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The computer as a tool in the ethical development of primary school children

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Rochester Institute of Technology

A Thesis Submitted to the Faculty
of Fine and Applied Arts in
Candidacy for the degree of

MASTER OF FINE ARTS

THE COMPUTER AS A TOOL IN THE ETHICAL DEVELOPMENT
OF
PRIMARY SCHOOL CHILDREN

by
Nancy B. Landau

May 13, 1987

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I) Motivating factors:

When I first thought about my thesis topic at the end of last year, I had a very different concept from what eventually developed into this project. My original intention, that of using the computer as an educational tool in the ethical and social development of primary school children has remained the same. The changes occurred in my methods of achieving this intention.

My rationale for promoting the computer as an educational resource is manifold. For example, the world that these children will be entering as adults will be entirely computerized and automated. This next generation must have more than a passing familiarity with the computer, if they are to survive in an increasingly high-tech environment. Also, the computer has the potential to reach a greater audience, as people are becoming far more visually inclined than verbally inclined. Whether this trend is positive or negative, the fact remains that this is happening. Immediate visual impact is the goal of modern advertising. The advantage that this medium had in relation to my project was that an entire class of children could watch simultaneously, and then participate in a group discussion of what they had viewed.

The choice of primary school children was clear-cut to me. I wanted to develop their computer skills as early as possible, and my project involved a study of moral thought in a particular age group. This subject had fascinated me as an undergraduate, so much so that I minored in developmental psychology.

I have never actually seen a computer graphic animation for children on the television. This struck me as odd. Traditional cell animation is far more costly and time consuming to produce than computer animation created on a relatively inexpensive system such as the Apple. It is true that the quality of an image can greatly suffer on a poor resolution screen, and that cell animation still provides more flexibility and fluidity of motion. I believe, however, that new software packages and higher resolution screens will narrow the gap between the two types of animation. The educational uses of computer graphics which I have seen are primarily software programs teaching the basic skills of spelling and mathematics. To my knowledge, there are no programs for diagnostic or therapeutic use in the field of Psychology, nor are there computer programs or animations which teach social development skills. This is the basis of my thesis project. I am giving computer graphics a new application, to deal with the social development of a new generation.

In the initial phases of research on child development and aggression, I was considering creating an animation which would deal with the subject of nuclear war on a child's level. I strongly believed (and believe) that the next generation will be facing a much more precarious and fragile world situation than we are already facing, and it is our responsibility to prepare our children in the best way that we can--through education.

My objective was to teach the children that war is not inevitable, that we, and they can do something about it. Consequently, I would not have simply presented them with the horrors of a nuclear holocaust, as this would only have given them nightmares, at best. I intended to entertain them with a story, using symbol and allegory -- a modern fairy tale.

This is where my ideas began to take on another form. Why concentrate on the nuclear issue, specifically, when fear and violence were at the actual root of the problem? What exactly was I addressing? I realized that the way to educate children about the "wrongness" of war was to show them, on an individual level, the mistake of prejudice -- of pre-judging due to one's own fear or ignorance. My story would be about the courage of being tolerant and open, even in the face of the unknown -- especially in the face of the unknown. This central concept is illustrated in the scene of "The Monster of Mushimork," when Sneegle attempts to climb the Wumbley tree and is thwarted by some hostile Gorks.

"Go away!" someone yells,
 "Go home, get lost!"
 "Go back to where you belong!"

"We know you're the Monster of Mushimork--
 and if you say that you're not -- well-- YOU'RE WRONG!"

But nobody listens to what he has said
 and they start to throw Wumbley fruit
 at his head!

This interchange is only slightly less sophisticated than the current state of U.S.-Soviet relations. It seems that as we become adults, we simply cloak our blatantly egocentric desires with a more complex vocabulary, and continue to play our childhood games.

As I progressed in my research concerning child development and continued my talks with Dr. Farnum, my story went through a gradual metamorphosis. At first I had envisioned three different "creature cultures," the Snoogs, the Gorks, and the

Muddlewumps. The Muddlewumps, who lived in the mud (a combination of the Snoogs in the water and the Gorks on the land) were always happy. They were the Superegos of the swamp, compared to the more Id-oriented Snoogs and Gorks. The Muddlewumps were also physically part Snoog, part Gork, suggesting that one culture was incomplete without the other. Glick and Sneegle, motivated by a Muddlewump, encounter each other and become friends, which transforms them into Muddlewumps. It was a variation on the frog-prince story, where courage and ethics bring about a higher state of being, an inner evolution symbolized by a physical change.

Then it occurred to me that this was not my message. I wanted to validate the need for different cultures to exist, while suggesting that both can learn a great deal from each other. The answer did not lie in complete conformity, or loss of cultural identity. Rather, it resided in a sharing of cultures. Also, a physical transformation seemed unnecessary in light of this, so the Muddlewump was pulled out of the story, and the Snoogs and Gorks, with consciences now intact (if somewhat underdeveloped) became much more sympathetic creatures.

