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Zero

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ZERO

By
Charles M. Wilson

Submitted in Partial Fulfillment
of the Requirements for the Degree
MASTER OF FINE ARTS

MFA Imaging Arts/Computer Animation
SCHOOL OF PHOTOGRAPHIC ART AND SCIENCES
ROCHESTER INSTITUTE OF TECHNOLOGY
ROCHESTER, NEW YORK
October 15, 1997

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Title of thesis: "ZERO"

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Date: October 15, 1997

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I. The purpose of an M.F.A.

"Graduate school is not about how little you can do, but how much you can do." When Erik Timmerman stood in front of my class and spoke those words, I took them to heart. Nowhere in my three year graduate studies is this better reflected than in my thesis. Creating a 2D thesis animation when my background was in 3D animation seemed like insanity to my colleagues. Thinking back on Erik's words, I made a decision to take the road that offered me the greatest potential for growth as an artist. Could I have created a 3D animation in less time and with less pain? Certainly, but I would not have gained the appreciation for the artform that comes through intense study and struggle.

Marla Schweppe once told me that the purpose of a Master of Fine Arts degree was threefold:

1. To study other artistic styles and determine what works, what doesn't work and why not,
2. To develop your own style,
3. To develop the skills that will enable me to learn the tools of the trade and continue developing as an artist.

In my decision to create a 2D animation, I was building upon foundational skills developed in Jack Slutzky's animation classes as well as the figure drawing class I took. Additionally, I was also learning from the mistakes that were made in my Spring movie, "the Chameleon." "Zero" has become the culmination of what I have learned throughout my graduate school experience.

II. The path I chose

Despite the fact that my animation experiences have primarily been in 3D animation, I chose to create a 2D animation. I did not believe that the story I was creating lent itself to a 3D medium. 3D animations have a polished, seamless quality to their visual style. Texture maps have a problem in that they do not simulate the rough hewn quality of nature. An example of this is tree bark. If you look at a tree, the bark is rough edged. Even when you look at the profile of a tree trunk, you can detect the small contours, bumps, and imperfections in the bark. Texture maps wrap themselves around an object and do not simulate this non-symmetry to a level that I am satisfied with. While there is certainly a place for this visual style of animation, I did not feel that my story could be visually described with this medium. My personal style involves a pencil drawing look and feel. The edges need to be uneven and rough. The intersections between multiple lines need to have a lack of precision. When I look at my animation, I want to be able to "feel" the paper that the characters are drawn on. Applying my visual style to 3D animation comes off as someone who is a sloppy modeller.

Faced with this challenge, I was forced to make a decision: either grow as an artist and work with a medium that I am not accustomed to or find a new story. Painful as it was, I chose to grow. It was a decision that I would come to regret and also rejoice over. Jack told me that in order to become used to drawing my characters, I had to actually draw my characters. Following his advice, I ended up drawing several hundred poses of both the prisoners and the guards. This was the most painful work

that I had to do for my thesis. Every night, I was confronted with the fact that I was not a good 2D artist. In the beginning, I spent six hours just to do twenty drawings. I did everything I could to avoid the torture. I washed dishes. I did other homework. I watched television. I did anything to keep from confronting the fact that everyone was right, I am not a good 2D artist. The self-inflicted mental torture was oppressive as I worked into the night--often until three or four in the morning--scribbling out pose after pose. I would get angry at my lack of skill. I would critically judge my inability to draw. But after the twenty poses were done for the day, I could feel the weight of my task slide from my shoulders when I closed the sketchbook. In order to cut through the monotonous sound of pencils scratching over paper, I took to playing animated videos in the background. Rather than get depressed over the quality of the animations on television versus the lack of quality in my sketchbook, I used the animations to inspire me. I pushed harder through the haze of my critics. Soon I was drawing twenty poses in a matter of minutes.

As I built upon my weaknesses, the visual style for Zero started to take shape and my overall visual style improved. I developed a rough drawing style where the outlines of my characters would metamorphize from scribbles that described action lines into single defined lines that described poses. Later on, as my drawing skills improved, I would discard the scribble method and draw what I visualized on the paper. The rough style was intact and I saved pencil lead. Finally, the characters started to take on a life of their own in my imagination. I became able to clearly visualize their expressions and actions as if I was watching the characters on a movie screen. The guards developed their own personalities that I was able to view and capture through their facial expressions and body language. The prisoners were a little more difficult to capture. Since the guards were stylized characters and the prisoners were closer to human proportions and body styles, they took me little a more time to get into who they were and how they acted.

When it became time to scan my drawings into the computer I discovered that I was losing line quality. If the images were scanned at a high level of resolution, I would have to spend a lot of time removing unwanted eraser marks and background paper deformations. But, if I scanned at a lower level of resolution, I could scan the lines that I wanted while ignoring the noise that I didn't want. Unfortunately, I lost a certain level of "roughness" to the edges of my lines. As I was touching up these images in Photoshop, I discovered that if I turned anti-aliasing off, a certain level of pixellation replaced the edge style that I had wanted in my images. There was still some tweaking to do in each image, but for the most part, the pixellation maintained the visual style of my drawings.

Another advantage that I had with my visual style was the amount of time it took to shade my characters and backgrounds. While there are shortcuts in 3D animation, figuring out proper lighting angles, light intensities, and raytracing frames does require a lot of time. Since I was doing a 2D animation, I was in control of how fast my images were processed, I did not have to worry about "downtime" while my computer was rendering images. I determined the rate at which my images were completed. I do admit that it would have been nice to let my computer render images while I was at work during the day. However, the learning curve would have been a little too steep for me to easily set up my scenes to be rendered. Coloring is easier than lighting.

In order to maintain a certain level of independence from RIT's equipment, I decided to build my thesis animation process around a computer system that I could construct and maintain at my

apartment. This would allow me to work longer hours with fewer distractions, something that would become very helpful during the summer months, but would also leave me very isolated from the outside world and the other RIT students. I do not regret my decision to work at home, however, I do believe that I should have done as much work as possible at RIT in order to gain better access to council from the other students and professors.

The animation process that I followed was as follows:

1. Action was drawn on animation bond paper
2. The animations were scanned into the computer using a flatbed scanner
3. The images were touched up in Photoshop and Director
4. The animated characters were arranged, in sequence, in Director
5. The animation was tested and either rejected or accepted
6. The characters were colored in Director
7. The characters were composited with the backgrounds in Director
8. Completed images were exported as bitmaps and imported into Premiere
9. The images were lined up with the soundtrack already created in Premiere
10. The scenes were compiled into AVI files for final testing
11. Finally, the individual scenes were output to video and assembled on analog videotape.

How did the process of animation limit my visual style? It didn't limit me at all. This process of animation made it possible for me to cut corners here and there in order to meet production deadlines. With a little creative compositing, one prisoner marching became an army of prisoners. Also, I was able to use Director's animation capabilities in order to simulate camera tracking and other limited animation.

III. The Story

The main theme of Zero is about getting what you want but learning that sometimes you don't get it in the way that you want. Zero is my basic statement on life, except that you don't always die after each challenge. Zero, the character, is one of those dreamers that always looks toward the future. He never lives in the present. Since the present is not what Zero wants it to be, he would rather spend his life daydreaming about a possible future rather than taking the steps necessary to change it. When provided with the proper catalyst, Zero does finally decide to change his life. Unfortunately, it becomes a fatal change as Zero becomes a martyr instead of a triumphant war hero. His example of defiance in turn becomes the catalyst to inspire the other prisoners to fight for their freedom. The fact that Zero's personal catalyst is a cricket being squashed, rather than a prisoner being killed, shows how wrapped up in his life Zero is.

