

Prey Study Guide

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Plot Summary

At 10:04 A.M. on what would become known as "Day 1," Jack is shopping for new placemats. He's the "house Dad," having lost his job at MediaTronics after learning that his boss, Dan Gross, was cheating and stealing. Jack, ignoring the advice of his attorney who told him to get out of the company fast, tells a board member, who is in on the scheme, and Jack is summarily fired for "gross negligence." Jack's wife, Julia, is vice president of another computer-based company, Xymos, and Jack watches as she spends more time at work and grows more distant. Jack soon believes that she's having an affair, though he'll discover that she's become overly involved with a project at work.

Julia's company has a Department of Defense contract to produce airborne cameras. Large prototypes are easily shot down so Xymos decides to create micro-sized cameras that will "swarm." The problem is that the small cameras can't operate in winds. Discovering that the swarms are evolving and knowing that the funding is about to be withdrawn, Xymos sets a swarm free, hoping that it will "learn" to adapt to the environment. Julia begins interacting with the swarms, which are not only self-replicating but are also evolving and learning predatory behavior that results in the deaths of several animals. Julia herself becomes host to a swarm and infects her children. The baby, Amanda, reacts violently and is hospitalized, but recovers miraculously when exposed to an MRI.

Then Jack is offered a job with MediaTronics. He's told that there are computer programming issues but feels certain they're not telling him everything. When Julia is in an accident, she babbles about the job and Jack decides to find out for himself what's going on. He accepts the position and soon sees the swarms in action. They first kill a rabbit and that's when Jack, accompanied by a co-worker named Mae, learns that the swarms are using the rabbit as food for the bacteria that is part of the manufacturing process - now part of the self-replication process. Then the swarms attack Jack and later kill two other programmers, taking their bodies to the nest. The evolution continues with swarms able to reproduce specific looks so that they appear to be people.

Jack and Mae locate the nest and destroy it only to discover that Julia and Ricky are serving as hosts and intend to infect Jack and Mae. Jack and Mae find a virus that has attacked the bacteria-growing kettles and take the virus, hoping to eliminate the bacterial component of the swarm and therefore kill the swarm. They manage to introduce the virus to those serving as hosts, including Julia, and escape as the plant explodes from a combination of overheating and built-up methane gas.

At home, Jack infects the children with the virus, hoping it will eliminate any of the nanocameras that remain in the three children. While he tries to be hopeful, he worries that he himself is infected and says that the children are aware of his concern. Jack now knows that Julia was to blame for the entire incident, and that she'd taken a step with no thought to long-term impact.



Day 1 and Day 2

Day 1 and Day 2 Summary

At 10:04 A.M. on what would become known as "Day 1," Jack is shopping for new placemats. He's the "house Dad," having lost his job at MediaTronics after learning that his boss, Dan Gross, was cheating and stealing. Jack, ignoring the advice of his attorney who told him to get out of the company fast, tells a board member, who is in on the scheme, and Jack is summarily fired for "gross negligence." He quickly learns that he's "marked" and unlikely to find another job soon, though MediaTronics is about to "go belly up" with some employees facing indictments. Jack knows that "Silicon Valley" covers a lot of ground but it is really a tight community so he has no choice but to wait for the storm to blow over.

Meanwhile, Julia is making good money and life at home is becoming strained. One night, Julia arrives home from work to gripe at Nicole for being up at nine-thirty, despite the fact that Julia and Jack had agreed that the twelve-year-old could stay up until ten o'clock. Julia and Nicole argue and wind up waking nine-month-old Amanda. Julia takes over the diaper change and is angry that the baby is so squirmy, eventually slapping the child on the leg before Jack steps in. As Jack is warming a bottle, he notes that Julia is wearing shoes that she laughingly refers to as her "fuck me" shoes, which she would never wear to work. Jack realizes that he believes Julia is having an affair and can't shake the idea, especially when added to her recent habit of showering the moment she arrives home. They watch a video of a promotion Julia says happened that day in which she explains her company's latest project - imaging nanotechnology. Julia falls asleep while the video is running but Jack notes that the video is date stamped with the previous day's date, meaning Julia lied about the reason she was late.

The truth of the showers is that Julia is trying to ensure that she doesn't infect the family. Jack will eventually discover that Julia is harboring a swarm within her body. The fact that she is still showering at this point seems to indicate that Julia is not yet infected herself, though it's not clear exactly when it happens.

On the morning of Day 2, Jack is shopping when he runs into Ricky Morse. Jack gave Ricky his first job and recommended Ricky for his current position with Julia's firm. They briefly talk diapers, laughing that they sound like a commercial and abruptly changing to sports when a woman is staring at them. Then Jack asks how things are going at work and specifically mentions Julia. Ricky tells a little about the current project, saying that Julia is spending a lot of time at the nanotechnology fabrication building. Jack believes Ricky is reluctant to say something and wonders whether it's that he's in danger of breaking his confidentiality agreement with his employer or that he doesn't want to tell Jack that Julia is having an affair. From the conversation, Jack realizes that Julia must be spending more time with the computer programmers and the fabricators than in other aspects of her job and thinks that is a big change from her background as a child psychologist.



Jack is at the pediatrician's office for Amanda's immunization when Julia calls, saying she's going to be early and will bring home dinner. Jack picks up Eric from a soccer practice that runs late and then Nicole from play practice. At home, the kids are hungry and Nicole calls Julia, who says she's running late and forgot to call. Jack and the kids go to the drive-in. When Julia arrives home, she steps into Amanda's room and cuddles the child though Jack is angry, believing she woke the baby. Julia showers and slams around the bedroom, which Jack knows is his cue to mollify her but he remains in the living room, reading, until Julia is asleep.

In the middle of the night, Amanda wakes them with her screams. She has a rash that Jack can see spreading before his eyes. She continues to scream, refusing to be comforted, and Jack takes her to the emergency room leaving Julia with the other children. At the hospital, Jack reports on the immunization as doctors discover that Amanda doesn't have an infection but can't decide what it is. Several doctors are called in for diagnoses and Amanda, now bright red, continues to scream, eventually having convulsions. The medical staff insert a needle into the vein in her head to replenish her fluids and the testing continues. The baby is strapped to a board and put into the MRI machine, and Jack waits with the technicians, listening to the girl scream until the sounds abruptly die. They all fear that something has happened to her but when they rush to her, her skin is lightening and she's obviously past the pain of the past hours. She takes a bottle, but doctors continue to worry about what caused the situation, finally putting it down to a "victory for modern medicine" and allow Jack to take her home.

Day 1 and Day 2 Analysis

There is an extremely detailed description of how the nanotechnology created by Julia's company works, and it seems reasonable to believe that it could work though the manufacturing and production and liability of such an endeavor seems impossible. In general, the principle is that millions of tiny cameras are infused into a blood vein, where they are activated by the body's heat. Using a very primitive concept - that an image will reflect through a tiny pinhole of light - the nanotechnology captures those images and transmits them back to a screen. Speed and direction can be controlled. In this way, doctors could see the inside of human organs, watching the many processes to determine what's wrong. Jack will later learn that the medical technology has evolved as a minor commercial application from a larger project - using tiny, airborne cameras for military reconnaissance - and that Amanda's illness is an allergic reaction to the bacteria used in the process.

