Quick Click Morph™

Hollywood Style Special Effects

Mike Westerfield

Byte Works®, Inc.
8000 Wagon Mound Dr. NW
Albuquerque, NM 87120
(505) 898-8183
MikeW50@AOL.COM

Master Set 1.0.0.0

Limited Warranty - Subject to the below stated limitations, Byte Works, Inc. hereby warrants that the programs contained in this unit will load and run on the standard manufacturer's configuration for the computer listed for a period of ninety (90) days from date of purchase. Except for such warranty, this product is supplied on an "as is" basis without warranty as to merchantability or its fitness for any particular purpose. The limits of warranty extend only to the original purchaser.

Neither Byte Works, Inc. nor the authors of this program are liable or responsible to the purchaser and/or user for loss or damage caused, or alleged to be caused, directly or indirectly by this software and its attendant documentation, including (but not limited to) interruption of service, loss of business, or anticipatory profits.

To obtain the warranty offered, the enclosed purchaser registration card must be completed and returned to the Byte Works, Inc. within ten (10) days of purchase.

Important Notice - This is a fully copyrighted work and as such is protected under copyright laws of the United States of America. According to these laws, consumers of copywritten material may make copies for their personal use only. Duplication for any purpose whatsoever would constitute infringement of copyright laws and the offender would be liable to civil damages of up to $50,000 in addition to actual damages, plus criminal penalties of up to one year imprisonment and/or a $10,000 file.

This product is sold for use on a *single computer* at a *single location*. Contact the publisher for information regarding licensing for use at multiple-workstation or multiple-computer installations.

Quick Click Morph is a trademark of the Byte Works, Inc.
The Byte Works is a registered trademark of the Byte Works, Inc.
Apple and GS/OS are registered trademarks of Apple Computer, Inc.

Apple Computer, Inc. MAKES NO WARRANTIES, EITHER EXPRESSED OR IMPLIED, REGARDING THE ENCLOSED COMPUTER SOFTWARE PACKAGE, ITS MERCHANTABILITY OR ITS FITNESS FOR ANY PARTICULAR PURPOSE. THE EXCLUSION OF IMPLIED WARRANTIES IS NOT PERMITTED BY SOME STATES. THE ABOVE EXCLUSION MAY NOT APPLY TO YOU. THIS WARRANTY PROVIDES YOU WITH SPECIFIC LEGAL RIGHTS. THERE MAY BE OTHER RIGHTS THAT YOU MAY HAVE WHICH VARY FROM STATE TO STATE.

Apple is a registered trademark of Apple Computer, Inc.

Table of Contents

Chapter 1 – Getting Started with Quick Click Morph

What's in This Book

Like most books that come with a program, this one serves three purposes.

- This book shows you how to install Quick Click Morph on your computer.
- This book shows you how to use Quick Click Morph.
- This book includes a reference section that is a catalog of all of the capabilities of Quick Click Morph.

This section gives you a quick overview of the book, as well as a detailed overview of this chapter. If you read this section carefully, you'll learn what you can safely skip, and what you really need to read. If you're an experienced computer user, you'll end up skipping a lot.

This book is divided into three major sections.

- This chapter tells you how to install Quick Click Morph and how to get help if you need it.
- Chapters 2 and 3 are a tutorial introduction to morphing in general, and Quick Click Morph in particular. In these chapters you'll learn how to use the major features of the morphing program and movie player, and get some ideas you can use in your own morphs. You'll also find valuable tips for creating the best morphs in the least amount of time.
- Chapter 4 is the reference manual for Quick Click Morph, while chapter 5 describes Quick Click Movie Player. These chapters describe the desktop interface, including all of the menu commands and the special mouse and keyboard commands you can use in a morph window and movie player document.

System Requirements

Quick Click Morph runs on any Apple IIGS computer with 1.125M or more of RAM and at least one floppy disk drive. It requires Apple's System 6.0.1 (not included).

While Quick Click Morph can work with this minimal system, there are several other things you should have to get the most from the program. A color monitor is essential for full color morphs. The number and complexity of morph frames is limited by your RAM, so for larger morphs (including some of the examples in this book) you will need more than 1.125M of RAM. We recommend 4M of RAM. Morph files and movies take a lot of disk space, so a hard drive makes it easier to organize, load and save your movies. Finally, morphs take a lot of computer time. An accelerator card will cut the time needed to create a morph in half—or more.

▲ **Warning** Quick Click Morph requires System Disk 6.0.1 or later. If you have an older version of Apple's operating system, you will need to update your operating system.

If you don't have the latest System Disk, and would like to get a copy, check first with your local dealer, your user's group, and any online services you have access to. You may be able to get a copy of the latest System Disks free.

You can purchase a System 6.0.1 boot disk or the complete collection of 6 System 6.0.1 disks and release notes from Byte Works. ▲

Backing Up Quick Click Morph

Quick Click Morph is shipped on floppy disks. Floppy disks are a very reliable way to store information, but accidents do happen. If your floppy disk gets too hot, or gets too close to a magnet, the program might be partially erased—and if that happens, it needs to be re-recorded. It's also possible you could loose a disk.

Of course, if you need to re-record a disk, you need to have more than one copy. That's what backups are for.

We suggest making one backup copy of your Quick Click Morph disks. You should also have a working copy, generally the one on your hard disk.

If you have a disk copy program you already know how to use, go ahead. The Quick Click Morph disks are not copy protected, so you can copy them with any copy program.

Here's how to make a backup copy from the Finder. The Finder is the program supplied by Apple Computer that shows disks, lets you copy files, and lets you run programs.

- Get into Apple's Finder. One way to do that is to boot Apple's System Disk.
- Insert a blank floppy disk into the computer. The Finder will ask you to initialize the disk. Initialize it, using the default name of Untitled.
- Eject the disk by pulling down the Disk menu and selecting Eject. The disk has to be selected before you can eject it. If it doesn't eject, click one time on the disk icon to select the disk, then try again.
- Insert a Quick Click Morph disk into the disk drive.
- Drag the disk icon for the Quick Click Morph disk to the disk you just initialized. The Finder will double-check before copying the disk, and will ask you to swap the disks a few times. (Of course, if you have two 3.5 inch floppy disk drives, you can leave both disks in drives and avoid the swapping.)
- Click on the name of the new disk Type the name of the disk you copied, since the name of the disk can be important. Press the return key to finish naming the disk.
- Eject the new disk by dragging it to the trash can.

- Set the write-protect tab so the disk can't be accidentally erased, and store the disk in a safe place.

You should repeat this process for each of the disks in the package.

Installing Quick Click Morph on a Hard Disk

If you have a hard disk, you will want to install Quick Click Morph on your hard disk. From the hard disk, Quick Click Morph will load and run faster, and will always be available when you need it.

There are two ways to install Quick Click Morph on your hard disk. The first is to run the Installer from the Quick Click Morph disk, select the option to install Quick Click Morph, and click the Install button. You'll need to insert the various disks as prompted. The installer will install Quick Click Morph, Quick Click Movie Player and all of the samples in the folder you have selected, and it will install the Quick Click fonts in the Fonts folder of your boot disk.

If you don't want all of the files, you can drag the ones you want from the Quick Click Morph disks to your hard drive. Here's the files the installer installs:

`QCMorph.Sys16`	This is the morph program itself. It is self contained; you don't need to copy any other files from the disks to use the morph program.
`QCMovie.Sys16`	This is the movie player. Like the morph program, it is self contained.
`Icons`	This folder contains an icon file for the Quick Click series of programs. Copy the file to the icons folder on your boot disk.
`Samples`	The samples are in the folders that start with samples. But you probably figured that out for yourself. Copy any or all of them to your hard drive.

Using Quick Click Morph With Floppy Disks

You can run Quick Click Morph from floppy disks by booting from a System 6.0.1 boot disk, then running Quick Click Morph from a copy of the Quick Click Morph disk. If you have two 3.5" floppy disks, this works fairly well—by leaving the boot disk in your first drive and putting the Quick Click Morph disk in drive 2, you won't have to swap disks, and there will be some work space for your files on the Quick Click Morph disk.

If you only have one 3.5" floppy disk, Quick Click Morph will still work, but you will have to swap between the Quick Click Morph disk and the System Disk from time to time.

While Quick Click Morph supports 5.25" floppy disks, these disks don't hold much information compared to 3.5" floppy disks. Your morphs will probably be too big for a 5.25" floppy disk, as is the morph program itself.

Using Quick Click Morph from a Network

You can install Quick Click Morph on a network using the same procedure that installs Quick Click Morph on a hard disk. Once installed, you can use Quick Click Morph just like you use any other program.

There is one thing you need to be aware of when using Quick Click Morph from a network: Quick Click Morph requires System 6.0.1 or better. If you are running an older version of Apple's system software, you will need to update your system software or boot from floppy disks.

Getting Answers to Questions

Eventually, you may want to talk with others about Quick Click Morph.

If you need technical assistance—anything from a bad disk to not understanding the manual to reporting a bug—you should contact the publisher and ask for technical assistance. The publisher occasionally adds new technical support channels or changes hours or phone numbers. For the latest times, numbers, online services and mailing address, read the file Tech.Support.

If you would like to talk to others about Quick Click Morph, we suggest one of the major online services, like GEnie. You'll probably find a topic to discuss Quick Click Morph already there, and can join in the discussion. As this manual goes to press, the publisher sponsors discussions on America Online and GEnie. You can join the discussion on America Online using keyword ByteWorks. From GEnie visit with us in topic 45 of A2.