Zero is a selfish character and watching Fifteen getting killed only slaps him in the face with his own state of being. Zero could have done something to help Fifteen, but instead of leaving his comfort zone, he chose to look away. The whole Zero inner conflict is played out in his mind during the daydream. It is in this daydream that Zero is confronted with his own desire for freedom. Zero realizes that no matter how much he wants the cricket, to deny the cricket its freedom would be as

bad as what the guards are doing to him and his people. The inner turmoil that Zero feels about this whole episode is reflected in his facial expressions and how he holds the cricket. Rather than spell out the conflict with extraneous imagery, I have left it up to the viewer to interpret Zero's feelings and empathize with him as he makes his moral decision only to find out that no matter what he does, the cricket still dies. There are neither loud thunderbolts nor flashes of lightning when Zero's feelings turn to shock and anger against the guard that killed the cricket. Again, I have left it up to the viewer to interpret Zero's inner and exterior emotions from his actions and expressions.

The entire visual scheme in Zero is shades of gray. The purpose of this was to bring out the theme of good versus evil being a result of choices made instead of some innate condition that is determined by genetic makeup. The prisoners were not totally light, indicating a state of goodness, nor were the guards completely dark, indicating a state of evil. Both prisoners and guards were shades of gray that indicated their inner state of being. The guards were darker gray, not to reflect their position of authority as slavemasters, but rather to reflect their decision to enslave and brutalize an entire population. Likewise, I did not color the prisoners a lighter shade of gray to indicate that they were any more "good" than the guards. The prisoners were in a position of submission to the guards and did not have the opportunity to perform acts of evil that the guards could. It is my belief, hypothetically, that if given the opportunity, the prisoners could commit acts of evil that could astonish even the guards themselves.

A welcome side effect of the grayscale images was that they added to the overall feeling of oppression throughout the entire animation. The prisoners marching, the steady drumbeats, and the visual style of the images all added to each other in order to define the mood that the animation was trying to portray. My rough lined drawing style also added to the oppressive feeling. Rather than having slick, shiny images, Zero is filled with angry, abrupt pencil strokes and scribbles. This rough style mirrors a sort of brutality within the guards and starkness of the landscape.

IV. The influence of technology on visual style

Technology was a large influence on the visual style of Zero. There were three main technological areas which precipitated a decision to limit my animation's visual style to a grayscale, 256 color palette. The first reason was codecs. In the digital video world, codec means COmpression DECompression. Codecs are the mathematical algorithms that allow the rapid compression and decompression of digital video files. By limiting myself to a 256 color palette, I was able to reap the widest available benefit from my technology during the video output and playback stages of post production.

I used two codecs during animation: RLE and Video 1. The RLE codec stands for Run-Length Encoding. What this means is that if we have a series of ten consecutive black pixels in our image, the mathematical representation of that row of pixels would be the number for black followed by the number of black pixels (0 10). So, rather than using up 8 bits to represent each pixel—yielding 80 bits for our example—we can mathematically use 8 bits for the color value, and another 8 bits to describe the number of pixels for a total of 16 bits. When you are trying to display images at 30 frames per second, it is much more efficient to move 16 bits from your hard drive than 80 bits. The advantage of the relatively simple and limited RLE codec is that it handles images with large blocks

of identical color extremely well. Since all of my characters were the same color regardless of position, RLE compression worked to my advantage.
Additionally, codecs only update the part of the screen that is different from the previous frame. Most of my scenes involved medium shots, and closeups. For these scenes, RLE compression and decompression was the most efficient method of obtaining the highest frame rate possible. However, there were scenes with transitions and broad expanses of speckled color, such as the overhead shots of the prisoners marching across a sandy desert. For these scenes, I used the Microsoft Video 1 codec. The difference between these two codecs are relatively few. Both codecs work the same in principle, however Video 1 uses an algorithm that lends itself to higher color palettes (thousands of colors vs. 256 colors). A side benefit of this codec was that it is designed to handle images where there are broad expanses of unrelated color.

The second area where technology influenced my visual style was in the realm of video conversion. When an animation is created on a digital system, such as my computer, there comes a time where the images must be transferred to analog videotape. The VGA to NTSC converter that I used (could afford, really) only handled a 256 color palette. Therefore, I limited the visual style to 256 colors.

The third, and final technological limitation that I ran into was size versus playback. The computer that I used for this animation was built around a 90 MHz Pentium processor, 40 megabytes of RAM, and a 2.1 gigabyte, A/V rated hard drive. The system was designed to move a large amount of information in a short amount of time. But, by constraining the images to a 256 color palette, I reduced the amount of information that the processor had to move. One image is 640 pixels by 480 pixels by 256 colors. This translates to 2,457,600 bits per single image. When your add that number to the fact that 30 frames per second is the standard for video output, the amount of data being moved becomes enormous. Now, using a video codec to process images is very helpful in cutting down the amount of data. But, the fact remains, even one second of animation—run through a video codec or not—is still a tremendous amount of data to move. Remember, codec stands for compression-decompression. The data that is compressed still has to be decompressed and moved to the graphics card for display. If my animation had images that were 640 pixels by 480 pixels and used a 16-bit color palette the amount of data that would have to be moved for one image would be 4,915,200 bits! By moving from an 8-bit palette (256 colors) to a 16-bit palette (thousands of colors, approximately 65,536) we have effectively doubled the amount of data to be moved. Again, a 256-color palette was the appropriate decision to make.

V. What worked and what didn't work

This is a tough section to deal with. Obviously, we would like it if we were always right about the path we chose. And, while some testing can be done in order to prove a concept, sometimes unexpected problems arise no matter how much we plan and test. I ran into seven major challenges during this animation. Some of these were planned for, and some showed up quite unexpectedly.

My first problem was with Adobe Premiere. I started out using Premiere—the 16-bit version—to assemble all of my sounds and individual frames. Over time, as I added more scenes, it became apparent that Premiere was not up to the task of handling several hundred images in one file. To make matters worse, I was rapidly running out of memory. Often I would be making a timing

change to several frames of animation and I would be forced to wait a half-an-hour for Premiere to update all of the frames and relocate them in their proper position relative to the changes I had made. This problem came to a head when the giant, five-minute animation file became corrupted. I was left with an old backup file that did not reflect any of the most recent changes that I had made. I ended up moving my entire thesis to the 166 MHz Pentium at work in order to correct the problem and meet my deadline. It became apparent that the best solution to this would be to break up the main animation into smaller, more manageable files. During this time, I also upgraded to the full 32-bit version of Premiere in order to take advantage of my 32-bit operating system and processor. The gains were immediate and substantial. In a matter of days, I made up for all of the time I had lost waiting for screen and program updates.

The second problem I dealt with was related to the first. My Pentium was running on 16 megabytes of RAM. Compounding my problems with Adobe Premiere was the fact that my computer could not store Adobe Premiere, Windows 95, and the image data in its limited memory. The Pentium/166 I had used was loaded with 32 megabytes of RAM. While upgrading my memory cache would not allow me for faster program operation per se, it would allow me to store a greater quantity of data in RAM. This meant that the program would spend less time swapping data to the hard drive. When programs run out of memory, operating systems will save parts of unused memory to the hard drive in an attempt to free up memory for the new operations. Once the operation is finished, the memory on the hard drive is returned to the random access memory. Since RAM can be accessed faster than a hard drive, swapping memory starts taking up some serious time. The solution was simple: upgrade from 16 megabytes to 40 megabytes of RAM. Again, the gains were visible and immediate.