It occurs to Jack that the technology that networks the many cameras together may be like one he worked on at his job at MediaTronics. There, the programmers mimicked various animal behaviors in their work, and Julia says that the millions of cameras working in harmony, are "swarming" like bees. Jack and the other MediaTronics programmers have created applications that "swarm" as well, though theirs were in the form of operations that would be performed inside a computer, rather than as physical objects like the cameras of the nanotechnology. The attitude about the competition being only months behind in the production of this same technology - and Jack's



reaction to that idea - is interesting. While Jack says that the general belief is that once someone has perfected the nanotechnology, others will also be doing so soon isn't entirely correct. He points out that it's just like manufacturing cars or producing computer code - there's a long process in which mistakes are made and corrected and details changed to become a workable solution. In the case of the stolen technology from MediaTronics, the programs contained "Easter Eggs," small bits of data that prompted specific, but useless, actions. The programmers install these as a signature, and the recovered programs in this case still contained the unchanged "Easter Eggs"—a particular keystroke prompts a new screen with a programmer's wedding date, for example.



Day 3 and Day 4

Day 3 and Day 4 Summary

At home, Julia is at the window with a cup of coffee. She says she hasn't slept at all for worrying about Amanda but now doesn't hold the baby. When Jack returns to the room after putting Amanda to bed, Julia is on the phone, saying that they now have to be more careful. She hangs up abruptly and tells Jack that something has come up, and she has to go to work, though it's just after six o'clock in the morning. As Jack is driving Eric and Nicole to school, Eric yawns and says the men who had vacuumed the house during the night kept waking him up. He says that they'd vacuumed the entire house, and they'd gotten the ghost, which he describes as "all shimmery" and without a face. Jack puts it down to a nightmare prompted by the horror movie Nicole favors.

At home, Jack goes to sleep and is soon awakened by the maid, Maria, who says he has to see the baby. When he arrives in her room, she's awake, alert and happy, but her entire body is the color of a bruise. Jack notes that the uniformity of the color is frightening. He calls the emergency room physician, who says that he's done some research and come to learn that there's been another case like Amanda's reported, that the victim had the color change like Amanda and that the problem apparently just resolves itself after a couple days.

As Jack is talking to the doctor, he realizes that Amanda's room has been disturbed. There's a small surge protector plugged into the wall under her crib, which he finds when Amanda throws his glasses to the floor. Her lamp is turned, diaper rash cream moved nearer the crib and her crib mattress turned. Later, he finds Eric's MP3 player in the nursery, and Eric is angry that it doesn't work - a fact he blames on Amanda's drooling on it. Jack removes the cover and finds a coating of dust and a problem with a chip, which he believes unusual because the mother board and the rest of the player is in good condition. He tells Eric that he'll replace the chip.

Jack continues to deal with the children, dinner, dishes, homework, lost toys and the other issues of his family life and admits that it makes him tired. On the night of Day 3, he goes to bed before Julia arrives home and has a strange dream. He sees Julia come into the room and begin to undress with her back to him but her face visible in the mirror. He notes that her face looks different - more chiseled. Suddenly, her lips turn black then the bottom part of her face is dark, then it returns to normal and Julia continues to undress, apparently oblivious. Jack says that he feels a sense of fatigue that he can't explain or fight and so remains immobile as Julia leaves the room.

On the morning of Day 4, the dream remains with Jack though it feels real, unlike a dream. Jack finds Julia in the kitchen and notes that her face does look more chiseled, as does her body. He tells her so when Eric arrives, complaining that Nicole is in the bathroom and he can't get his socks. Jack interrupts, saying that he can't wear the dirty socks anyway, and Julia is angry, saying that she has few opportunities to interact with



the children and that Jack won't allow it. He apologizes and Nicole later says that Julia is crazy and criticizes Jack for staying with her.

Jack meets with his headhunter, Annie Gerard. She says that there are a couple of possible jobs for him but one is in New York and the other in Texas. Jack says he can't leave the Valley because of Julia's job, but Annie says it's time for him to think about his "shelf-life," meaning that his knowledge is eventually going to be eclipsed by those continuing to work and that he'll find himself outdated. Jack thinks back to his work - that artificial intelligence is replacing programs that seek to achieve a specific goal. In that case, programmers encounter a problem, write another line of code to solve that and the program eventually becomes too large to manage or manipulate. Annie tells Jack that he has to talk to Julia about leaving the area or she can't help him find a job. He calls and leaves messages for Julia, but she doesn't return the calls. He deals with the kids for supper and wakes the morning of Day 5 to find that she hasn't called, hasn't been to bed, and apparently hasn't been at home at all.

Day 3 and Day 4 Analysis

The emergency room doctor asks Jack about his job, which Jack finds unusual but doesn't focus on at that moment. Jack eventually tells the doctor that he is not currently employed after the doctor asks several questions about his job. It seems odd that Jack doesn't mention that Amanda's mother also works in the computer field, and that he doesn't even think of it at this moment. The dynamics of this family are such that everyone seems caught up on the fact that Jack has taken over many of the duties of a wife and mother in a traditional setting.

When Jack finds what he believes to be a surge protector, he sees a sticker with SSVT on it and assumes that's the manufacturer but can't find any information about that company. He'll later see the same company at the site of an accident involving Julia. This is the team that arrived during the night when Jack was at the hospital with Amanda and that Eric claims to have seen but that Jack puts down to a dream. There will come a time when Jack doesn't mind their presence.

During Day 4, Jack considers his situation with Julia. He has wondered if she is setting the stage for separation by pointing out that she is the one working long hours, that she's trying to balance the job and the family and by accusing him of taking over her role in the lives of the children. Jack himself has wondered what he'll do if she says she's in love with someone else and wants a divorce and what he'll do if he doesn't have a job by then. He notes that judges favor the mothers, the argument being that children need their mother.

Jack's knowledge of the computer industry puts him in a prime position to figure out what's going on, though he hasn't yet realized that there's a problem. The fact of Eric's MP3 player is one of the clues, as is the surge protector in Amanda's room. Then he notices that the sprinklers are running during the middle of the day despite having been programmed otherwise. He'll make the first of the connections when he learns that the

MRI at the hospital had been "breaking down" over several days prior to Amanda's examination. He will later realize that the MRI is a serious problem for the swarms of nanoparticles creating the problem.



Day 5

Day 5 Summary

Jack wakes to find that Julia hasn't been home. She'll later say that she called, but Jack doesn't believe her. Though Eric asks about his mother, he seems to not want to know the answer. Jack calls his sister, Ellen, a psychiatrist. She tells him that he's being "passive" because he doesn't want to talk to Julia, a lawyer or a counselor. She says that she has a couple of free days and plans to come for a visit. She instructs Jack to tell Julia that she's coming to help out with the kids. Jack notes that psychiatrists who can clearly see others can never see anything but fantasies about themselves.

Later in the day, Jack gets a call from Tim Bergman, the man who took over Jack's position at MediaTronics. He says Don Gross - the man who'd fired Jack - wants to hire him back. Jack says he'll think about it and later tells Ellen that there are two possible reasons - that they're having trouble with a program and need his help or that they're in trouble and need someone to blame. Don's message through Tim is that a program Jack had been working on, PREDPREY, has been purchased by Xymos and that they're having difficulty. Jack says it's because there were no "reinforcers." He likens the program to a child who drops things and forgets goals. Reinforcers remind the program to continue on a specific task.

Jack decides to see what he can find out before committing to the job, which is actually a consultant's position, and Jack would be working at the Xymos fabricating facility. Jack starts by calling Ricky and discovers that he's been at the fabricating facility for several days. His wife, Mary, says she's worried, that Ricky seems distracted by more than just work, and she wonders if he might be having an affair. She says Mae Chang, a woman who had previously worked for Jack, is working at the fabrication site and that Ricky has always found her attractive. Jack reassures her that Ricky is faithful. Then Mary asks if Julia seems okay and whether she's mentioned things such as "the black cloak." Jack, remembering something he saw in what he thought was a dream about Julia, stops at that but says that he'll call Ricky's cell. Before he can dial, Julia arrives and Eric says he thought he saw someone in the car with her but goes to look and finds no one there. Julia showers and the family eats in the backyard at the picnic table - what Jack calls the "classic American family dinner" scene.