Chapter 2 – Morphing: What It Is, How It Works

This chapter is a quick introduction to morphing, explaining various terms and concepts and giving you some ideas you can use in your own morphs.

If you already know what morphing, tweening and fading are, and have a clear idea what you can do with them, you can safely skip this chapter.

Morphing and Tweening and Fading, Oh My!

Everyone who has watched cartoons or seen a recent science fiction movie has seen morphs and tweens. They're everywhere. But what, exactly, are they, and where do they come from?

Actually, tweens came first, and they came a long time before computers were used. Tweens is shorthand for in-betweening, a term that comes from the cartooning industry. Cartoon artists start with a storyboard that looks more like a comic book than anything else. The frames from the storyboard eventually evolve into key frames, which are pieces of the final cartoon drawn by the best artists in the group. Less experienced artists are then called on for the time consuming work of creating the frame in between the key frames, moving each object in the image slightly as they draw each frame. These in-between frames are called tween frames.

Computers don't do as good a job as artists, mostly because an artist knows a lot more about how things move. Still, a computer is a very useful tool in creating those tween frames. You can use Quick Click Morph for tweening to create your own cartoons, starting from drawings you create with a paint program. Even if you aren't a talented artist, you can still put the ideas to good use. Imagine a chemical reaction with two molecules sliding across the screen to meet their destiny, or a square growing from the sides of a right triangle to show the Pythagorean Theorem.

Morphing is actually the same thing as tweening, at least from the computer's viewpoint. The term tweening is used when you are creating intermediate images of the same thing appearing in two different positions. Morphing is when the start and end object isn't the same. It's an arbitrary distinction, and if you happen to call everything a morph, I won't tell. Morphs are a lot more dramatic visually, though. From a person changing into a werewolf to a car tire changing into a panther foot, the shift of one object to another is a great attention grabber.

You can certainly create the same kinds of morphs you see in movies on your Apple IIGS, but it seems like the morphs people create for themselves are quite a bit different from the ones Hollywood uses. The KarenCat morph you see on the cover of this manual was an enormous hit in our family. A morph of two parents separated by a child can finally convince the grandparents that there really is a little of the in-laws in the kid. School pictures from various years make a great morph, showing a child literally growing up.

The last term you need to learn is the simplest. A fade is just one picture gradually fading to black, while another gradually appears. In the middle you see a kind of double exposure, with a little of both pictures. Fades are just morphs with no control points.

How Morphs are Created

Just as the cartoonist did, you will start with two or more key frames to create a morph. The key frames are pictures or drawings that you download from an online service, scan into your Apple IIGS from a photograph, draw with a paint program—any picture you like, actually.

Let's talk about a specific morph, one you'll see in more detail in the next chapter, to understand the ideas behind morphing. The KarenCat morph on the cover of the manual changes my daughter Karen into one of our cats, Psi. (For those of you with a background in physics, there's a pun there. Think Schrödinger's cat.)

Creating a fade is pretty simple. Let's imagine how the program would create a fade with 5 frames total in the movie—the original two frames and three more created by the program. For the middle frame, it scans each pixel in the frame and averages the colors from the start and end frame. If a pixel is black in the start frame and white in the end frame, the pixel will be gray in the middle frame. Things aren't much more complicated than this for the first and last generated frames. The pixel would be dark gray (75% of the black pixel and 25% from the white pixel) in the first of these frames, and light gray (25% of the black pixel and 75% of the white pixel) in the last generated frame.

Fading is also half of the process of morphing between two pictures. The other half is stretching the image. To see how this works, imagine printing the two pictures on sheets of rubber. We want to match like points from the two images and pull them together in the generated frames, so we would push the eyes toward each other; stretch the mouth of the cat wider, and push Karen's mouth narrower; stretch Karen's hair out to become ears, and so forth. At the same time, we'd do a fade, using some of the color from each image.

That's exactly what the morph program does. To tell it how to stretch the image, you create morph control points. Each morph control point appears as a cross in both the start and end key frame. To match the eyes, for example, you'd create a morph control point over each of Karen's eyes, then move to the cat's picture and drag the points to the proper spot over the cat's eyes. That tells the morph algorithms how to stretch the image to match up the eyes.

Chapter 3 – The Morph Cookbook

This chapter is a morph cookbook. Through several carefully chosen examples, you'll learn how to use the major features of the morph program and movie player. In the process, you'll pick up some tips that will help you get along with the program, and find ideas you can use in your own morphs.

△ **Important** Some of the things in this chapter may not make much sense unless you follow along at a computer. △

☆ **Tip** To avoid boring experienced computer users to tears, this chapter assumes you know a fair amount about using desktop programs. If you don't, and something confuses you, try looking up the command in this manual. For some of the commands, there may not be a lot of detail. For example, the Open command assumes you know how to open files on an Apple IIGS. If you don't, you can find information about using standard desktop features like the Open dialog in the System Disk manual that comes with your computer.

If the System Disk manual is missing, or you need more help than the manuals seem to provide, the publisher's technical support staff will be happy to help. You can contact the publisher though any of the channels listed in the Tech.Support file on the program disk. ☆

KarenCat

About This Morph

This is a morph of my daughter Karen turning into our cat Psi. It's the morph you see on the cover of the book.

This sort of morph is a real crowd-pleaser. Morphing people you know into pets, animals, or other people grabs their attention (and tickles their vanity) like few other things.

Ideas Covered

- Loading key frames.
- Using morph control points.
- Making the best use of your time and RAM by picking appropriate options.
- Tips on morphing faces.
- Generating a movie.

Creating the Morph

Step 1: Load the pictures Karen and Cat as key frames.

Every morph must have at least two key frames. You can use more than two key frames if you like, morphing from picture to picture to picture—the only upper limits on the number of key frames are RAM and time.

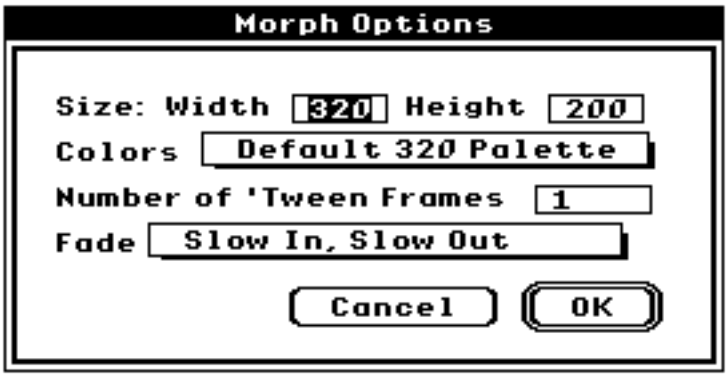
Start with a new morph document. Use the *Load Key Frame Before...* command, which brings up a standard Apple Open dialog box. The first picture you will load is a picture of Karen; it's in the samples folder inside the folder KarenCat; the file itself is called Karen. The picture will load and display as your first morph key frame.

Next, load the picture of the cat using the *Load Key Frame After...* command. The cat is in the same folder; the file is called Cat.

Step 2: Set the morph options to 16 Grays, 240 by 150, 9 'Tween Frames, Slow In Slow Out

You can ask the program to create just a few frames between the two key frames, or a lot of frames. You can also run those frames quickly or slowly. Of course, there are tradeoffs involved. A 10 second movie is more impressive than a 5 second movie, and 30 frames per second looks smoother than 5 frames per second. On the other hand, lots of frames take a long time to create, and they take lots of RAM and hard drive space.

For this morph, we'll start with a short movie with 9 frames. Pull down the Morph menu and select the *Morph Options...* command. You'll see a dialog like this one:



This dialog controls options that affect the entire morph. The top line is the size of the movie in screen pixels. For the KarenCat morph, you should select a size of 240 pixels wide and 150 pixels high.

Picking a morph size smaller than the screen has a number of advantages. Since there are fewer pixels to remap, the morph is created faster. That's a big consideration: Morphs take time. It's no accident that the first Cray 2 super-computer ever built went to a movie company! Smaller morphs also use less RAM and less disk space, so you can create more frames in the same amount of space. Finally, with less of the screen to update, the movie player can play the movie at a faster rate. It can't keep up with full frame updates at 30 frames per second, even if you have an accelerator card. Besides, the original photographs are small, and just don't need the full screen.

There are lots of color choices, and you might want to play around with a few. The originals for this morph are grayscale photographs, though, so you should pick *16 Grays* from the *Colors* pop-up. Colors can be tricky on the Apple IIGS, as you'll find out in a later example. For the first morph, we'll stick with simpler, easier to deal with grayscales.

The number of tween frames is the number of frames the program will generate. The way we'll pick our settings, the finished movie will be 11 frames spanning 1 second of time. The two key frames count, so we'll ask the program to create 9 tween frames. Enter 9 in the Number of Tween Frames box.

One of the most subtle and at the same time most important choices in this dialog is the fade rate. The *Fade* pop-up offers all kinds of choices for the fade rate. The two you'll use most often are *Normal In, Normal Out*, which works well for cartooning and other forms of tweening, and *Slow In, Slow Out*, which works best for morphs, like the one we're creating. The reference section goes into what this control does in more detail. For now, pick *Slow In, Slow Out.*

Step 3: Create morph points over the eyes.

