

Red Mars Study Guide

Red Mars by Kim Stanley Robinson

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Plot Summary

'Red Mars' by Kim Stanley Robinson is an epic novel about the colonization of Mars. The story is a journey of mankind on its search for immortality and a new world in which to begin a new life.

In the novel, the first of a series of three, one hundred participants are chosen to go to Mars after a rigorous selection process, and include geniuses from Russia and the United States, as well as from other countries. Following a long and somewhat troubled journey through space for nine months, the crew lands on Mars and begins work on Underhill, the first colonization base. Nuclear generators are built for power, medical stations are built, biologically engineered farms produce food, and the bio-engineers create life forms that can live on the surface. A debate, rising on the Ares and continuing both on Mars and on the Earth, rages in terms of whether Earthlings have the right to terraform and mine Mars for their own benefits.

The Reds, led by Ann Clayborne, believe Mars should not be abused and used for profit or Earth expansion, whereas the Green's, led by Sax Russell, believe that terraforming is necessary in order for life on Mars to continue. Over time this and other political arguments tear the settlement into factions, and as more immigrants arrive from Earth, the situation only worsens. When the medical team develops a near immortality drug, more problems ensue on Earth as a result of an uprising of the poor, causing even more immigration to Mars. One of the medical team soon disappears with a group of followers, and begins harvesting eggs to produce children.

Mining begins in earnest on the planet, and more workers are brought in from Earth. What was once a scientific juncture is slowly turned into a struggle for power by governments and international companies, all of whom aim to carve a piece of Mars for themselves and their own monetary gain. When the situation reaches a critical juncture where the new towns are overcrowded and understaffed, riots begin between UNOMA police and the population of Mars. Soon, these riots turn to a revolution as many of the new city domes are sabotaged. Water supplies are damaged, causing massive flooding and death, and the entire moon of Phobos is destroyed.

Many of the first hundred are killed as a result of the revolution, and much of their work, and the subsequent work of many generations, is destroyed. Amidst this chaos, the remaining survivors of the first hundred are taken into hiding with the hidden colony, and begin trying to build a new life for themselves on a now chaotic and destroyed planet.



Part 1: Festival Night

Part 1: Festival Night Summary

'Red Mars' by Kim Stanley Robinson is an epic account of the colonization of Mars. Covering a span of three generations, Red Mars discusses terraforming, colonization, medical advancement, political power and a host of other topics that create a suspenseful, entertaining, and realistic look into the possible future of our species.

Festival Night begins by noting that, before the first man on Mars, people of Earth knew little about the planet, but believed there was life. Following the landing of Mariner and Viking, however, we knew more of the landscape and the planet, but still, we saw no life. It was only when we sent people that we could really understand the lifeless, yet powerful planet.

The chapter opens with a speech by John Boone to the people of Nicosia, the latest city on Mars. Frank Chalmers listens, and complains to himself about how John is lying to the population when he speaks of a new way of life. When Maya Toitovna introduces him, however, Frank finds himself unable to speak his own mind and follows John's lead. Afterward, he finds Maya and John speaking to Terrans, or newcomers from Earth, and feels they are keeping things from him, but he knows they always have. As he wanders around the new city, he soon finds himself among the Arabs, and when talk turns to John Boone, Frank points out that John dislikes anyone not American or Russian.

Frank's explanation that John is attempting to block the Arabs during the writing of the new Mars treaty angers Selim el-Hayil, a young Arab. Frank agrees to speak with John about the issue to try and change his view. As Frank continues his journey through the new town, he is given a mask for celebration, and although he feels odd when he notices a man with dreadlocks watching him, he knows he is hidden. Frank heads outside the dome in a walker, or a suit designed for walking on the surface of Mars. The walkers are heated, and allow protection from radiation. Entering a farm dome, Frank steals several pesticide patches, and admits he knows a combination that is lethal to humans.

Returning to Nicosia, Frank again runs into John, and the two talk, albeit stiffly, about the changes in the new world. Frank accuses John of trying to block him from the treaty rewrite, but John assures him this is untrue. When Maya is brought up in conversation, both men become uncomfortable, and Frank again seeks out Selim. Once found, Frank adheres the pesticides to Selim's shirt without Selim's knowledge. He then lies, convincing Selim he has spoken with John, but to no avail. Frank continues to press the issue, urging Selim to take action against John, and Selim angrily sets off. Frank seeks out Maya, and the two chat, stiffly, but are soon interrupted by sounds of violence. Running to the middle of the city, they find themselves in the middle of a fight of sorts. Sax, another friend, informs them John has been attacked. They discover his body



outside the dome, and while doctors attempt to revive him, they are unable, as he has been without oxygen for too long. Frank appears distraught, but as he leaves, he wonders to himself what he can now do with the planet.

Part 1: Festival Night Analysis

In this brief opening, readers are introduced to several main characters and several major plot points, although they are not highly descriptive at this point. The introduction explains that while Mars, seen as a powerful image in folklore and in Earth's history, is uninhabited when the story begins, people from Earth are soon sent to occupy it. This helps to set the story.

The chapter really begins with an immediate look at the conflict between John and Frank. It is clear from the beginning that Frank sees John as a liar, as a social figurehead only, and as one who wishes to exclude him from things he believes are rightfully his. This becomes clearer with the conversation between John and Maya and the Terrans, and again with their argument in the street about the rewrite of the treaty. Although the point of this treaty is unclear at this time in the book, what is clear is that this treaty is important, and that he and John differ in opinions. Additionally, Maya seems to be a point of contention between the two as well. This information foreshadows information about the treaty and the trio of John, Maya, and Frank throughout the novel.

Readers also begin to see Frank's way of getting things done in this chapter. Frank clearly manipulates the Arab population into believing John is against them, and he is well aware that his prompting of Selim will cause him to hurt John. He also is aware that, to avoid any blame on himself, he must also eradicate Selim. From his wanderings to the farm, to his theft of the pesticides, to his admittance on knowledge that can kill a man to his unknowing placement of those pesticides on Selim, it is clear he has things well planned out. Additionally, from the conversation between Maya and Frank in the street, it is clear the two share a past, which is likely one cause of the conflict between John and Frank. Frank's comments at the end of the chapter show his reasons for ridding Mars of John, in that Frank is now able to proceed with his own agenda for Mars.

This chapter introduces several other characters used in the novel, as well. Sax is introduced briefly, and it is already clear he and the others are close in some way, foreshadowing information about the first hundred, a phrase which is mentioned several times in this chapter. Also, Coyote is introduced in the background, as the man with dreadlocks watching Frank. This foreshadows not only the sighting of this character several times in the novel, but also the revelations later of who this character is.

This chapter also serves to introduce readers to several pieces of information vital to the book. First, the concept that Mars is not only extremely cold, but also highly radiated, is a fact used throughout the novel, so is important to understand from the beginning. The contraption of a walker, or a highly mobile suit used both to heat individuals and to



protect them from radiation, is also used throughout the novel, and is an important technical piece. Much of the novel is highly technical in nature, and concepts such as the walker, which are used frequently, are important for the believability aspect of the novel. The descriptions of how the dome is constructed, how the town is set up, and how the people behave all help to set the story.



Part 2: The Voyage Out

Part 2: The Voyage Out Summary

The introduction to Part 2 explains that Michel Duval, a psychiatrist, was sent with a hundred and fifty finalist scientists to McMurdo Station in Antarctica, where they lived and worked together, learning specialized equipment, for a year. This was done to choose the final hundred that would travel to Mars as the first colonizers. Fifty men and fifty women were chosen, thirty-five of whom were Russian, and another thirty-five were American. The remaining thirty were from other nations. Because of his time spend with the crew, Michel is sent to Mars.

Part 2 opens with Maya Toitovna and the rest of the one hundred colonists beginning their journey to Mars on December 21, 2026, as their ship, the Ares, leaves the orbit of the Earth. Maya is the leader of the Russian group. The crew celebrates their first night on the ship, and Maya counts off those she knows around her; Arkady Bogdanov, Hiroko Ai, Vlad Taneev, Sax Russell, and many others. Maya knows her role is as leader, and she seeks out others with similar power. The ship is extremely large, with over five hundred rooms and seems expansive after their time in Antarctica. It has built in sensors to mimic daylight and night, and contains a host of birds and other creatures to mimic life on Earth. Because of her position, Maya is put in constant contact with John Boone, whom she finds intriguing, and Frank Chalmers, whom she finds attractive. She notices a tension between Frank and John, but understands little of the reasons. John was the first man on Mars, and Maya assumes this has caused strife between Frank and John. One morning during an argument between Sax Russell and Ann Clayborne, however, Maya sees Frank simply look at John, who responds by effectively manipulating the conversation away from the argument of terraforming. Maya begins to realize their is more to their relationship.

All crew members are required to take part in job simulations, and Maya and the other engineers are led through countless emergency flight and landing drills by Arkady. During her off time, Maya often walks in the bioforest with Frank Chalmers. One day, she and Frank meet in the forest, and find themselves kissing. They move off the trail and make love. Maya is uncomfortable afterward, but they make love again. She finds herself making excuses to avoid him, but when alone, the two make love several more times. Maya is perplexed, as she finds she likes Frank, but is put off by him, as well. After one final encounter, she stops, and Frank is clearly hurt and perplexed, but does not push the issue. As the group moves further from Earth, they begin to show more of themselves. One day, John and Phyllis argue religion, where John attempts to portray Christ as a literary figure and Phyllis rebuts. Afterward, Maya realizes Frank is telling everyone of the disagreement, and wonders again about his relationship with John. Several days later, however, the argument is forgotten when the crew is bombarded with a solar flare. While waiting for the storm to pass, Arkady loudly comments that the group should ignore commands from Earth, and make their own decisions for themselves on Mars. The conversation becomes political, with Arkady arguing for a new



way of life, and other arguing that they are merely a scientific outreach of Earth. John shows his support for Arkady, and Arkady admits to everyone he lied to be among the chosen. It is revealed that nearly everyone lied or manipulated the system in one way or another to join the team, and the group feels cohesive once again.

Over the next few weeks, Maya begins to work on the farm for something to do, and is in awe of Hiroko and her staff, who seem separate from the rest of the group. One day, Maya is working alone on the farm, and swears she sees a face of a dark-skinned man she has never seen, hiding in the fields. She fears he is a stow-away, or that she is hallucinating. Maya begins to notice the group is separating into small cliques who spend much of their time gossiping about others. She even hears Hiroko plans to fertilize her eggs using sperm from all the men on the Ares. When the landfall assignments are handed out, Arkady and his group are assigned to Phobos to transform the moon into a space station, while Ann Clayborne and her team are assigned geological study. The rest are assigned to farms, and to creating the home base of Underhill on Mars.