Julia is overly-chatty and it occurs to Jack that she might be taking drugs. She talks as if to reaffirm that she's in charge of her family - handing out news about Nicole's part in the school play, which is just two lines instead of the lead as she'd hoped, that Eric was doing well in soccer, though she hadn't been to a game and the season is almost over, and accusing Jack of having already fed Amanda, though the baby is simply waiting for the airplane game to open her mouth to eat. Julia also continues to say how wonderful it is to have Jack at home and how much she depends on him. Then Julia says she has to go back to work for awhile, though she denies that she's put in a lot of hours, saying that it's been hectic only for the past week or so.



As Julia leaves, Jack sees someone in the car, though he can't make out the features. He says that there's something strange about that, but Ellen puts it down to denial and tells him that it's time to take some action. Ellen convinces Jack to call Julia and confront her with his knowledge, but Nicole interrupts, saying that the police are on the phone. Jack arrives at an accident scene where Julia's car ran off the road and tumbled down an embankment. She tells police she was alone, and there's no sign of anyone else involved in the accident. Julia says that it's "not what it seems" and makes Jack promise to "stay out of it." By the time they're in the ambulance, she's delirious and her blood pressure is dropping. She then lapses more, saying that she hadn't meant to do anything wrong, talking about teenage rebellion and asking about Nicole and Eric. At the hospital, there's the immediate concern that there's more than the broken arm, as originally believed.

Jack returns to the crash site to pick up his car and finds that there's a truck there winching Julia's car out of the ditch. The tow truck driver points out a van with the letters, "SSVT" on the door, saying they've been just sitting there for an hour. Jack starts in that direction but they speed away. He notes that the license plate is Nevada - where the fabrication plant is located - and that the Xymos symbol is on the back of the van. He takes out his phone and calls Tim Bergman, saying that he'll take the job.

Day 5 Analysis

Jack considers his relationship with his sister, Ellen. He says that he considers her pushy - perfect for a psychiatrist since she gets to tell people what to do. She considers him passive, having opted to go into population biology, which is a field that really offers no job options other than university teaching. But while he is working on his degree, he finds no computer programs to help in his research and writes his own, sliding into computers as a field. Ellen also believes computers to be a waste of time, but then Silicon Valley erupts and Jack is in high demand until his episode with MediaTronics. In Ellen's eyes, Jack simply shows up for work and rides the wave of promotions. Jack knows that it's competitive, that he worked hundreds of hours and was under deadlines to produce new technology with new programs that work. He does admit that he was lucky in that his original study had been biology, which is commonly used in computer programming and that he was fortunate in being in the right place at the right time.

Technology is evolving quickly and the combination of computer information and biology is important. Jack notes that there are those programs that - mimicking the division of labor in termite swarms - control thermostats in large buildings. In another case, the principles of genetic selection are used to help police identify suspects. A person is shown a series of nine photos and asked to determine which looks the most like the suspect. The program then offers new photos and can eventually produce a composite more accurate than an artist.



Desert, Day 6, 7:12 A.M. and 8:12 A.M.

Desert, Day 6, 7:12 A.M. and 8:12 A.M. Summary

Jack arrives at the fabrication plant by helicopter. There are three public relations men on board as well, talking about the fact that environmentalists have found a dead coyote and some other animals in the area and are accusing Xymos of having a spill. One is saying that they'll simply deny it all and put a spin on the project being worked on within the buildings. On the ground, one of the PR professionals insists on getting off the chopper to take a leak, though he's reminded by the other two that they weren't to get off the aircraft. At the door, Jack is sprayed with a liquid that he assumes is to remove dust particles and other items from his clothing. The liquid dries under a brief blast of air and Jack is then asked to hand over all metal items, including his laptop, belt, watch and knife. He jokes that it's like entering prison and asks if they also want his shoestrings. The man admitting him, Vince Reynolds, says that he can keep them just in case he needs to hang himself.

Jack is then taken through several additional airlocks, where he is met by Ricky, who asks about Julia, then takes Jack on a tour, beginning with sleeping quarters, which are "monastic" with all furniture covered with laminate and no places for dust to hide. In the kitchen, Jack finds Rosie Castro and engineer David Brooks, both from Jack's team at MediaTronics. Jack takes a call informing him that Julia is refusing treatment, provides what information he can as to her psychiatric history and promises to talk with her when the doctors have her call upon her return from x-ray.

At 8:12 A.M., Jack and Ricky catch up with Mae Chang, Charley Davenport and Bobby Lembreck, who are working on a problem with sensors in the building. The three are among the most talented programmers Jack knows, but they are now all three huddled over a problem, each wanting to contribute but all bickering, nervous and jumpy - a huge change from the self-assurance all three have exemplified in the past.

Ricky then takes Jack into another room, leaving the three with a warning to finish up and return to work. Ricky then tells Jack that the medical imaging application is only a side application of what Xymos is really working on, which are small airborne cameras that would be too small individually to be shot down and would flock together to produce images, then dispersed to avoid detection or gunfire. Ricky says that they've encountered networking issues with the "distributed intelligence." Jack says it's a common problem in this type of networking, that people see fish and birds flocking together and assume there's a leader, but that in fact it's a response to "simple stimuli." Furthermore, there's no genetic reason - flocking is simply a response to rules such as, "Stay close to the birds near you but don't bump into them." This is called emergent behavior, and it's what's causing problems in the camera nanoswarm. Jack says that it's exciting and frustrating for computer programmers. Two computerized "agents" or components could be put together to work, given goals and even programmed to help each other with tasks. The results vary because it's impossible to predict what emergent



behaviors will occur as the agents coalesce and evolve. It's also likely that the programs could lose sight of the goal over time as the situation changes. For that reason, Jack began studying predators because they are fixated on their prey, though it may take several tries to accomplish the goal.

The idea of the nanotechnology has been around for some time. The reality is that a molecule has too many parts - ten to the twenty-fifth power. Adding one part per second on an assembly line is normal. At that rate, manufacture of a single unit would take millions of years. Ricky says they've solved this "time-build" problem and takes Jack on the next phase of the tour.

Desert, Day 6, 7:12 A.M. and 8:12 A.M. Analysis

When Jack meets up with Ricky, Ricky says that Vince is "strange." He says that Vince was alone with his mother when she died and at only five years old, he remained with the decomposing body for some time - a situation Ricky says justifies that Vince is strange. From Vince's point of view, those who work in the building are strange. He says they are busy pushing around molecules to manufacture something too small to see and that the people who work on site are "fucking crazy." He also says that there have been problems and accidents, but seems to change the topic when Jack asks for more information.

When Jack is talking with Rosie and David, he asks why they're so glad to see him and Rosie says that it's because Jack is so well-versed in algorithms, but Ricky interrupts, saying he's going to take Jack on a tour first. Ricky then erupts, telling Rosie and David that their break time is over, and Jack notes that he's never seen Ricky's temper but that based on the reactions of Rosie and David, it's a common occurrence. Jack's phone rings and he takes a call from the hospital. The doctor says that Julia's injuries might be life-threatening and that they need to perform an MRI, but she has refused, saying she doesn't need it. Jack agrees to talk to her and, under questioning, says that he has recently been worried about her behavior but that he doesn't know of any serious psychiatric issues or drug use. The doctor seems to be questioning whether Julia had tried to kill herself. It's important to remember that, at the scene, Julia had said the accident is not what it seems. While he's talking, Ricky walks up, looks at his watch and raises his eyebrow, though Jack has indicated that he's talking to the hospital. Jack thinks it's odd that Ricky would take that attitude considering that Julia is Ricky's supervisor.