The third problem was, again, similar to the previous problem. I ran into storage limitations on my hard drive. All of the images and sounds used in my animation total about 1.5 gigabites of memory. Since I was using a 1.2 gigabyte hard drive at the start of my animation, I could not store all of the necessary data, programs, and operating system on my hard drive. Even the presence of a Zip Drive did not help much. The 180 MB Zip Drive disks did help for transport and archival purposes, but they were not up to the task of storing my entire thesis animation with the access times that I needed to finish production. The solution was simple, buy a 2.1 gigabyte hard drive and use it for all of my thesis data.
It was at this point that money started to become a problem. I did not want to completely rebuild my system for this project halfway through the production phase. Fortunately, this became the last technology limitation that I was to run into during the course of my animation.

The fourth challenge was in the realm of sound editing. At the time, I was using Sound Forge for all of my sound capture and editing. Unfortunately, Sound Forge does not handle multiple tracks in one file. This means that I could not layer sounds together. The only way that I could get around this problem in Sound Forge was to calculate the specific position of each and every sound in the animation and then mix the sounds together in one file. This was not an acceptable solution. Fortunately, again Premiere came to the rescue. Adobe Premiere supports the use of multiple sound tracks (up to 99 separate tracks). This gave me the unexpected but welcome benefit of being able to manipulate the individual sound tracks on the time line. Rather than remixing the entire soundtrack

when a scene was added or cut, I was able to cut and paste the sound files in a matter of seconds to reflect the change in scenes.

My fifth challenge was just that: the "me" challenge. When I had done the original research into a visual style for this piece, I wanted to work in black and white in the form of Mei Liao's animation: "Ignorance Is Bliss?" Unfortunately, her style was not my style. While the stylized ricepaper drawings that Mei used in her animation had the visual quality that I was looking for, it did not fit with my topic. My topic was brutal and rough. It did not fit with the shaded elegance of Japanese visual poetry. I decided to switch my style closer to that of Chinese matte paintings. I was able to retain my rough drawing style and still shade the images to fit a more asthetically pleasing visual scheme.

The sixth challenge was in the realm of video codecs. I wanted to use the RLE codec for the entire animation because of the color scheme and the size of the data that had to be moved to the screen. Unfortunately, the RLE codec is best applied to images where there are large blocks of related color. As my animation took place in the desert, there was a lot of speckled sand. Additionally, there were also scenes that had transitions that the RLE codec could not handle. Because of this, I switched these scenes to the Microsoft Video 1 codec and raised the level of quality retained in the images. This enabled me to maintain a consistent frame rate and a high level of image quality.

Challenge number seven was a result of my discussions with Howard Lester. In the original story, Zero kills the cricket in order to "protect" it from the guards. After many discussions with Howard, we decided that the cricket would make a better catalyst for Zero if he saw his struggle for freedom in the cricket. Instead of killing the cricket, Zero decided that it would be wrong for him to deny the cricket its freedom. However, during these scenes, I was given the opportunity to explore a greater level of humanity in Zero's character which I translated into a greater range of facial and bodily expressions. Rather than being stuck with the continual oppressive, unexpressive, monotone feeling of the animation, Zero took on a life of his own in contrast to the other characters in the animation. Zero is free to hold the cricket and value the cricket as a treasure. Through his actions we get the impression that the cricket holds inherent value in Zero that goes beyond a distraction from his hellish existence. As Zero makes the moral decision to let the cricket go free, we get a clear understanding why the cricket's death becomes the catalyst for Zero's rebellion.

VI. Wrap-up

"Was it worth it?" And "where to now?" Those are the two most common questions I receive from people who view Zero and listen to me talk about the whole animation process. The answers are simple: "yes" and "the next project." Animation is not something that I can stop, now that I've produced a five-minute cartoon. Animation gets under you skin and seeps into your blood. For me, it is not whether or not I could stop doing animation, it is more an issue of do I want to stop? And the answer is no. It doesn't matter to me whether or not I am working for animation studios. I would be content to be an independent animator, running the festival circuit every time I finish a production. I do not want to stop animating and I've got a lot of stories so it will be a long time before I decide to take a hiatus from animation.

Appendix A

Original Proposal

COMPUTER ANIMATION M.F.A.
THESIS PROPOSAL

"ZERO"

Charles Wilson
October 17, 1995

Thesis Committee Members:

Professor Erik Timmerman (Chair) 10/16/95

Professor Jack Slutzky 10/17/95

Professor Howard Lester 10/17/95

THESIS TREATMENT

Zero tells the story of a man who discovers that the horrors of the human soul are greater than the hell of a prison camp. Drawing from the example of another prisoner, Zero, the main character, decides to deny the Guards their victory over him. For although the Guards may break his body, they will never break his spirit. However, before he can exert this moral victory against his oppressors, he must first win the war that is being waged within his psyche. In his mind, Zero comes face to face with despair, his true enemy, and conquers it by using the only weapon that despair cannot overcome: hope. Freed from the mental torment of hopelessness, Zero remains defiant until his death. Refusing to allow the Guards the pleasure of seeing him broken, Zero inspires other prisoners to follow his example.

This animation depicts warfare on two primary levels: the physical and the psychological. The physical battle is evidenced by the stature of the main character and his expressions. While he will not physically confront his oppressors, he can show his defiance through his body language. Instead of walking hunched over, the main character will walk with his chest out and his head held high. Instead of crying or showing sadness upon his face, his gaze will be defiant.

As the spiritual battle takes place on an internal almost metaphysical plane, the rules of combat change. The character is allowed to use all the forces available to him. He can now physically confront his oppressors. He can also unite the spiritually battered prisoners and lead them into battle without fear of death or defeat.

In order to set the mood and the time period, Zero will be illustrated in grayscale. The animation process will follow a simple formula. The first stage will be to animate skeletal, stick-figures in order to get an initial idea of timing between scenes. The second phase will to draw, using pencils and animation bond, the characters going through their various motions. Phase three consists of scanning in the characters and touching up the images using Photoshop 3.0. Phase four is when the backgrounds will be modeled and rendered in 3D using Ray Dream Designer 3.0, then imported into Photoshop for retouching. In phase five, the backgrounds and the characters will be combined utilizing Adobe Photoshop's ability to composite images using separate layers. Phase six will be dedicated to incorporating the soundtrack with the animation. As the soundtrack will be composed at the same time as the animation, timing issues will be worked out during the development phase. Phase seven consists of a general cleanup. Images that do not seem to fit the style and mood of the animation will be retouched. Character animation that is not smooth or that does not appear realistic will be redone. After phase seven, the completed animation will be submitted for final faculty approval.