The most important step in creating a smooth morph is picking good morph control points. Each control point you add takes more computer time, though, so you don't want to add too many. The exact amount of time adding a point will take varies, but for the KarenCat morph on my own computer, adding a point added about 17 seconds to the time it took the program to generate each frame. If you get carries away and create 100 morph points for a 30 frame movie, you'll be chewing up around 51000 seconds of computer time. In more normal terms, that's about 14 hours!

The best way to create a great morph with the fewest number of morph points is to try the morph a few times as you go along. With the KarenCat morph, I started by dropping a point down on each of Karen's eyes.

If you've been following along, you're looking at the cat. Pull down the Frames menu and pick *Previous Key Frame* to move back to the picture of Karen. Click once at the center of each of her eyes to create two morph points. If you create too many points, press the delete key to get rid of the extras. If they aren't quite in the right place, drag them there with the mouse, or for fine adjustments, use the arrow keys to move the selected point one pixel at a time.

Note If you are an experienced computer user, or are willing to experiment a bit, all of that probably made sense or was easy to figure out. If you get lost, you can find a more detailed explanation of how to create and modify morph points in Chapter 4.

These two points should also be on the cat's eyes. Use the *Next Key Frame* command to move back to the picture of the cat and drag the control points to the proper spots.

☆ **Tip** You probably had no trouble figuring out which control point to put on the left eye and which one went on the right eye, but when you have a few dozen points instead of two, it's easy to loose track of which point is which. To tell where a point is in each photograph, select the point you aren't sure about by clicking on the point in either picture. The selected point is red (or the closest available color to red), while all of the other points are green. By flipping back and forth between the pictures, you can see what the point is morphing. ☆

Step 4: Generate the middle frame to test the morph control points.

Maybe two morph control points are enough. The only way to tell for sure is to look.

Starting from the picture of Karen, use the *Next Frame* command 5 times to move to the middle morph frame. Since none of the frames have been generated, they are all blank screens. Once you arrive at the middle frame, pull down the Morph menu and use the *Morph This Frame* command to morph the middle frame.

The middle frame is the oddest looking frame in the entire morph. If the middle frame looks good, the overall morph will look even better. If it doesn't look good, you can look to see what parts of the original picture look the worst. In the case of the KarenCat morph, the worst part is the ears, so adding morph points to reshape some of Karen's hair to become ears seems like a good idea. After doing that, you could regenerate the frame and check for other bad spots. The idea is to repeat this cycle of adding morph points and generating one frame until the morph looks good.

☆ **Tip** A still picture mixing two things is sometimes as useful as a movie. If you're goal is a still picture, you can use the *Morph*

This Frame command to create just the frame you want, rather than generating the entire morph. ☆

This is a quick introduction to morphing, though, so for now just stick with the two points on the eyes. That will make the rest of the example go a lot faster. At the end, you can load the KarenCat morph from the samples folder to see where I put the control points for the morph you see on the cover.

☆ **Tip**

When I'm morphing faces, I always start with the eyes. Frequently, if you put control points on the eyes, and the corners of the mouth, and three points each around the top and bottom of the head, you'll get a pretty good morph.

The biggest problem is coping with very different hair styles! It can take dozens of points to map short hair into long hair without twisting the face into an unrecognizable jumble, and creating just the right effect to bring out a curl is just as hard as bringing out the ears on the cat in the KarenCat morph. The trick is to start with just a few control points and add just enough extra ones to bring out the shape you want. ☆

Step 5: Morph the remaining frames.

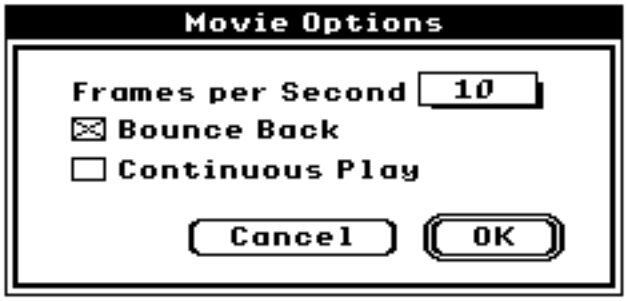
The time spent morphing the test frame isn't wasted. Quick Click Morph remembers which frames have been morphed, and as long as you don't change any morph points or any options that would affect the morph, the frame won't be regenerated.

Pull down the Morph menu and use the *Morph All Sequences* command to generate all of the remaining frames.

Step 6: Generate the movie with Bounce Back and Continuous Play selected.

At this point, the morph is complete. You still need to assemble the frames into a movie, though.

Pull down the Movie menu and pick *Movie Options...* You'll see a dialog like this one:



Select *Bounce Back* and *Continuous Play* and click OK. This tells the program to create a movie that moves from Karen to Psi and back again, and to play it over and over.

Step 7: Run the movie.

Pull down the Movie menu and select *Play*. Assuming you have enough RAM, the movie is created in memory and then played. Since you picked *Continuous Play*, it plays repeatedly until you click the mouse or press a key.

You can also save the movie to disk using the *Save Movie As…* command and play it with the movie player. If you're short on memory, that is a great option. The program doesn't need to hold the entire movie in RAM when saving it to disk, so even if you run out of memory trying to play the movie with the Play command, you can probably save it to disk and play it later with Quick Click Movie Player.

Evolution

About This Morph

The Evolution morph uses drawings of three skulls, one human and two prehuman, and creates a movie showing a gradual change between the skulls. It's a great example of an attention grabbing educational morph.

Ideas Covered

- Using more than two key frames.
- Tips about line drawings.

△ **Important** The directions for creating this morph assume you have already created the KarenCat morph, so they don't go into create detail explaining topics that were discussed completely in the last example.

With a little experimenting you can probably follow these directions even if you skipped the last example, but if you get stuck, you might try the KarenCat morph first, then come back to this one. △

Creating the Morph

Step 1: Load the files Makapan, Java and Human as key frames.

The three pictures we'll be using for this morph are retouched scans from line drawings. This is the sort of picture you can get from a variety of sources, including an inexpensive hand-held scanner.

The files are in the Samples:Evolution folder. Use the *Load Key Frame Before...* command to load Makapan as the first key frame. This skull is from a prehuman monkey-like animal. Add Java as the second key frame using the *Load Key Frame After...* command. Java man is still pre-human, but is a much later animal. While looking at Java, use the *Load Key Frame After...* command one last time to load the Human skull.

These skulls were touched up, preshifted and sized in Platinum Paint. It's a good idea to do all of your artwork in a program designed for the job before you load the pictures into Quick Click Morph, but if you check the reference section, you'll see that there are a few commands to move and resize pictures.

Step 2: Set the morph options to 16 Grays, 240 by 200, 7 'Tween Frames, Normal In Normal Out

There are several ways to deal with color in line drawings and cartoon-like pictures with large, solid color areas. The one we'll use in this morph is to use a grayscale palette. That way, as detail lines in the skulls that don't appear on the other pictures appear, they will have a full range of grayscales to use, and will fade in gradually.

If the picture really should stay solid black and white you can use a trick in your paint program to eliminate the grays. If you pick *16 Custom Colors* instead of *16 Grays* and start with a normal Apple IIGS picture, Quick Click Morph will use your original palette for the tweened frames. The trick is to load each of the pictures into a paint program and change the palette to 8 solid white colors and 8 solid black colors. That way, when Quick Click Morph tries to find the closest color match for a pixel, it is forced to pick either black or white.

Back to the current morph, though, move to the Makapan picture, open the *Morph Options...* dialog and pick *16 Grays*.

In the same dialog, set the width of the morph to 240 pixels. These images don't need more space, and as you saw in the KarenCat example, picking the narrower size dramatically reduces the time and memory requirements.

This is a line drawing, so unlike KarenCat, you're better off using *Normal In, Normal Out* for the fade kind. These morphs show a gradual shift from one shape to another, more or less like a cartoon, and we want the colors to keep pace. *Normal In, Normal Out* gives a linear mapping of the fade colors, so a frame 30% of the way from one picture to another uses 70% of the color from the first picture and 30% of the color from the last picture for a nice, even fade.

Finally, pick 7 tween frames and click OK.

All of the options but the last one apply to the entire morph, but you can pick a different number of tween frames for the morph of Makapan or Java, which you just set, and the morph of Java to Human, which is still at the default of one tween frame. This brings up the most difficult

problem you face when creating a morph using more than two frames: Which morph are you looking at?

Let's explore this a bit. Use the *Next Key Frame* command to move to the picture of Java. Bring up the *Morph Options...* dialog again. As you see, the number of tween frames is set to 7.

Now use the *Next Key Frame* command to switch to the Human picture, and immediately use the *Previous Key Frame* command to move back to Java. Check the *Morph Options...* dialog again. This time the number of tween frames is 1.

The problem you have to deal with is that Java is really a part of two separate morphs. It's the last frame in the Makapan-Java morph, and the first frame of the Java-Human morph. You will see a different set of morph options and morph control points depending on which morph sequence Quick Click Morph is dealing with at the time. Quick Click Morph switches to the Java-Human sequence when you move to the Human skull, and switches to the Makapan-Java morph when you view Makapan. If you aren't sure which morph you're dealing with, flip between the two key frames for the sequence you *want* to modify—that guarantees you're looking at the right sequence.