Day 6, 9:12 and 9:32 A.M.

Day 6, 9:12 and 9:32 A.M. Summary

The tour continues and Jack sees an array of machinery and equipment that are evidently producing molecules. Jack asks how the process works but is told that it's not important, and Ricky tries to move on, constantly looking at his watch as if time is vitally important. Then Jack, forcing Ricky to stop while he looks around a particular room, discovers what he hasn't been told. The most popular concept for molecule production is that there would be nanoassembly lines. The biggest problem is producing the nanoassemblers. Jack had thought Xymos had managed that but now realizes that they're "using bacteria to crank out their molecules," meaning that the process Jack is watching is not nanotechnology at all but is actually genetic engineering, and that a form of *E. Coli* is used as the bacteria. Ricky says it shouldn't be a surprise, and Jack admits that it's a well-known concept that cells produce molecules and that the general train of thought has been that computer engineering and biology would merge. What Jack has actually learned is that the process occurs naturally under the right conditions and that the building only produces the optimal conditions.

Ricky continues with the information, ending by showing Jack diagrams of the finished product for the Pentagon, which is to be airborne. Jack asks about the capability of flight and Ricky reminds him that it's micro machinery and that there are small appendages that allow them to climb on the "viscosity of the air." The cameras work indoors but outside are susceptible to the slightest breeze, and the Department of Defense is on the verge of pulling project funding, meaning Xymos will go "belly up." Jack says that the flight issue is an engineering problem and he doesn't see how he can help. It's now that Ricky says they've encountered a problem, that programming code is involved, and starts the conversation by saying that it wasn't their fault. He then admits that when they were first in production, they vented unfiltered air that included the nanoassemblers, completed molecules, and *E. coli*. While they are talking about this, there's an alarm, and Ricky pulls up the security cameras on the computer screen, where he eventually locates a dark cloud - a runaway swarm that they can't control and can't recapture that has been in operation autonomously for ten days.

Ricky and Jack watch as a swarm of the nanorobots approach the building, then break into three swarms that undulate and move together. They then chase and kill a rabbit and Jack watches as the swarms rise as a single unit. Jack says (based on his PREDPREY program) that the individual units have a limited memory capacity, solar power that will last for three hours and markers so that they can be found at night, but they haven't been able to find them at night and he believes they hide - indicating a learned behavior. Jack insists that the individuals can only communicate with others very near and that the swarms cannot communicate with each other. Only Mae will go outside with Jack when he goes to retrieve the rabbit and then only after he argues that what they believe about the swarm is not possible. Mae dissects the animal but has to return inside to get swabs she left behind.



Jack is alone when he's told there's a swarm on the other side of the building. One intercepts him at the door and as he fights his way through, he's covered with the small particles that make up the swarm. As he reaches the airlock inside, he collapses and Mae revives him, saying that he was in anaphylactic shock - an allergic reaction that she believes is the result of the E. coli that has become part of the swarm itself, rather than just part of the manufacturing process. It's David who tells Jack that the particles that are part of the swarms are assemblers and that they will continue to replicate in the desert. It's also David who says that one specific component of the swarms cuts down memory chips - exactly what happened to Eric's MP3 player.

David continues with his information, saying that the bacterial content of the swarms can live on anything, even garbage, so can find sustenance in the desert; the swarm returns several times each day. David says there's the opinion that the swarm wants to be inside, perhaps to reach what it considers its home territory, but David believes it's trying to reach Julia.

Day 6, 9:12 and 9:32 A.M. Analysis

Jack feels pride when he sees the swarm's action, which is actually the result of his program, PREDPREY. Though he knows the program doesn't really prompt the nanorobots to consume the rabbit as food, he's excited to see that the three swarms work together, just as any pack of predators would do.

Jack himself is a programmer who would likely have been seeking the answers to problems just as the programmers of Xymos were when they created a power source for the nanorobotic cameras, but now he seems to condemn the fact that someone added that bit of programming. It's interesting that Ricky seems to be afraid of the swarm and that he raises the pressure of the building to a higher-than-normal rate. Jack notes that it's more than enough to keep passive particles out but admits that there's nothing passive about the swarm. Jack does, however, believe Ricky and the others have scared themselves - that the swarms are not reproducing, that any sign of intelligent cooperative behavior in robots is always accidental, and that it's more likely that the rabbit died of suffocation from the robots in the airways or from sheer fright. When Mae and Jack examine the rabbit, they discover that there are robots inside its body and that the animal's skin is a deep red, just as Amanda's had been.

As Jack realizes that he's not going to make it inside, he can't help being fascinated by the fact that one of the swarms is guarding the door, blocking his way inside, while another is zigzagging behind him, eliminating any chance of escape. He discovers that the swarms will chase something that moves fast and throws Mae's dissection kit but it's a short-lived reprieve and their attention is almost instantly back on him, long before he can reach the door. As he fights his way inside, he notes that he can't see but doesn't realize it's because the nanorobots are covering his eyes.



Day 6, 11:42 A.M., 3:12 P.M. and 4:12 P.M., 4:22 P.M.

Day 6, 11:42 A.M., 3:12 P.M. and 4:12 P.M., 4:22 P.M. Summary

Jack discovers that Julia has interacted with the swarms, treating them as a psychologist would treat a child. For example, she places two red blocks and a yellow block on the ground to see if the swarm "chooses" the yellow. Jack points out that this testing is teaching as well and that the swarm has evolved dramatically over the course of the past several days, at least partly because of Julia's interaction with it. On Day 5, when Julia came home for an early dinner with Jack and the family, the swarms had killed a rattlesnake. David says that Julia and Ricky are in agreement that the swarms should not be killed and Jack says that's exactly what he's going to do.

He prepares to go outside to a storage building where he'll retrieve isotopes to spray on the swarms so that he can track them at night. Everyone but Ricky and Bobby agree to help. They choose a time when the wind is blowing so that the swarms have difficulty maintaining a shape and are forced to sift low to the ground. Ricky tries to block the way, but Jack insists and Ricky admits that his wife, Mary, is worried about his behavior. Jack suggests that it's tension. Mae wants another look at the rabbit, now covered with a white foam, and it's evident to all that E. coli is using the rabbit as a food source meaning that the bacterial will manufacture a new swarm in a matter of hours. They go to a storage building, find the necessary equipment and are working to rig up a remote-controlled sprayer when Bobby says the wind has dropped. As Jack tries to hurry them, Bobby says there are four swarms at the compound.

They know they can't make it to the main building so remain inside, counting on the fact that the swarms hunt by sight. David panics and begins to cry and is comforted first by Jack and then by Rosie. The swarms range near and then away from the main building. Then one passes by the rabbit and stops, and Jack realizes that it's seen their footprints. It follows the tracks between the main building and the rabbit three times, then circles the rabbit before finding the tracks leading to the shed. Everyone hides and Jack has time to think about the programming. He says that he used the idea that predators hunt the stragglers, the one that is different from the rest of the herd and has trouble deciding on attack when faced with a solidified group. Jack has everyone stand together and move together in what Mae calls "step aerobics from hell." Though it's a simple ploy, the swarms are stymied by this behavior. Then David breaks for the door and is stopped by the swarm, which attacks quickly. Rosie can't stand to see his death and follows, only to be attacked and killed as well. The rest, knowing there's nothing to be done for them, head for the compound.