One evening, Maya and John find themselves together in the weightless dome, and they make love. When they become a known item, Maya admits to herself she does not love John, but is using the match as a position for more power and prestige. She tells him about her vision of the stowaway, and he reassures her. Soon, the crew aerobrakes off the atmosphere of Mars to orbit the planet. The night before the landing crews are to begin their decent, there is a party. Once again, Arkady and Phyllis argue over how the structure of the settlement, and the political aspects of life on Mars. Arkady discusses the usefulness of ignoring the existing treaty, and beginning to terraform. He points out they are not arms of Earth, but are instead building a new civilization on their own. As Maya prepares her landing ship, she realizes the group is, in fact, not cohesive, and that their separation will only continue on Mars.

Part 2: The Voyage Out Analysis

Part 2 of 'Red Mars' introduces several more main themes in the novel, and gives a deeper understanding of several of the main characters. First, readers understand how the first hundred were chosen, and why, although later in the chapter it is revealed how the process was flawed. It is clear from the selection committee that the two main powers of Earth at the time of the novel's writing, Russia and the U.S., are well represented, while other countries are simply added in. This knowledge sets the stage for understanding Arkady's arguments in this chapter pertaining to the political structure of the settlement. Also, Michel Duval, the psychiatrist, is introduced, and readers see how he was chosen, which is important later in the novel as Michel breaks away from the group.

In the beginning of Part 2, readers meet the narrator for this section, Maya Toitovna. Maya is a powerful leader for the Russian coalition, and often uses her beauty to further her power. She seems to see relationships simply as a means to an end as opposed to a mutual respect and love for others. She is not a cruel person, but selfish and



somewhat of a drama queen. She likes to feel as though the world revolves around her, and she likes reveling in the attention of others. From the beginning, it is clear Maya's relationships with both Frank and John will serve to make their already volatile relationship more unstable, and Maya seems not to particularly care, as long as her union is agreeable and gives her the best position. Maya's sexual relations with Frank and John in this chapter also foreshadow the problems between these three throughout the novel.

In addition, this chapter introduces more about the relationship between Frank and John. Readers have already seen that Frank has John killed at some point in the future, and this chapter explains part of their relationship that leads to this murder. It is clear that John, as the first man on Mars, has a certain status that Frank, even as Commander, does not have. Frank seems to resent John's position within the people of Ares. On the other hand, it is equally clear through the looks from Frank that direct John's actions that John is, in a way, often reacting to Frank's prompting. When Frank sees an unstable situation, he uses John to diffuse arguments.

So, while Frank may resent John, he also uses the same aspects of John that he envies for his and everyone's benefit. This, along with his way of manipulating others, shows Frank is a political force who uses others to advance his own agenda. This knowledge, in part, explains Frank's thoughts in the last chapter about what he can do with Mars with John removed. Further, the knowledge that Frank had Maya first, and is clearly somewhat hurt by her eventual rejection and choice of John, foreshadows his continued resentment throughout the novel.

This chapter also introduces John, and shows his character, as well, in more detail. Whereas Frank is clearly a political force within the group, John appears to be merely a figurehead for popularity. While Frank can get results, John can get people to listen to him, to move with him to different topics, and to agree with him. Whereas Frank is able to shift political agendas, John can get the people behind those agendas. John is more easygoing, less harsh, and more agreeable than Frank, and when combined with his status as First Man on Mars, this makes him more of a social force. While his reasons behind his relationship with Maya is unclear at this point, one does wonder if the relationship isn't done, as with Maya, to further his own position within the group.

Arkady Bogdanov is also introduced in this chapter, and his force is clearly one of a revolutionary. Arkady seeks a new life on Mars, and refuses to allow historical mistakes of government on Earth to permeate the new colony. It is Arkady who creates the first split among the colonizers, in that Arkady pushes to leave Earth behind, and ignore all their directives. Instead, he proposes they create their own laws and their own colony, as they, as scientists, see fit. His arguments that their civilization on Mars has little in common with Earth are true, but in pushing the people, he creates the very divide he seeks to alleviate. His arguments with Ann and Phyllis foreshadow continued problems between the two groups throughout the novel, as Arkady and the others seeks to terraform Mars and create a new path, and others seek to leave the planet alone, and continue as a scientific outreach of Earth. The knowledge that Arkady is taking control of the only space station near Mars foreshadows his power later in the novel, as well.



The brief introduction of other characters is important, as well. Hiroko's status as almost an icon to her farming community, as well as the rumors about her fertilization of eggs, foreshadow her leadership of the hidden Mars colony later in the novel. Further, the closeness of that group and Maya's sighting of a stowaway foreshadow the coming of the Coyote, Hiroko's hidden revolutionary, and his role later in the novel. Sax as a constant reminder of the terraforming plans of Mars, foreshadows his role in the revolution later in the novel, as does Phyllis and Ann's arguments throughout this chapter. The knowledge that Vlad is a Nobel Prize winner in medicine sets the stage for his group's development of the anti-aging drug later in the novel, as well.

Finally, the technology, thoroughly described in this chapter, again serves to create a believable backdrop for the storyline. The lengthy description of the ship's construction, the plans for the settlements, the detailed conversation about mimicking seasons and day cycles on the ship, the explanations of how the farm functions, the bioforest, the birds in the dining area, and all other aspects help the author to create a highly technical setting in which the story takes place. While this does, at times, become long-winded, the completeness of these details is one of the most important parts of the story.



Part 3: The Crucible, pages 94 - 158.

Part 3: The Crucible, pages 94 - 158. Summary

The opening of Part 3 describes the creation of many parts of Mars over billions of years, explaining the water that lies underground in great aquifers.

In Part 3, Nadezhda Cherneshevsky, or Nadia, a member of the Russian team, lands with the others, delighted to finally be on Mars. She and the others begin to work, rounding up the equipment unmanned ships have been dropping on the planet for years. For several days, the workers strive to begin establishing their community, and Nadia quickly becomes well known as a problem solver. She finds herself helping everyone solve their issues, and speaks often with Arkady on Phobos. On the other hand, she also is subjected to nearly constant chattering of Maya about her own troubled love life. Soon, Nadia and her crew have the first chamber for living built and pressurized underground, and Nadia wonders at the warmed brick walls and floors, knowing they are now becoming a real colony, and a permanent one.

The crew develop a new calendar to track the 668 day Martian year, and develop a "time slip" where all time stops for 39 1/2 minutes between midnight and 12:01 to accommodate for the time difference. One evening, Maya discovers that there is a feud between John and Frank over Maya, as well as over power, and Nadia continues to find herself in the middle of their triangle. To further complicate things, she and the others are ordered to limit their time outside, due to the radiation, so Nadia finds it difficult to escape.

One day after staying up late with Maya, Nadia is working on an impact hammer when it malfunctions, smashing her hand. She loses her little finger, and feels she has been rendered useless. Over time, she consults more to take her mind off her hand. One night as Maya whines again about her relationships, Nadia wonders if she is even telling the truth, and discovers she blames Maya for the loss of her finger. When asked by Ann again to go on a scouting mission for water to the pole, Nadia agrees, as a means to escape Maya.

On the journey, Nadia discovers Ann and Simon are against prospecting on Mars, whereas Phyllis and her crew are for it. The crew builds a road with transponders every few kilometers, with the idea that robots will be used to take ice from the pole and carry it back to Underhill. Along the way, they install several permafrost water collectors, but find little actual underground water. Ann and Nadia become friends, of sorts, although Ann speaks very little. Finally, at the pole, the team finds ice in huge dunes. They set up the ice miners, and begin to send the robot freight rovers back to camp with distilled, frozen water. Ann argues that the team should go to the polar cap to take samples, while Phyllis believes there is no point.



After much arguing and communications with Underhill and the Terran governments, Phyllis and her team stay with the mining site, while Ann, Simon, and Nadia set out for the pole. Ann reminds Nadia that terraforming will destroy the pole. On the return home they discover the permafrost pump has broken, and a huge ice pond has formed. Ann finally admits to Nadia that realizes she is living in duality, in that she wants nothing more than to see and study Mars, but that in doing so, she changes it, which is opposite of what she desires.

Part 3: The Crucible, pages 94 - 158. Analysis

The opening of Part 3 serves to explain the makeup of Mars, and how the ice formed at the polar caps. This is useful, in that much of this chapter is dedicated to the pursuit of this ice. The narrator of this chapter is revealed to be Nadia, who is on the Russian team. From the beginning, it is clear Nadia is much different than Maya, in that she wants only to work and to establish a colony. She is less worried about her relationships with men. She is strong, capable, and intelligent, and although Maya is her friend, it is very clear that she is annoyed by the constant drama. Nadia's growing relationship with Arkady foreshadows their relationship later in the novel. Nadia's position in the middle of the love triangle, however, does serve to show the growing tensions between Frank, John, and Maya, and Nadia's own view of Maya as a manipulator. Nadia's blame of Maya in the loss of her finger also shows a growing discord between the two women.

The trip of Nadia with Ann and Phyllis serves a number of purposes during this chapter. First, the argument between the prospecting team of Phyllis and the anti-prospecting team of Ann's becomes apparent. Ann and her crew believe that to prospect for metals and such on Mars is to drastically change the planet, which thereby destroys its beauty. On the other hand, Phyllis and her company believe that to live on the planet, they must terraform and must prospect for usable materials. Ann continues to fight for the right of the planet, even though, by her own actions, she too changes the surface. She sees the duality, and feels helpless to change the situation. Secondly, the trip does show there is much water on the pole of Mars, and that the water is available for use. Again, Ann hesitates to exploit the planet for water they do not need, showing again her concern for overusing resources on Mars like Terrans have done on Earth. This argument, one of the primary ones throughout the novel, foreshadows the continued fight over this for the rest of the book.

This chapter also again serves to show the level of technology in use on Mars at this point. From robot freight rovers to mining equipment to robots used for construction to the technology on Phobos, it is clear the technology in use is far more advanced than what is commonly used on Earth. This technology allows the crew much more freedom but as Ann points out, and Nadia begins to recognize, the use of such technology causes necessary changes to the planet. The example of the overflowing permafrost pump shows the effect of their work on the land, as they already have created a large ice pond on the surface of Mars. This foreshadows the floods later in the novel, and Nadia's quick thinking solutions to the problem foreshadow her ability to deal with these problems during the revolution. Finally, this chapter gives an explanation of the calendar

year on Mars and the time slip, which are both used throughout the rest of the novel to track time in the story.



Part 3: The Crucible, pages 159 - 202.

Part 3: The Crucible, pages 159 - 202. Summary

When Nadia's expedition returns, she realizes how badly Underhill has damaged the surface of Mars. Underhill is beginning to fall apart, with Maya and Frank not speaking, John and Frank fighting, and several other relationships are on the rocks. Nadia feels alone again, but Arkady returns from Phobos, and Nadia is relieved. At a dinner, Arkady admits he and his crew wish to come down from Phobos, and run the space station by robot, since they are tired of no gravity. Later, Arkady admits the colony is progressing as he dreamed, with no real leaders and community conversations, but Nadia reminds him those conversations often turn to arguments. The two hold hands, and Nadia finds herself warm and happy with Arkady near her. However, others find new arguments with him constantly questioning their reasons, and the terraforming debate increases. Ann leads those wishing to forgo terraforming, known as Reds, whereas Sax leads those who wish to terraform quickly, known as Greens.