THESIS TIMELINE

MONTH	TASK	CHECKPOINTS
OCTOBER	Research Script Storyboard Animatic	*** Meet with committee.** - Meet with review board.
NOVEMBER	2D Character Design Layouts Design Soundtrack Composition	*** Meet with committee.** - Check the character designs before animation.
DECEMBER	2D Character Animation Soundtrack Composition	*** Meet with committee.** - Create the skeletal animation for timing issues.
JANUARY	2D Character Animation Soundtrack Composition	*** Meet with committee.** Review the soundtrack before initial recording sessions.
FEBRUARY	2D Character Animation Image Retouching Soundtrack Recording	*** Meet with committee.** - Make sure that the characters and the backgrounds are consistent with the desired style.
MARCH	2D Character Animation 3D Background Modelling Image Retouching Image Compositing Soundtrack Recording	*** Meet with committee.** - Make sure that the timing of the animation matches the timing of the soundtrack.
APRIL	2D Character Animation 3D Background Modelling Image Retouching Image Compositing Soundtrack Recording	*** Meet with committee.**
MAY	Image Retouching Image Compositing Soundtrack Recording	*** Meet with committee.**
SUMMER	Continue Thesis Production	
SEPTEMBER	Post Production Soundtrack Dubbing Final Defense	*** Meet with committee.** Resolve all outstanding issues.
OCTOBER	Thesis Screening	*** Meet with committee.**

THESIS BUDGET

	ESTIMATE	IN KIND	ACTUAL
Research	$600	$300	$0
Script	$1200	$600	$0
Storyboard	$1200	$350	$0
Animatic	$1200	$0	$0
2D Character Design	$3000	$600	$0
2D Character Animation	$8000	$0	$0
3D Background Modeling	$3000	$0	$0
Image Retouching	$8000	$0	$0
Image Compositing	$8000	$0	$0
Soundtrack composition	$400	$0	$0
Soundtrack Recording	$2000	$150	$0
Musicians	$400	$150	$0
Hardware	$3000	$5200	$5200
Software	$3200	$1849	$1849
Optical Disk	$300	$0	$0
Zip Drive	$200	$0	$0
Videotapes	$35	$0	$0
8 MB RAM	$400	$319	$319
Zip Drive Disks	$60	$0	$0
Animation Bond	$30	$0	$0
TOTAL	$44225	$7668	$7668

Thesis Script: "Zero"

FADE IN:
EXT PRISON CAMP - DAY

We see a prison camp. As we look left to right, a line of people is winding through the camp toward a monolithic statue in the distance. The statue, under construction, is of a clenched fist. All the people are carrying stones toward the statue. The people look depressed and walk hunched over.
One prisoner (ZERO) with the number zero branded on his forehead, stops and looks over at a group of people. Several GUARDS (1,2,3) are surrounding one man (FIFTEEN). The man has the number "fifteen" on his forehead. He is standing up to a Guard (GUARD #1) as the Guard points at a stone on the ground.

GUARD #1
Pick it up Fifteen!

Zero stops walking and looks at Fifteen. Fifteen looks over at Zero. Their eyes lock for a second, then Fifteen returns his defiant stare back to the Guard. Outraged, Guard #1 rears his fist back and then lunges forward. In silhouette, we see Guard #1's fist smash through fifteen's torso with a loud crunching noise. A second later, we hear the sound of a body falling to the ground as we see Zero's reaction. Guard #1 is towering over Fifteen's body, which is lying on the ground. Blood drips from Guard #1's clenched fist. He looks over at Zero, his hand whips out, and he points at Zero.

GUARD #1
(shouting)
You!

A hand grabs Zero from behind and slams his face down into the ground. We see another GUARD (#4) behind Zero as he pulls Zero back up. Zero's nose and mouth are bleeding. Guard #4 points Zero toward the line of people.

GUARD #4
(shouting)
Get back in line!

We see the people walking toward the statue. Guards are placed strategically in order to watch over the prisoners.

FADE OUT:

FADE IN:
EXT PRISON GROUNDS NIGHT

It is evening and the people are walking toward their bunkhouses. Zero walks past three GUARDS (A,B,C) and another inmate marked "22" (TWENTY-TWO). This time he doesn't stop, but he does watch. Twenty-Two is lying on his side in the fetal position with his hands clamped over his ears.

GUARD A
You're weak! You can't keep up with the others!

Guard "A" kicks Twenty-Two.

GUARD B
You are useless!

Guard "B" kicks Twenty-Two.

GUARD C
You don't deserve to live!

Guard "C" raises his leg and stomps down. We hear a crunch as Twenty-Two's skull is crushed. We see Zero's face. His eyes close at the sight. His face contorts in pain. We hear the Guards laughing.

FADE OUT:

FADE IN:
EXT PRISON GROUNDS NIGHT

As the Guards laugh, anger builds in Zero's expression until he lifts his stone and throws it at one of the Guards. The stone hits Guard C in the head and kills him. As Guards A and B look at their comrade's dead body, they are stunned into silence. Other prisoners start looking at each other. A roar rises up from the prisoners as Zero attacks a Guard. They join Zero and rush the Guards. They fight. In the chaos we see a Guard who is being overrun by prisoners. The prisoners swarm him and all we are left seeing is the Guard's fist pointing into the sky. The scene dissolves into a view of the monolithic statue as tiny figures pull it down. The statue crumbles and a cheer goes up. We see Zero standing triumphant over the wreckage of the statue.

FADE OUT:

FADE IN:
INT BUNKHOUSE - NIGHT

Zero opens his eyes. He is lying on his bunk. He sits up and looks out the window. As light streams through the window, he sees the statue rising toward the sky. Zero's eyes narrow in determination.

FADE OUT:

FADE IN:
EXT PRISON GROUNDS DAY

We see Zero with the same defiant look on his face as Fifteen. Zero is standing in front of Guard #2. Guard #2 is pointing toward a stone on the ground.

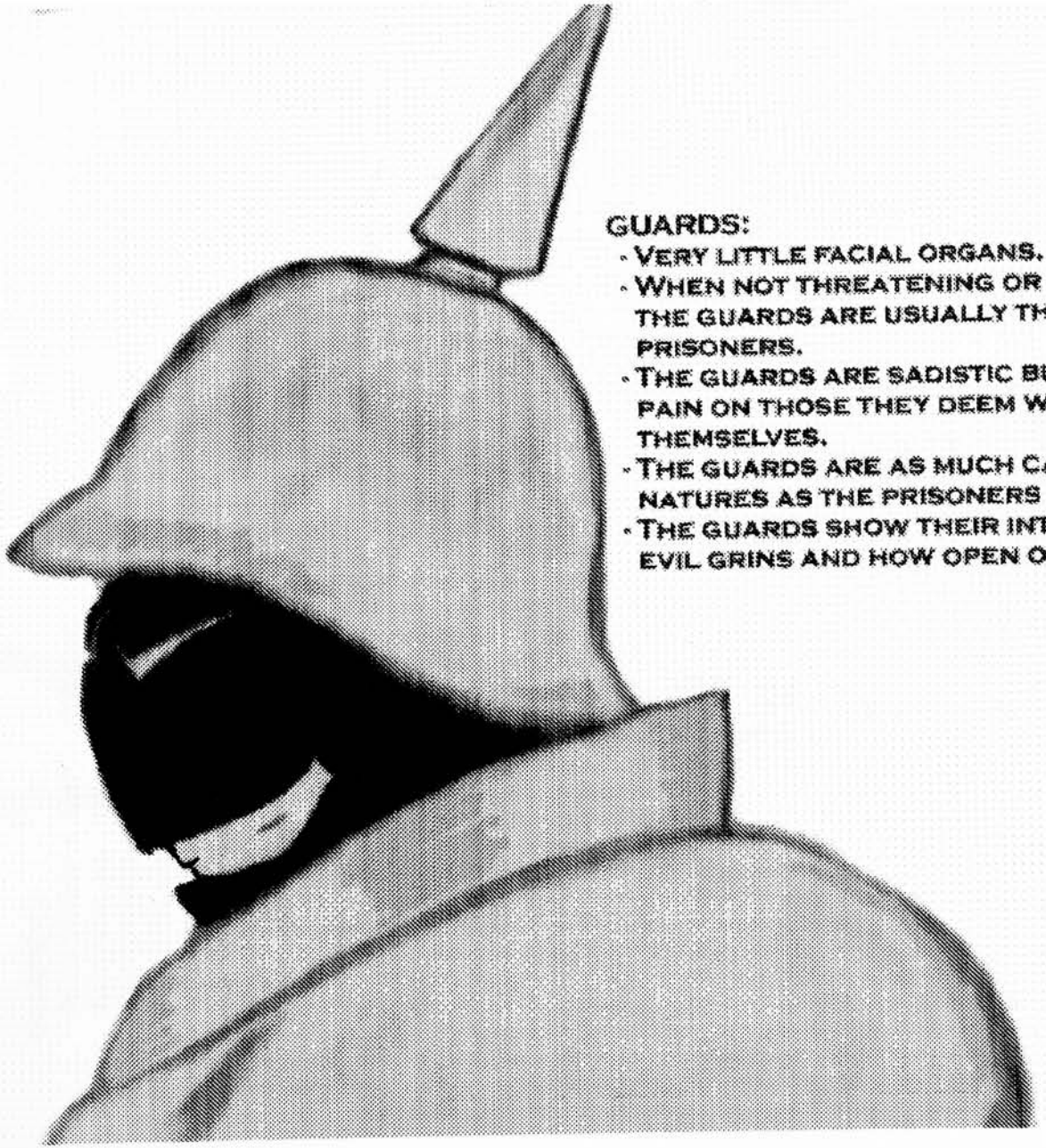
GUARD #2
Pick it up Zero, now!