The three survivors - Jack, Mae and Charley - make it only part way and take shelter in cars. The swarms are outside the vehicles and at one point mimic the way the



occupants look - indications of further evolution. Then they find their way into Charley's car and a short time later into the car Mae and Jack are in. The wind is picking up, and Charley, spraying isotopes on those inside with him, tries to get out and run. Mae and Jack soon do the same though they are having trouble breathing and are being pricked by the nanoparticles. When they arrive at the door, Ricky says that Charley is still out by the cars and that he's alive, prompting Jack to go back for Charley despite his own condition.

He finds Charley barely conscious and wastes a lot of time trying to figure out how to transport him to the main building. He finally discovers David's dirt bike and wastes more time looking for the key, which is locked inside a CD console with a spare taped to the ski rack. Jack gets Charley on the bike just as the swarms again approach, waits until they're right at them and guns the motor so that they pass through the swarm with little effect. By the time the swarms turn to give chase, the two men are at the main building and Jack pulls Charley inside. There's an airlock system, but a person must be standing in order for the system to work. Since Charley can't stand, Jack has to hold him up - a problem since Charley is bigger than Jack and both are losing consciousness. The airlock still doesn't work and Mae frantically signals that only two feet can be on the floor at a time, prompting Jack to muster all his strength and hoist Charley up so the rush of air pulls the nanoparticles off their bodies.

Day 6, 11:42 A.M., 3:12 P.M. and 4:12 P.M., 4:22 P.M. Analysis

Mae says that there's a problem with the growth of the bacteria being used in the process and that they might be facing a delay in production. Jack says shutting down production might be the best course of action and Mae says that Ricky has been overheard talking about his stocks and that she believes he has a higher-than-usual vested interest in the success of the company. While Ricky says that he's afraid to go outside, he refuses to allow Jack to try to kill the swarm. He intimates that Julia had said the same thing, which Jack already knows, but Jack brushes him aside, saying that if they can't get control they'll have to call for help.

While Mae and the others are working at creating a remote-controlled sprayer, Jack pulls up the computer program that would have been used to control the individual components of the swarms. It's protected by a password and Jack has to get rude with Ricky in order to get the password. However, he can't find the specific information he's looking for, and Ricky seems to evade his questions, finally saying that he'll look for the information once they're all back inside. Mae looks at Jack, seeming to say that Ricky will never allow him that access, and Jack again wonders why he's here since those codes would be his specialty and the one area where he really might be able to help.



NEST, Day 6, 6:18 P.M., 10:12 P.M., 10:58 P.M., 11:22 P.M.

NEST, Day 6, 6:18 P.M., 10:12 P.M., 10:58 P.M., 11:22 P.M. Summary

Jack wakes and finds himself in his room with the door locked. Ricky soon unlocks the door and gives him a printout of the sheet of missing code Jack was searching for earlier. Jack continues to think Ricky's role in this entire situation is more complex than he's telling. Jack learns from Nicole that Julia has been home but left quickly. Jack learns from Ricky that Julia is on her way to the site. Charley is still sleeping, but seems to be recovering and joins them as they sit down for dinner. With sundown calculated around seven-thirty, Jack confirms that he's going out searching for the swarms some three hours later, and he expects to locate them because Charley sprayed much of one of the swarms with the isotopes.

While they are eating, Jack points to one of the video monitors that shows a man outside the main building. Under the flood lights, they see that it's actually a swarm, which looks like a younger version of Jack, right down to the same t-shirt. Jack knows this is the "man" he saw in the car with Julia just before her accident. The swarm has no facial features, but Charley is the first to say the behavior is much more sophisticated than anything they've seen from the swarms so far. It's quickly getting darker, and the swarm begins to dissolve, prompting Jack to note that it's likely taking a lot of power to retain the image of Ricky. The particles then dissolve back into a dark cloud and swirl away.

Mae shames Bobby into going with them on their search. At the shed, Jack realizes that Rosie's body is now missing as well and searches for signs of animals having gotten it but finds no sign of such happening. As Mae packs the backpacks, Jack realizes that she is the only one with real field experience and he feels dependent on her. They go out with a radiation wand, and Mae directs their path from the back of the dirt bike, driven by Jack. Bobby is on an ATV that Vince directs them to.

They lose the trail after traveling a semi-circle around the area and are just discussing that the swarm must have gone airborne before "jumping" off a fairly steep cliff when they see something moving in the bushes. They discover that it's Rosie's body, which is being moved by the swarm. Jack believes the swarm has either overcome their need for sunlight as power or that Ricky has also lied to them about this. It's Mae who suggests that neither is the case, but that the swarms are taking turns so that none of them has to move for more than three hours at night. They look ahead on the path Rosie's body is taking and discover that there's a huge formation, some six feet high and fifteen feet wide - the outer portion of the nest site.



Jack and Mae get near the entrance and use a tiny camera on a telescoping pole to look inside. There is a green glow coming from the cave and a thrumming noise, along with the intense smell of rot. One of the swarms becomes Ricky again, then there are two that look exactly the same, then one takes on the appearance

of David. Mae, Jack and Bobby split up and move away from the mound. A helicopter approaches and Jack knows it is probably Julia arriving. The copter shines a light directly down on Jack and then moves off. One of the swarms, looking now more like Ricky down to the features and individual strands of hair, moves to Jack's hiding place and then locates where he's moved. Jack knows he has no chance of escape but then the chopper returns and the wind forces the swarm to seek refuge inside. Bobby heads for the ATV, but Jack and Mae, scarcely talking at all and without making a solid plan, don oxygen masks and jump into the cave.

They light a thermite cap and kill off several swarms at once, but the next group is already adapting to this new situation and hang back. Mae then lights two caps, dropping one nearby and rolling the other toward the next swarms. When Mae next holds out a cap to be lighted, the swarms back off and she likens it to "lion taming." They then arrive in what seems to be a reproduction chamber and Jack says he wants to find the center of the operation. When he discovers it, Mae says it reminds her of a heart—it gives off heat. Jack throws in five caps, detonating a sixth and throwing in with the understanding that the one explosion will ignite the five others. Mae throws several caps ahead of them to clear the way out.

After the explosion, Jack can't see because he's lost his night vision goggles. Mae helps him find his flashlight and he discovers that his foot is lodged in what's left of David's body. He and Mae continue to use the thermite caps, but Jack knows they aren't going to make it out of the cave. With only a short distance remaining to the opening of the cave, they hear Bobby yelling to get out of the way and the ATV comes roaring past with a flaming cloth hanging from the gas tank. Mae, Bobby and Jack run for the top of the cave, motioning for the helicopter to get back and are barely clear when the explosion occurs. As Bobby pulls Jack into the helicopter, his only thought is that they've managed to kill the swarms.

NEST, Day 6, 6:18 P.M., 10:12 P.M., 10:58 P.M., 11:22 P.M. Analysis

As Jack is talking to Nicole on the phone, he watches the images from the outside monitors and decides there's something wrong with what he's seeing in his view of the shed. That's when he realizes that David's body is missing. A short time later, he notes that Rosie's body is also missing, and they find that the bodies are being moved by the swarms into their nests, apparently to be used as a food source.

Jack says that most people believe evolution is a one-time event that produces a specific change, but says that it's actually random and recurring. For example, a plant that is attacked by ants may begin to produce something the ants favor, and the ants in



return sting anything else that tries to eat the plant. Both ant and plant now co-exist and have co-evolved and will continue to do so. It's not required that there be only two involved in this type of evolutionary situation. He says that a cornfield has many types of plants and pests and animals and that all will react to the others in the field, meaning an evolutionary field could be any number of participants interacting to their individual or mutual benefit.