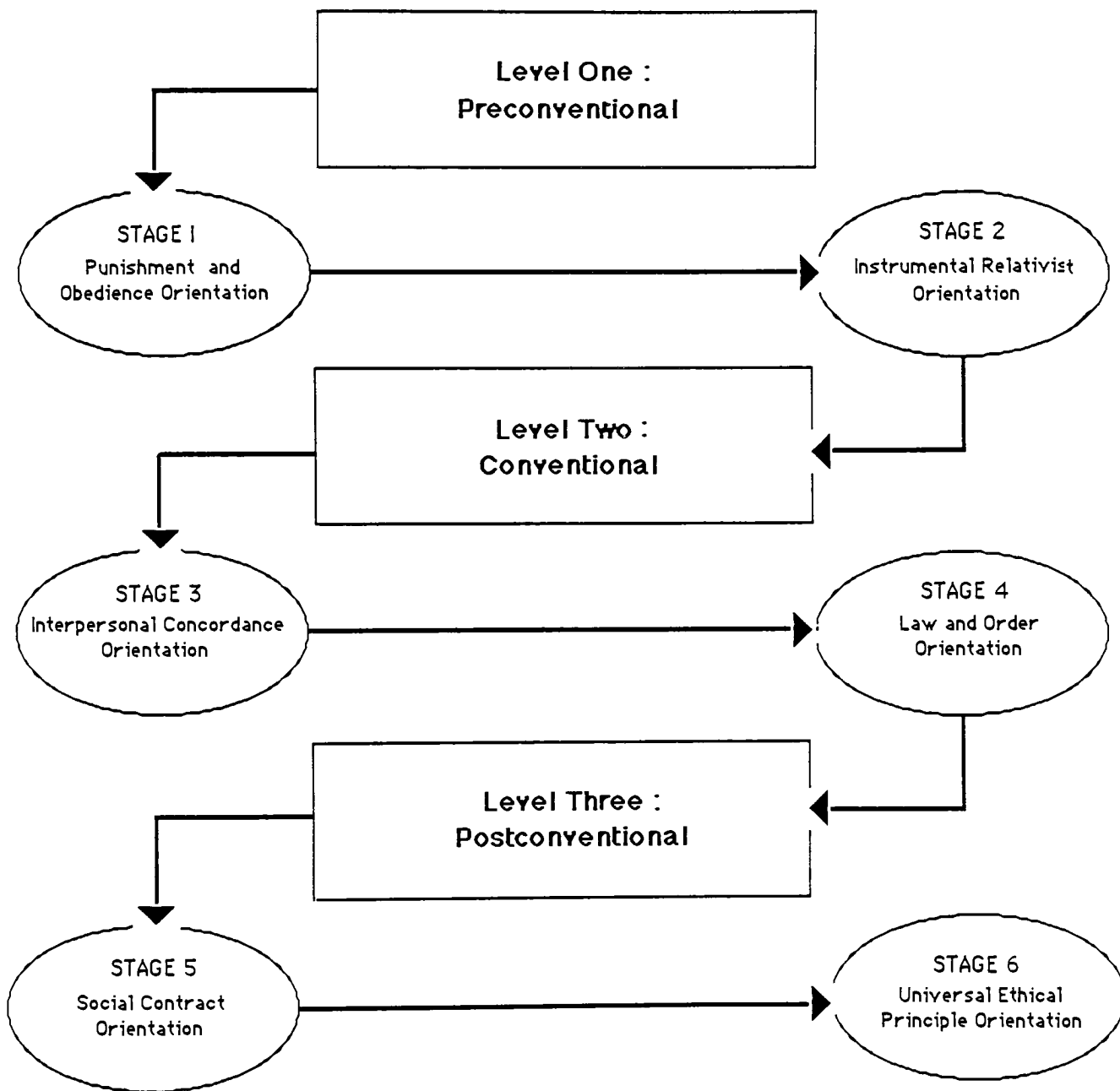
The story became more simplistic -- streamlined, in fact. What had started out as a fable had changed into a fairy tale, using Bruno Bettelheim's expedient definition of the terms;

Many [stories] are simply diversions, cautionary tales, or fables. If they are fables, they tell by means of words, actions, or events---fabulous though they may be -- what one ought to do. Fables demand and threaten -- they are moralistic -- or they just entertain... [Like myths] the figures and events of fairy tales also personify and illustrate inner conflicts, but they suggest ever so subtly how these conflicts may be solved and what the next step in the development toward a higher humanity might be. The fairy tale is presented in a simple, homely way; no demands are made on the listener. This prevents even the smallest child from feeling compelled to act in specific ways, and he is never made to feel inferior. Far from making demands, the fairy tale reassures, gives hope for the future, and holds out the promise of a happy ending. 1

II) Research:

What is the "next step in the development toward a higher humanity ?" To help me formulate an answer to this question, I reacquainted myself with the developmental theories of Piaget and Kohlberg. Piaget essentially outlined two major developmental stages in

Kohlberg's Six Stages of Moral Development



moral thought, the "heteronomous" stage and the "autonomous" stage, respectively. The heteronomous stage is more primitive. Moral rules are defined by others, especially authority figures such as parent or teachers. These rules are inflexible and "sacred" to the child in this phase of growth, which covers ages one to twelve years.