Many side with Hiroko, who believes there is a middle ground, and others, even on Earth, begin to follow Arkady in political and social reform. The Reds believe that there may be life deep in the permafrost or underground that is yet unfound, but possible. The Greens note that stopping terraforming for low probability life that may not even be affected by terraforming is ridiculous. However, the Greens also note that to live on Mars, the radiation must be lessened. The bio-engineers begin developing genetically engineered microorganisms, or GEMS, that can survive on the planet. Arkady proposes that the crew decides what to do on their own, without UN approval, but Nadia talks him into waiting for the UN to decide. Soon, the robot station to develop heating windmills for terraforming is completed, and Ann begins secretly sending taped messages to Washington, asking to stop the terraforming.

When the colonists hear of this, they are outraged, although Nadia understands her reasoning. Ann defends her actions, noting that Sax and the others want to terraform because they can, and not because they need to. Sax, on the other hand, argues that the beauty of Mars only exists in the mind. In the end, permission is given to distribute the heater windmills. Arkady and Nadia are to pilot the distribution craft. They know the windmills do little alone, but with several thousand, their effect will be monumental. One evening, they rearrange the beds so they are together, and begin to tease one another. Eventually, the two are laughing and kissing, and begin to make love. The two admit early that they already love one another.

One morning, one of the windmills crashes, and Nadia takes a sling down to take a look. She realizes, looking at the broken heating element, that the blue moss of the bio-engineers has been placed into each windmill they have been dropping, thereby forcing the terraforming of Mars. Nadia is furious, and attacks Arkady, who claims to know nothing. Arkady is angry, but only because no one told him the plan, while Nadia fears they will be in trouble by the UN. Meanwhile, a dust storm brews, and threatens their



flight pattern. They try to make it home, but the storm overcomes them, and they are unable to see. Nadia realizes they have to find a way to navigate, and suggests that they attempt to pick up the signal from the ice road transponders. Nadia is winched down to the ground several days later, and finds the marker. On the way to Underhill, they are informed that UNOMA has approved the dispatch of GEMs.

Part 3: The Crucible, pages 159 - 202. Analysis

In the second half of Part 3, Nadia is shown to be a changed woman, of sorts. She begins to see the world through Ann's eyes, and realizes the dangers of terraforming without reservation. It is clear from Arkady's landing that a relationship is building between he and Nadia, which foreshadows their relationship later in this chapter, but it is equally clear that Arkady's presence brings more tension to the group, foreshadowing his role in the rebellion later in the novel.

The terraforming debate is again the center stage of this chapter, as the Reds and the Greens are introduced. The Reds, led by Ann, are highly concerned about the effects of terraforming on possible life forms on the planet. While even they admit there is little possibility of life, they still maintain that the only way to be sure they are not killing other life forms is to not change the atmosphere drastically enough to cause any existing life to perish. However, the Greens, led by Sax, are convinced there is no life on Mars that they can find, and that to not terraform because of an unfounded fear of killing a non-existent life form is not the proper path. It is clear that the fight between these two groups will not easily be resolved, since their argument is one of basic existence. In order for the colony to exist and expand on Mars, there must be an atmosphere that is conducive to life. To make such an atmosphere, drastic changes have to take place that will forever change Mars. This argument, and the sneaky way Ann fights it, foreshadows the revolution later in the novel, and the consistently sneaky way several of the characters choose to fight their battles.

The engineering of the GEMs foreshadows their eventual use, but the sabotage of the wind mills is a surprise, even for the characters involved. While Nadia's concern is well founded, in that illegal terraforming is like a crime, Arkady's displeasure is more selfish. In his case, Arkady is hurt that the rebels in this case trusted him not enough to tell him of their plan. Again, this sabotage as well as the secrecy in which it is done, foreshadows the way in which the characters continue to relate throughout the novel. In addition, the conversations between Arkady and Nadia surrounding Hiroko again show her to be a highly intriguing and secretive character, foreshadowing her development. Additionally, the use of the wind mill heaters foreshadows consistent terraforming measures, which can only serve to increase the tensions on Mars. Finally, the arrival of the first dust storm on Mars is important, in that it shows the true level of danger on Mars, and foreshadows the coming of the worst dust storm on Mars history. The cause, as Arkady and John discuss, is the increased heat in the atmosphere, which can only increase with terraforming.



Part 4: Homesick

Part 4: Homesick Summary

The opening of Part 4 discusses the rapid growth of GEMs on Mars, and how genetically modified organisms tend to survive. This section reveals that, built within the GEMs are a suicide gene, where rapid overgrowth leads to death of the GEM. As the plant life grows, however, so do oxygen levels and other plant life, resulting in still more life on Mars.

In Part 4, Michel Duval is homesick. He dreams of home often, but is woken by calls from Phyllis and others, generally about Maya. Maya is consistently in need of assistance, since her life is such a drama. In this case, Maya and John are arguing about politics. Michel finds himself barely listening to Maya's saga as he thinks of his own problems. He and Maya take a walk as Michel continues what he calls the psychiatrist program, even though he is still thinking of his own issues. He compares Maya, whom he thinks of as labile, with Nadia, who he believes represents the stable force in Underhill.

Michel has developed a chart of human behavior that utilizes a range of other psychological theories, such as the liable/stable concept, introversion/extroversion, and Wagner's index of autonomic balance, and he believes this new schema explains human behavior, and Maya's in particular. Michel admits that melancholics of his schema do not do well on Mars, and unfortunately, he is one of them. At this juncture, he cannot remember why he sought to come to Mars. He finds himself losing track of time, watching television and withdrawing from the hundred. He is disturbed one night as he cries in bed by a man he has never seen. The dark skinned man leads him to the farm colony, where Michel is amazed to find small children among the members of the farm team. All are naked and soon, Michel is as well. He learns they, under Hiroko, have begun to worship areophany, which is a type of landscape religion. The concept is that the land is infused with kami, or spiritual energy, and that the colonists have within them the power of viriditas, or a love of nature. These powers allow the group to live in harmony with Mars, rather than against it. The ritual begins, and the group eats the dirt of Mars, and dances to a chant in Japanese. Hiroko informs Michel the group is planning a new life on Mars, different from that of Earth, and is leaving tonight. Michel joins them.

Part 4: Homesick Analysis

In this brief chapter, many of the rumors and mystery surrounding Hiroko are either solved or intensified. In the opening, the discussion of GEMs symbolizes the colonists themselves, as both begin to grow and change as a result of their life on Mars. In Part 4, Michael, the group psychiatrist, is clearly bored with Maya and her petty problems, and realizes he himself is in severe danger of losing his mind. He is ravaged by



homesickness, and his new schema of human behavior only serves to show that people like him should not be on Mars. It is clear Michel is a caring person, but his loneliness and misery have made him intolerant of the grief of others. It is only Hiroko's new way of life that gives Michel an opportunity to leave behind his old life and to find happiness in a new way on the planet. Hiroko has clearly been busy in the farm, in that this chapter reveals a slew of children that were not brought on the Ares, suggesting the rumors or Hiroko's fertilization plans were real. Additionally, the Coyote is again seen as the man that comes to Michel, showing again the Coyote seems to make an appearance often in the colony, although no one knows his identity.

Hiroko's new religion is a counterpoint to both the Reds and the Greens. Hiroko and her group believe, as the Reds, that Mars should be preserved. However, like the Greens, they also believe that Mars can be used to sustain them. In this, the areophanies forge a middle ground in the argument. They want to create a new way of life on Mars, free from the politics of the Earth and in harmony with Mars. This introduces the concept, in a way, of ecological economics, or the idea that each individuals should give to the ecological state of an area as much as it takes in order to maintain a sustainable system. This is Hiroko's plan, and it is clear, from her farming to her new children, that her plan is already well under way. To Michel this represents a way to leave the old life, and begin a new, as a part of a group, and as a member of a society in which he can thrive as something other than the sounding board of geniuses. The disappearance of Hiroko and her group foreshadows problems for the group in the upcoming chapters, as well.



Part 5: Falling Into History, pages 231 - 337.

Part 5: Falling Into History, pages 231 - 337. Summary

In the introduction to Part 5, two men discuss a cell repairing solution that allows animals to age without death. In the beginning of the chapter, John Boone and Etsu Okakura are at the bottom of a mohole in a town called Senzeni Na when a huge truck comes tumbling down to them. They escape, but John notes there have been several sabotage attempts on the moholes. After dinner, he calls Sax Russell, who heads the terraforming effort. Sax questions if Ann Clayborne or Arkady is responsible for the destruction, and asks John to investigate. The following day, John takes a glider to see Ann in Argye Basin. When he finds her, he asks her about the sabotage. She admits she wishes them luck, but suggests he ask the coyote about the attacks, explaining that he is a friend of Hiroko's, and a legend, who hates terraforming. The following morning as he leaves, John finds out from Simon, Ann's lover, that she is pregnant. When John arrives in Echus Overlook, Sax's headquarters, he and Sax go over the sabotage. They agree to increase security, particularly in light of UNOMA's recent approval of a space elevator. When Sax leaves, John finds a note from someone, explaining how to contain the lichen, and how a hidden population can remain undetected, and he wonders who Sax is working with.

The following evening, John takes a train to see Helmut Bronsi, head of UNOMA detail on Mars. Helmut explains that a prospecting contract is being given to transnational corporation Armscor. John begins to distrust Helmut and the other UNOMA and transnational forces. He travels next to Bradbury Point, a new transnational mining site, and the workers tell him of an Arab colony who claims to have been visited by the lost colony of Hiroko. When he finds this Arab colony, however, he finds Frank Chalmers with them, who refuses any knowledge of such a visit. John thinks of Frank as a brother, but the two argue about politics, and who will own Mars once the transnationals take over.

When Maya arrives, then, John makes sure she sleeps in his rover, in an effort to anger Frank, although as he makes love he does realize he has missed Maya. He promises to join her in Acheron, but is distracted as he thinks about where the new society of Mars went wrong. Arriving at Acheron a few weeks later, John is asked to get his physical, where Ursela tells him of a new treatment that reverses aging. John is shocked, but he and Maya both agree to get the treatment. John spends the winter learning areobotany at Archeron, and asking the crew of their opinions on Martian society. Vlad and Marina argue that society should be mutually beneficial, in that an organism should expend as much energy back into the ecosystem as it uses to create a harmonious union, an idea referred to as ecologic efficiency. Days later, John sees a huge dust storm, and Sax reports it is the biggest, and likely one of the longest, in history.



