'd named the Earth-Trisolaris Organization. He asked Ye to be the commander of the ETO, and she accepted. The Earth-Trisolaris movement had officially begun.

It now becomes clear that the timeline Wang sees in the game is slightly behind the real timeline of the Trisolaran departure. Also worth noting: though Ye invited the aliens to earth, and though she is nominally the commander of the ETO, she is not its founder. Individual action, the novel reminds readers, always leads to consequences the individual in question might never predict.

CHAPTER 29. THE EARTH-TRISOLARIS MOVEMENT

Most of the ETO was made up of intellectuals; while most people were hesitant to betray their families and loved ones, some elites hated the human race enough to wish for its complete destruction. The ETO quickly grew in power and scope: after all, "human civilization had finally given birth to a strong force of alienation," and the most alienated people were also among the most powerful and influential. Still, governments mostly thought the ETO was silly and extreme, and so it was allowed to grow relatively unchecked.

Here, the thematic question of theory versus lived experience takes on new meaning: while people who focus on daily life find redeeming qualities in humanity, theorists and intellectuals only find reality messy and disappointing. The most important idea, here, is this play on the word "alienation." People have become so isolated from each other that connection with actual extraterrestrials feels more attainable than connection with other human beings.

Within the group, there were two main factions: Adventists and Redemptionists. The Adventists hated humanity so thoroughly (due to wealth inequality, environmental destruction, and war, among other things) that they wanted humanity destroyed; as Evans put it, "We don't know what extraterrestrial civilization is like, but we know humanity." The Redemptionists had developed a religion around Trisolaris, in which the Trisolarans were a spiritual Lord that actually existed. The Redemptionists believed that they should spread Trisolaran culture to the larger population, and they also believed that solving the seemingly impossible three-body problem was a religious act.

At last, the two warring sectors of the ETO come into focus. Adventists have no investment in (or even any particular beliefs about) what the Trisolarans are like; their agenda is based solely on a hatred of humanity. Redemptionists, however, spend a lot of time imagining the Trisolarans; since the Adventists have monopolized much of the aliens' communication, the Redemptionists are able to create a sort of mythos around the extraterrestrials. Understanding that the three-body problem is a religious question also clarifies Shen's intent devotion to her husband.

The *Three Body* game was the main way in which the Redemptionist faction of the ETO spread knowledge of the Trisolarans to earth. Using recognizably human figures and important historical events, the game designers hoped to make Trisolaris more palatable to humans who were just learning of it. Once a player advanced far enough in the game, they would be contacted and—if their sympathies aligned with the ETO—they would be recruited.

The way that the video game plays with history complicates the standard sense that time moves in one linear direction. But the game also serves to affirm the perceptual challenges of the shooter and the farmer theory. Humans can only understand another world through their experience, and this need to center humanity blinds people to the reality of the universe around them.

The Adventists and the Redemptionists were always in intense conflict, as the Redemptionists believed that humans and Trisolarans should coexist. Moreover, over time, a third faction emerged: the Survivors. With knowledge of the coming war, the Survivors wanted only to outlast the aliens, in whatever way possible. These three warring factions, which had splintered only from a few initial messages, proved the "contact as symbol" theory—rather than uniting people, belief in extraterrestrials would only further divide them.

Though humans and Trisolarans are ostensibly at odds, both are ultimately motivated—above all else—by a desire to survive. But rather than working together to accomplish this survival, humans (and their alien counterparts) view survival as a zero-sum game; their existence must always come at the expense of someone else's.

CHAPTER 30. TWO PROTONS

Ye's interrogation continues in transcript form. Ye explains that after the Adventists monopolized communication with the Trisolarans, she tried to build a Third Red Coast Base. But four years ago, all communication with the Trisolarans stopped. Ye, who does not identify as either a hateful Adventist or a religious Redemptionist, reflects: "I started the fire, but I couldn't control how it burnt."