The autonomous stage arises from peer interaction. The child acquires the ability to put himself in another person's place, to experience sympathy and empathy. This stage does not begin until after twelve years, and continues on into adult life. 2

While this structure enabled me to gauge the type of response I could expect from a third grade audience, it was too broad to aid in the actual creation of my fairy tale. I needed more specifics on this particular age group, and I found Kohlberg to be a valuable source for a more detailed framework. Kohlberg lists six stages of moral development, which I have clarified in the diagram on page three (A). The first stage is essentially the same as Piaget's heteronomous stage. Stage two involves a limited recognition of intentions with a "you scratch my back, I'll scratch yours" version of reciprocity. It is still mainly pragmatic and physicalistic. Stage three, at the secondary level of the hierarchy is more intention-oriented. The goal at this stage is to win approval from others by doing what pleases them or helps them. Being thought of as a "nice person" is the primary motivation. 3

The third-graders I worked with at the Sherman Elementary School seemed to fluctuate between the second and third stages of Kohlberg's structure. When the narrative alone was read to a fourth grade class, these children were much more cognizant of the moral of the story, and seemed to be more aware of the character's feelings than the younger group. I chose the third-graders instead as my "test" group specifically for this reason. I wanted to encourage qualitative, rather than quantitative thought at an age level that was just beginning to make the transition. As this is not a scientific study, and I am not gathering statistical data or conducting longitudinal studies, my only intention was to have some effect, however subtle, on this developmental process. The immediate results of the viewing are discussed in detail in the "Application" section of this essay.

The fourth stage, Law and Order Orientation, seems to describe the stereotypical military mindset. The maintenance of the social order reigns over egoistic desires. Authority and established rules (the Law) are the sacred cows of the fourth stage individual. Stanley Milgram's controversial authority experiments demonstrated that this type of person could make up a chillingly large segment of our population.

Finally, the fifth and sixth stages represent the highest phases of internal growth. Social Contract Orientation maintains a belief in the "system," with the realization that not every authority figure or rule within the system is infallible. There is an awareness that right actions are those a society has agreed upon, but one is also aware that values, opinions and laws are flexible and can be changed.

At the very top of the hierarchy is stage six, the Universal Ethical Principle. The self-chosen ethical principles of the individual's own conscience are of primary importance. These principles must be universally applicable, consistent, and comprehensive. Very few people fall into this category. Ghandi might be a good example of a sixth stage person.

Personally, it would be fascinating to me to see if an extensive education in ethical reasoning from primary school straight through to high school would have an effect on the large percentage of the human population falling into the stage four category. This is also taking into account the fact that ethical codes are not necessarily cross-cultural. Kohlberg's system of measurement seems distinctly Western, placing the highest value on the individual's capability to follow his own conscience.

Next I would like to comment specifically on the narrative, demonstrating how my research contributed to its creation. As I will be referring to different portions of the text, I have enclosed the full narration in the following four pages. The narration was written in limerick form, with occasional breaks in the meter to keep the cadence and rhythm as dynamic as possible. I restricted the vocabulary to a third grade level, with the exception of one or two words like "infamous," which I imagined they would understand in context. My biggest problem was pacing. How slowly would the story have to be read in order for the children to retain the information? I had also complicated this issue by including so many nonsense words which sounded rather alike, such as Snoogs, and Sneegle, and Grandpapa SnicSnart. I finally solved this problem with moderately slow pacing and clear enunciation, rather than altering the wording of the narrative, which I liked very much.

"The Monster of Mushimork"

The very longest time ago,
on a planet far and wee,

across the plains of Tickalick
and past the Gurpling Sea,

Where the rattling winds are silent,
and the waters are still and deep,
there is a place,
a secret place,
that wakens as we sleep.

The air is thick and steamy,
the waters darkish green,
and the Wumbley fruits hang round and red,
from the purple Wumbley tree.

Now under the water
and up in the trees,
live two kinds of creatures
as proud as you please,
the Snoogs and the Gorks,
(in Mushimorkese).

The Snoogs are great swimmers
and love to stay wet,
they live in the water
without a regret--well,
maybe just one...