After hearing at several camps about the space elevator, John decides to investigate, and finds Phyllis Boyle is one of the chief organizers. Her habitat, built by UNOMA, was funded by transnational Praxis. John learns that the plan is to attach cable to a fixed point on the equator, and then attach that to an asteroid in space, which is orbiting the planet, thereby always keeping the cable in line for transport elevators. When asked, Phyllis admits that she and the others are simply doing business, and John wonders at the political, social, economical, and ecological effects of the space elevator. While driving again to meet Maya at Hellas, he meets a group of Sufis who inform him Frank is his nafs, or his evil self. They have a religious ritual in which John takes part, and he learns their culture believes much like Vlad, that ecological equality is vital to a sustainable system.

John arrives Turner Wells, and learns that giant aquifers have been tapped and are being used for energy and terraforming. That night, someone destroys a well head, which sends massive water through the aquifer. A charge is set next to the cap that effectively blocks it, stopping the flood, but John wonders about the sabotage attempt. One night, John is visited in the open Martian terrain by five men, all part of Hiroko's hidden colony. The speaker, the Coyote, asks John to slow immigration rates, while a young man names Kasei broods angrily. The men note that immigration is too fast, and that the planet is being destroyed. John agrees to help, and the men drug him, although John manages to scratch one of them. When he awakens, he gives the skin sample from under his fingernails to Ursela for examination. Days later, Ann, who now has a three year old son named Peter, tells him they have found an organism that does not match any of the Terran organisms, but that because of terraforming, they are unable to tell if the growth is a Terran mutation, or is native to the planet.

Days later, UNOMA investigators arrive, and begin to question John about the sabotage incidents. John receives word back from Ursela but she responds only with coded message, and the word congratulations. John swears at Hiroko and takes a walk outside, only to be attacked by two men who tear his walker. Running out of air, and freezing to death, he is forced to tear a hole in the tent of the settlement. He sneaks through, and quickly goes to his room and hides the torn walker. When asked by UNOMA forces about who might have made the hole, John lies, attempting to cover up his attack. However, when UNOMA breaks into his room, John is furious, and begins being uncooperative, knowing he is now a suspect.

Part 5: Falling Into History, pages 231 - 337. Analysis

The first section of Part 5 has two primary themes, those of the terraforming effort, and the coming of the transnationals to Mars. John has been working for Sax for many years, and he understands that to live on Mars, some terraforming is needed. He agrees that the moholes, the windmills, the lichen, and all other organisms are a vital part to new life on Mars. However, even he can see the damage being done to the planet in the name of prospecting, which is why he agrees with Ann to stopping the exploitation of the planet. On the other hand, John in this chapter appears to be the target of sabotage, and by the end of this section, it looks as though John is both a



target and a suspect. It is clear that someone is trying to harm John, or at least to set him up as a suspect. Terraforming appears to be at the root of all sabotage, and the Coyote soon becomes the most likely suspect to John. When the Coyote visits him, this theory is supported, simply by the way the Coyote acts. Further, the coming of the dust storm, likely created by Sax and his group, shows the damage to the ecosystem that terraforming is already doing. It is clear that terraforming is becoming a battle-worthy agenda for many groups on the planet, foreshadowing the continued fight throughout the rest of the book.

The coming of the transnationals is also a large theme in this section. It is clear that Phyllis and her crew want nothing more than a piece of the monetary action on Mars as she and her team, backed by UNOMA and the transnationals, aim to set up an easier, more efficient way to exploit Mars and its resources. Helmut, the businessman, also seems to want nothing more than to use Mars as an extension of Earth's money, political power, and minerals, and John is beginning to realize that his ideas of a Utopian society are threatened by the coming of these multinational corporations. John knows that the treaty of Mars currently bans such mining, but as Ann pointed out, that same treaty is being violated on Earth in Antarctica, showing a shifting political agenda on Earth that will likely carry over to Mars.

This chapter also reveals a few aspects of John that were previously unknown. First, by the end of this section, it is clear that John has a reliance on a drug, and that John really is beginning to dislike having to constantly pretend to be happy and easygoing. He is not as simple as he appears in previous chapters, and he is more driven and manipulative, as well. He uses his fame to gain political power, and uses his charm to gain information from others. He even uses Maya to anger Frank, although he does admit he loves her in the end. He also uses his influence to intimidate the UNOMA investigators. These revelations show John as a powerful figure to contend with, and foreshadow his fight with UNOMA throughout this chapter.

In addition, the curious note found in Sax's office and the even more curious findings by Ursela about the skin fragments John was able to take from his visitors, suggest an involvement by Hiroko and her hidden colony in some of the sabotage effort. It is clear Sax has spoken with Hiroko, but is refusing to tell John. The congratulatory note from Ursela foreshadows John's discovery that he and Hiroko has a son, manufactured by Hiroko. Finally, this chapter introduces a major cause of conflict in the rest of the novel, that of the longevity treatment. John and the others realize that such a drug makes sense on Mars, where there is a limited colony and a need for expertise. But if sent to Earth, an already overpopulated planet would explode, and John realizes this early on. While he and the others accept the treatment, the fallout on Mars is only a fraction of what the fallout on Earth will be. On Mars, knowing they will live longer, people begin projects they likely would never have started, and this too foreshadows events later in the novel as the revolution comes.



Part 5: Falling Into History, pages 337 - 382.

Part 5: Falling Into History, pages 337 - 382. Summary

John decides he wishes to speak to Arkady about the increasingly violent situation on Mars. He travels to the moon Phobos to the town of Stickney, and as the two talk, Arkady notes that the treatment will cause a social revolution. When asked about the sabotage, Arkady reminds John that the economic status of Mars is changing, as it switches from the non-money based economy of the first hundred to the standard capitalist model of the Earth. He predicts that any new treaty will follow that pattern, and points out that many nations and companies funded the first hundred, and that they now are expecting a return for their investment. He also notes he, John, and the Reds all want the same thing, which is to keep the transnationals from commercializing the planet, and John agrees. When John proposes to use politics to influence the re-adoption of the existing treaty, Arkady scoffs, noting that it will take more direct action. Back on planet, John notices that many groups are beginning to disobey their orders from Earth. In Senzeni Na, workers reveal habitats in the walls of canyons that can avoid heat sensors, and John realizes this is how Hiroko's group has existed without detection.

The workers note the habitats are ready if needed during the revolution, and they and John argue endlessly, with John noting that revolution never works, and the workers noting that much of Earth was built through revolution. When John returns to his quarters after a long night, he finds UNOMA investigators, who again accuse him of being the saboteur. John leaves Senzeni Na, knowing he is now a leader of the revolutionaries. When John speaks with Frank, he realizes that the transnationals are coming to Mars because the Earth is a doomed planet. If aging treatments are given to the rich, the poor revolt. If they are given to everyone, the world is overpopulated. Frank reminds John bitterly that population control is the only way to survive. One night, after walking outside, John sees two of the UNOMA investigators sneaking around. He asks his AI to scan his room, and he sees a dead body on the bed. When he uses remote control cleaning robots to move the body into waste disposal, he discovers that the body is a UNOMA investigator, and he realizes the UNOMA forces are trying to frame him.

The following morning, the dust storm has abated, and John organizes a celebration on Olympus Mons that coincides with Sax's burn up of the ice asteroid in the atmosphere. Nine months later, the celebration occurs with thousands of people appearing. Nearly forty of the first hundred arrive, and many others John has met throughout his travels. Days into the festival, Hiroko and her hidden colony arrive. Joyous greetings are mixed with angry accusations, but the reunion is a happy occasion. John takes the sixty of the first hundred to a secluded tent, where he tells Hiroko he believes her children are the saboteurs. He explains to the group that Hiroko has been growing children in vitro, and some of them, now older, have formed a revolutionary movement.



Hiroko promises to look into it, and John continues to explain to the others that someone is trying to kill him. He notes that it isn't the saboteurs, since they visited him in the desert and didn't kill him. John explains that the supposed UNOMA investigators really work for transnationals. Arkady then calls for a united front against the changing of the treaty, and John urges agreement. In a break, he requests Hiroko come speak with him in private. When together, John admits he knows Kasei is his son, created in vitro using John's sperm and Hiroko's egg. He also points out he knows Sax and she were communicating, as shown by the note in his office, and he is disappointed that she and the others were selfish enough not to help them realize a united goal for Mars, and Hiroko promises to stay in touch. They return to the tents, where John meets the Coyote again. The group watches as the asteroid strikes the atmosphere and burns brilliantly, and John makes a closing speech about democracy versus capitalism. After cleaning up the following day, John and the others verbally revise the treaty, and determine a course of action that involves convincing the UN to delegate them as speakers for the people of Mars.

Part 5: Falling Into History, pages 337 - 382. Analysis

In the second part of section 5, the theme shifts from terraforming to the revolution between capitalism and democracy. John's conversation with Arkady allows the reader to understand fully the situation on Mars as the shifting economy leans toward war. Arkady's explanations make sense, in that in a scientific world, money is not the primary goal, but that in a non-self sufficient environment, money is a requirement, and that investors will always want a return on their initial capital. Conversations with Frank later in this chapter further this point, in that the US and Russia have to maintain control over Mars in order to maintain control over the Earth.

John is beginning to realize that his government used false pretenses to get the first hundred to Mars, and that the entire project has, from the beginning, been political and economical in nature, as Arkady has always maintained. Arkady's assertion that there are "guns under the table" foreshadow John's revelations in the next chapters that Frank and others are sabotaging the treaty efforts, just as Hiroko's children are sabotaging the terraforming. John's new look at the planet allows the reader to see just how far gone Mars' population is, and how inevitable revolution is becoming. However, Arkady does serve to make John a strong figure in the revolution, which gives hope that a violent revolution can be avoided. Frank's assertion that the Earth is going to be destroyed inevitably only serves to make the situation worse, as it becomes clear that a strong position on Mars is vital for continued economical and social existence on Earth.

The increasing attacks on John by the UNOMA forces foreshadow John's revelations later in the chapter that those forces are simply an arm of the governments and transnational corporations attempting to maintain a hold on the planet. Clearly, their methods are aimed at one not as clever as John, and they are not successful in framing him, but their actions show they are not only intent on making the first hundred seem responsible for the problems on Mars, but that they will stop at nothing to achieve their goals. This too foreshadows their use of violence later in the novel against the colonists.



The part at Olympus Mons serves a few plot purposes. First, the information John reveals about Hiroko and her group explains several other plot points suggested previously in the book. First, it is now clear that Maya's vision on the ship was not a hallucination, but was the Coyote, Hiroko's anarchist lover. She has been working with Sax on the terraforming project, as suggested by the note John found in his office, and has produced children from the sperm of the first fifty men, as was suggested by Ursula's congratulatory note about the skin cells John recovered from his attacker. Additionally, the stone eye teeth, seen around the sabotage sites, are the mark of Hiroko's offspring, and thus show her children to be the attackers.

In addition, John's revelations about the UNOMA forces show they are attacking everyone, and that the entire first hundred are at risk. Their decisions to help form the treaty foreshadow their involvement in the process later in the novel, but the knowledge that Frank, a powerful governmental figure, and Phyllis, a powerful force of the transnationals, are not part of this decision foreshadow their own blockage of the plans of the first hundred, and the resulting revolutions in upcoming chapters.