☆ **Tip** For another strategy to keep the morph sequences straight, read the description of the *Key Frame Pair* command in chapter 4. ☆

Move to the Java-Human sequence and set the number of tween frames to 7 for that sequence, too.

Step 3: Create morph points around the teeth and outline of the skull.

Create a morph control point where the front teeth meet on Makapan, then switch top Java and move the point to the corresponding location on that skull. Since the original pictures were lined up on the teeth, you won't need to move the point far, if at all.

Now move to Human and then back to Java. The morph point is gone. That's because you're now looking at Java as part of the Java-Human morph, but the morph point you created is a part of the Makapan-Java sequence. You'll need to create a new morph point and line it up on the corresponding points on the Java and Human teeth.

Repeat this process for a while until you get a feel for how to keep the morph sequences straight. It works the same way as for the number of tween frames, so look back to the last section if you get confused.

At this point, you might want to take a shortcut and just load the Evolution morph from disk. It takes quite a few morph points, and more than a little experimenting, to get a good, clean morph. The sample file will show you where I placed points.

☆ **Tip** The sample file uses a lot of morph points, and it can get hard to keep the corresponding points straight. Selecting a point changes it's color, though—and that helps you identify which point in one frame matches which point in another. ☆

Step 4: Generate the middle frame to test the control points.

If you are going to try your own morph points, you'll want to test the points several times. Keep in mind that there are two sequences to test; but other than creating two separate test frames, one in the middle of each sequence, there's nothing new here. Refer back to KarenCat for a description of the process.

Step 5: Morph the remaining frames.

Pull down the Morph menu and use the *Morph All Sequences* command to generate all of the remaining frames.

Step 6: Generate the movie with Bounce Back and Continuous Play selected.

Pull down the Movie menu and pick *Movie Options...* Select *Bounce Back* and *Continuous Play* and click OK.

Step 7: Run the movie.

Pull down the Movie menu and select *Play*.

Anatomy

About This Morph

Here's one that will make your skin crawl right off your skull—at least, it made my skin crawl (er, fade) from my skull. This morph shows yours truly changing into a skinless wonder. The original photographs are of me and a model of a human head showing the skull, eyes and some major muscle groups. It's a real attention grabber; just the sort of thing you might use at the beginning of an anatomy stack in HyperStudio.

Ideas Covered

- Loading TIFF files.
- Working with color.
- Planning ahead to cut computer time.

△ **Important** The directions for creating this morph assume you have already created the KarenCat morph, so they don't go into create detail

explaining topics that were discussed completely in the first example.

With a little experimenting you can probably follow these directions even if you skipped the first two examples, but if you get stuck, you might try the KarenCat morph first, then come back to this one. △

Creating the Morph

Step 1: Set the morph options to 16 Custom Colors, 112 by 180, 10 'Tween Frames, Normal In Normal Out

If you've been following along and working the examples, you know picking the morph options is normally the *second* step, not the first. There's a good reason for changing the order, as you're about to see.

This morph uses two 24 bit color pictures taken with a digital camera. That's a lot more color than the Apple IIGS can handle, but Quick Click Morph can make use of the color internally. Because of this, Quick Click Morph is the first commercial Apple IIGS program to make routine use of TIFF files, which are more or less a standard for high quality color files on PC compatible computers, and are rapidly gaining favor on the Macintosh as well.

TIFF files handle a lot of information. Each pixel in a typical color TIFF file uses 24 bits of storage—one byte each for red, green and blue. A 320 by 200 screen shot stored at a full 24 bit resolution takes nearly 190K of disk or RAM.

Quick Click Morph can compute colors internally using 12 bits per pixel. That's not as much as most TIFF files use, but it's plenty for a nice, high-quality color morph. In fact, it's a lot more color than the Apple IIGS can handle. Because of the way the Apple IIGS uses color, Quick Click Morph has to spend a lot of time munging a 24 bit picture into something you can see in color on the Apple IIGS.

And that's the problem we're solving by setting these options first. If you change the color model or size of the morph, Quick Click Morph will reconvert all of the TIFF files to fit the new screen size and color model. That takes time, and we all have better things to do than watch our computers play with bits. By picking the color model first, then loading the files, the files are only converted from TIFF format to the correct screen size and color model once, which saves us time.

Open the *Morph Options...* dialog. Set the width to 112 pixels and the height to 180 pixels; these are the dimensions of the pictures you will load. I used *16 Custom Colors*, so start with that option selected. You'll experiment with the color choice in a moment. Select 10 tween frames and *Normal In, Normal Out*, then click OK.

That last choice may seem a bit odd, too. Because of the kind of original pictures, I felt this morph had more in common with a cartoon than a typical photographic morph. *Normal In, Normal Out* just looks better to me than the *Slow In, Slow Out* that generally looks better for photographs. There's a lot of art to a good morph, so you need to try some things rather than sticking to firm rules.

Step 2: Load the pictures VMike and VHead as key frames.

These files are in the folder Samples:Anatomy. Use *Load Kay Frame Before...* to load VMike as the first frame, then use *Load Key Frame After...* to load VHead as the last key frame.

Step 3: Experiment with the color options to find one you like.

Picking colors isn't straight-forward on an Apple IIGS. Our favorite computer does a lot of things well, but it does not have a wide color selection. Internally, colors can use up to 12 bits, which is pretty good. The problem is that it has to pick just 16 colors from the possible 4096 colors you can form from 12 color bits per pixel. A program can use any 16 colors it wants, but it can only use 16 colors per line.

On the other hand, you can use up to 16 different groups of 16 colors. Each line of the screen has to choose a color palette, and that color palette has only 16 colors, but each line can pick from 16 palettes, and each of them can use 16 different colors.

Quick Click Morph can take advantage of this color scheme to deliver up to 256 colors at a time—in theory, anyway. In practice, the actual number of colors used tends to be much smaller because of the limitations on the number of colors per line.

There are three choices that make sense for a full color morph. *16 Custom Colors* tells Quick Click Morph to look at the entire picture and pick 16 colors that will work well, then match each pixel to the closest available color. It's fast, and in many cases gives very good results.

128 Custom Colors tells the program to use up to 128 colors in 8 palettes. The screen is divided into bands, and 8 separate color palettes are picked. Each line is scanned, and it picks the best palette from the 8 available. Sometimes only one or two palettes actually get used. This generally gives noticeably better results than *16 Custom Colors*, but that process of picking a palette for each line takes a lot of time, and it has to be repeated for each morph frame. I'd recommend using this option for extreme cases only, like a picture that has radically different colors in differing vertical bands—a sunset, say, with reds and golds at the top, and dark colors near the bottom. A picture with wildly different colors in different strips of the image works a lot better with *128 Custom Colors*, since it can use different palettes for the two color zones.

256 Custom Colors works the same way, but uses all 16 palettes instead of just 8. There are two big disadvantages to using all 16 palettes. The first is it takes a lot more time, since the program has to check 16 palettes for the best match instead of 8. The second is that, with 16 or 128 colors, half or less of the palettes are used for each frame of the movie. Without getting too mired down in technical details, you'll see less color flicker in the finished movie with 16 or 128 colors.

In general, save *256 Custom Colors* for situations with a lot of color bands and where the start and end frames have similar coloring.

There is one other important color choice. Hidden in the Frame menu is a command called *Frame Options...*, and that dialog has a button that lets you turn dithering on or off. Dithering is a very effective tool for creating full color pictures on the Apple IIGS. It effectively extends the number of colors to about the fourth power of the number you are actually using. The price you pay is a grainy picture, but that graininess is less noticeable when a movie is playing. (Did you

ever look at a single frame from a real movie, especially an old black and white movie? It has an amazing number of spots and blotches, but they don't show up when you watch the movie.)

In a nutshell, dithering tells the program to pick the best available color for a pixel, but then to remember the error in the color, and spread it out to other pixels. If you need a pink pixel, for example, but only red is available, a little white will be added to the surrounding pixels to make up for the error. When you stand back or play a movie, you see better overall color. When you look close, any smooth texturing is lost.

All together, these options represent no fewer than 6 combinations you can try on the current morph frames. If you're in a hurry, you should skip them—but if you're in a hurry, you probably didn't read this far. So give some options a try. As a minimum try the pictures with and without dithering, and give either 128 or 256 colors a shot with dithering on.

Step 4: Create morph points around the eyes, mouth, chin, and top of the head.

I didn't use many morph control points in this sample. One point in each eye and three each along the mouth, top of the head, and chin gave the results I wanted. You can play around with some of your own choices, though. See the last two examples for some tips about choosing the points, and take the time to look at my choices, too.

Step 5: Create the morph.

Pull down the Morph menu and use the *Morph All Sequences* command to generate the frames.

Step 6: Generate the movie with Bounce Back and Continuous Play selected.

Pull down the Movie menu and pick *Movie Options...* Select *Bounce Back* and *Continuous Play* and click OK.

Step 7: Run the movie.

Pull down the Movie menu and select *Play*.

Creating a Movie Script

About The Movie Player

Quick Click Morph creates movies as output. You can play those movies with any PaintWorks compatible movie player, but the one that comes with Quick Click Morph has one unique feature: it can create a movie slide show. This example shows you how that works.

Ideas Covered

- Movie slide shows.