When winter comes to Mushimork
(for this is the secret place)
The Snoogs begin to shake and sneeze
as all the swamp begins to freeze,
and then they wish they lived in trees--
or deep in outer space.

Now up in the very most tippytop branches
hidden by the Wumbley tree,
we find the furry, flapping Gorks
all screeching very happily.

But when the summer sun is high
and burns atop of every limb,
and every Gorkish mouth is dry,
they often wish that they could swim
beneath the waters--cool and dim,
but not a single Gork will try.

There is a Snoog child,
the youngest, I've heard.
His name is SnicSneegle SnicSnickerish the Third.

He loves to hear stories
from Grandpapa SnicSnart,

as he's really quite curious
and terribly smart.

Each evening he settles in Grandpapa's lap
just after he's taken his afternoon nap,
and listens to tales of adventure and woe,
of the things he must learn
and the things he will know.

So on one dark and spookish night
Grandpapa Snicsnart did tell,
a fearsome story of the time,
he left the swamp to up and climb
the Wumbley tree to try and find
a drier place to dwell.

The lowest branch was in his reach
when suddenly he heard a screech--
a terrifying sound!

Above his head the branches shook,
and trembling
he dared to look--
and this is what he saw...

Two monstrous, horrible awful things
of teeth and claws
and flapping wings,
with eyes that glowed like winter stars
and mouths as wide as pickle jars.

SnicSnart was paralyzed with fear,
he couldn't move or speak,
until he was hit by a Wumbley fruit
and let out a sudden shriek.

He slithered and slid
all skitter and skid
right back to his watery home,
and promised himself
he would never come back,
and never again would he roam.

And so, there ends Grandpapa's tale,
but Sneegle is wondering--
why did he fail?
True, monsters are scary,
but winter is colder

and hard on the Snoogs
who are very much older.

I'll do it myself,
I'll take them all on
until all of the Mushimork monsters are gone.

I'll show them who's boss,
I'll do as I please,
and we'll spend all our winters
in warm Wumbley trees.

So Sneegle starts out
in the cold morning light
with a bold and angry heart,
to fight the monsters of Mushimork,
to set himself apart.

He travels for a half a day
and half a day again,
to find the infamous Wumbley tree
where Grandpapa SnicSnart had been.

At last he spies a Wumbley
much bigger than the rest,
its purple arms embrace the sky
and weave a giant nest.

"Hey you! Up there!" he starts to shout,
"I've come to throw you monsters out!"
"I've come to toss you on your ear,
of whatever it is with which you hear!"

Then, from above, an ugly screech
makes Sneegle freeze with fear,
his heart feels numb and tiny
as he sheds a single tear.

"Go away!" someone yells,
"Go home, get lost!"
"Go back to where you belong!"
"We know you're the Monster of Mushimork--
and if you say that you're not--well--
YOU'RE WRONG!"

But nobody listens
to what he has said
and they start to throw Wumbley fruit
at his head!

Meanwhile, on a limb nearby,
the tiniest Gork lets out a sigh.
He's very young and doesn't know
why everyone is shouting so.

Now Glick (for that is what he's called)
is resting on a limb,
when suddenly a Gork named Gloom
mistakes him for a Wumbley fruit
and tosses him right in!

He thrashes and splutters
and furiously flutters
but nothing can keep him afloat,

Till the other Gorks see him
and decide that to free him
they must begin building a boat.

"Oh my!" says Sneegle,
"I think he's in trouble,
that Gork doesn't know how to swim!
I must pull him right out."
So he did, with a shout,
and he set Glick right up on his fin.

Every Gork in the tree
is cheering for Sneegle,
and the Snoogs in the water, too,
for they'd been following Sneegle
from under the swamp
and they saw what a brave heart can do.

Well Sneegle and Glick become friends
right off,
of the very closest kind,
and the Snoogs and the Gorks
start to speak to each other
and all have a very nice time.

The Snoogs teach the Gorks
how to float on their tummies
and how to do all sorts of strokes,
while the Gorks teach the Snoogs
where to hang when it's sunny,
and how to climb trees without ropes.

So everyone's sharing the swamp,
if you please,
there are Gorks in the water
and Snoogs in the trees,

And Grandpapa SnicSnart
is still telling his tales
by the light of the Mushimork moon.
"There are monsters", he says,
"some real and some not,
but don't let them scare you too soon."

"Be careful and wise,
but don't be angry
at something you don't understand,
ask questions, like Sneegle,
and try to be brave.
You may end up making a friend.

THE END

"The very longest time ago, on a planet far and wee..." Well, most fairy stories begin this way and mine is no exception. "The very longest time ago" removes the listener from the present time, and consequently, the present reality. The child is given free license to fantasize, as no one really knows what things were like the "very longest" time ago. In describing the planet as "wee," I was also trying to make it part of the child's world, where everything should be child-sized, including the solar system.