Part 6: Guns Under the Table, pages 384 - 470.

Part 6: Guns Under the Table, pages 384 - 470. Summary

In the opening of Part 6, people discuss the tragedy of the murder of John Boone, and the legends that followed his passing. When they hear, Arkady is overwhelmed with grief, and gives Nadia a remote transmitter, noting that she may need to use it, since "they" plan to kill everyone.

In Part 6, Frank and Maya are in the dining hall, watching the news as they hear of revolutions surrounding the new birth reduction acts on Earth. Frank is on the treaty commission as a voting party, and Maya is a leader of MarsFirst, but does not have a vote. As the treaty negotiations continue, Frank becomes a vital component as he works deals with the Indians to give up land on Mars for money, and deals with the other governments to limit transnational investment, all the while promising transnationals a high investment opportunity. Maya is impressed, but others see his wheeling and dealing, and are angry.

One night, Maya returns to his room with him, and the two make love. She continues to shower him with pleasure, but he knows she must want something. One night after a dream of John, he and Maya argue, and he accuses her of getting everything she wants from the treaty as a result of sleeping with him. Maya, furious, storms out, claiming he only wants control. When the treaty is signed, then, Maya is not at his side. Sax Russell and Frank discuss the new treaty, and although Sax is disappointed that terraforming will be negatively affected, he also believes the treaty will make no difference. Frank runs into an associate who informs him that his corporation is opening an office in Ethiopia, and that they are looking for office space on Mars. Frank now understands the treaty has failed.

Frank spends much of the next several months with an Arab caravan, mining, and spending time alone. He finds himself, when at camp, with Zeyk and his followers, who discuss social progress as a fight against governmental intervention. He dreams often of John, and of the time before they came to Mars when he and John were brothers. One day, they pass an American settlement, and Frank speaks to the miners, who are generally from Florida. He learns many, like this group, simply work on Mars for large pay, then return to Earth. They remind Frank that the treaty is a joke, and that most of them are there on business the treaty calls illegal.

Frank is forced to return to the world, then, and when he does, he learns UNOMA is violating the treaty consistently. He and some of the first hundred gather for dinner, and Frank discovers Earth is falling apart as well. When he asks where Maya is, he is told she is in town, and that she really does love him, but is angry he rejected her. He seeks



her the following night, but when she tries to play him off by flirting with someone else, he leaves the settlement. Frank's office is soon flooded by new immigrants complaining of conditions and extortion by UNOMA forces. He tours the Spanish immigrant tents to hear of robbery, theft, rape, overcrowding, and violence. A week later, the American tent workers strike. Frank speaks with the crew, hears complaints similar to those of other immigrants, and convinces them to go back to work. He decides that to help, he must speak with Phyllis.

When he arrives on Clark, he tries to convince Phyllis that she is sending too many immigrants down to Mars, but she refuses to listen. Back on Mars, Frank begins conferences with Washington, discussing treaty violations, and when stock prices begin to fall, the elevator consortium slows immigration, but more strikes occur. Frank visits again, and learns that the group was provoked by UNOMA forces into violence. He urges them to begin to organize, and when he leaves, he finds Maya waiting. She asks him to give a similar speech to the striking Russian workers, after which she again returns with him to his room.

The two learn that a large group of workers have disappeared, and when Frank investigates, he finds Arkaday is urging them to flee to the hidden colonies. He and Nadia are no longer together. Back with Maya himself, Frank finds it hard not to admit to her he killed John. Riots begin to break out all over Mars, and when the elevator consortium is taken in a hostile takeover, immigrants begin flooding back onto the planet. Traveling to Nicosia, Frank finds Arkady is leading part of the revolution at Carr Crater, and finds the Coyote is in Nicosia. Suddenly, all alarms in town begin to sound, and Maya and Frank discover the tent has been compromised, and the city is in revolution.

Part 6: Guns Under the Table, pages 384 - 470.

Analysis

The mention of the remote transmitter given to Nadia at the opening of Part 6 seems out of place, but actually foreshadows her use of the transmitter to bring down the space elevator later in the novel. In Part 6, the story returns to Frank Chalmers and his political dreams on Mars. It is clear from the beginning that Frank is good at politics, and at arranging things to meet the needs of those he represents, but it is also clear that Frank knows nothing about what he himself wants. He is vital in the creation of a working treaty, but all his efforts are soon shown to be worthless and the transnationals continue to operate illegally. It is apparent that Frank overestimated his own powers, showing his murder of John to be unnecessary, and likely more damaging than helpful. He is plagued by nightmares, and actually appears to feel remorse for his actions. His affair with Maya, off and on through the chapter, shows again he is not emotionless, but is instead a torn man who clearly feels something for Maya. Her actions in this chapter again show her as the selfish, careless woman she has been throughout the story. She is naive, as well, and admires those qualities in Frank others loathe.



Throughout this section, it is also clear revolution has become inevitable. With the conditions of the landscape, the illegal treaty violations, the overcrowding, the violence, and the influx of individuals who care nothing for Mars, the revolution is only a step away. When Arkady and his company declare a free city, the straw is broken and the revolution begins, as was foreshadowed through the entire story. Arkady as a leader of the revolution is unquestionable, and has been from the beginning, and the Coyote's presence can only indicate violence. Frank's involvement is now necessary, in that he too wants the transnationals to stop the flood of immigration, as he can see the damage such an influx is causing. His conversations with Phyllis show her to clearly be on the side of UNOMA, and suggest her involvement in the governmental attacks on the planet. This foreshadows her involvement in the attempts to subdue the revolution.



Part 7: Senzeni Na

Part 7: Senzeni Na Summary

In the opening of Part 7, it is the fourteenth day of the revolution, and the forces have blown up asteroid Nemesis. Phyllis appears on Arkady's screen, and demands surrender. Oxygen levels begin to rise in the city, and as Arkady is walking to his office, he sees a hole appear in the tent above, and he watches as his arm is suddenly ablaze.

In Part 6, Nadia realizes just how easy it is to sabotage Martian towns. Nadia is called to a sabotaged water station that is threatening to wipe away the entire settlement and many beyond. The town is evacuated, and Nadia, Yeli, Angela, Sasha, and Sam place charges to attempt to force a block of the geyser. It works, but they are forced to drill a pressure release upstream to avoid another break in the flow. The group discovers aquifers have been sabotaged throughout Mars, and decide to travel to help. They receive a distress signal from Ann and Simon, who are trapped in Peridier Crater, also with a cracked dome. When they arrive, they learn that Peter, Ann's son, is on Clark, waiting for an elevator down. Nadia helps the residents, and within a week, they are again safe. Nadia and her group, now with Ann and Simon, fly off again, this time to help Elysium. Nadia is again seen as the hero as she helps the town rebuild with the use of robots.

Nadia helps repair the water mains, and the group travels to other disaster sites. They suddenly realize UNOMA is blocking communications, and that they can no longer guide themselves. When they reach the Hellan Basin, they see a sea of ice and water, and realize someone has broken one of the largest aquifers. They find Sax in a broken down rover, and he explains he was on his way to Cairo to meet Frank and Maya. The group lands several more times, and is given help by pockets of free revolutionaries. At one stop, however, they learn that the elevator cable has been destroyed. Ann is panicked, as Peter was last known to be on the now free flying Clark asteroid. The cable is falling from orbit, and when it crashes into the equator, it explodes on impact. Ann is sick with anger at the destruction of the planet and worry over Peter. The team flies again, this time to Carr Crater, where they find hundreds of dead bodies, reduced to ash. Among the dead, Nadia finds the remains of Arkady.

Nadia and the others continue towards Cairo, with Nadia dazed by her sorrow. Reaching the city, they find it is overcrowded with refugees, but they also find Frank and Maya as well as Mary and Spencer. Frank continues to try to talk the situation, as he negotiates peace with UNOMA and the revolting parties. For several days the group recovers from their journey, and Frank finally negotiates a halt in the assault by UNOMA to assess the situation. The group receives word that Samantha and others from the first hundred are arriving in Cairo, so they travel to the city gate to greet them. On arrival, however, the UNOMA forces in orbit on Phobos rain down explosives, killing the entire arriving group.



Nadia takes the transponder given to her by Arkady, and uses it to blow up Phobos. She explains to the others that Arkady and his team had built a system of explosives and rockets into the space station, knowing it could be used as a government stronghold. The group prepares to leave, knowing the UN will soon come to detain them, but Sax informs them they are too late as government rovers surround the city. The group heads to the east gate, and the tent is breached. Suddenly, a figure appears to guide them to a hole in the city wall, where Michel appears in rovers to rescue them. Yeli is lost in the commotion, but the other six are rescued, and Michel Duvel informs them he will try to get them to Hiroko and her hidden colony.

Part 7: Senzeni Na Analysis

The opening of Part 7 describes the unfortunate death of Arkady, as Nadia discovers later in the chapter. In addition, the destruction of the tent of Carr foreshadows the destruction of many more cities on Mars throughout the chapter, and the appearance of Phyllis as a part of the UNOMA threats foreshadows her own problems later. Part 7 returns the story to Nadia as she again comes into her own as a problem solver on Mars. Nadia knows much about the construction of the cities of Mars, having been a primary builder on many of the projects. As a result, Nadia becomes the woman who nearly single handed helps many cities back to life after they are destroyed by UNOMA forces. She also helps those cities in trouble due to the sabotage of aquifers by the revolutionaries. It is clear that Nadia does not agree with either side of the revolution, but only wishes to help those in trouble. Even after she finds the body of Arkady, Nadia continues to help where she can, knowing that to stop would be to feel.

The destruction of Mars during this chapter is so complete, it is clear to see that neither side of the terraforming argument benefits from the revolution. The surface of Mars is destroyed by floods, the destruction of the cable, and the destruction of the Phobos space station. The landscape is forever changed, and as many note, the changes have killed thousands of people. Combined with the destruction of the cities, thousands more have perished in the war, and as Sax and the others note, the governments of Earth appear to be allowing UNOMA and the transnational forces to convince the Earth that the primary hundred are responsible, thereby allowing their execution. It is Nadia's knowledge of this that propels her to blow up the space station. Nadia is not joining the rebel forces by her actions, but is simply saving herself and her friends. Readers now understand why Arkady gave Nadia the transponder earlier in the novel.

Ann, in this chapter, becomes more and more distraught as she fears for her son's life and for Mars as a whole. This decline in her mental stability foreshadows the events in the next chapter, as her stability continues to crumble. The appearance of Michel, and again of the Coyote, in this chapter foreshadow the knowledge that Hiroko is keeping her promise to John by sending a team to rescue the first hundred, when they are needed. Michel's comments of the dangers ahead also foreshadow the loss of life in the upcoming chapter.



Part 8: Shikata Ga Nai

Part 8: Shikata Ga Nai Summary

In the opening to Part 8, it is revealed that Peter Clayborne was on an elevator when the cable was destroyed. He and the other passengers donned space suits and ejected before they hit the atmosphere, and Peter was rescued by a passing ship and taken back down to Mars.