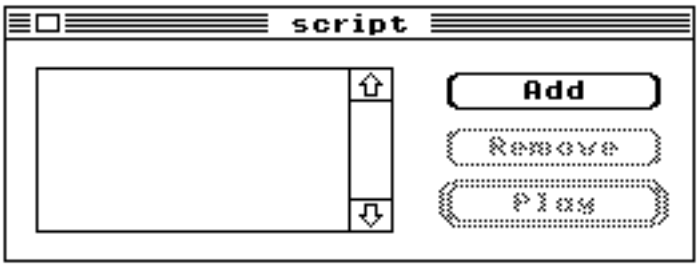
Creating the Movie

Step 1: Add the KarenCat and Evolution movies to a movie script.

When you run Quick Click Movie Player, you see a window that looks a lot more like most dialogs than it does a typical document window. The window you see is the document for Quick Click Movie Player, though. Quick Click Movie Player uses lists of movies as its document. When you play the list of movies, Quick Click Movie Player plays each movie you select in turn, then returns to the top of the list and plays them again. It doesn't stop until you tell it to stop.

These movie scripts work just like documents from word processors, spread sheets, or any other Apple IIGS program. You can save a movie script, load and edit one, and even double-click on a movie script to run it from the Finder.

Here's the window you see when you create a new movie script:



When you click on the *Add* button, you see a standard Apple Open dialog that lets you pick PaintWorks format movies. Picking a movie adds it to the end of the current movie list.

If you want to play a movie twice, you can add it to the list twice. You can also remove movies from the list by selecting the movie and clicking Remove, or movie a movie in a list by selecting the movie, holding down the option key, and pressing the up or down arrow key.

Click on Add, then add the KarenCat movie from the samples folder. Click on Add again and add the Evolution movie from the samples folder.

Step 2: Play the movie.

Click Play.

There are a few commands you can use while the movies play. Pressing the left or right arrow keys changes the speed of the movies. Pressing the space bar stops the movie, and pressing it again steps to the next frame. The return key starts playing the movie again.

Pressing any other key or clicking on the mouse button stops the movie.

Chapter 4 – Quick Click Morph Command Reference

This chapter describes the desktop interface used by Quick Click Morph. Each of the menu commands is described, the Finder interface is examined, and special commands and features of the morph window are examined.

In several places, this documentation refers you to Apple's System Disk manuals. These are the manuals that came with your computer. The most recent version comes with Apple's System Disk 6.0.1, available from a variety of sources.

Finder Interface

Teaching the Finder About Quick Click Morph

Apple's Finder can automatically use Quick Click Morph to open files or print documents, as described in the next two sections. Before it can do that, though, you have to tell the Finder Quick Click Morph exists, and just which files it can use. Teaching the Finder about Quick Click Morph is pretty simple, though—all you do is run QCMorph.Sys16 one time from the Finder. When you do that, the Finder saves some information about Quick Click Morph in its desktop file, and from then on (unless you delete the desktop file, of course) the Finder can do the things described in the next two sections.

Opening Files

When you open a Quick Click Morph document from Apple's Finder, either by selecting one or more documents and opening them from the File menu or by double-clicking on a Quick Click Morph document, the Finder will start Quick Click Morph, which will open one window for each document you pick.

Note Quick Click Morph can load and save files in a variety of formats. For example, it can load frames in various picture formats, and can save PaintWorks format movies. The only file that is unique to Quick Click Morph is the morph document itself—that's the one with the key frames, control points, and morph frames. When you open a morph document from the Finder, the Finder runs Quick Click Morph to handle the file. For any other kind of file, even a picture or movie you save from Quick Click Morph, the Finder will open some other program.

Printing Files

You can print a morph without running Quick Click Morph. Select the Quick Click Morph documents you want to print and pick the Print command from the Finder's menu. The Finder runs Quick Click Morph, which prints the files you selected and returns to the Finder.

Morph Window Features

The morph document window is a frame-by-frame view of a movie you are creating with the aid of Quick Click Morph. You see a single frame of the movie, and use various commands to flip back and forth between the frames, making adjustments and admiring your work.

There are two very different kinds of frames in a morph document. Key frames are the ones you start with. Key frames are pictures created in a different program and loaded into your morph document. You must have at least two key frames to create a morph; you can have more than two as long as you don't run out of memory.

Morph frames, also called tween frames, start out as blank white screens. These frames are created by Quick Click Morph, filling in the gaps between two key frames based on directions from you.

You supply the directions partly by selecting the key frames in the first place, and partly by selecting options from the various dialogs, but the most active roll you take is in creating and positioning morph control points.

Creating Morph Control Points

Morph control points, also called simply morph points, are the small plus signs you see on the key frame. To create a morph control point, move to a key frame, position the cursor where you want the control point, and click. You can move a control point by dragging it with the mouse. Delicate adjustments can also be made with the arrow keys, which move a point one pixel in the direction of the arrow.

The selected control point is colored red (or the closest color to red that's available in the current palette), while all of the other control points are green. You can delete the selected morph point using the Delete key. You can select a different morph point by clicking on it with the cursor.

You'll usually use morph control points to show Quick Click Morph where the similar features are in two key frames. For example, if you are morphing between photographs of two people, you might position a morph control point over each eye. The position of the control point can, and usually does, differ between the two key frames, so you might move one point over the left eye in each image, and the other over the right eye. If you imagine the images printed on a rubber sheet, the control points work like a toothpick driven through the sheet and dragged from one point to another.

The Resize Tool

There are two tools available besides the morph point tool. The first is the resize tool, which gives you a quick-and-dirty way to change the size of the image. To get the resize tool, move the cursor over the image and hold down the option key. The cursor switches to the resize tool. Dragging on the image with the mouse changes its size.

While the resize tool is a nice way to make unexpected adjustments within Quick Click Morph, it's generally a good idea to prepare your images in a powerful paint program before you load them as key frames. If you need to make extensive changes to a frame, use the *Save Frame As…* command to save the frame to disk, make your changes, and then use the *Update Key Frame...* command to load the changed image.

The resize tool is a shortcut for the *% of Original Size* command in the *Frame Options...* dialog. See the description of that dialog for tips concerning resize options and speed.

The Image Mover Tool

The image mover tool shows up when you move the cursor over the morph document window and hold down the command key (the key with the open apple). It's the ubiquitous hand shape, and like all hand shaped tools, it lets you drag the picture around the screen.

This tool is a shortcut for the offset commands in the *Frame Options...* dialog. See the description of the *Frame Options...* command, later in this chapter, for some hints and comments regarding picture editing.

Apple Menu

About Quick Click Morph...

The about box shows the copyright notice and version number for Quick Click Morph. The version number is something you need to check, especially if you are about to call for technical assistance with Quick Click Morph.

Desk Accessories

Any remaining items in this menu are desk accessories. You can find a general description of desk accessories in Apple's System Disk manuals. For specific information about a particular desk accessory, see the documentation that comes with the desk accessory.

File Menu

New

The *New* command opens a new morph window, like the one that opens by default when you run Quick Click Morph.

See “The Morph Window,” later in this chapter, for a description of the various mouse and keyboard commands available in this window.

Open...

The *Open* command brings up an Apple open dialog. Use this dialog to open an existing morph document. The dialog’s features are described in Apple’s System Disk manual.

Passwords

If you open a file that was saved with password protection, you will see the password dialog.

You must enter the password exactly as it was entered when the file was saved. The password is case sensitive, too, so “fred” won’t open a file saved with the password “Fred”.

If you loose your password, you’ve lost the file!

See “Save As...,” later in this chapter, for more information about password protection.

Close

This command closes the front window. It works on all Quick Click Morph windows and most windows opened by desk accessories.

Save

Saves the contents of the front window. If the front window has never been saved to disk, this command works exactly like the Save As... command.

Save As...

This command brings up a slightly modified standard Apple save dialog. The modifications are described below. Apple's save dialog is described in Apple's System Disk manual.

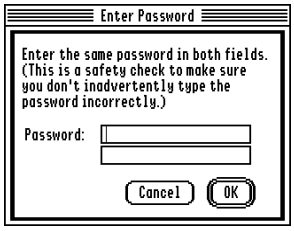
Encrypting Files

Encrypting a file is a fast, easy way to keep your valuable or sensitive information from casual prying eyes. Once a file is encrypted, you can't load it from disk without the password.

▲ **Warning** If you loose your password, you have lost the file! Be sure the password is something you will remember. ▲

It's fair to ask just how secure your information is. A good way to thing about encryption is that it's like a lock on your house. Yes, it can be broken. There are government agencies with talented code breakers and huge computers that can no doubt break into an encrypted Quick Click Morph file—if they had a good enough reason to spend the time and money to do it. Most people don't have the time, expertise, or a powerful enough computer to break into our files, though.

By far the easiest way to break into a file is to steal the password. The password to a file is the key to the file. Writing your passwords on a piece of paper and sticking the paper in your desk drawer is about as bright as putting a door key under your door mat. Your password should be easy to remember, but not too short. For maximum protection, you should use different passwords for each file.



To encrypt a file, select *Encrypt the File* using the check box near the bottom of the save dialog. Enter a password for the file two times. You must enter the same password in both LineEdit items before you can click OK. This is a simple check to make sure you don't encrypt a file with a password that contains a typographical error. Once you select OK, the file will be encrypted on all subsequent saves. If you select cancel, the file won't be encrypted.

Passwords are case sensitive, and spaces an punctuation marks do count. "Fred" is *not* the same password as "fred".

Page Setup...