The idea of Mushimork being a "secret place," that "wakens as we sleep" suggests two possibilities. The "secret" is a confidence between the storyteller and the child--it makes the story private, written especially for this child. A place that "wakens as we sleep" tells the listener that these special childhood secrets are not part of the everyday adult world. Like the tin soldiers of the "Nutcracker," the Snoogs and the Gorks of Mushimork appear only at night, in the dreamworld.

In effect, the first three paragraphs of the narrative have established two major functions, the first of which removes us from reality, liberating our imaginations, and the second of which serves to draw the child into the story and establish trust. Once these things have been accomplished, the message of the story is ready to be delivered.

The next group of verses sets up the dilemma of the story -- two rather discontented societies who could change their situations, but don't even try. Then we are introduced to Sneegle; "There is a Snoog child, the youngest, I've heard..." Sneegle is the child-hero,

who is "really quite curious and terribly smart." Curiosity and intellect are presented as the most positive qualities, and listening to the wisdom and experience of one's elders is seen as natural behavior in anyone who is both curious and smart. The following two verses imply that there is a great deal for a child (like Sneegle) to learn from his elders, and furthermore, if he listens well, he will someday acquire the same wisdom and knowledge.

Each evening he settles on Grandpapa's lap,
just after he's taken his afternoon nap,
and listens to tales of adventure and woe,
of the things he must learn
and the things he will know.

To children in Piaget's heteronomous stage of development, the role model of Grandpapa SnicSnart is very important. He represents the "Authority," or the "Law," which provides essential behavioral codes for pre-adolescent children. Sneegle is initially cast as the obedient, stage one child, but upon hearing the story of the "Monster of Mushimork" (as told by Grandpapa SnicSnart) Sneegle decides to strike out on his own.

And so, there ends Grandpapa's tale
but Sneegle is wondering,
Why did he fail?

True, monsters are scary,
but winter is colder,
and hard on the Snoogs
who are very much older.

I'll do it myself
I'll take them all on
until all of the Mushimork monsters
are gone!

I'll show them who's boss,
I'll do as I please
and we'll spend all our winters
in warm Wumbley trees.

In this part of the tale, Sneegle is making a transformation. In the space of a moment, which, in "real life" might be a decade or so, Sneegle has moved from heteronomy to autonomy, entering Kohlberg's Postconventional level. He has assimilated his Grandfather's knowledge, and yet he is arriving at his own unique conclusions. He is a typical adolescent, struggling to achieve his own identity, and subsequently must leave the

swamp, as all children eventually leave home to become mature adults. Sneegle's journey symbolizes this process -- his rite of passage.

Although his primary motive for leaving the swamp stems from rebellion, the seed of a "higher state of being" exists already. Sneegle is concerned that the winter is "hard on the Snoogs who are very much older," which marks the beginnings of altruistic behavior, culminating in his rescue of Glick. After he overcomes his fear of the unknown to rescue another child, Sneegle is no longer an egocentric individual. Sneegle not only follows his own conscience, he also brings the two disparate cultures together with Glick's help. His principles therefore become universal, consistent, and comprehensive, solving every problem. This is Stage Six in Kohlberg's system -- The Universal Ethical Principle.

At the end of the narrative there is a reaffirmation of the adult role in the child's life. Grandpapa SnicSnart admits that he made a mistake because he could not get past his own fears, but he delivers the final kernel of wisdom, demonstrating that the learning process is perpetual, and that age can learn from youth. There is a mutual respect between generations, as Grandpapa is "still telling his tales," and Sneegle and Glick are still listening.

III) Technical Aspects:

"The Monster of Mushimork" was created on the Apple IIe, using a combination of Apple graphics and animation software. The following programs were included: Take One, Blazing Paddles, Koalapainter, and Alpha-Plot. Blazing Paddles is almost identical to Koalapainter, in that both are freehand drawing programs. Koalapainter has a better selection of brushes, while Blazing Paddles has a nice cut and paste option. Blazing Paddles is automatically compatible with the Take One animation software, but Koalapainter needs to have the files converted, which can be done through the disk utilities function in Take One. Alpha-Plot is a graphics program which allowed me to access the digitizing camera. I used the digitized effect in my first animation, "I Want to Fall."

Before embarking on a critique of Take One, I will briefly outline the basic concepts of the program. An animation in Take One is comprised of pictures, backgrounds, actors, and scenes. The original still pictures, created on the software previously mentioned, are used as backgrounds or actors. To make an actor, which is simply defined as a moving object, one can cut a portion of the still picture out of the whole, and save this portion as an actor. Both backgrounds and actors are needed to shoot a scene, and all of the scenes are compiled

to create a movie. When the scenes are individually edited, they will also appear edited in the movie sequence, although the movie itself has not been manipulated. More than one actor can exist in a scene simultaneously, as one can see in the "Monster of Mushimork."