Back on Mars, Ann Clayborne is in a deep depression. Even as Michel tells the group of the hidden colony's canyon cars, their secret caverns, and their ability to self sustain, Ann refuses to speak, overcome with grief over the planet and the assumed loss of her son. They drive for several days, with the others discussing the hidden colony, terraforming, and other topics. They come to a massive flood and ice blockage, where the rock overhangs continue to crumble around them, threatening their route. An entire canyon wall breaks free, but Ann is disappointed to find the wreckage misses their car. She ignores the others when they ask her what has happened, and continues to mourn the loss of red mars.

The flood hampers the group's movement, and when they continue on, one of the rovers falls into a hole. The crew is saved, but now all eight are in a single rover. On several occasions, the rover is stuck on rock or landslides, and one from the group must go out to manually free the machine. One evening at dinner, Ann realizes she has been making the group carry her, and is ashamed. She finds herself speaking again, and helping to clear the table, and finds it in herself to drag herself back to reality. In the days following she continues to help the team, even taking her turn to drive, but the road continues to be challenging. In order to pass, they find they must drive on the ice, which Nadia and Maya note they are quite used to. One day, however, Ann is distracted, and runs the rover aground. Frank suits up in a walker to clear the area, and notes there is a flood raging behind them. He frees the tracks, but has no time to get in, and disappears.

Maya is beside herself with grief, and Ann blames herself for his death. Several days later, Ann slips out of the rover in a walker while others are asleep, and turns off the heat in her suit, waiting for death. Just as she stops shivering, Simon arrives and yanks her to her feet, screaming at her for her selfishness. Days later, after stopping to rest in a hidden cavern, they continue on in rovers, driving south until they reach a cavern in the rock. Once inside, they realize they are in an underground settlement with farms, green grass, running water, and trees. Many people begin to pour from the underground village to meet the new comers, and Simon points out that Peter is among them. They have reached Hiroko and the rest of the survivors.



Part 8: Shikata Ga Nai Analysis

In the final part of this epic novel, the full destruction of Mars is revealed. As the group drives to reach Hiroko, they see the extent of damage to the planet surface. Huge floods rage across the landscape, completely altering the look and texture of the land. Towns and cities, now destroyed, litter the landscape. Ann's depression is a direct result of such destruction and she knows that she will never have the red planet she loves. Her depression, however, allows her to see others in a way she has not before, and she sees Maya suddenly as a calming force for Frank, and a driving force for them all, even after Frank's death. She sees Sax is not happy with the results of the revolution, and is finally able to see him as human again. It is this realization that is able to force her from her depression.

Frank's final effort in the novel is to save his friends from death, thereby nearly exonerating himself of the horrible things he has done throughout the rest of the novel. Frank dies in order to free the rover, and in that, he uses his own life to save others, showing him again to be different than the unfeeling person everyone assumed him to be.

Simon, too, in this last chapter, reveals himself to be a strong force. Previously quiet and unassuming, Simon takes action when Ann, the woman he has loved for much of his life, again acts selfishly in trying to commit suicide due to her guilt. Simon screams at her, punishing her, and showing her that he does love her, and that he needs her. Although she is angry at his lack of support previously in the novel, this does foreshadow a changing relationship between these two characters.

When the group finally reaches Hiroko, they are clearly safe, as shown by the well developed community and the number of citizens already in the city. When Peter is shown to be alive, it is clear Ann and the others will continue their lives, and as Hiroko notes, will start to rebuild.



Characters

Frank Chalmers

Frank Chalmers is the leader of the American group on the Ares. Frank is stocky, but good looking in a rough way. Frank enjoys power over all other things, and much of his time is spent trying to amass more power. He is cynical, and uses this as a self defense mechanism in many situations. On Ares, he becomes romantically involved with Maya, the leader of the Russian crew. However, Maya leaves him for John, making him more bitter than ever. John, Frank's long time rival, and Frank spend much of their time fighting bitterly as they both struggle for power.

Frank continues to run things his way, pitting party against party until he has his way. Frank even uses his power to convince the Arab's to kill John. He also uses his power to attempt to negotiate a new treaty on Mars, where he benefits greatly. However, he finds that many of his enemies have also been trying to manipulate the situation. In the end, Frank finds himself left with a small selection of the first hundred as they try to escape the revolution he himself is partially responsible for. He is killed trying to help them move a rover in the midst of a flood. Although Frank appears cruel and uncaring, his feelings for Maya display a level of emotion that is often hidden.

John Boone

John Boone is an American member of the Ares crew. John enjoys boyish good looks, and an easy personality. As the first man ever to walk on Mars in a previous expedition, John has a prestige and a standing among the crew that no one else has. This position allows him a considerable amount of influence both in Washington and among his colleagues. John develops a relationship with Maya on the Ares, but unknowingly steps in between her relationship with Frank Chalmers.

Frank and John were friends at one time, but John's consistent success and Frank's constant struggles for power drive a wedge between the two, as does the love triangle with Maya. But John remains, as always, good natured, happy, and generally sociable. However, his constant spotlight role leaves him sometimes in need of help, and he becomes addicted to omegendorph, or a synthetic form of endorphins. When the story switches to John's view, however, it is revealed that John uses his simple outward appearance and nature to hide his power goals. He has relations with Maya to offend Frank, plays Maya to use her for his own gains, and uses others to achieve his goal of unifying the colony. John is eventually killed by Frank. His role in the novel is one of near legendary status.



Maya Toitovna

Maya Toitovna is the leader of the Russian contingent on the Ares. Maya has considerable skill in engineering, but her true strength comes from her leadership abilities. Maya, however, has a tendency to use seduction, wit, and cunning to manipulate others to do her bidding, rather than using honesty and integrity as a leader. As a child, her life in Russia often led to a dislike of men, but a need for them in order to gain power and prestige. It is suggested she has used her sexual relations to rise up through the ranks of the Soviet space program. On Ares, she attempts to use the same tactics, but ends up in a love triangle between leader of the Americans, Frank Chalmers, and the first man on Mars, John Boone. She chooses John, but only because he can give her a powerful status.

Maya is overly emotional, and most things she does result in a dramatic situation where she can engender sympathy or power. Maya manipulates nearly everyone she knows throughout the story, and often alienates people as they try to escape her dramatic scenarios. When Frank kills John, Maya switches back to have relations with him. When he is killed, Maya is inconsolable. While Maya is a strong leader, her tactics and her tendencies make her volatile and unstable.

Saxifrage 'Sax' Russell

Saxifrage Russell is one of the American colonists who arrives on the Ares as part of the first hundred. As a physicist, he is well respected and considered a genius. As a person, however, Sax has little social skills and is often seen as stand-offish, nerdy, and socially inept. On Mars, Sax quickly becomes the unwitting leader of the Green movement, or the movement who believes firmly in the terraformation of the planet for Earth use. It is Sax who consistently argues that life is not present on Mars, and that as scientists they have an obligation to test limits, and to do things they are able to do, just to see if they can. Sax and Ann Clayborne have a brief affair on Ares, but come to have a love hate relationship, as Ann continues to fight against terraforming. Sax and his team develop windmills that will heat the atmosphere a slight amount, but when thousands are released, will increase the heat on the land tremendously to help with the terraforming effort. Sax is often accused of enjoying the revolution, as its side effects often include unintentional benefits for terraforming, but in reality, Sax dislikes anything out of his control. He escapes with the others of the first hundred to the hidden colony.

Selim el- Hayil

Although a brief character, Selim el-Hayil's influence is important in the novel. A friend of Frank Chalmers, Selim is a young Arab boy who is passionate about the Arab right on Mars. When Frank tells him John Boone is trying to block their right to expand on Mars, Selim is outraged. He is persuaded by Frank to find a solution to the John problem, and uses Frank's suggestions to kill John. Unknowingly, however, Selim is also killed by Frank, as Frank places a combination of pesticides on him that will end his life. Without



John, the revolution begins in earnest as Frank tries to manipulate situations, and is often the victim of false promises.

Michel Duval

Michel Duval is a psychiatrist from France who is originally sent to live with the finalists for the Ares crew in Antarctica, to observe them. Now a part of the team, he is sent with them to Mars, as well. Michel is often quiet, and serves only as a sounding board to others, while inside, he is slowly losing his own mind. Homesick, Michel develops a system of categorization of characteristics that allows him to understand the first hundred, but this does nothing to stop his misery. One evening, the Coyote comes to him, and takes him to the farm team, where he is initiated into their religion. He becomes an important member of their hidden colony, and is instrumental in the saving of Maya, Ann, Nadia, Simon, and others in the first hundred during the revolution.

Nadezhda Cherneshevsky

Nadia Cherneshevsky is a Russian engineer, and an expert on cold weather construction. She is a short, round, capable woman who is not excitable, and who thinks clearly and logically much of the time. On Mars, she finds herself one of the key point persons for construction, as many seek her knowledge and wisdom. She also finds herself constantly bombarded by Maya and her love problems. One day, after a long night with Maya, Nadia is in an accident, and her finger is cut off. She continues to be a beacon of knowledge, however. She finds herself falling in love with Arkady despite their differences in political beliefs. Nadia grows to believe that Mars should not be exploited, but that terraforming can be an acceptable practice. When Arkady is killed in the revolution, and it is clear that attacks are stemming from Phobos, Nadia uses the explosives Arkady hid in the moon to destroy it. She and the others find shelter from the revolution with Hiroko and the underground colony.

Arkady Bogdanov

Arkady Bogdanov is one of the most influential characters in the novel. Arkady is a Russian engineer, with blazing red hair and blazing blue eyes. He is one of the leading anarchists of the group, and from the beginning urges the Ares crew to ignore governmental direction, and to set off on their own course. He and his team are to prepare Phobos as a space station. As a safety measure, however, Arkady implants explosives into the space station, knowing that if governmental action is done, it will be done from the space station. Once on Mars, Arkady and Nadia form a relationship, and Arkady leads parts of the revolution, as he pushes people to think beyond government control. The uprising against the transnationals is much the doing of Arkady. His political concepts come to be known as Bogdanovism, and he has several followers, both on Mars and on Earth. Unfortunately, Arkady is killed in an attack against one of the dome cities during the revolution.



Ann Clayborne

Ann Clayborne is one of the Americans, and is on the geology team. Ann is one of the first on Mars to disagree with ideas of terraforming, a movement that soon becomes known as the Red's, with Ann as their leader. Ann believes that the planet should be studied in as much of its natural state as possible. She uses her influence in Washington to attempt to block the other colonists from terraforming, and as such, becomes disliked by many in the book. She chooses to live with her companion, Simon, and with him, the two have a child called Peter. Ann and Sax Russell are opposites in the novel. Ann also gets a rover stuck while she and the others of the first hundred are escaping the revolution, and when Frank Chalmers frees the rover, he is killed. Ann is safe in the end with the hidden colony of Hiroko.