This command opens a printer page setup dialog. Quick Click Morph supports any printer driver that conforms to Apple's standards. Apple's printer drivers are described in Apple's System Disk manual; for other printer drivers, see the documentation that came with the driver.

Print...

This command opens a print dialog. Quick Click Morph supports any printer driver that conforms to Apple's standards. Apple's printer drivers are described in Apple's System Disk manual; for other printer drivers, see the documentation that came with the driver.

The print command prints all of the frames in the entire morph sequence. Each frame is printed on a separate page. The frame numbers match the page numbers, so printing pages 2 through 4 from the *Print...* dialog will print frames 2, 3 and 4.

Quit

This command leaves Quick Click Morph. Before leaving, all windows are closed. If any window has changed since it was last saved to disk (or since it was created, if it has never been saved to disk), you will get a chance to save the file, not save the file, or stop shutting down the program.

Edit Menu

Undo

The *Undo* command is not used in Quick Click Morph. It is included for use by desk accessories.

Cut

The *Cut* command is not used in Quick Click Morph. It is included for use by desk accessories.

Copy

The *Copy* command is not used in Quick Click Morph. It is included for use by desk accessories.

Paste

The *Paste* command is not used in Quick Click Morph. It is included for use by desk accessories.

Clear

The *Clear* command is not used in Quick Click Morph. It is included for use by desk accessories.

Frames Menu

Previous Key Frame

Moves to the previous key frame.

See “Morph Window Features,” earlier in this chapter, for a description of key frames and tips on using them effectively.

Previous Frame

Moves to the previous frame. The previous frame can be either a key frame or a morph frame. If the frame is a morph frame that has not been generated, it will appear either as a blank frame or, if you interrupted a morph while it was in progress, as a partially filled frame.

See “Morph Window Features,” earlier in this chapter, for a description of frames.

Next Frame

Moves to the next frame. The next frame can be either a key frame or a morph frame. If the frame is a morph frame that has not been generated, it will appear either as a blank frame or, if you interrupted a morph while it was in progress, as a partially filled frame.

See “Morph Window Features,” earlier in this chapter, for a description of frames.

Next Key Frame

Moves to the next key frame.

See “Morph Window Features,” earlier in this chapter, for a description of key frames and tips on using them effectively.

Delete Key Frame

Deletes a key frame, all morph points associated with the key frame, and the generated morph frames that were created using the key frame as a reference.

Since morphs take a lot of time to generate, and this command removes all of the information associated with a key frame, you will get a caution dialog asking if you are sure you want to delete the key frame and its associated information.

Load Key Frame Before...

Loads a new key frame before the current key frame. The current key frame becomes the end frame in a morph sequence, and the frame you load becomes the start frame.

If you use this command while you are not looking at a key frame, Quick Click Morph places the new key frame before the starting frame for the morph sequence you are viewing.

You can use this command to load the first frame in a new morph document.

Quick Click Morph can load the following kinds of files as key frames:

Screen Dumps

Screen dumps (file type $C1, auxiliary file type $0000) are files containing a copy of the Apple IIGS graphics display. They are simple to create, simple to load, and are supported by most programs that use graphics files.

Apple Preferred

Apple Preferred files (file type $C0, auxiliary file type $0002) are the preferred picture file format on the Apple IIGS. They are supported by most paint programs, as well as by many other programs which use graphics files.

TIFF

TIFF files (file type $C0, auxiliary file type $0080) are a powerful and flexible picture format popular on computers that can use more colors than the Apple IIGS. Quick Click Morph supports TIFF files so you can create morphs from original pictures that use more colors than standard Apple IIGS pictures.

The TIFF file format is very flexible, and has lots of options. Quick Click Morph loads a subset of the vast number of formats that can be stored in TIFF files. A TIFF file should be saved as uncompressed RGB if you want to load the file into Quick Click Morph.

While there is a TIFF file format available on the Apple IIGS, and Quick Click Morph recognizes that file format, most TIFF files will come from another computer. Depending on how

you move the TIFF file to the Apple IIGS, it can arrive as an untyped file (file type $00), a binary file (file type $06) or a text file (file type $04). Quick Click Morph will look inside any file with one of these file types. If the file has a valid TIFF header, Quick Click Morph will allow you to open the file. If the file opens successfully, you'll get a chance to change the file type to the Apple IIGS TIFF file type.

Load Key Frame After...

Loads a new key frame after the current key frame. The current key frame becomes the start frame in a morph sequence, and the frame you load becomes the end frame.

If you use this command while you are not looking at a key frame, Quick Click Morph places the new key frame after the ending frame for the morph sequence you are viewing.

You can use this command to load the first frame in a new morph document.

Note See "Load Key Frame Before...", earlier in this section, for a list of the file formats you can load as a key frame.

Update Key Frame...

Loads a new key frame, replacing the image of the current key frame. Morph points and morphed frames are not changed, although any morph sequences affected are marked for update, and will be regenerated when any of the Morph menu morphing commands are used.

This command is generally used as part of a sequence to change a frame. When you want to change the image of a key frame, start by saving the key frame to disk. Use a graphics or paint program to change the picture, then use this command to load the modified picture, replacing the original. The big advantage to changing the frame this way, as opposed to using the *Delete Key Frame* command, is that the morph control points are not deleted.

Note See "Load Key Frame Before...", earlier in this section, for a list of the file formats you can load as a key frame.

Save Frame As...

Saves the current frame to disk. The command starts by displaying a standard Apple save dialog, as described in Apple's System Disk manual. Once you provide a file name and click the *Save* button, the currently visible frame is saved to disk as a screen dump (file type $C1, auxiliary file type $0000). Virtually every Apple IIGS program that uses pictures of any kind, particularly paint programs, can load this file.

There are many reasons to save a frame for use in other programs, but there are also two common reasons to save a frame while using Quick Click Morph.

After working on a morph, you may discover that something about a key frame needs to be changed. Perhaps changing a color would give a smoother transition, or rotating an object slightly would make it easier to map the image to the next key frame. In many cases like this, the original image is already available in a format that you can load right into your paint program, but if the original is a TIFF, or isn't available for some reason, you can save the key frame to a screen dump file using this command, change the image with any paint program, then reload the key frame using the *Update Key Frame...* command.

In some situations, you may want to change a morphed frame into a key frame. To convert the morphed frame into a key frame, start by using this command to save the frame to disk. Next, use *Load Key Frame Before...* or *Load Key Frame After...* to load the frame back into the morph as a key frame.

Print Frame...

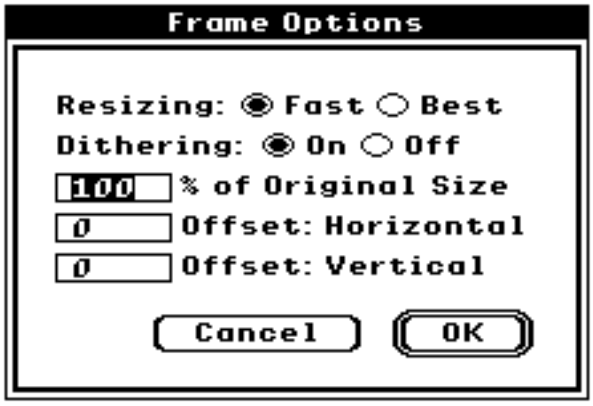
Prints the current frame.

The *Print...* command in the File menu prints all of the frames in a morph. *Print Frame...* works the same way, but it only prints the visible frame. You could do the same thing with the *Print...* command from the File menu by carefully counting the frames and supplying the frame number as a page number, but this command saves you the trouble.

Either way, the image printed is the same.

Frame Options...

Brings up a frame options dialog like the one shown. Use this dialog to select options that govern the appearance of individual frames.



Resizing

Quick Click Morph can resize a frame using either this dialog or the resize tool. This option controls the way pixels are formed when the frame is resized.

Fast selects a single pixel from the original frame for each pixel in the final frame, choosing the pixel that is geometrically closest in the two images. In most cases, this gives good results, and the new image is formed very quickly no matter what size is used.

Best uses a much more precise algorithm to form the final pixels. In effect, each of the final pixels is treated as a square, and overlaid on the original image, whose pixels are also treated as squares. The final pixel's color is a weighted average of all of the pixels it overlaps in the original image. This gives much better results, especially if the original image is a line drawing or has lots of sharp detail. Unfortunately, this also takes a lot more time. For odd size changes, say 41%, the amount of time this method uses is almost always so long that it isn't worth the trouble.

Dithering

The Apple IIGS is limited to 16 colors on a scan line, while Quick Click Morph handles as many as 12 bits of true color per pixel. With dithering turned off, each pixel in the final movie is picked from the closest available pixel in the Apple IIGS color palette. In many cases, this gives very good results, but on photographs or morphs that change from large solids with more than 8 solid colors used in each key frame, no amount of trickery will give good color results.

Dithering is a practical way to stretch the color palette. With dithering on, a pixel is chosen based on it's true color, but then the difference in the true color and the actual color that was picked from the available colors is spread to adjacent pixels. The color for the other pixels is modified slightly, so that pixel's color isn't quite right, but the overall color for large areas of the screen is closer to the original.

In many cases, the overall effect is far better than a frame formed without dithering. Up close, the picture looks grainy, but from a distance, or when several frames are played in succession, the net effect is for your eye to blend the pixels together, so you see far more than the available 16 colors per line.