Take One has many positive attributes. It is an excellent program for animating organic forms, unlike the vector-based Genigraphics software I used to create "Mortimer Meets his Maker." An animated scene can be viewed in real time before it is included in the movie, so that the motion and timing can be edited early on. Because there is no regeneration time involved, the shooting is quick and painless, although there is no "tweening" done by the computer itself. The animations are also easily dumped to video, also in real time, with the simple addition of a line conversion card inserted into the computer. Another plus is the fact that any frame can be accessed and edited individually, and accessibility is really the key word. The menu itself is so simple, straightforward and well-designed that I was never forced to waste time either exiting a function or switching options. Mistakes are easy to rectify, as I could exit my animation at any point in its creation and return to the main menu. This was quite a relief after having spent so much time on a more sophisticated system which crashed at the slightest mistake, exiting the entire program and destroying the image.

For my own purposes, the Apple seemed the ideal system to work on. Apple graphics use bright colors, and are ideal for a flat, cartoonish look, which is my own personal style. Furthermore, the children were already familiar with the system and understood how to use a "Koala Pad." My original concept was to show the animation on the computer, rather than videotaping it, to make the idea of animation more accessible to the children. I wanted them to see a clear connection between the computer and its product. Unfortunately, I was forced to videotape because of certain software problems which will be explained in later paragraphs.

And now to address the negatives. To begin with, the Take One manual is poorly written, obscure, and lacks some rather vital pieces of information. At no time does it state in the manual that all of the actors and backgrounds must exist on the same side of the same disk that the movie is on. This can become quite a problem if the animator has not planned the animation for more than one disk. I was compelled to make three separate movies and edit them together. Some of my difficulties also involved the Apple hardware. One problem was consistency of color. Each Apple monitor was calibrated differently. I worked mainly on a brand new monitor that I had at home, and later overlooked the fact

that I should have used this same monitor to dump to the VCR, rather than a school monitor. This resulted in the first radical color change. The next major problem presented itself when "Mushimork" was placed on the same tape as other people's animations, created on different hardware, causing all sorts of color variations. I could have solved the problem early on if I had taped a sample of my video onto the shared monitor simply to see how the colors differed from the Apple monitor, and adjusted my Apple colors to appear correctly on the shared screen. Also, if more than one monitor is showing simultaneously, all monitors should be calibrated to one standard.

Color is also a problem within the Apple hardware, which limits each program to an identical set of eight colors, with dark and light variations. Each set of eight colors is further broken up into two palettes, which are incompatible. When the two palettes are mixed to broaden the color range, erroneously-colored pixels appear around objects placed on incompatible backgrounds. These pixels can be painstakingly edited out, only to have them appear again during the animation, as new pixels are turned "on" during the movement of an object. This problem can only be solved by planning your image so that the two palettes will remain separate.

When I first started working with the frames-per-second (fps) option in Take One, I thought that this function would afford me a way of precisely timing my animation. I was wrong. The user is given a choice of 3 frames to 30 fps for each individual scene. Theoretically, if 30 fps is selected, then ten seconds would equal 300 frames of animation. In this program, however, the number of frames in a scene is never consistent with the duration of the scene or the frame rate. At times, ten seconds of animation at 30 fps might actually come out to 300 frames, but at other times, the same set of variables would equal 25 frames, or 110 frames, or even 10 or 20. The number of frames in a scene seemed to be arbitrary. Each experiment I tried, using different scenes with a consistent fps and duration time, I came up with a different frame count. The only variable left was the amount of information in each scene, which led me to a theory. The fps varies according to the number of *bytes* being used in a scene. The more actors and actions there are in a scene, the more information there is to process, so that the program then compresses the data to conserve memory space. Therefore, a scene with few actors and actions will take up more frames at a particular fps than a scene with many actors and actions (or more complex ones) as the information has not been compressed to the same extent. The result is that fps is actually bps -- bytes-per-second. This situation does not allow the user to calculate the timing of his

or her animation with any degree of accuracy. My only solution to this problem was to time my scenes with a stopwatch, tailoring each one to its respective verse of recorded narration. Both the video portion and the music were synchronized to the pre-recorded narrative.

Another difficulty with the software is that all the actors are treated as blocks. The block will be a solid form (even with a black background) unless the "sprite with holes" option is used. Unfortunately, any black within the figure also becomes transparent with this option, and one can see the background through it as it moves across the screen. I would like to see a transparent background as a choice, so that the figure would remain intact, but the unused portions of the block would be invisible.

The graphics in Take One are bit-mapped, and have no rotation, scaling, or flipping options. There are certain software packages, however, where these functions are available, such as a program called Pixet.