Hiroko Ai

Hiroko Ai is the youngest of the Ares' crew at a mere thirty one. She is a prodigy of biosphere design, and is an expert at ecological systems development, biology, and agriculture. Hiroko has her own agenda on Mars from the very beginning, as she smuggles Desmond Hawkins onto the ship. Hiroko and her team are closely knit from the beginning, and it is eventually revealed that she and her companions have formed a religion known as areophany. Areophany is the concept that there is a union between the power of the colonists of Mars, or virititas, and kami, or the spiritual energy of the planet. This religious belief leads the team, led by Hiroko, to escape the first settlement and build a life for themselves in the chaos of Mars, creating new laws, and a utopia community. Hiroko uses the eggs and sperm of the first hundred to artificially create a host of children, and some of these children are a part of the destructive revolution.

Vladimir 'Vlad' Taneev

Vladimir Taneev is a biological scientist, and is the oldest of the crew of Ares, at fifty-eight. Vlad won the Nobel prize on Earth in medicine. On Mars, Vlad and his medical crew are responsible for a number of research projects that change their way of life. First, Vlad and his team invent omegendorph, which is a drug that synthesizes the natural endorphins and opiates in the human brain, so acts as a feel good drug. In addition, Vlad's team creates a number of GEMs that survive on the planet and help the terraforming effort. Primarily, however, Vlad's importance is in his creation of a gerontological treatment that staves off the aging process, and helps cells regenerate. Vlad and his team escape during the revolution to the hidden colony.

Phyllis Boyle

Phyllis Boyle is an American geologist who is one of the first hundred on Mars. She, unlike some of the others, supports corporate control of Mars, and believes Mars is there as an extension of the Earth, as opposed to the belief that Mars should be left



alone, and studied as is. As a fan of corporate control, Phyllis is placed in charge of the asteroid Clark that serves as the weighted point for the newly constructed space elevator, which makes the movement of raw materials easy to and from Mars. When the revolution occurs, however, and the space elevator is destroyed, Clark is sent spinning off. Phyllis and the rest of the crew plan to use Jupiter to spin back into the elliptical orbit of Mars, so they can escape the asteroid.

Kasei

Kasei is the child of John Boone and Hiroko Ai. Kasei, and the other children, were created in vitro, with eggs from the fifty women on Ares, and fertilized with the sperm samples of the men on Ares. Children were created from all the samples, resulting in a ready made colony for Hiroko. Kasi visits John one evening to warn him about the fight against the transnational corporations.

Desmond 'Coyote' Hawkins

Desmond "Coyote" Hawkins is a man Hiroko his in the Ares ship as a stowaway. Once landed on Mars, Hiroko and the Coyote begin a small community in the hidden areas of the planet. Throughout the novel, little is known of the Coyote, other than he is an anarchist who appears several times in the shadows of the novel.

Peter Clayborne

Peter Clayborne is the son of Ann Clayborne and Simon. Peter is believed to be dead, in that he was on a space elevator that was torn down by the revolutionaries. It is revealed in the end of the novel, however, that Peter was saved by a passing ship as he floated in space, and taken to live with the hidden colony of Hiroko.



Objects/Places

Ares

The Ares is the ship on which the first one hundred colonists traveled to reach Mars.

Nicosa

Nicosa is the first city on Mars that is built above ground.

Harvard Solution

The Harvard Solution is the concept that in order to keep high average students happy and ahead of the grading curve, one has to accept lower quality students into the school. This same solution was applied by the Selection Committee to choose the first hundred colonists.

Tharsis Bulge

During the creation of Mars, and death of the core, the last of the molten core shoved part of the landscape outward, creating a large bulge on the side of the planet. This also caused a variety of other land forms, including radial fractures, volcanoes, and mountains. The bulge is considered one of the primary factors in shaping the surface of Mars.

Walkers

Walkers are a form of space suit, designed to allow colonists to work on the surface of Mars without large, bulky space suits. These walkers are made of elastic mesh, which holds the body at the same pressure as the Earth atmosphere. Only the helmet is airtight, so that a hole ripped in the walker will not cause depressurization of the entire suit, which causes death.

Fines

Fines are very small particles of matter, much like dust, that cover the surface of Mars.

Barchan Dunes

Barchan dunes are huge dunes of fines, or sand, on Mars, topping nearly one hundred meters in height and kilometers in length.



Wagner's Index of Autonomic Balance

Wagner's Index of Autonomic Balance is a system of categorization of people that uses seven different variables to determine in individuals are dominated by the sympathetic or parasympathetic portions of the autonomic nervous system. Those dominated by the sympathetic are excitable, whereas those dominated by the parasympathetic are placid.

Areophony

The areophony is a religion designed by Hiroko and the rest of the farming team, which celebrates a union between the colonists of Mars and kami, or the spiritual energy of the planet.

Omegendorph

Omegendorph is a type of drug, developed by Vladimir "Vlad" Taneev and the rest of the medical team. The drug is a mix of all endorphins and opiates found naturally in the human brain, and is used as a "feel-good" drug.

Underhill

Underhill is the first complete settlement on Mars. Developed by the first hundred colonists, the settlement is complete with farms, housing, warehouses, reactors, and other necessary buildings and equipment.

Haecceity

Haecceity is a form of philosophical belief, which is nearly a religion for Sax in the novel. Haecceity is the concept of thisness, of the here and now, of the idea that every moment has a particular quality.

Transnationals

The transnationals are groups of investment firms of international origin that seek to control assets on Mars.

Phobos

Phobos is a moon of Mars that operates as a scientific station, and eventually as a launching point for weapons against the rebellion.



Acheron Group

The Acheron group is a group of scientists led by Vlad that takes residence in the Acheron Fossae. This group includes a medical team and a biological team who develop several new medical techniques.

Aeurum Chaos

The Aeurum Chaos is the home of the hidden group on Mars, led by Hiroko, and is often referred to as simply the chaos in the book.

Greens

The Greens are a group of individuals, led by Sax Russell, who firmly believe that terraforming Mars is the natural progression of the situation on Mars.

Reds

The Reds are a group of individuals, led by Ann Clayborne, who believe that the planet of Mars should remain as unchanged as possible.

Korolyov

Korolyov is a city on Mars transformed into a makeshift prison system.

Mohole

A mohole is a giant hole dug into the surface of Mars to release geothermal energy into the air to help the terraforming effort.



Themes

Colonization

The colonization of Mars is one of the primary themes of the novel. In the beginning, one hundred scientists, biologists, chemists, medical team members, and engineers are sent to Mars to build a new colony on the planet. They are told, by their respective governments, that they are there to examine the planet, and to create a self sufficient colony that is able to survive without the assistance of the Earth. Even before they arrive, however, separate factions develop that threaten the group. The Greens, led by Sax Russell, wish to terraform the landscape while the Reds, led by Ann Clayborne, want the planet to remain unscathed. People like Phyllis Boyle want to turn the planet into a giant mining operation for the transnationals while anarchists like Arkady Bogdanov want to create their own society, without intervention from any corporation or government. Hiroko Ai believes there is a middle ground, and chooses to create a religion and a secret colony that both worships the physical entity that is Mars as well as uses Mars for their own survival, creating an equal balance of give and take of resources.

When the transnationals begin to take over Mars, relatively speaking, revolution begins. The towns, now overcrowded with unlivable conditions, are destroyed by UNOMA forces and rebels against UNOMA and the transnationals. The Greens and the Reds both lose, in that the chaos that ensues from the rebellion not only damages and forever changes Mars, but the changes are not all positive. In the end, the moral shows that only by balancing what we take and what we give, ecologically, can any system be sustainable.

Terraforming

Terraforming is another major theme throughout the novel. Even before the colonizers reach Mars, there are already discussions about whether or not terraforming is in the best interest of the planet, and of the people of the colony. Arkady, on the trip out, points out that even to exist on the planet of Mars they have to change it. They will create air and water and oxygen and plants and food, and they have to do this to survive. Therefore, he argues, the terraforming of Mars will begin even before a decision is made to do so by people of Earth. Life on unchanged Mars means a life filled with cold and radiation and no gravity. To live, and to be self sufficient, many argue, terraforming is necessary. Sax Russell leads this movement, and his group is known as the Greens. Sax and his team develop lichen that can live on Mars, windmills to heat the atmosphere, black mold that can help melt the polar caps, solar mirrors to reflect sunlight, and drill moles to release geothermic energy to warm the planet. It is argued that crashing an asteroid into the atmosphere, and thus burning it up to use the water and oxygen in the atmosphere, would be a great terraforming enterprise.



On the other hand, there are a small number of individuals who wish to study and live on Mars in its natural state. Ann Clayborne believes strongly that to terraform Mars is to destroy what is beautiful and wonderful about the planet. She realizes, while looking for water on Mars, that by landing on the planet, they have changed it forever. This duality is painful for her, in that she wants nothing more than to leave the planet, and any possible life forms, intact. Her group is known as the Reds throughout the novel. Ann's group loses out, however, when the transnational companies realize that to exploit Mars fully, they must terraform. In the end, the revolution brings more terraforming than anyone would have dreamed possible, with asteroids burning in the atmosphere, large floods, and other side effects of war. The cost of this, however, is huge, in that many lives are lost, and much of the landscape of the newly colonized Mars is destroyed.

Medical Advancement

The topic of medical advancements, and their effects on the live population of planets, is examined in the novel as well. First, on a more minor note, Vlad and his medical team invent a new drug that simulates the natural endorphins and opiates in the human brain, creating the feel good drug. John, for one, becomes addicted to this drug, as he becomes unable to exist in his famous position in society without the drug to calm him and make him happy enough to be able to fake his emotions. Such a drug, then, is clearly a danger in the novel as it allows John and others to slip into a mood that they really do not feel. While it may be natural, its effects are still addicting.

In addition, and more importantly, Vlad and his team invent 'the treatment', or a gerontological therapy that effectively stops the aging process, and strengthens a person's DNA. The result is the repair of cells, and the restoration of cell division accuracy. Since cell division error is the primary cause of the normal aging process, and improvement in the accuracy of the division effectively stops, and helps reverse, aging. In essence, the treatment takes his own DNA and creates a virus with it. That virus then infects each of his cells, but this virus positively affects his cells by repairing and reinforcing them. The end result is a much longer life span. This treatment, had by many of the first hundred on Mars, is revolutionary, and makes some sense when used on the people of Mars. As the original colonists, these individuals have had more cell damage than most, and the effect of radiation, loss of gravity, and other components of space has caused particularly more damage. Further, these individuals have a use in the new colony that well bypasses their normal life span. However, when this technique is used on Earth, problems result. First and foremost, the treatment is costly, and the poor begin to revolt as the rich lengthen their lives, but the poor continue to perish at the normal rate. Further, the longer lifespan and a lack of birthing control cause dramatic overpopulation. However, when control on breeding is implemented, people revolt, feeling the government is attempting to control their reproduction illegally. Wars and revolutions break out, and the situation becomes critical.