In this important quote, Ye gives voice to the novel's thematic preoccupation with the human desire for legacy. Though Ye knew her action would change the world, she had "control" only over the initial moment—the fallout was out of her hands entirely. And just as real-life experience never neatly follows the theory that attempts to explain it, real-life legacies rarely correspond to the legacies people dream of.

Ye also explains that she cannot destroy Evans's ship because it would mean losing the Trisolaran messages inside of it. This would be devastating for the Redemptionists, because those messages were a religious text. Destroying the ship would also pose a strategic problem for any forces hoping to combat the alien invaders. The interrogator notices that Ye also calls the Trisolarans "Lord."

Though Ye claims not to affiliate herself with either faction in the ETO, she is clearly much more on the side of the Redemptionists (specifically because she seems to view the Trisolarans in a religious light). This alliance helps to explain why she was so quick to execute Pan Han.

Before the questioning ends, Ye tells the interrogator that the Trisolarans sent two protons to earth at the speed of light. When the interrogator is confused by the purpose of these protons, Ye explains that the protons have effectively "locked" human science; no matter how much they try, humans will not be able to advance technologically in the 450 years before Trisolarans arrive. Though Ye does not understand how this could be possible, she reflects that to the Trisolarans, "we're probably not even primitive savages. We might be mere bugs."

These mysterious protons were probably responsible for the confusing lab results that ultimately drove Yang Dong to her death. Indirectly, then, Ye is responsible for her daughter's death—in much the same way that her mother was responsible for her father's. In addition to demonstrating yet another cycle of trauma, this passage also introduces the concept of human beings as "bugs," a motif that will recur in the last chapters of the novel.

Having heard the interrogation, Wang Miao and Ding Yi debate whether or not they believe what Ye has said. Wang is confused about how two protons could have any meaningful effect, but Ding explains that a giant two-dimensional structure can be contained in a very small three-dimensional structure. Beyond that, Ding explains that there are many more "micro-dimensions" that could be manipulated, so vast amounts of energy and information could indeed be stored in a single proton. As Wang begins to fret, Ding comforts him, saying, "Just do the best within your responsibility. Let's go drinking and then go back to sleep like good **bugs**."

As it had been with Shi Qiang and Sha Ruishan, enjoying a night drinking with friends becomes a way to cope with the existential crisis Wang is facing. This passage is important for how it juxtaposes highly technical language with the simpler, more joyful language of quotidian experience. In other words, in order to understand the most complex ideas, there must be time for plain old rest and socialization.

CHAPTER 31. OPERATION GUZHENG

Shi brings Wang to another meeting at the Battle Command Center, and Wang is amazed to realize that "for the first time in history, the armed forces of the world's nations faced the same enemy." General Chang explains that the human race must fight against the Trisolaran aliens—which, right now, means fighting against the human members of the ETO.

Even though humans are united against a common enemy, the only way they can deal with that enemy is by means of more humans—division, in other words, is impossible to avoid. Or as Shi Qiang puts it, "all this must be the work of people."

Specifically, Chang's mission is to intercept the messages from the *Judgment Day* ship without destroying the ship itself. Now is the time to strike, as the ship is about to pass through the Panama Canal. Different military experts propose options for how to do this: they could work with spies on *Judgment Day*, or they could use advanced weaponry like a neutron bomb or nerve gas. But all of these ideas pose huge logistical risks, and Chang—along with his colleague General Stanton of the United States—vetoes all of them.

Just as the book began with the idea that modern history can be understood through the lens of weaponry, the conversation about how to save the world involves many technologies designed to destroy it. So many human inventions, the novel constantly reminds readers, center around new ways of doing violence to other people.

Though the military men do not take him seriously, Shi has an idea even when the others fall silent. Before he reveals his plan, Shi boasts that his years of dealing with petty criminals has made him uniquely able to "think outside the box"; this brag further frustrates General Stanton.