Zero looks over to a group of inmates who are carrying their stones toward the statue. Two prisoners (NINETEEN and THIRTY) are watching the scene unfold. Zero looks at one then the other. He looks back toward Guard #2. Zero stands up straighter and resets the defiant look on his face.

ZERO
No!

The Guard's hand rises, pauses for a moment, then falls with a heavy thud. Zero dies. We see shock on Nineteen's face. He turns to Thirty. Both look at the Guards with a look of defiance and they drop their stones. As the Guards lumber toward the two prisoners, other prisoners in the line stop to watch what is happening.

FADE OUT:

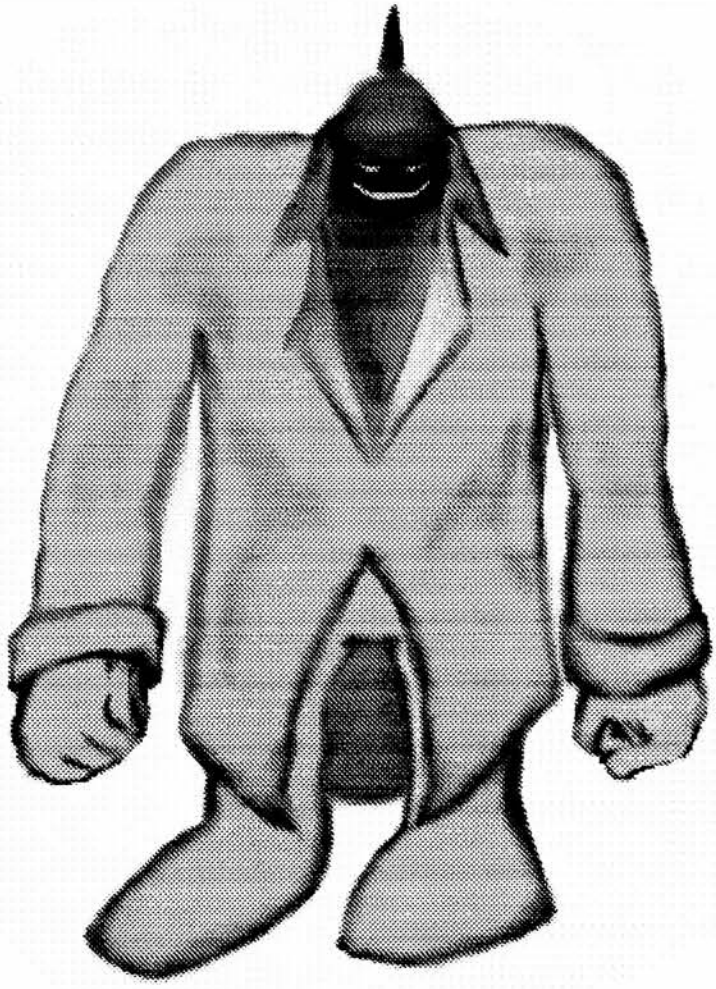


GUARDS:

- VERY LITTLE FACIAL ORGANS.
- WHEN NOT THREATENING OR TORMENTING THE PRISIONERS THE GUARDS ARE USUALLY THINKING OF WAYS TO BULLY THE PRISONERS.
- THE GUARDS ARE SADISTIC BULLIES WHO LOVE TO INFLICT PAIN ON THOSE THEY DEEM WEAKER OR INFERIOR THAN THEMSELVES.
- THE GUARDS ARE AS MUCH CAPTIVES TO THEIR EVIL NATURES AS THE PRISONERS ARE TO THE GUARDS.
- THE GUARDS SHOW THEIR INTENTIONS THROUGH THEIR EVIL GRINS AND HOW OPEN OR CLOSED THEIR EYES ARE.

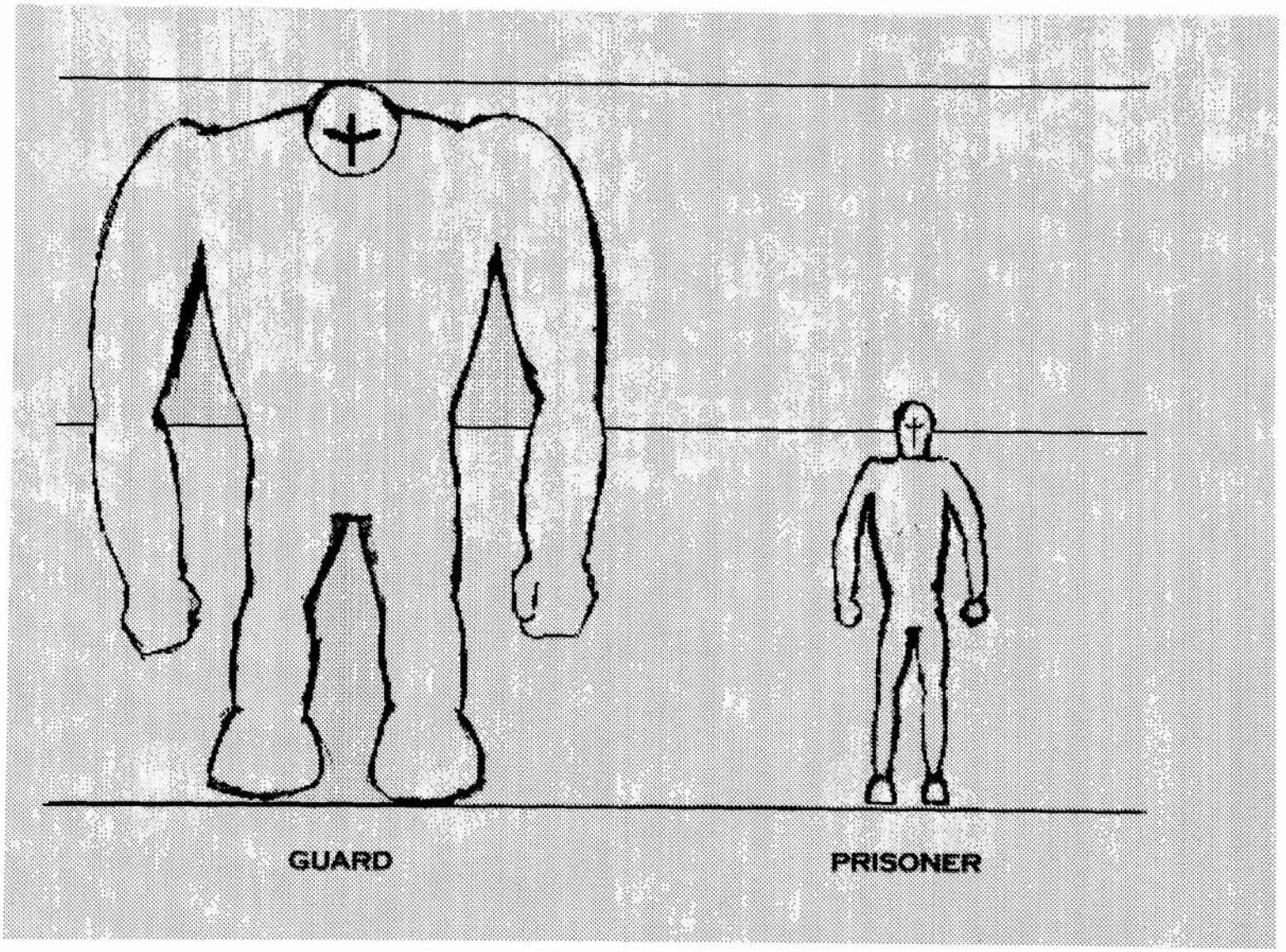
GUARDS:

- MOVEMENTS ARE SLOW AND PLODDING DURING A NORMAL ACTION.
- THEY SEEM TO CONSCIOUSLY THINK ABOUT MOVING WHEN IT INVOLVES AN ACTION THAT IS NOT VIOLENT.
- WHEN THEY GET VIOLENT, THE GUARDS MOVE WITH LIGHTING SPEED AND ACCURACY.
- PUNCHES APPEAR FROM OUT OF NOWHERE, KICKS STRIKE WITHOUT WARNING OR TELEGRAPHING.
- THE GUARDS ARE NOT INVULNERABLE, HOWEVER, AS EVIDENCED BY ZERO'S DREAM.
- THEIR SIZE AND BULK IS WHAT ALLOWS THEM TO INTIMIDATE THE PRISONERS.
- THEIR SADISM IS REFLECTED IN THEIR FACIAL EXPRESSIONS, THE GUARDS TRULY LOVE WHAT THEY ARE DOING.



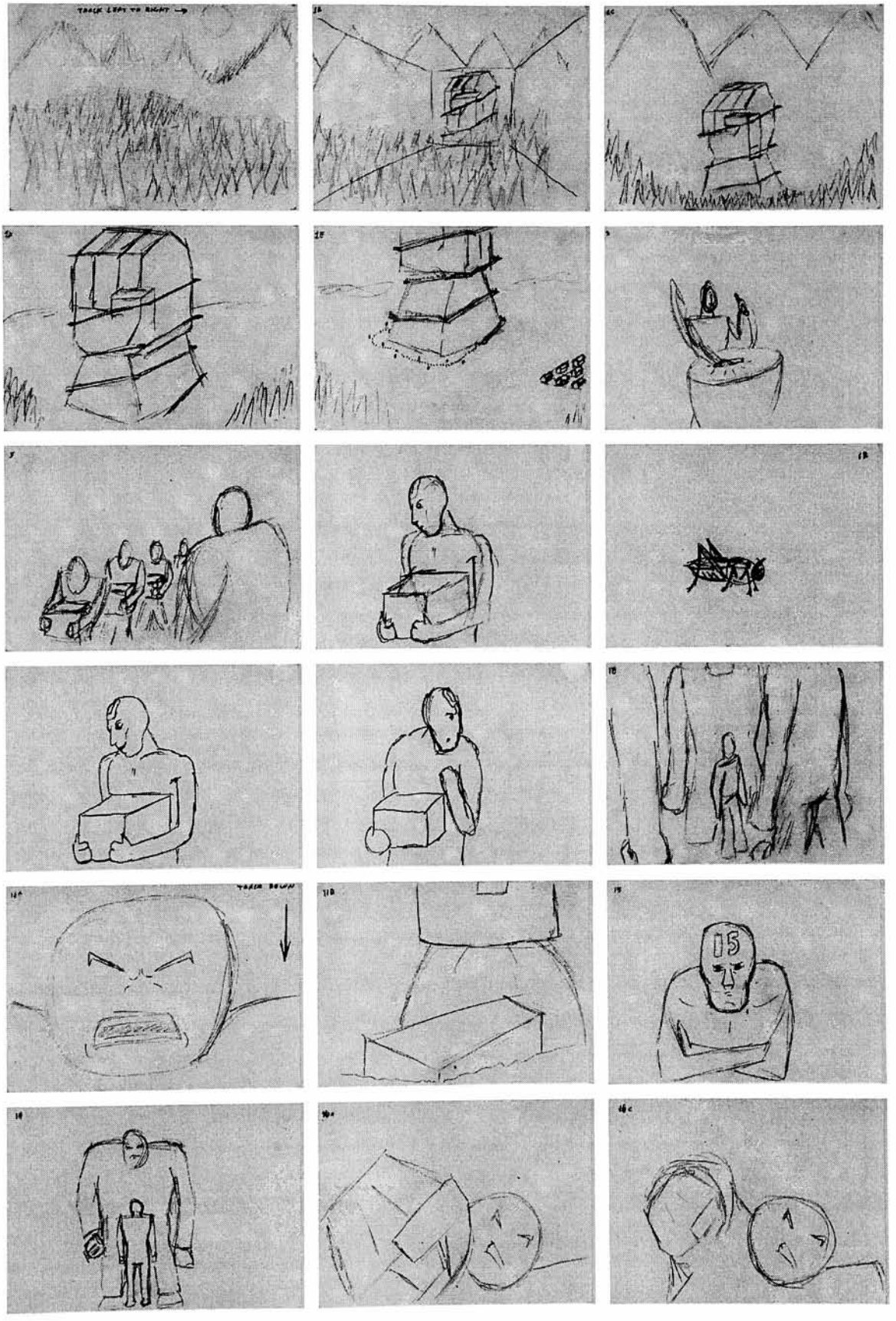
PRISONERS:

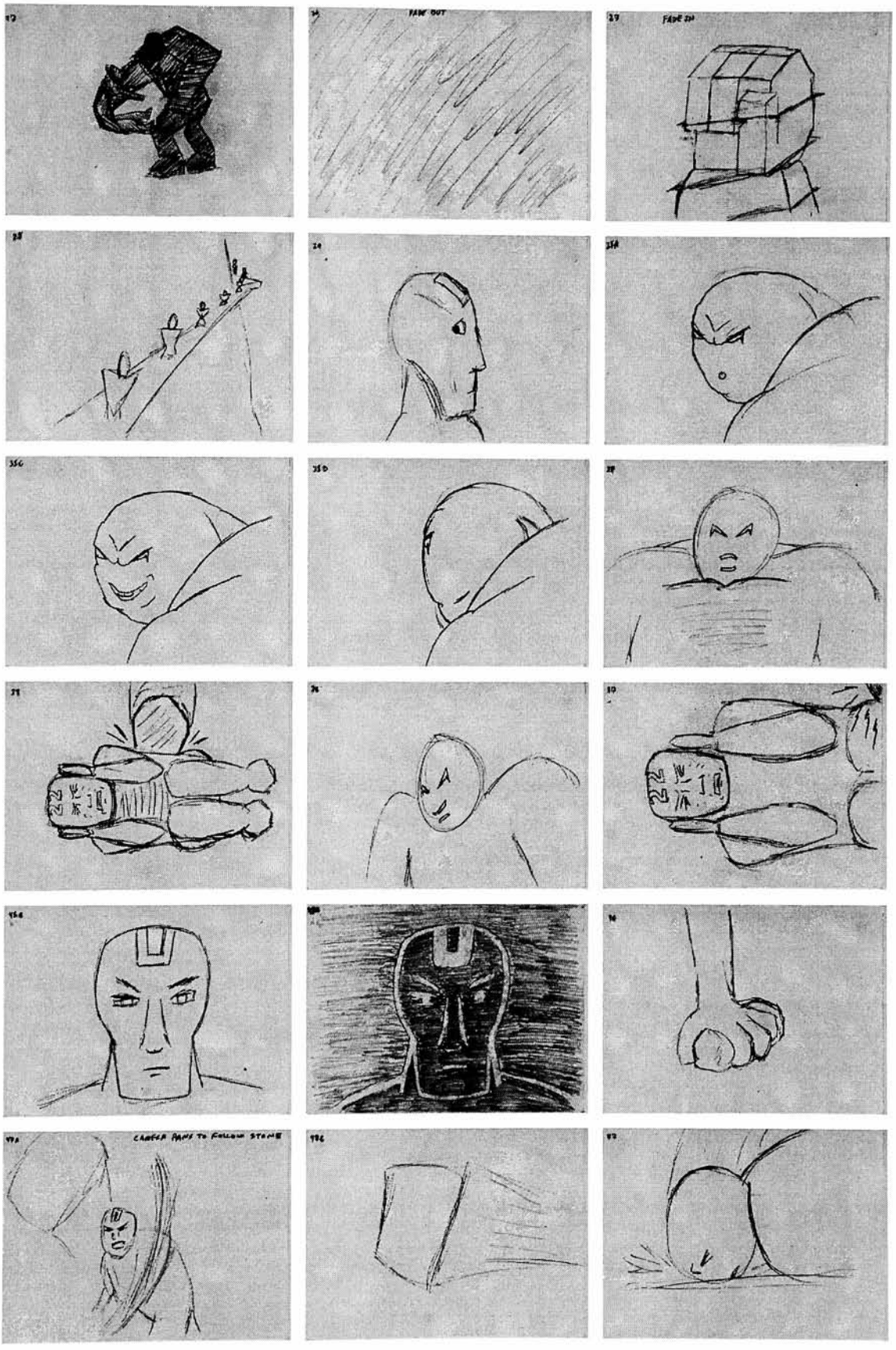
- DEEP STARES, ANGRY LOOKS, NON-CONFRONTATIONAL
- THEY SHOW THEIR RESISTANCE (OR LACK THEREOF) IN THEIR EXPRESSIONS AND POSTURES.
- DEFEATED = HUNCHED OVER
- ZERO STARTS OUT AS BEING DEFEATED BUT MOVES TO OPEN DEFIANCE.
- ZERO'S ACTIONS WILL BE SLOW AND METHODICAL WHEN HE IS IN DESPAIR.
- ZERO'S ACTIONS WILL BE SMOOTH AND CONFIDENT DURING THE IMAGINARY BATTLE SCENE.
- ZERO'S ACTIONS WILL BECOME STIFF AND QUICK WHEN HE CONFRONTS THE GUARD. HE MUST BE TERRIFIED BUT ALSO HAVE THE CONFIDENCE OF SOMEONE WHO I S COMMITTED TO A PARTICULAR ACTION.
- FIFTEEN IS OPENLY DEFIANT. HIS ACTIONS MUST BE STIFF AND UNYIELDING.