As Jack and Mae begin to consider how to kill off the swarms in the cave, Jack is disappointed to find that they aren't shut down as he'd expected. He notes that unless all are killed, they'll simply reproduce and generate more swarms and so killing them all is vital.



PREY, Day 7, 12:12 A.M. 4:42 A.M., 5:12 A.M.

PREY, Day 7, 12:12 A.M. 4:42 A.M., 5:12 A.M. Summary

Jack insists that Julia call in the Army because he says there's no way to be certain all the swarms are dead. Julia picks up the phone and tries to call but finds the line dead. Jack believes that the actions of Julia and of Ricky - who suggests she try again - are forced and that they seem to be acting. They go to look at the main phone wiring boxes and discover that Charley is dead in the room with a swarm around his head. Ricky says that Jack must have brought the swarm inside with him but Jack is skeptical. Ricky says that with the phone and electrical lines ripped from the wall, there's no cell service, no phone service and no way to view the recordings from the security cameras. Julia asks Jack to go to bed with her but he refuses. In the night, he dreams that Ricky is standing beside his bed, about to kiss him and that Julia interrupts, saying it's not yet time. He wakes, shaken by the dream, and finds that Mae is watching video from the security cameras at one of the computer terminals.

Together, Jack and Mae see the images leading up to Charley's death, including a passionate embrace between Julia and Ricky. Later, there are images of Charley arguing with Julia and Ricky, though Jack and Mae can't figure out what's prompted the confrontation. Charley is chased into the room with the communications equipment and Julia leans close to him, opening her mouth for what seems a kiss, and a black stream of the nanorobots stream between the two. This is the first time Jack and Mae realize that Julia is serving as a host to a swarm, and they'll soon learn that Bobby, Ricky and Vince are also hosts.

Julia arrives in the room where Jack and Mae are watching the video and insists that she see what has their attention. Mae opens the program with the slides of the virus attacking the bacterial kettle, and Julia is forced to accept it, though she seems to believe they were looking at something else. Julia then insists that Jack accompany her for breakfast. In the kitchen, she suggests champagne. Jack says that he doesn't want her to realize that he's angry, but that there seems to be little point in continuing the charade and so slams the champagne bottle into the sink, breaking it and telling them all that those who died were his friends, that Julia's reckless behavior had put them all in danger, and that she has to take it more seriously. He then stalks out of the room, returning to Mae.

Mae is crying when Jack arrives and the lack of her typical calm is disconcerting for him. Considering that the viral problem in the tank is producing problems for the E. coli bacteria used in the production of the swarms, Jack wonders if having the virus would prevent the swarms from being able to inhabit his body as a host. He proposes the idea to Mae, who revolts at the thought of swallowing the brown sludge that smells like fecal matter, but she agrees to do so. Then, in keeping with the rest of Jack's plan, Mae takes



four vials to the kitchen, telling Julia, Bobby, Ricky and Vince that Jack wants them each to consume the virus and explains why.

Meanwhile, Mae has restarted the fabrication process, though they know the sludge from the bacterial tanks will soon plug the filters and cause a heating overload. Ricky shoves Jack into a room with a gigantic magnet process, and Jack suddenly remembers that Amanda's bout with the nanorobots was immediately solved with a trip into the MRI. When he has an opportunity, he holds Julia to him and hits the switch to start the magnet. The swarm pulls away from Julia, leaving her looking gaunt and sick. While the swarm is out of her body, she tells Jack that she's sorry, that she fears for the children because she kissed them, and begs him to save the children. The magnet has only enough power to pulse three times and the swarm again retains control of Julia but Jack says that having seen that Julia was lost makes it possible for him to do whatever must be done.

There follows a scuffle between Jack and the three men, who are overly strong because of the presence of the swarm. Jack manages to reach the sprinkler system and pours a gallon of the viral sludge into the reservoir. He returns to the main floor to find that Ricky has turned off the system safety overrides and that the sprinkler won't kick on, even when Jack holds a lighter under a sprinkler head. As Ricky laughs, thinking he's won, the fabrication processors begin to overload, on the verge of overheating, which will prompt an explosion. Ricky grabs for a keyboard, planning to turn the safety system back on and Jack points out that the sprinkler system will then work, meaning they'll either be sprayed with the virus or they'll be blown up. They stop the explosion briefly, rivers of brown spray rain down prompting screams from Ricky and Julia. Jack and Mae run for the helicopter, which arrived on time and is waiting at the helipad. The pilot first insists that they buckle harnesses before he takes off, then sees the smoke billowing from the building and rises quickly. The explosion is shattering and they feel the shock wave from their retreating position. The pilot asks what happened and is told that it was an "industrial accident."

At home, Jack is now somewhat reassured by the presence of the SSVT team working through his house. Jack says that Mae has taken the team to a nearby spot, where she thinks she sees a green glow and that he hopes they return with good news. He's given all three of the children a dose of the virus, and Ellen has taken a dose as well. He listens to Nicole and Eric throwing up and worries that the baby isn't, but hopes that it's just that babies react to things differently. He notes that he feels a slight vibration in his chest and abdomen and hopes he's mistaken about the cause. He has found emails on Julia's computer and says that they simply hadn't admitted that what they were doing was dangerous.

PREY, Day 7, 12:12 A.M. 4:42 A.M., 5:12 A.M. Analysis

Jack realizes that Julia already had champagne chilled and the glasses ready for the celebration party before it was even certain that there'd be one. Then she leans in to him and asks him to forgive her, saying that she'd never lost a company before and her



behavior was based on her fear of doing so. She says that others wanted to shut down the project, but that she'd held on. She also says that she loves him and doesn't want to lose her family. Jack notes that he hates the fact that she begins this when he's tired and emotionally drained from a situation that's her fault.

Jack has talked a lot about evolution and the fact that much evolution occurs because of symbiotic or co-existence relationships. He'll now learn that it's the same with the swarms - that they are living in their hosts but that the hosts feel better, look better and can't imagine being without the swarms. It may seem interesting that the helicopter returned to offer the protection of its winds when Jack, Mae and Charley were blowing up the nest, but Julia revealed that they were happy that the "wild swarms" were eliminated so that the swarms with hosts have no competition.

As Jack looks back on the situation from the relative safety of his own home, he realizes some important facts, including that he'll never know what caused Julia's wreck. The more important question in Jack's mind is why the swarm continued to return to the base, always attempting to get in. He finds the answer on Julia's computer. Ricky had said the original swarms escaped by accident. What Jack finds is that the company was facing a loss of funding because they couldn't solve the problem of how to make the cameras withstand winds. It had already been noted that the swarms were able to evolve, and Julia had decided to set a swarm free, hoping that when faced with the problem of winds, it would learn to adapt. The release, far from being accidental, was purposeful and with full knowledge that the swarms could learn, evolve and adapt, though they were programmed with the "desire" to seek the shelter of the building. It seems obvious that Julia and Ricky didn't want them inside because they had become two types of swarms - those living in hosts and those in the wild. Jack says that Julia and the others working on the project simply didn't realize what it was that they were setting into motion.



Characters

Jack Forman

Jack is the husband of Julia and father to Amanda, Nicole and Eric. He's a computer programmer who first went into biology and then wrote programs for his research, prompting the permanent career move into the computer field. When Jack is put in charge of overseeing a company's security after a theft has occurred, he takes the position seriously and soon discovers that there are some high-profile people involved. Though he's advised to get out, he tells what he knows and is fired. He becomes a stay-at-home Dad, while his wife continues her job at Xymos, though Jack is actually looking for a job but is stymied by the false accusations of his previous employers. With Julia's long absences, he begins to suspect that she is having an affair, but then she is involved in a suspicious accident and Jack decides it's time to get a look at her workplace.