Shi's experience in the weeds of problem-solving allows him to see the world in a different light than the more credentialed generals and scientists around him. As he himself says, while everyone else is looking up the sky, he is paying attention to what is on the ground.

Finally, Shi explains his vision: as the *Judgment Day* passes through the Panama Canal, it will be sliced by "Flying Blade," a razor-sharp, invisible string of nanomaterial. Since Wang is the foremost expert in nanomaterials, all of the generals turn to him to verify if Shi's plan is indeed possible. After some quick calculations, Wang confirms that Flying Blade is a viable option.

Though most of the weapons suggested earlier were more abstract (like the neutron bomb), Wang's flying blade is in some ways a relatively simple technology—and as always, the nanomaterial suggests a synthesis of theory and practical knowledge. That middle ground between abstraction and reality will be essential in stopping the Trisolarans.

The people at the Battle Command Center decide that they will string the nanomaterial right across the narrowest point of the canal, at the Gaillard Cut; this project will be called Operation Guzheng. Shi notes that they must do this during the day—at night, all the soldiers on the ship will be lying down asleep, and the sharp filament might miss them. Though one of the diplomats at the meeting is shocked by Shi's "demon[ic]" thoughts, General Stanton congratulates him for his quick thinking, giving Shi a Cuban cigar as a token of his respect.

A guzheng is a specific kind of Chinese string instrument; the thin strings of nanomaterial in many ways mimic the strings of a guzheng. More important, however, is Shi's focus on the particulars of bodily experience (namely, when the ship's crew will sleep). And it is also worth taking in the geopolitical significance of an American general giving a Chinese policeman Cuban cigars—the old wounds of the Cold War, while not healed completely, seem a thing of the distant past.

Four days later, Wang and Stanton arrive at the Gaillard Cut section of the Panama Canal. Wang notices that here, too, there has been widespread deforestation. Stanton and Wang keep close watch as the invisible net of Flying Blade filaments—held up by two pillars on either end of the canal—is put into place. While this happens, Stanton reflects on all the other times he has been in Panama; though in those days, he thought he was "witnessing history," now it all seems "so insignificant" by comparison.

There are two key ideas in this passage. The first is that even as Wang is fighting to save humanity, he notices how much damage people are doing to themselves and their planet (by deforesting). The second takeaway is that the scale of history has shifted; all the wars and conflicts that once seemed giant now seem so small. Once again, humans have been trapped in the perceptual trick of the shooter and the farmer, in which the world as they know it is actually only a piece of the truth.

Wang's heartrate speeds up as the *Judgment Day* approaches the invisible net. Though Stanton tries to calm Wang down with conversation, Wang can barely breathe. At last, the ship passes through the Flying Blade, but nothing happens right away. Only after a few seconds does a thin antenna at the top of the ship split in two, showing Wang that his plan has worked after all. Moments later, the ship falls apart entirely—both people and mechanical parts are sliced in two, and the *Judgment Day* splits into 40 separate slices. As dozens of soldiers descend on the shipwreck, Wang takes out a pair of binoculars to look more closely at the wreckage. He thinks he sees blood.

Antennas have recurred throughout the novel as a kind of shorthand for threatening, mysterious communication. The fact that the antenna is the first thing on the ship to break apart thus symbolically heralds the severing of the Adventists' ability to contact the Trisolarans. Also, Wang must face for the first time that even his own beloved technology can be used for violence—the blood in the water has his name on it.

The interrogation transcript resumes again, and Ye's interrogator presses her to explain why she automatically trusted the Trisolarans. When Ye cannot give a "scientific" answer for her trust, the interrogator guesses that her faith in the Trisolarans stemmed from her love of her father. Ye says nothing in reply. The interrogator then explains that Evans has been killed, and that the world's military forces have successfully intercepted the Trisolaran messages. Nervously, Ye at last reads what this alien society has written.