Dithering does take a fair amount of computer time, and for some pictures, the grainy result is worse than putting up with colors that are slightly off. The best way to tell if dithering will work well is to try it. If the only problem is the graininess of the picture, though, it's often worth creating the movie, since the graininess can vanish as the frames blend together while being played as a movie.

% of Original Size

This option resizes the image by a fixed percent. 100% leaves the image the original size, 50% cuts the image to half its original size, and so forth.

This only changes the size of the displayed image and the image Quick Click Morph uses when it creates morph frames. A complete copy of the original image is kept. This makes it safe for you to experiment—cutting the image to half its original size and then returning it to 100% doesn't loose any information.

As a general rule of thumb, you should prepare pictures before you load them into Quick Click Morph, since a paint program has better tools to change pictures. Save this option for quick or delicate changes only.

See "Resizing," above, for comments on the quality of the final image and for information about the amount of time it takes to resize the image.

☆ **Tip** This dialog command is great for very precise resizing, but resizing an image is something people do better by feel than by numbers. In most cases, it's easier to use the resize tool to change the size of an image. See "The Resize Tool," earlier in this chapter, for information about the resize tool. ☆

Offset: Horizontal
Offset: Vertical

These options shift the position of the image in the frame. The position is shifted to the left and up by the number of pixels you enter. The shifting is done before the image is resized.

As with resizing the image, its best to position the image in a paint program rather than in morph, but this option will do the job.

☆ **Tip** This command is great for very precise positioning, but as with resizing, positioning an image is something people do better by feel than by numbers. See "The Image Mover Tool," earlier in this chapter, for a visual way to move the image. ☆

Morph Menu

Morph All Sequences

The entire morph is scanned from start to finish for morph sequences and frames that have not been generated since the last change to a control point or option. All of these frames are generated.

If the morph only has two key frames, this command is the same as the Morph This Sequence command.

☆ **Tip** You can always interrupt a long morph and restart it later. Quick Click morph remembers which frames have been morphed. This command won't redo the work on a frame that has already been completed.

Partially morphed frames will be completely redone, though. ✯

Morph This Sequence

The active morph sequence is generated. If there are more than one morph sequences in the document, the other morph sequences are not updated in any way.

Morph This Frame

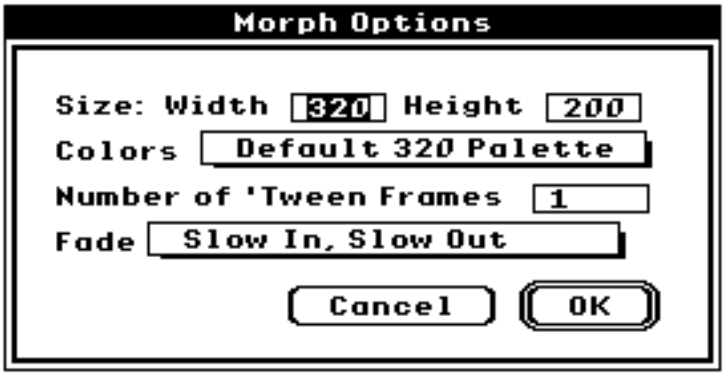
The visible frame is morphed. Other frames in the document are not changed.

✯ **Tip** Use this command when you want to use Quick Click Morph as a special effects package, and save a single, morphed frame as a picture in another document.

You can also use this command to look at important frames in the morph, like the middle frame, to see if you have enough morph points for a smooth morph. This way, you don't have to wait for the entire morph to see that you need to make minor adjustments in the morph points. You don't waste any time, either—Quick Click Morph remembers that the frame has been completed, and doesn't redo it unless you make a change in a control point or option that might change the frame. ✯

Morph Options...

Brings up a morph options dialog like the one shown. Use this dialog to select options the effect the morph or morph sequence.



Size: Width
Size: Height

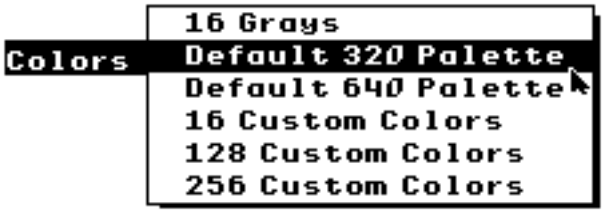
These options let you select the actual frame size for a morph. The largest allowed morph is one full Apple IIGS screen, which uses 320 by 200 pixels. You can make the morph as small as you like. The size affects the entire morph, applying to each of the morph sequences.

Note

The Apple IIGS actually supports both a 320 pixel wide screen with 16 colors and a 640 pixel wide screen with 640 pixels. The 640 pixel wide screen has 4 pure colors which, using some tricks, appear as up to 16 colors on a color monitor. Quick Click Morph treats the 640 mode screen as a 320 mode screen with a special color palette. A 320 pixel wide morph will show up as 640 pixels wide in a program like HyperStudio that runs in 640 mode.

Quick Click Morph doesn't have to spend the time to generate full screen movies. If your images don't use the full screen, or if the final movie will be smaller than the full screen (as in a movie on a card in HyperStudio), cutting the size of the morph itself can dramatically cut memory requirements and the time needed to create a morph.

Colors



Quick Click Morph can work in a variety of color schemes. The colors pop-up lets you select one of these color schemes. The color scheme you select applies to all of the morph sequences in the morph document. All of the key frames in the document are immediately remapped to the color scheme you select—since that can take a fair amount of time, especially for TIFF frames, try to pick one color scheme and stick with it!

16 Grays uses a gray scale palette, more or less like a black and white TV. This is a great option for pictures, especially if there are so many colors, or such delicate shading, that the original pictures just don't look right with any of the other options.

Default 320 Palette uses the default colors from the 16 color 320 mode palette. Use this option for hand-drawn images that use the default palette or for movies that will be used in a program that requires the 320 mode palette.

Default 640 Palette uses a color palette that approximates the 16 colors you can get by mixing colors in 640 mode. This is the palette of choice for any morph you want to use in HyperStudio, since it is also the color palette HyperStudio normally works in.

16 Custom Colors tells Quick Click Morph to form a custom color palette based on an original image that contains more than 16 colors, or to use the 16 custom colors in an original image. If the start and end frames are Apple IIGS pictures, the 16 colors are picked based on the colors in the start frame for a morph sequence, and those colors are used for each frame in the morph sequence. If either the start or end frame is a TIFF file, the morph is done using 12 bits per pixel, then the final frame is generated by reducing the colors in the 12 bit original to 16 custom colors.

Combined with dithering, *16 Custom Colors* is generally a good trade off between speed and color. It gives pretty good color, especially when the movie is played, but doesn't take near as much time as the 128 or 256 color modes.

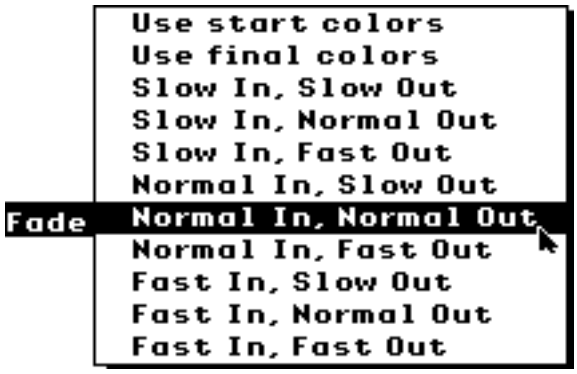
128 Custom Colors and *256 Custom Colors* give the most accurate color, although full color originals still require dithering, and delicate color changes are generally lost. For both of these options, the morph frame is generated internally using 12 bits per pixel, then the final image is mapped to either 8 or 16 scan lines of 16 colors each. Half of the scan lines are optimized for dithering, and half for the most accurate color, then the color picker routines pick the best scan line for each display line. (As a result, a particular frame may not actually use all of the available scan lines.)

With 128 custom colors, each pair of frames uses a different set of the 8 available palettes, so color transitions are smooth as the movie plays. With 256 colors, the transitions can cause color flickering. In general, use 128 colors rather than 256 colors to avoid color flicker, but 256 colors can give better results when the colors in the start and end key frames are similar, and don't mix much as the morph progresses.

Number of 'Tween Frames

This is the number of morph frames between the two key frames. You can pick a different number of tween frames for each sequence in the morph.

Fade



As the frames of a morph are created, two factors control the appearance of each frame. The position of the morph points on the start frame and end frame, combined with the automatically calculated position of the points in the tweened frame, govern which pixel in the start frame and end frame contributes color to the tweened frame. Looked at another way, the control points control the movement of the picture as the morph progresses. The other factor is how much color comes from each of the key frames. At the start of the morph, a red pixel in the start frame and white pixel in the end frame will generate a red, or nearly red, pixel in the tweened frame. Near the end of the morph sequence, the pixel will be almost white. The fade option controls the *rate* that the colors change.

Use Start Colors and *Use Final Colors* don't change the colors at all—the pixels are picked entirely from the start or end frame. In this case, the morph is just reshaping the start or end image, not changing one image into another. This is a great way to create special effects.

The other options control the speed of the color switch. For photographs, *Slow In, Slow Out* is generally the best choice. It's the most natural looking, compressing the strangest looking frames into the middle of the morph so the whole transition looks smoother. For line drawings, cartooning or tweens of natural objects—like a tween showing continental drift—*Normal In, Normal Out* will generally give the best results. *Normal In, Normal Out* tends to work best. It is a linear shift, so frame 4 of 15 frames uses 4/15 of the color from the final frame, and 11/15 of the color from the start frame. The other options give you a complete range to choose just the right effect for a particular set of conditions.