The point being made, both by the drug and by the treatment, appears to be that even if science can invent something, it does not mean that the invention is good for the



entirety of mankind. Even natural substances, like the drug, are addictive, and even something that lengthens the human life can lead to dramatic problems if not properly used and maintained.

Ecologic Efficiency

The theme of ecological efficiency is used throughout the novel, under a variety of different headings. First mentioned by Vlad and Marina, the concept of ecological efficiency measures the amount of energy an organism takes to function, and the amount of energy that organism then puts back into the system. The idea, then, is that if a human takes six kilocalories per gram of weight to function, then that same human should output the equivalent of that through daily operations in order to form a sustainable society. Vlad notes that in classic efficiency models, that output would be measured by the amount of kilocalories obtained by predators who eat the organism, but that on Mars, the output must be measured in terms of indirect calories passed on to future generations and through the building of houses, roads, and so forth. By assigning values to non-physical things, Vlad and his team are able to account for calorie output that includes indirect contributions.

In the classic model, the equation was the output of calories divided by the input calories multiplied by one hundred, and a good percentage was considered to be fifty percent, so that each organism's rate of output was fifty percent their rate of intake. To create a stable human ecological system on Mars, then, Vlad points out the human population must decrease their use of already limited ecological resources, and work harder on increasing their output of those same resources. The end result, then, is for a stable system where the output and the input of energy is equally matched, creating a self sustaining system.



Style

Point of View

The point of view of the novel is third person. Since each section in the novel changes narrators, this point of view is necessary in order to fully understand each character, and his or her relationship to other characters in the story. Within a given passage, then, the story can show the actions of the narrator, within a context that also shows the emotions and reactions of other characters in the novel. This makes the third person point of view reliable. Since the relationships between the characters are one of the primary points in the novel, this point of view is vital, because without it, these relationships would not be as fully developed.

The story is told through the eyes of Frank Chalmers, John Boone, Maya Toitovna, Nadezhda Cherneshevsky, Michel Duval, and Ann Clayborne, but throughout each narrative, long passages of description and dialog help the reader to see the surroundings and the full situation. The third person point of view helps the reader to quickly identify the person from whose eyes the story is being told, and helps the reader to follow the scene more closely. If not told in third person, these changes in focus would be nearly impossible to decipher.

Setting

The setting of the novel is one of the primary components of the book, in this case. The first part of the book, which follows Frank as he kills John, is set in Nicosia, or the newest above ground city on Mars. Such cities are becoming popular, with protective domes to help shield residents from radiation and the cold of the planet. The next section, however, takes place both on Earth and in space. The Earth portion takes place much in an Antarctic scientific station called McMurdo Station, where the first hundred learn to live together. Next, the first hundred move to the spaceship Ares, where they spend nine long months in space as they travel to Mars. The crew lands on the surface of Mars, and develops the first colonized settlement, called Underhill. This settlement, unlike the later models, resides underground to protect the inhabitants from radiation.

The rest of the novel is spent in various locations on Mars, including on the northern and southern polar caps and new cities such as Cairo. Other settings discussed in the novel include the moon of Phobos, where Arkady and his team set up a space station. On occasion, Earth is also mentioned as wars and other strifes are reported on the nightly news, broadcast to Mars. Finally, the chaos is often mentioned, and refers to an area of Mars officially called Aurum Chaos, an area of Mars that is not populated, with very rough terrain. This is where Hiroko and her people hide in the beginnings of the novel.



Language and Meaning

The language of the novel tends to be a blend of casual and informal, and highly detailed and technical. During dialog, much of the conversation is technical in nature, but is easy to follow and uses words common in language. The descriptive passages, however, are often highly technical and highly specialized, using phrasing and wording likely to be used in scientific circles when describing technology. Once the reader gets used to the shifting nature, it is not as difficult to follow. However, during some passages, the highly technical language can be a hindrance, and can detract from the information being given. On the other hand, this level of technicality is what makes the novel believable and highly realistic.

Further, the language used in the novel tends to change as the different characters are represented. When Hiroko and her staff are speaking, there are hints of Japanese language inserted into the dialog. When Maya and Nadia speak, their language turns more formal, and includes some Russian. Only the Americans are lax in their dialog, in that they speak a more slang version of the English language. This differentiation, while subtle, does help add realism to the book. Additionally, the language allows the different concepts of the various cultures to be discussed without having to find unsuitable translations for some concepts.

Structure

'Red Mars' is comprised of eight parts, each of unequal length. Each part's name refers to something within the section, and each portrays a different character as the character through which the story is being told. Some chapters are short, and describe a short time frame, while others are much longer, and describe the events of longer time periods.

The novel is highly complex, and jumps a bit within a specific time frame. The story begins with the murder of John by Frank, and then goes backwards to tell the story of how people came to live on Mars. The story then follows the first hundred through their beginnings, and continues to follow the progress of Mars through new inhabitants, eventually bypassing the time in which the story begins. The story involves a host of characters, and many subplots in addition to the main plot, which is the colonization of Mars.

The pace of the novel is slow, due to the author's extremely long descriptions of highly technical aspects of life on Mars. However, the novel is intriguing as well as educational, and does bring up a number of moral questions. Although epic in content and in breadth of story, the novel is an intriguing and entertaining look at how the colonization of Mars affects Earth, and how people of Earth adapt to life on Mars.



Quotes

"How to say it? How to say that they alone in all that rocky world were alive, their faces glowing like paper lanterns in the light? How to say that even if living creatures were no more than carriers for ruthless genes, this was still somehow better than the blank mineral nothingness of everything else?" - Part 1, page 6.

"You can't keep Mars for yourselves, John, it's not a scientific station anymore, and you're not going to get a treaty that makes it one." - Part 1, page 16.

"We have been sent here by our governments, and all of our governments are flawed, most of them, disastrously...Now we are on our own, and I for one have no intention of repeating all of Earth's mistakes just because of conventional thinking." - Part 2, page 61.

"Anything was possible, anything could happen - in that sense they were, in just these last few days, perfectly free. Free of the past, free of the future, weightless in their own warm air, floating like spirits about to invest in a material world..." - Part 2, page 85.

"History is not evolution! It is a false analogy! Evolution is a matter of environment and chance, acting over millions of years. But history is a matter of environment and choice, acting within lifetimes, and sometimes within years, or months, or days!" - Part 2, page 88.

"We'll all go on and make the place safe. Roads, cities. New sky, new soil. Until it's all some kind of Siberia or Northwest territories, and Mars will be gone and we'll be here, and we'll wonder why we feel so empty. When when we look at the land we can never see anything but our own faces." - Part 3, page 158.

"If there is Martian life here...the radical alteration of the climate might kill it off. We cannot intrude on the situation while the status of life on Mars is unknown; it's unscientific, and worse, it's immoral." - Part 3, page 176.

"Here you sit in your little holes running your little experiments, making things like kids with a chemistry set in a basement, while the whole time an entire world sits outside your door...And you're going to wreck it all." - Part 3, page 177.

"This is about the human mind: if it can be done, it will be done. We can transform Mars and build it like you would build a cathedral, as a monument to humanity and the universe both. We can do it, and so we will do." - Part 3, page 178.

"Even without an imagination you can see what kind of power we have. Maybe that's why things are getting so strange these days, everyone talking about ownership, or sovereignty, fighting, making claims. People squabbling like those old Gods of Olympus, because nowadays we're just as powerful as they were." - Part 5, page 323.



"With you all living a fantasy of the past, you're leading us right into the repression you're complaining about! We need a new Martian way, a new Martian philosophy, economics, religion!" - Part 5, page 349.

"So it's democracy versus capitalism at this point, friend, as we out on this frontier outpost of the human world are perhaps better positioned than anyone else to see this and to fight this global battle, there's empty land here, there's scarce and nonrenewable resources here, and we're going to get swept up into the fight, and we cannot choose not to be a part of it, we are not one of the prizes, and our fate will be decided by what happens throughout the human world." - Part 5, page 380.

"In reality, they were all actors all the time, playing their video parts, and there was no chance of contact with the true selves inside others, not anymore; over the long years their parts had hardened into shells and the selves inside had atrophied, or wandered off and gotten lost. And now they were all hollow." - Part 6, page 399.

"The past is wiped out, all that matters is now. The present and the future...and you know, you never really summon all of your strength until you know that there's no way back, no where to go but onward." - Part 8, page 551.



Topics for Discussion

One of the major themes in the novel is the debate as to whether the terraforming of Mars should occur. What are the arguments for terraforming? What are arguments against terraforming? Which do you agree with, and why? What are some of the benefits of terraforming? Some of the downfalls?

Another theme in the novel is whether the mining of Mars for precious metals to be used on Earth should occur. Do you think we, as a world population, have a right to mine another planet for our own benefit? Why or why not? What are the benefits of such an act? Can you think of reasons we should not exploit another planet?

One of the arguments against terraforming is that life may exist on Mars that is yet unfound, and that terraforming might destroy that life. Do you think halting terraforming for such a low possibility of life is a logical thing to do? Why or why not? If terraforming allows the Earth population to live on Mars, do we have a right to kill bacteria or other microorganisms that may be living on the planet? Why or why not?

Maya and Nadia are two of the strong women characters in the novel, but both are very different. Compare and contrast these characters. What are their similarities? What are their differences? Which character do you relate to more, and why?

Frank and John are two of the strong male characters in the novel, but both are very different characters. What are Frank's strengths? What are John's strengths? What are each of their weaknesses? How are they similar and how are they different? Which character do you feel is more qualified to lead the American crew, and why?

One of the themes in the novel is the ability of the human being to adapt to new environments. Maya, Frank, and John seem to be able to adapt, and actually thrive in the new world, but people like Ann and Michel seem to be unmovable. Why do you think such differences exist? Do you agree in Michel's theory of personalities? Why or why not? Would that explain the differences in the first hundred? Why or why not?

Frank kills John in the novel by manipulating Selim into killing him. Why did Frank have John killed? What does Frank gain from John's death? Do you think Frank really feels remorse by the end of the novel? Why or why not? Do you think Maya ever suspected Frank? Do you feel that, in the end, Frank got what he deserved when he fell from the rover? Why or why not? Do you think Frank ever changed in his ways? Why?

At one point in the novel, the medical team invents a solution for aging and the effects of Mars on the body. The treatments could conceivably extend the life on an individual for many many years, and on Earth, this causes a number of problems, such as war, overpopulation, violence, and revolt. Can you see the use of such a treatment in a colony such as Mars? Do you think it should have been released on the Earth? Why did it cause such problems when it was released? Do you think such problems are realistic? Why?



The novel is highly graphic in its detail of the technology used on Mars. The descriptions are detailed, and often take up several pages. Do you think this amount of detail adds to the story, or detracts from it? Why? Do you think the author was overambitious in this, or do you think he was simply attempting to make a believable setting? Do you think he succeeded? Why or why not?