Just as Shi was able to stop the young ETO member from detonating the bomb with (fake) news from her mother, the interrogator successfully links Ye's trust in the aliens to the betrayal of her father's death. Perhaps more than anywhere else in the narrative, then, this passage shows the long shadow trauma can cast—Ye has altered and betrayed the world because she herself was once altered and betrayed.

CHAPTER 32. TRISOLARIS: THE LISTENER

Ye, imagining the Trisolarans as humanoid, begins to read their message to Evans. The message explains that across Trisolaris there were hundreds of listening posts, each manned by a single individual. The listeners were supposed to keep an ear out for any messages from other sentient life in the universe. The listeners were lonely; though the listening booths kept them safe from many of the dangers of Chaotic Eras, the listeners could not leave during Stable Eras, either, so they were denied the basic pleasures of life.

The listeners' experience shows that isolation is not solely a human experience; indeed, though many of the novel's characters have lamented their sense of loneliness, they are actually far more connected than some of their alien counterparts. Moreover, this section reveals another parallel between life on earth and life on Trisolaris: though chaos is painful (and Chaotic Eras are scary), this messiness is a necessary counterbalance to the pleasures of real life.

One night, during a Chaotic Era, the listener at Post 1379 was contemplating the incredible loneliness of the universe. All of a sudden, he saw an unusual waveform come through on his monitor. Whereas most of the waves were meaningless, the deciphering computer showed that this wave had been sent by intelligent life. Shaking with excitement, the listener opened Ye's message and learned, for the first time, of the existence of earth.

The fact that the listener is never given a name shows again how isolated (and seemingly insignificant) this individual is—or would be, were it not for this monumental moment of contact with earth.

At first, the listener was touched to imagine the beautiful oceans and forests of earth. But soon, his excitement turned to dread—not only would he never get to experience this beauty, but realistically, Trisolarans would conquer and alter any other planet they could find. Plus, if the listener reported this message, listening posts would become obsolete and he would be out of a job. And without a job or a mate, he would be forcibly dehydrated and burned.

Unlike on earth, where things like landscape photography and violin music are valued, Trisolarans are so focused on their own survival that they are entirely utilitarian. Without purpose, therefore, the listener will be literally deemed unworthy of life.

On the other hand, the Trisolaran government probably could not identify where in the universe the transmission had come from, because even if they could ascertain the direction of the signal, they could not know how far away it was. Therefore, if the listener replied by warning the citizens of earth not to respond, he could potentially save earth from Trisolaran invasion, thus shaping the course of both earth history and Trisolaran history. In other words, the listener "had a singular chance to make his own humble life glow."

In this passage, more than any other place in the novel, readers are confronted with an individual's desire to leave behind some trace of himself. For the society of Trisolaris as a whole, the goal is simply biological survival—but for at least this Trisolaran individual, living on in someone's memory is more important than living on in flesh and blood.

The listener typed out a short message—"Do not answer! Do not answer!! Do not answer!!!" Knowing that "the fate of Trisolaran civilization was now tied to [his] slender fingers," the listener pressed the transmit button.

Interestingly, this language parallels exactly the language used to describe Ye as she contacts the Trisolarans. In both cases, the emphasis on "slender fingers" shows how even a relatively weak individual can create massive historical change.

The princeps (leader) of Trisolaris did not live in a palace exactly like the one in *Three Body*, but he was separated from the elements (possibly by thick walls or by going underground). When he learned what the listener had done, the leader felt nothing—Trisolaran society viewed most emotions as a form of weakness. All of the many civilizations and Chaotic Eras had taught the Trisolarans that only "calmness and numbness" were useful in the fight for survival.

Human characters like Wang Miao have struggled for the entire novel to balance rational thought with emotional experience. But on Trisolaris, only the former is valued; emotional stability is necessary in a society where natural stability (namely, the sun rising and falling every day) is not guaranteed.

The princeps called the listener to his palace, and the two began to debate whether earth's "warlike" society was more or less valuable than its Trisolaran counterpart. The listener argued that in the fight for survival, Trisolarans had made their lives meaningless—they had "no literature, no art, no pursuit of beauty and enjoyment." The princeps, meanwhile, countered that while Trisolaris had once had democratic societies filled with arts and culture, such societies were the least likely to survive.