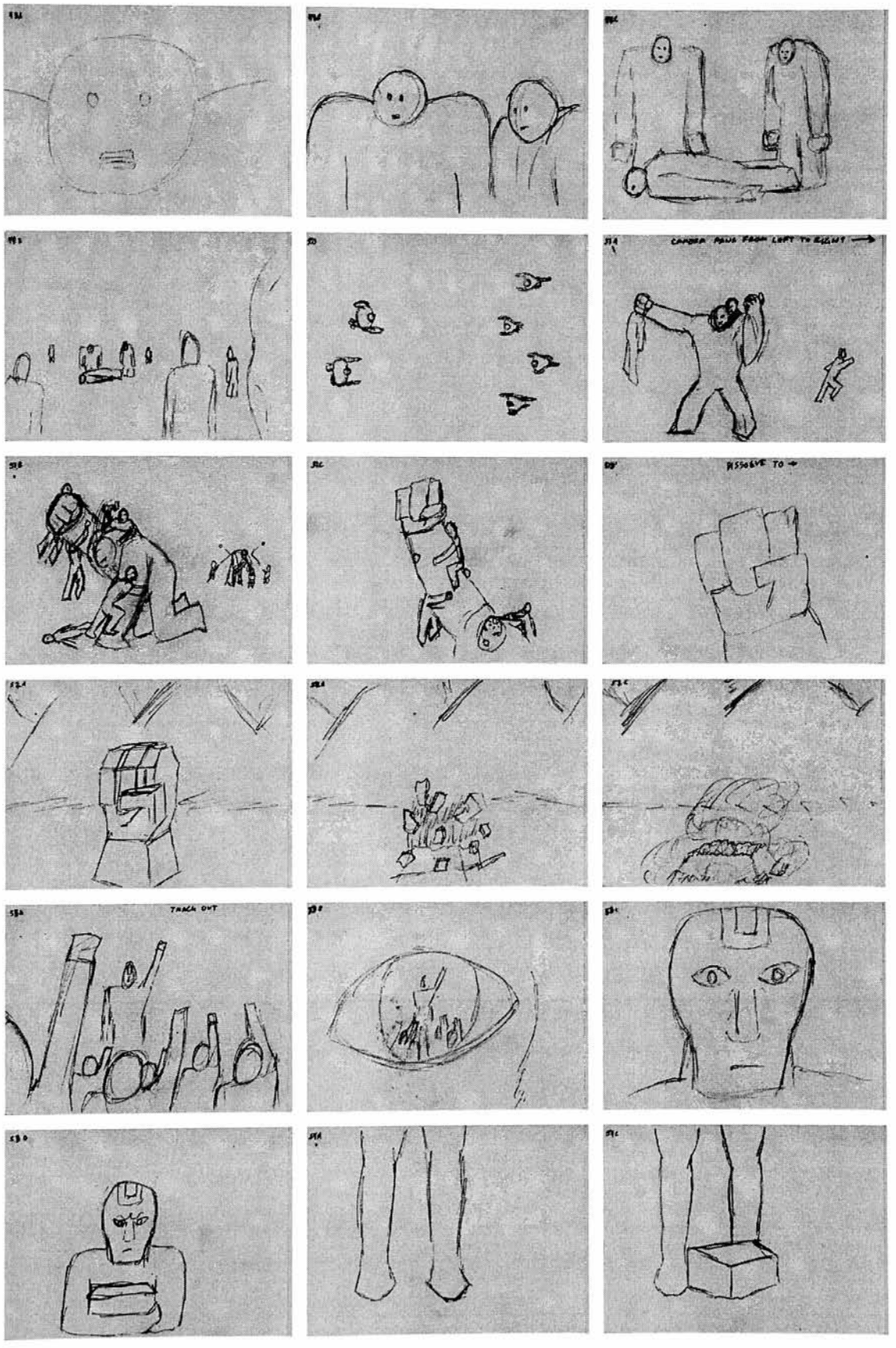

GUARD
PRISONER

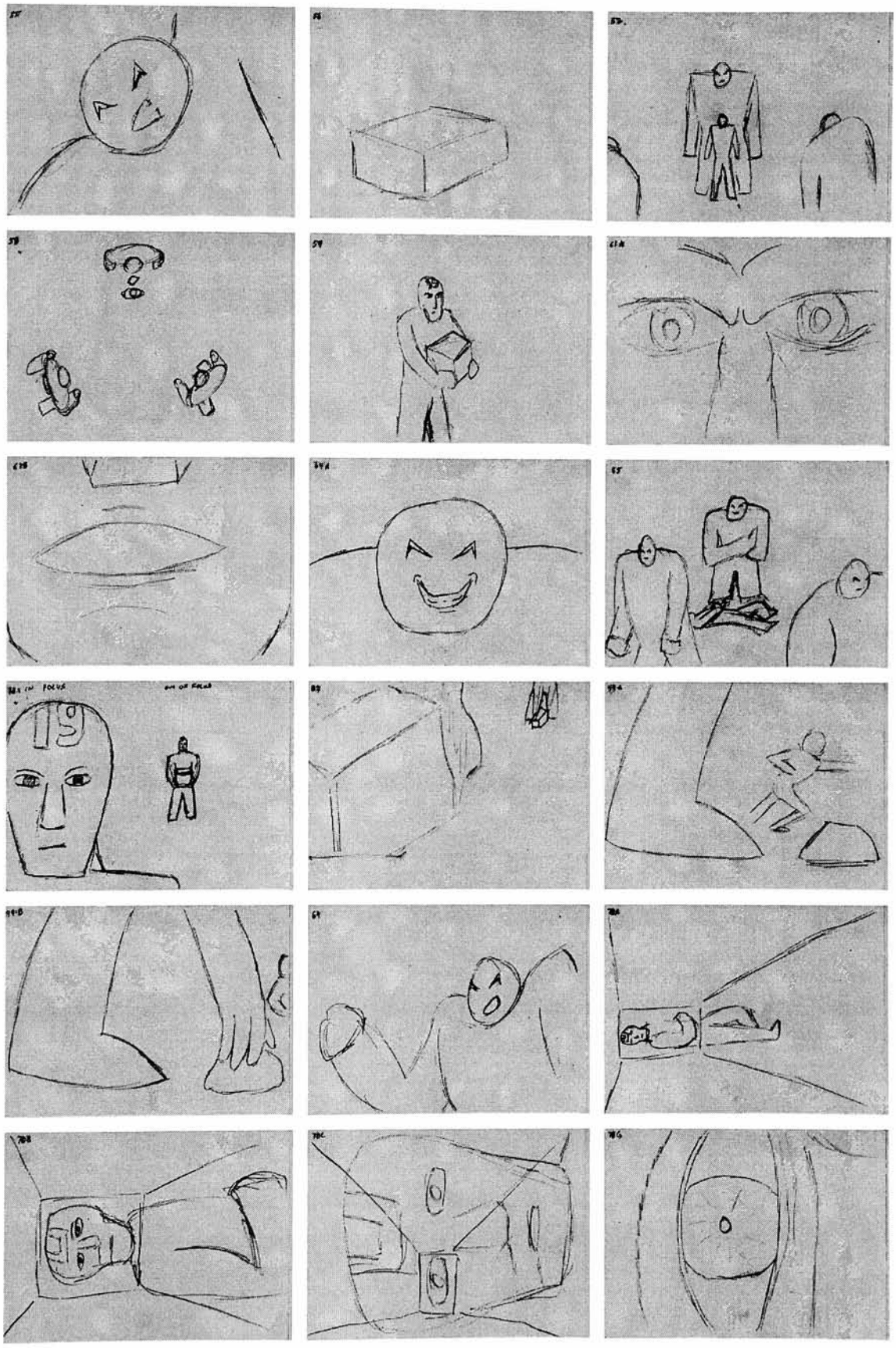
Appendix B

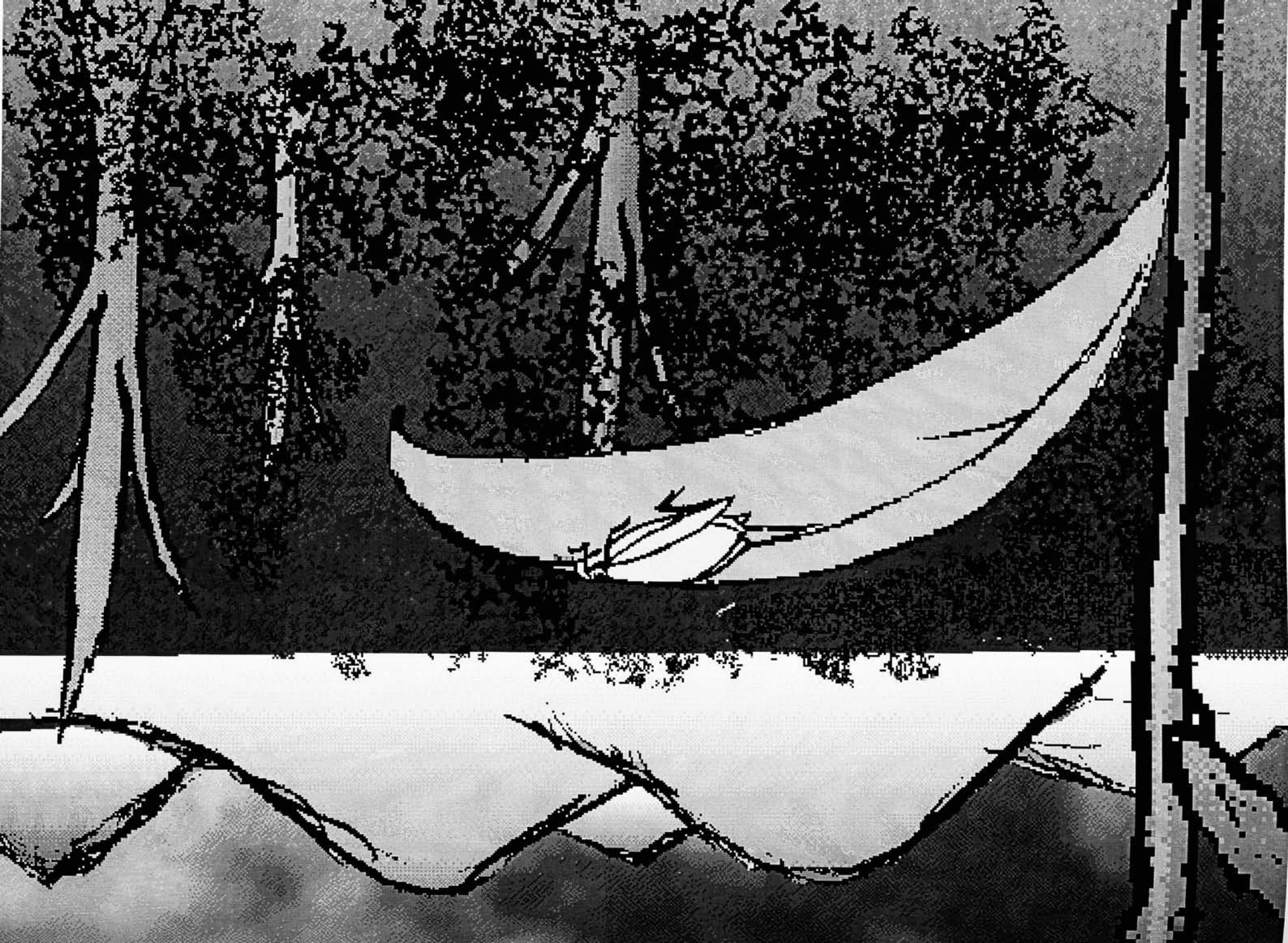
Original Storyboard


TRACK LEFT TO RIGHT
15


PAN OUT
FADE IN
CAMERA PANS TO FOLLOW STONE


CAMERA PANS FROM LEFT TO RIGHT →
DISSOLVE TO →
TRACK OUT



Appendix C

Stills