It should also be mentioned that the sound track was edited using a 3/4 inch insert editor. The narrative was first recorded on audio tape, then dumped onto one 3/4 inch tape and edited onto another. The music was edited on audio tape (synchronized with the master narrative tape) and finally recorded on a separate 3/4 inch tape. The result of this process was two master 3/4 inch tapes, one narrative and the other background music. The video was also initially recorded on one 3/4 inch tape and edited onto another. This was the third master tape. All three tapes were finally edited together onto a fourth, complete tape. The music and the narrative were placed on separate channels, so that either can be edited or redone individually.

IV) Application:

When I presented my video to the third grade class at the Sherman Elementary school, teacher Margo Wheeler gave me a brief introduction, stating that I was an R.I.T. student who had created two computer videos for them to see. The children were familiar with both the Apple IIe and the "Koala pad," so that I did not have to explain the hardware to them. To outline the basic concept of animation, I had produced another video, entitled "I Want to Fall: The Story of Animation," which was shown after the discussion of the first animation. I wanted the children to concentrate mainly on the story of Mushimork, rather than the technical aspects of it, which is why I presented the two films in this order.

The following pages of dialogue between Margo and her students present a structured

discussion of the central themes of "Mushimork." I have included a large percentage of the original dialogue, leaving the children's answers unedited. The results of this dialogue served as the true test of my entire thesis project. Would the children understand, absorb, even interpret the story? What would they learn from it, if anything? The next few pages should provide some answers to these questions.

The Sherman Elementary School May 06, 1987
 Authors Rd., Henrietta, N.Y.

Grade Three
 Instructor - Margo Wheeler

Dialogue on "Mushimork"

- Margo: Why were the Snoogs and Gorks afraid of each other?
- Class: Because they thought they were monsters.
- Margo: Why else? Why did they think they were monsters?
- Class: 'Cause they'd never seen them before? 'Cause they're ugly.
- Margo: Well, if they didn't see them they don't know if they're ugly, do they?
- (laughter)
- Except, I guess, Grandfather SnicSnart saw them once.
- So, if most of them had never seen each other before, why were they so afraid?
- Class: They thought they were going to hurt them.
- 'Cause they've never seen people like that and they're not used to looking at people like that.
- They may not be nice.
- Margo: Any others?
- Class: They looked different.
- Margo: Have any of you ever been afraid of anyone who looked different?
- (mixed yes's and no's)
- Some people said yes -- raise your hands. Go ahead.
- Class: The first time I saw a lightning bolt and a thunderstorm.
- Margo: Good, so you didn't know what it was. You were afraid of it.

Anyone else?

Class: When I first saw my brother's tarantula the first time I was afraid of it.

Margo: Are you afraid of it now?

Class: No.

Margo: How did you get used to it?

Class: I watched it a lot and my brother told me it won't hurt me as long as I don't touch it.

Margo: So you were afraid because you didn't know what was going to happen? Is that right?

Class: Yes, I didn't know.

Margo: Do you think that that's why the Snoogs and the Gorks were so afraid of each other?

(vigorous nodding and yes's)

How many of you went to another school for kindergarten before you came here?

(all raise their hands)

Before you came here, were you kind of afraid to come to Sherman?

Class: Yes. I didn't know anybody.

Margo: Did you feel like Sneegle, going on a long voyage?

Class: Yes. I was scared to go.

Margo: Let's say your Mom and Dad come home one night and tell you that they've just been given great new jobs, but they are in Japan, so you all have to move to Japan.

(loud groans)

You don't know anything about living in Japan, or anyone who lives there. How many people would be hesitant or afraid to move there?

(almost all hands go up)

Who has a reason why they would be afraid to move to Japan?

Class: I can't speak Japanese.

Margo: That's a good reason. Do you think maybe the Snoogs

might've felt that way about speaking to the Gork (nods, yes's)
Why else?

Class: If you don't like their food, or the way their house smells.
You don't know what the people are like.

Margo: What do you think Grandpapa SnicSnart meant when he
said;"There are monsters, some real and some not."?

Class: I don't think he was telling the truth because there are no such
things as monsters.

Margo: But what about imaginary monsters? Did anyone ever go to
bed at night thinking there was a monster under the bed, or in
the closet?

(lots of laughter, yes's)

What does it usually turn out to be?

Class: Once I was asleep and I saw something big and round moving
but it turned out to be my cat under a laundry basket.

(more laughs)

Nancy: What do you think Grandpapa meant about some monsters
being real? Are there "real" monsters?

(emphatic no's)

So maybe he meant something else.

(hands shoot up)

Go ahead.

Class: He meant really mean people or people who are bad to you.

Nancy: Are there people who are bad, whom you can't trust?

(head nods, yes's)

Why?

Class: 'Cause they might do bad things to you.

Nancy: How do you know when you should try to be friendly with a
new person and when you should stay away ?

Class: If you tell your parents and they say it's Ok.