Again, the utilitarian nature of Trisolaris emerges here in contrast to the more multifaceted—but less practical—life on earth. To the listener, art is a particularly important product of a life in which interiority and feeling are valued; science, on the other hand, is more about increasing a society's ability to protect itself.

While the princeps believed that, should the Trisolarans make it to the stability of earth, they too could create art, the listener was not so sure; he believed that "the metallic Trisolaran spirit has infiltrated each of our cells and solidified." At this, the princeps dismissed the listener, telling him that he would not be dehydrated and burned. Instead, his punishment would be knowing that his attempt to save earth had failed forever.

In a heartbreaking parallel, this language neatly mirrors the language Ye uses to describe her own experience with trauma, in which the painful thoughts "dissolved into her blood, where they would stay with her for the rest of her life." In both cases, an experience of trauma—whether it is familial or a natural disaster—literally changes the makeup of an individual's body and brain, meaning that many of their actions (even seemingly unrelated ones) are actually some kind of trauma response.

The princeps summoned the consul in charge of the listening posts. He ordered that the consul and all of the 6,000 Trisolarans who worked for him be dehydrated and burned for allowing listener 1379 to commit such a grave crime. Then, the princeps ordered the Trisolaran fleet to prepare for flight—even though the fleet might not know exactly where to fly, Trisolaris was going to be destroyed by its three suns at any moment. It was time to "gamble."

Though many of the details of the Three-Body game were different from the real Trisolaris, the princeps's brutality is comparable to that of Zhou, Pope Gregory, and Qin Shi Huang. Also notable: in this moment of crisis, rational thought is not possible or useful, even for this most rational society. In other words, luck, risk, and mess are impossible to fully eliminate.

CHAPTER 33. TRISOLARIS: SOPHON

Years later (8.6 earth years, to be precise), the princeps ordered a meeting of the Trisolaran government at the **Pendulum** monument. Through the freezing cold of a Chaotic Era, the princeps shut off the pendulum; since the pendulum had been designed to hypnotize God, turning it off was a way of thanking God. The princeps explained the good news. They had received a reply from earth—and the timing of the reply suggested that earth was located nearby, only four light-years away.

Rather than finding sustained meaning in faith, the residents of Trisolaris use their pendulum-based religion as merely one more trial-and-error attempt to solve a problem. So when another solution presents itself, the Trisolarans are able to almost immediately give up their faith, showing again their desire to be "numb" and rational above all else.

Before the Trisolarans could celebrate, however, the princeps went on. Having learned more about earth's history, he had concluded that human technology was progressing very quickly. Therefore, even though humans were currently far behind Trisolarans in terms of technology, by the time the Trisolaran fleet reached earth, humanity could have far surpassed Trisolaran invention. In turn, humans could likely fend off any potential invasion.

Earlier, the Chinese government had discussed "saltatory" progress, in which science advances through giant, sudden "technology leaps." Such a thing never occurs on Trisolaris—so even though at this moment the Trisolarans are more advanced than humans, that could quickly change because human history moves in these unpredictable fits and starts.

Still, the princeps was gratified to know that the message had come from a human (Ye), who was a traitor to her own species. With the help of these "alienated" human forces, the princeps felt it was possible to prepare earth for Trisolaran invasion. First and foremost, however, the princeps believed that Trisolarans must find a way to halt the progress of human science completely.

Rather than trying to progress in their own technology, the Trisolaran aliens hope to halt human advancement. Just like the tension over logging that Mike Evans observed, this line of thinking shows how competing groups would rather use their most advanced science for destruction rather than creation.

To stop humans from making any technological progress, the Trisolarans decided to turn a single proton into a giant supercomputer—a project they called Project Sophon. To do this, the princeps and his science consuls created a giant particle accelerator; they then unfolded a nine-dimensional proton structure into two dimensions, creating a giant surface area.