Jack's conscientious nature comes to the forefront again as he is forced to face the fact that the introduction of the swarms into the environment was no accident but was intentional, designed to allow evolution but with no real consideration of what could happen. Jack gets a brief look at his wife without the influence of the swarm she's hosting and knows that he's now going to be forced to take action. His story ends with many questions, whether he's infected, whether the children are harboring the nanoparticles and whether the problem is fully solved.

Julia Forman

The vice president of Xymos Technology, she's a trained child psychologist, who becomes involved in "technology incubation"—helping technology-based companies get up and running. Julia begins interacting with the swarms, justifying it as "testing." Jack immediately recognizes it as teaching. At some point in this interaction, Julia becomes host to a swarm. Jack sees changes in her appearance - that her facial features are somewhat more chiseled than before and that her body is sleeker. More importantly, her actions and behavior have changed. For example, when Ellen comes to visit, Julia is overly-chatty and bubbly and seems to be trying very hard to prove that she's a good mother involved with her children, though Jack and the children know she's been absent a great deal. These actions and behaviors seem to be ultimately the result of the swarm inhabiting her body because once Jack successfully removes it for a few minutes, Julia's concern for the children is the first thing she communicates to Jack. While he realizes then that she has no control over her actions, he can't help being angry that she put them in a bad situation through her short-sighted desire to see a project completed without considering the costs.



Ricky

The man in charge of the operations at the Xymos fabricating facility. Ricky seems reluctant to allow Jack to do his (Jack's) job and seems often to be standing in the way. He says that he doesn't want to see the swarm destroyed, citing Julia's insistence on this point. Jack eventually discovers that Ricky, like Julia, is host to a swarm. Ricky is left in the facility as it explodes.

Mae Chang

The woman with whom Mary thinks Ricky might be having an affair. She is among the team members at the Xymos fabrication facility when Jack arrives there. She's a field biologist, and Jack notes that she's quiet but never loses an argument and has the ability to slip into the background. It's Mae who discovers that the swarm is using the dead rabbit as food for the bacteria growth and that there's a virus attacking the bacteria.

Charlie Davenport

A brilliant programmer who, at thirty, seems a bit overweight and always slightly ruffled. Charley accompanies Mae and Jack on their quest to find the nest and is later found dead with a swarm on his body. Jack will eventually discover that Julia and Ricky killed him.

David Brooks

Another member of the MediaTronics team who is now working at the Xymos fabrication facility. David is among the team in the storage shed when the nanocameras attack, and he falls apart, crying. First Jack and then Rosie comfort him but when they are nearly to the door of the building, David can't seem to stand the pressure, panics, and runs but is killed by the swarm.

Rosie Castro

The woman who had been working with Jack at MediaTronics and is now at the Xymos fab facility. She'd been studying Shakespeare when she transferred to MIT. When David is killed by a swarm, Rosie can't stand by without helping and rushes to his side and she is also killed. The others later find her body, being transported to the nest by the nanoparticles.



Gary Mardar

Jack's attorney. Gary is the one who tells Jack that he should seek out a marriage counselor to begin to build a counter-claim against Julia's likely claim that Jack is turning the children against her. Gary says it will help establish Jack's determination to save his marriage if he and Julia find themselves involved in a divorce.

Annie Gerard

Jack's "headhunter," who is searching for a job for him. He has an appointment with her on Day 4 and she points out that he can't be picky and tells him of jobs out of state.

Don Gross

The man Jack finds out is having an affair with an accounting employee, has provided her a company car and is discounting items to some customers while funneling money into an account in the Cayman Islands.

Tim Bergman

The man who takes over Jack's job at MediaTronics and who calls Jack to say that he's going to be offered his position back because they're having trouble with a program.

Bobby Lembeck

A thirty-five-year-old member of Jack's team. It's noted that he's usually the ring leader when there's something going on and that he generally works as a supervisor, though he can still produce code when there's a need. It's later revealed that Bobby is also harboring a swarm.



Objects/Places

Crate and Barrel

Where Jack is when Julia calls to tell him she's going to be late for dinner.

Xymos

The company Julia works for as a vice president.

MediaTronics

Where Jack worked before becoming a "house Dad."

Tonopah, Nevada

Where the Xymos fabrication facility is located.

PREDPREY

The computer program written by Jack that uses predatory behavior and is used by Xymos in manufacturing the cameras systems.

The Coffee Shop on Baker Street

Where Jack meets with his headhunter, Annie Gerard.

The Storage Shed

The location on the Xymos facility property in Nevada where the isotopes are located and where Jack and the others go in an effort to prepare to spray the swarm.

SSVT

The company that is doing cleanup of the nanorobots created by Xymos.

The Toyota

The car where Charley takes refuge when the swarm attacks them.

The Comm Room

Where Charley is found dead with a swarm around him and where the communications lines all converge.



Themes

The Desire to Succeed

It's Julia's desire to succeed that drives her to take actions and risks that she would likely have avoided under normal circumstances. Though Julia is infected with a swarm when she offers the explanation of wanting to succeed to explain her behavior to Jack, it seems likely that it is the truth. Jack seems to believe that it's true, especially based on the emails he recovered from Julia's computer. Julia says that funding for their project was going to be taken away in a short period of time. While she's busy trying to get funding for a commercial aspect - the medical technology program - she's only seeking to gain some financial input to save the company. She seems still to be intent on the need to successfully complete the project. This driving need is also at the heart of the reason the swarm is free.

Ricky says that the swarm escaped accidentally because the filters weren't in place. In actuality, the team has hit a road block and are simply unable to solve the problem they're faced with - the cameras are too light to operate in the wind. Rather than going back to the design phase and working on the problem, the team - under Julia's direction - sets a swarm free with the hope that it will learn to adapt to the environment and find some way to solve the wind issue on its own. The goal was solely to successfully finish the project, and Jack says that no one stopped to consider the long-term impact of their decision in this quest for success.

Confidence

Jack arrives at the Nevada fabrication facility after everyone else there has seen the swarms in action; therefore, he doesn't really realize what it is he's facing at first. It takes some time for him to come to understand that these swarms have evolved and that the behavior he witnesses is not accidental. Even when he does realize these truths, he continues to be confident that he can find a way to kill the swarms. What's interesting is that Jack carefully observes the lack of confidence among a group of people who are known for their talent. This is his first inkling of what he's up against, though he puts it down to being "spooked" from having misunderstood what they've seen and from having spent too much time isolated in the desert station.

Jack notes that three of the most confident programmers he's worked with are busy at a single task and that they're bickering and questioning each other - behavior they never would have shown working in a normal, computer-programming situation. Meanwhile, he looks carefully at the over-confidence shown by Ricky and Julia. They are both overly animated and seem uncaring of the situation. While the lack of confidence among the programmers is significant, the contrast between those emotions and those of Ricky and Julia are a stark indication of what's to come. It seems likely that Julia's



confidence in her ability to control the swarm is also an issue, though it's not discussed to any great length.

Dynamics of Relationships

There are a number of relationships going on in this story. Perhaps most importantly are Julia's relationship with Jack and that of Julia and her children. Julia and Jack have been married more than fourteen years and Jack says that he'd believed they'd always be together, raising their children as a couple. Then, Julia's behavior changes abruptly, though Jack misinterprets the cause. The fact that she showers as soon as she arrives home is her way of trying to ensure that she doesn't infect her family, but Jack takes it as her way of washing away signs of an affair. Ricky's wife, Mary, will tell Jack of similar concerns she has about Ricky.