Margo: That's right. Do you think that the Snoogs and the Gorks
would have become friends if Sneegle hadn't taken a chance by
going to climb the tree?

(no's)

Margo: Do you think that sometimes you have to take a chance and experiment with a new thing?

Class: Yes. My sister got on the jungle gym for the first time and fell off and she hit her head on a bar. But she still got on again.

Margo: So she was brave, to try again. I'll bet it was easier the second time, too. It's always scariest the first time.

Nancy: When I was little, I saw someone in a wheelchair for the first time and that scared me. Has anyone ever felt frightened by a handicapped person, or someone who looks or acts very different?

Class: Yes, I was, a long time ago when I was with my parents visiting somebody in the hospital, I saw a lady -- she was really old and she couldn't walk and her arms were all funny and she really scared me. I thought maybe that was going to happen to me someday.

Nancy: So you were thinking about what you would feel like if that happened to you.

(nod)

Margo: What if you saw someone at school who had been badly burned in an accident? Would you be afraid of them?

(no's)

What about three years ago, in kindergarten?

(all laugh and yell yes's)

So what has happened between then and now, to change your feelings?

Class: Well, um, I began to think about it a while and I thought --well -- there's nothing really wrong with them, they just have problems.

Margo: So they're just people like us, like the Snoogs and the Gorks?

(laughter, yes's all around)

One of the most difficult aspects of a dialogue with small children is how not to feed them an answer when one is trying to tap into their spontaneous feelings. This was

obviously not an objective discussion, as the teacher helped the children to connect the meaning of the story to "real life" situations. I accepted this format because it was far more important to me to communicate the "messages" of my story than to conduct an objective study of the developmental level of these children. Interestingly enough, several weeks prior to this discussion Margo had read the narrative alone aloud to a fourth grade class. The fourth-graders, though only one year older than this group, required far less reiteration of the tale, and grasped the "moral" much more quickly and easily than the third grade class. The difference that this one year can make in the moral development of a child is astonishing to me.

V) Conclusions:

In a final review of my project, I feel that I did accomplish the goals I had set for myself. I had utilized the computer as a teaching tool in the ethical development of pre-adolescents. I would like this film to be the first in a series addressing childhood fears and growing pains. My own fears involve the effects of the computer on this next generation of children. The computer is an incredible gift, but it may come with a price. When I see children who are socially underdeveloped retreating to the relative safety of the computer screen, I wonder how they will ever learn interpersonal skills in a world which is demanding less and less human interaction. For a working parent, it is easier to place a child in front of the television set, or the computer monitor than to spend actual time playing with them, or reading to them, or just talking with them. If this situation is inevitable, and the computer is to assume an ever-increasing role as teacher, parent, and friend, we must (ironically) begin to teach human communication skills, values, and ethics through the computer. I have attempted to do this in my modern fairy tale, but the discussion afterward was as important as the video itself. We must take an active role in the effect that the computer is having on our children. In this way, it becomes an advancement of the human condition, rather than a technological substitute for human interaction.

In the near future, videodisc will hopefully become an affordable resource for primary and secondary education. Had this been the present situation, I would have considered it in the development of my thesis project. Videodisc will enable children to actually interact with a program, or an animation such as "Mushimork." If I were to place the story on videodisc, I would create several different outcomes to the central conflict, and the children would be

able to test out different scenarios, learning from each situation. Most importantly, they would be actively involved in changing the outcomes, which teaches them the skill of exploring all the possible answers to a problem, before arriving at the most comprehensive one. They would also be learning the responsibility of making decisions and seeing the actual results of their decisions. Perhaps there could be a program designed in which the children could actually set up the moral situations, presenting them to their peers to solve the social dilemmas. This would reinforce the children's sense of control over their own environment, at the very least, but more significantly it would turn the computer into a conduit for human-to-human interaction. At the present time, the computer is more of an isolator. Even computerized video games are largely designed for one person to compete with the machine, and many games which were once "parlor games," meant to bring people together, have lost that purpose when translated to the computer. Dungeons and Dragons, for example, can be played without the computer with no less than three people, while the computer version can be played with only one. Ideally, I would like to see computers used to promote group play and group learning situations. While this concept is far too ambitious to be dealt with in a four-month thesis project, I do intend to pursue it as a long-term goal, in which "Mushimork" is only the first step. With "Mushimork," the interactive aspect was the actual discussion of the story between the children and their teacher. In this format, I have used the computer as a production tool to inspire human interaction. The addition of videodisc would not (hopefully) replace the human element. Rather, it would add another dimension to it.

Endnotes

- ¹ Bruno Bettelheim, The Uses of Enchantment (New York: Vintage Books, 1975), p. 26.
- ² Roger Brown and Richard J. Herrnstein, Psychology (Boston: Little, Brown and Co., 1975), p. 309.
- ³ Brown and Herrnstein, p. 311.

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