This is what Ding Yi had explained to Wang earlier: by unfolding a complex proton into its most spread-out form, the Trisolarans hope to be able to program onto the increased surface area as they would onto the circuit board of any computer.

The first time the Trisolarans tried to unfold a proton into two dimensions, they accidentally unfolded the proton too far, and it became one- dimensional. The remnants of this failed experiment appeared in the Trisolaran atmosphere as thin strings of light. To the princeps's dismay, his consuls justified this failure by explaining that "in scientific experiments, there has to be a process in which kinks are worked out."

Throughout the Three-Body game, many of the science experiments have had tremendous human costs. Though the Trisolarans erase these failures as merely necessary "kinks," each mistake potentially endangers thousands of individuals.

The second time the Trisolarans tried to unfold a proton into two dimensions, they failed again; this time, the proton became three-dimensional. Immediately after the experiment was conducted, giant geometric solids began to appear near the particle accelerator and float into the Trisolaran atmosphere. Even more disturbingly, these geometric shapes then morphed into eyes.

This is not the first time that the universe itself has appeared intelligent—something similar happened in the tri-solar syzygy section of the Three Body game. Just as humans have had to come to terms with the fact that there are other intelligent life forms in the universe, the Trisolarans must now understand that particles themselves can have thoughts and interiority (or in this case a kind of sight).

The princeps asked his science consuls whether the eyes were alive, and they replied that though the proton-eyes were not alive, they likely contained some kind of "intelligence" or "wisdom." Suddenly, all of the many eyes began to merge into a single eye—and then that eye turned into a giant parabolic mirror. Realizing that this mirror had the potential to reflect the suns' rays and thus destroy all of Trisolaris, the science consuls directed the princeps to get into his underground bunker.

This frightening passage parallels some of the tensest moments of the Cold War. In the process of inventing new technologies ostensibly to protect themselves, the Trisolarans put their entire society's existence in danger—much as the United States and the Soviet Union did with nuclear weapons and mutually assured destruction.

At this moment, Trisolaris began to get even brighter and hotter as the mirror reflected the sun, forming a giant cone of light. But before Trisolaris was destroyed, the planet's nuclear forces were able to split the mirror into many pieces, saving the Trisolarans from certain death. The princeps was nervous to try any more experiments, given how dangerous this one had been. Still, Trisolaris had no other hope for survival. With this in mind, the princeps gave his scientists one more chance to succeed at unfolding a 9-dimensional proton into two dimensions.

The Trisolarans are trapped between dangerous technology and dangerous nature—but because they have at least the illusion of control over technology, they choose what they see as the lesser of two evils. After all, science is perhaps the most essential way in which humans (and aliens) try to assert some measure of influence on their own history.

Before their next experiment, the princeps asked his science consuls if intelligent life had been destroyed in this latest try. The consuls explained that in fact, more than one entire microcosmos had been created and then demolished by the unfolding process. The princeps realized that, given how many particles are smashed every day in particle accelerators, thousands of microcosmos and civilizations had been destroyed. He wanted to publicize this fact to the other Trisolarans, so they could "face the destruction of Earth civilization with equanimity."

If particles can contain intelligence, then intelligence is constantly being smashed and destroyed. And because the Trisolarans define life in terms of intelligence—and not in terms of feeling—they are able to justify the destruction of earth in theoretical terms. But for someone like the reader, who understands the value of emotion and beauty, this calculus is not so simple.

Meanwhile, the princeps learned that the alienated forces on earth were growing. But even as some humans wanted to help Trisolarans with their invasion, not all of the Trisolarans were united behind this common goal. Like listener 1379, many Trisolarans had become pacifists. For this reason, the princeps now wanted to control all the flow of information from earth to Trisolaris.