Julia also feels a powerful need to be part of the lives of her children, but her time away from them is limiting that as a possibility. When Ellen arrives, Julia talks about Eric's soccer and Nicole's part in a play but doesn't really know what she's talking about. Jack and Amanda have established a new feeding routine and Julia also has missed out on that.

Meanwhile, Jack and Ellen are in many ways typical siblings. Ellen insists that she be able to tell Jack what to do and he tells her that she isn't helping him. This seems to be a grown-up version of the dynamics between Nicole and Eric, who argue often.

Style

Point of View

The book is written in first person and is limited to Jack's point of view. This works well because the twist near the end of the book - that Julia and Ricky are serving as hosts to the swarms - could not otherwise be kept from the reader. Jack tells the story as he sees it unfolding over a seven-day period, while inserting memories and thoughts as a way to present historical facts. Explanations are offered by simply adding informational passages. These passages aren't clearly introduced, and some readers may find it distracting that the storyline is occasionally interrupted for these points. For example, Jack explains that the PREDPREY program was written using animal behavior as a model, describes the behavior being modeled, and tells the situation for which the program was designed. The information is vital to the full understanding of the story and presenting it in this way is an effective tool.

Setting

The book is set over a seven-day period in California, probably during the nineties because the story involves the technology boom prevalent in the area during that time. The fact that "Silicon Valley" is a real place and that there were companies such as MediaTronics and Xymos that were at the cutting edge of technology and were very competitive with each other makes the story more believable. While the concepts are not workable with today's technology, most people believe that such technology will eventually exist and that there will be incompetent firms handling these projects, caring only about the financial profits with no thought to other issues.

The people, though fictional, are believable. The companies don't actually exist, but share characteristics and philosophies touted by many major corporations, making the companies believable as well.

Language and Meaning

The story line of the book is fairly simple - Julia is working for a company producing a dangerous technology, which has endangered her family. That part of the story is written in easy-to-read language and the story flows well. The more complex part of the story involves the computer programming and technology. Crichton, as is typical, goes into great detail on these topics. Although Crichton uses layman's terms to effectively explain most of the ideas, technology, and analogies of the technological venue in which the book takes place, there are concepts that readers with no working technological information will find difficult to understand. The beauty of Crichton's story is that much of the technology is theoretical anyway and it's not necessary for the reader to fully understand words and phrases such as "nanotechnology," "microbots," and "lines of code." It's also important to note that while these technologies are not entirely



explained, there is sufficient information to tantalize the reader with the idea that the concepts are possible, if not a reality.

Structure

The book is divided into many sections of varying lengths, from a couple of pages to ten or more. These are not numbered but are titled as a specific day during the event and a specific time during that day. The story begins on "Day 1" at 10:04 A.M. and progresses through "Day 7" at 11:57 P.M. These sections fall in chronological order and lend that same order to the storyline.

In addition to these divisions, there is a two-page prelude to the story that is designed to grab the reader's attention. It merely states, in first person, that the writer - apparently male - is with "the kids" and that he is in danger of losing consciousness. He says that he is concerned for all of them, including the baby, that Mae has gone to Palo Alto and that the facility is destroyed but he isn't certain it was done in time. It's evident that this is the final piece of the story and it does offer a tantalizing glimpse at what's to come, but some readers may be disappointed that there's too much information - including the fact that all of them apparently survive. Immediately after this begins the section titled "Home." The story of Day 6 is divided into "Desert" and "Nest," and Day 7 is "Prey."



Quotes

"I have a ringing in my ears, which is a bad sign. And I feel a vibrating in my chest and abdomen. The baby is spitting up, not really vomiting. I am feeling dizzy. I hope I don't lose consciousness. The kids need me, especially the little one. They're frightened. I don't blame them. I am too." Prologue, Page 2

"I put the pictures back on the shelf. They were old images from another, happier time. From another life. They seemed to have nothing to do with me anymore. Everything was different now. The world was different now." Day 2, Page 48

"The machine can't know itself for the same reason you can't bite your own teeth. And it certainly seems to be impossible; the human brain is the most complicated structure in the known universe, but brains still know very little about themselves." Day 5, 7:10 A.M., Page 108

"She mentioned Amanda by name, and Eric, asking if they were alright. She seemed agitated. The medics kept trying to reassure her. And finally she lapsed into repeating, 'I didn't do anything wrong, I didn't mean to do anything wrong.'" Day 5, 9:10 P.M., Page 137

"But these guys working here? Let me tell you, they're all fucking crazy. They're making these teeny-weeny little things you can't see, pushing around molecules and shit, sticking 'em together. It's real tense and detailed work and it make them crazy. Every fucking one of 'em. Nutty as loons." Day 6, 7:12 A.M., Page 154

"This is just the same as an automobile assembly line, except that it's on a molecular scale. Molecules start at the ends, and come down the line to the center. We stick on a protein sequence here, a methyl group there, just the way they stick doors and wheels on a car. At the end of the line, off rolls a new, custom-made molecular structure, built to our specifications." - Ricky, Day 6, 9:12 A.M., Page 181

"It was, I thought, a problem no one had every imagined before. In all the years that I had been programming agents, the focus had been on getting them to interact in a way that produced useful results. It never occurred to us that there might be a larger control issue, or a question of independence." - Jack, Day 6, 9:32 A.M., Page 198

"'So,' I said, 'what you're telling me is this swarm reproduces, is self-sustaining, learns



from experience, has collective intelligence, and can innovate to solve problems.'" - Jack, Day 6, 11:12 A.M., Page 243

"And one thing you could count on was that any big, hot broth of bacteria was likely to get contaminated by a virus, and if that virus couldn't infect the bacteria, it would mutate to a form that could. You could count on that the way you could count on finding ants in your sugar bowl if you left it on the counter too long." Jack, Day 6, 6:18 P.M., Page 346

"The swarms were changing fast, almost minute to minute. The natural human impulse to figure it out was a waste of time. By the time you figured it out, things would have changed." - Jack, Day 6, 10:58 P.M., Page 381

"I hated that she would start this when I was exhausted, when I had just gone through an ordeal that nearly got me killed and that was, ultimately, all her doing. I hated that she dismissed her involvement as 'bad judgment' when it was considerably worse than that." Day 7, 12:12 A.M., Page 417

"Jack says that Charley was harboring the swarm inside his body, so maybe the rest of us are, too. Or some of us. So you drink this virus, and it'll kill the bacteria inside you, and kill the swarm." - Mae, Day 7, 5:12 A.M., Page 458

"Julia's original email says, 'We have nothing to lose.' But in the end they lost everything - their company, their lives, everything. And the ironic thing is, the procedure worked. The swarm actually solved the problem they had set for it. But then it kept going, kept evolving. And they let it." Day 7, 11:57 P.M., Page 502

Topics for Discussion

How does Jack become a stay-at-home dad? What does Jack think about the arrangement? What does Julia think? What do the kids think? What changes occur in the relationships because of this?

What does Jack do for a living? How did he come into his profession? What does he say about the timing? What does his sister think about his career?

What is Julia's job? What are they trying to create? What are the two major applications for this project?

What is Julia's background? Why is that important when she begins interacting with the swarm? How does the first swarm come to be loose in the environment? How does this differ from the story Ricky tells? Why does Ricky tell that lie? Why is the truth important to Jack?

Who is Ricky? Mae Chang? Rosie? David? Charley? Vince? What role does each play in dealing with the crises of the swarms?

Describe at least three clues Jack had as to what is going on before he took the job at Xymos. Why didn't he figure out what was going on sooner?

Who is serving as a human host to a swarm? How does Jack explain this co-evolution?