Just as the mere idea of the Trisolarans is proving tremendously divisive on earth (as in the "contact as symbol" theory), the knowledge of human beings is creating a similar divide on Trisolaris. And as with the warring factions in the ETO, the question is again what degree of violence and destruction is necessary once these two societies meet.

The third attempt to unfold a proton created another giant mirror—but this time, rather than reflecting light, the mirror reflected the entire planet of Trisolaris back to itself. This was all according to the science consuls' plan. And indeed, soon after the giant mirror appeared, the consuls were able to wrap it around Trisolaris, creating a giant proton shell. Once the shell had formed, the science consuls could etch electronic circuits onto the proton, creating the supercomputer.

The unfolded proton is so giant that it is effectively the size of the planet itself; therefore, the only way for the scientists to work with it is for them to wrap it around their planet. Interestingly, this proton computer forms a strange counterpart to the human computer Wang and Von Neumann made in the Three Body video game.

But because the shell enclosed the entire planet, Trisolaris was shut off completely from the three suns—and a period of intense cold followed. Much of the population had to be dehydrated, and nearly everyone who remained worked in spaceships to etch circuits onto the proton shell. But, at last, the experiment was successful: the Trisolarans had successfully created a "sophon," or a proton with wisdom. The scientists boasted that "this is the smallest artificial intelligence that we can make."

Yet again, technology that could improve the future costs a great deal in the present (in this case, mass dehydrations). But the experiment is ultimately successful, and the "sophon" (a word that combines the Greek word sophia, *or "wisdom," with the word "proton") is born.*

The scientists began to give the sophon a series of commands, and the two-dimensional shape folded itself first into three dimensions, then into four, then five, then six. Once the proton had folded itself into six dimensions, it was able to see "the organs inside everyone, even the organs inside your organs." One scientist explained that this is because "a sophon observing three-space from six-space is akin to us looking at a picture on a two-dimensional plane."

In this passage, arguably one of the most technical sections in a novel full of them, the newly intelligent proton folds into so many dimensions that it begins to look on the three-dimensional figures in the same way that three-dimensional humans look at a painting and see all of the information contained within it. Even though the proton has always had this many dimensions, only now can it make sense of its surroundings in the same way a human might.

Creating the next three sophons was a much quicker and easier process, and eventually, the Trisolarans were ready to launch Sophon One and Two to earth. The sophons would immediately find the most powerful particle accelerators on earth and disrupt the accelerators, providing false or misleading results. When the particle accelerators smashed the sophons, several more sophons would be created, and these sophons could seek out yet more particle accelerators.

The particle accelerators were the exact machines that were confusing Yang Dong, ultimately driving her to suicide. Now, readers can realize that the laws of physics themselves never changed; rather, it was a successful deception on the part of the Trisolarans.

Because each of the sophons would be capable of multiplying and moving between particle accelerators, the Trisolarans would indeed be able to stop humanity from making any further discoveries in the deep structure of matter. Moreover, the sophons would be able to create other kinds of strange phenomena—including making messages (like letters or numbers) appear in developing photographs or in people's retinas. And because two sophons would remain on Trisolaris, these sophons could communicate with their counterparts on earth, getting real-time updates about humanity's progress (or lack thereof).

At last, many of the strange occurrences from earlier in the book are explained; in addition to the particle accelerator malfunctions, the sophons were also responsible for the bizarre countdown Wang Miao struggled with. But there is even more horrifying new information revealed here. Because the sophons can monitor anything and everything on earth, all of the actions at the Battle Command Center have already been reported back to Trisolaris. So humans have almost no agency over their own destiny—the Trisolarans have already won.

While Ye Wenjie finishes reading about the creation of the sophons, the people at the Battle Command Center meet to discuss what they have learned from the intercepted intelligence. Grimly, General Chang assesses that because of the sophons, humanity can no longer do anything without the Trisolarans knowing; the sophons essentially act as a set of "omnipresent eyes." As soon as Chang reaches this conclusion, Trisolaris communicates with non-ETO humans for the first time. Just for a moment, the same message flashes across everyone in the Battle Command Center's eyes: "You're bugs!"

These two words, chilling on their own, are especially frightening for two reasons. First, the Trisolarans send this message at the exact moment that human beings are realizing what they know, demonstrating just how much Trisolaris can monitor what happens on earth. And second, the use of the term "bugs"—the very term Ye Wenjie had used a few days earlier—reflects the fact that the Trisolarans are monitoring earth over a long period of time and putting together what they learn. Whatever the ETO members believe, therefore, it is really the Trisolarans who are constructing and controlling the narrative—and the end result—of contact.

CHAPTER 34. BUGS

Shi, Ding, and Wang all get drunk at Ding's house together. Though Shi still has hope for humanity, the other two men are hopeless; Wang knows that even though he can continue to improve his nanomaterials, this technology is like a primitive spear compared to what the Trisolarans have. "Long live bugs!" shouts Ding, giving a toast. "Long live sophons! Long live the end of the world!"

As in the metaphor of the shooter and the farmer, Wang and his friends now realize that what to them seemed like vast technological progress was in fact insignificant in the larger scheme of things. For the final time in the novel, the men turn to drinks, trying to cope with theoretical crisis by finding a brief moment of social respite.

In an effort to cheer Wang and Ding up, Shi decides to bring them both to his hometown. When they arrive, Wang and Ding see that the town is plagued by locusts. They ask Shi why he has brought them here, and he replies simply: "Is the technological gap between humans and Trisolarans greater than the one between locusts and humans?"

If in the previous passage, Wang and Ding zoom out to see themselves in comparison with the Trisolarans, Shi now shifts the sense of scale yet again, forcing his friends to step into the shoes of some actual "bugs." Though the bugs are much less advanced than humans, they are still able to exist—and still able to thwart the more technologically-advanced beings around them.

This question causes Wang to reflect on the fact that, though highly intelligent humans have tried to exterminate bugs for thousands of years, they have never been able to do so; "the bugs have never truly been defeated." Wang and Ding toast the bugs, and Wang realizes he has a lot of work to do—after all, humans might just stand a chance.

If the locusts can survive centuries of human beings, then humanity can potentially survive the Trisolaran invasion. It is immensely telling that this logic comes from Shi: as the most practical, humanist thinker in the novel, he is also the most able to endure a true crisis.

CHAPTER 35. THE RUINS

Against all odds, the aging Ye Wenjie makes her way to the top of Radar Peak. Once she arrives at the summit, she looks around for ruins— but only a patch of grass remains, as if Red Coast Base never existed. Still, by looking closely, Ye is able to see the metal base of the parabolic antenna that once dominated the peak. Near the base, Ye sees a plaque: "Site of Red Coast Base (1968 –1987)." She reflects that the tiny tablet doesn't seem "so much a memorial as an attempt to forget."

Though Ye has changed the world forever, her actual invention—her communication with the Trisolarans, as embodied by the parabolic antenna—has been all but forgotten. In other words, even though Ye will leave a gigantic historical legacy, her real experience will be lost to history. The novel thus seems to imply that the only way to leave a memory of one's life as it really was is to have meaningful connections with other people.

Ye walks to the edge of the cliff, remembering when she killed her husband—Yang Weining—and Commissar Lei in this very spot. As she stares out at the surrounding countryside, the sun begins to set. Ye, preparing herself to die, whispers her final words, thinking about her personal "sunset" and the "sunset for humanity."

In this ambiguous, lovely last moment, Ye seems (perhaps for the first time) to feel guilt for her actions; for the first time, she is recognizing that in addition to being wounded herself, she has also done great damage to others. And more than that, this closing passage shows once more how an individual's experience—and individual pain—can ripple outwards. Ye's "sunset" (as she prepares to kill herself) is inextricable from "sunset for humanity;" despite—or perhaps because of—her isolation, her own loss has meant a loss for the entire world.

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