Movie Menu

Play

The *Play* command creates a movie in RAM and plays it. All of the options you have selected from the *Movie Options...* dialog are respected.

If there are any frames which have not been generated since the last change to the morph control points or options, you will see a warning alert, but you can still create a movie. Of course, some of the frames may be solid white, and some may be partially generated, but you can still create and run a movie to see how the morph is coming along.

Generating the movie takes a few moments; the time depends on how different the various frames are from one another and how many frames must be generated. Once it is generated, though,

you can play the movie over and over. It is not lost unless you make a change to the morph or close the morph document window.

When the movie starts playing, the desktop is erased, and the movie is played using the complete screen.

If you select *Continuous Play* from the *Movie Options...* dialog, the movie will play until you press a key or the mouse button.

Once the movie stops you'll switch back to the normal desktop display.

△ **Important** Morphs take a lot of RAM, and so do movies. In some cases, there won't be enough memory to generate the movie using this command. All is not lost, though: The Save Movie As... command saves the frames to disk as they are generated, then frees the memory for the next frame. It takes a little longer to generate the movie, and you have to play it from an external movie player, but the process uses a lot less memory. △

Save Movie As...

Brings up a standard Apple save dialog. After picking a location and file name, and clicking on the *Save* button, the movie is generated (if necessary) and saved to disk as a standard PaintWorks animation file. Virtually any Apple IIGS program that can play movies, including HyperStudio and the movie player included with Quick Click Morph, can play the finished movie.

Movie Options...

Brings up a movie options dialog like the one shown. Use this dialog to select options the effect the movie.

Frames per Second

This pop-up menu lets you select the rate of play for the movie. On unaccelerated computers with complicated full screen movies, 10 or 12 frames per second is about all a movie player can manage. On accelerated computers, especially with movies that don't change a lot from one frame to the next, or that are less than the full screen size, 30 frames per second is a real possibility. There's no point in trying to go faster than 30 frames per second, since your monitor doesn't update the display any faster.

Keep in mind that a faster frame rate means you have to generate more frames to create a movie of a given length of time. That takes more time when the morph is created, and more disk and RAM space to store the movie.

Bounce Back

Bounce Back gives you twice the frames from a morph by creating the movie forward, just as you would expect, and then creating frames in reverse order. When the full movie is played, you end up back at the beginning.

This option works particularly well with *Continuous Play* or with movie players that play the movie continuously by default. The effect is a morph that moves from the start to the end picture, then back again, then forward, and so on.

Continuous Play

Continuous Play tells the built-in movie player to play the movie repeatedly until a key or the mouse button is pressed.

Note The PaintWorks movie format used on the Apple IIGS doesn't support this flag, so it only affects the *Play* command within Quick Click Morph.

Display Menu

Show Morph Points

This command lets you hide or show the morph points that show up on key frames.

Single Frame

This is the default display mode, showing one frame of the morph. Use this command to reverse the effect of the *Key Frame Pair* command.

Key Frame Pair

You normally see a single frame from the morph, but particularly when you are placing and adjusting morph points, it's nice to look at both the start and end key frame side by side. This command lets you do just that.

You are restricted to key frames while you are looking at a pair of frames.

All of the commands that refer to the current frame change the left of the two frames; the left frame is the start key frame for the morph sequence.

☆ **Tip**

When you are creating a morph with more than two key frames, it's easy to get confused as to which morph sequence you're working on. This command is a great way to tell, and also a good way to select the correct morph sequence, even when you want to work on the frames one at a time.

When this command is active, the left frame is always the start frame in the current morph sequence. Switching back to a single frame display doesn't change the active sequence. ☆

Actual Size

This command switches the display to full size. Use it to reverse the effect of the *Fit In Window* command.

Fit In Window

A full screen morph doesn't fit on a window, but it's sometimes nice to see the big picture. This command shrinks the frame just enough to fit in the current window.

Chapter 5 – Quick Click Movie Player Command Reference

This chapter describes the desktop interface used by Quick Click Movie Player. Each of the menu commands is described, the Finder interface is examined, and special commands and features of the movie script window are examined.

In several places, this chapter refers you to Apple's System Disk manuals. These are the manuals that came with your computer. The most recent version comes with Apple's System Disk 6.0.1, available from a variety of sources.

Copyright

Unlike most software, including Quick Click Morph, you can give away copies of Quick Click Movie Player. Byte Works Inc., owner of the copyright for Quick Click Movie Player, grants any legal owner of Quick Click Morph the right to give copies of Quick Click Movie Player to anyone, provided you are also giving them a copy of a morph movie created with Quick Click Morph, and provided you have not modified Quick Click Movie Player in any way.

If you would like to distribute the movie player some other way, please contact the publisher for permission.

Finder Interface

Teaching the Finder About Quick Click Movie Player

Apple's Finder can automatically use Quick Click Movie Player to play movies or movie scripts, as described in the next section. Before it can do that, though, you have to tell the Finder Quick Click Movie Player exists, and just which files it can use. Teaching the Finder about Quick Click Movie Player is pretty simple, though—all you do is run QCMovie.Sys16 one time from the Finder. When you do that, the Finder saves some information about Quick Click Movie Player in its desktop file, and from then on (unless you delete the desktop file, of course) the Finder can do the things described in the next section.

Opening Files

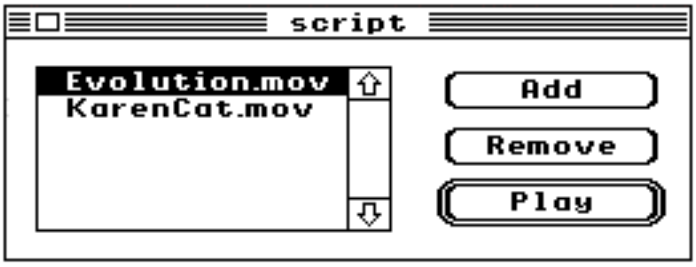
When you open a Quick Click Movie Player script document or a PaintWorks movie from Apple's Finder, either by selecting one or more documents and opening them from the File menu

or by double-clicking on either kind of document, the Finder will start Quick Click Movie Player. Quick Click Movie Player will play either the movie or all of the movies in the movie script continuously, repeating them until you press a key or click with the mouse. After either a mouse click or key press, the movie will stop and you'll be returned to the Finder.

△ **Important** Unlike all of the other keys, the space bar, left and right arrows, and the return key have special uses inside Quick Click Morph Movie Player. These are described in "While the Movie Plays...," later in this chapter. These keys won't stop the movie. △

The Movie Script Window

The document for Quick Click Movie Player is a movie script, which is just a list of the movies you want Quick Click Movie Player to play in the order you want them played. The window looks something like the one you see here, although the list of movies will generally be different.



Add

This button brings up a standard Apple Open dialog, as described in Apple's System Disk manuals. You can select any PaintWorks format movie. The movie is added to the end of the movie list.

You can move a movie once its in the list; see "Moving Movies," later in this section, for details.

Remove

This button removes the selected movie from the movie list. The button is dimmed if there are no movies in the movie list.

Play

This button plays the movies in the list in turn. Once all of the movies have played, it starts over with the first movie. The movies play repeatedly until you stop the movie player by pressing any key except the space bar, left or right arrow, or the return key, or by pressing the mouse button.

Moving Movies

To move a movie, select the movie you want to move and, while holding down the option key, use the up and down arrows to move the movie in the proper direction.

While the Movie Plays...

Once you start playing either a single movie or a series of movies from a script, you can do one of five things:

Stopping a Movie

Press the space bar to stop a movie in its tracks. If you press the space bar again, the movie advances one frame.

Starting a Movie

Press the return key to start a movie you've stopped with the space bar.

Making a Movie Play Faster or Slower

Movies have a normal speed recorded with the movie. In Quick Click Morph you select the speed with the *Movie Options...* command's *Frames per Second* pop-up menu. You can change the speed while the movie plays, making it go faster by pressing the right arrow key, or slowing the movie down by pressing the left arrow key.

Quitting

Pressing the mouse button or any key except the space bar, return key or left or right arrow keys stops the movie.

Apple Menu

About Quick Click Movie Player...

The about box shows the copyright notice and version number for Quick Click Movie Player. The version number is something you need to check, especially if you are about to call for technical assistance with Quick Click Movie Player.

Desk Accessories

Any remaining items in this menu are desk accessories. You can find a general description of desk accessories in Apple's System Disk manuals. For specific information about a particular desk accessory, see the documentation that comes with the desk accessory.

File Menu

New

The New command opens a new movie script window, like the one that opens by default when you run Quick Click Movie Player.

See "The Movie Script Window," earlier in this chapter, for a description of the various commands available in this window.

Open...

The Open command brings up an Apple open dialog. The dialog's features are described in Apple's System Disk manual. You can open a PaintWorks movie file or a Quick Click Morph Movie Script.

Playing a Single Movie

If you open a PaintWorks movie file, like the ones created by Quick Click Morph, the movie starts playing right away. It plays repeatedly until you stop the movie.

Once you stop the movie, it vanishes from memory. To play the movie again, open the file again.

See “While a movie Plays...” earlier in this chapter, for the keyboard commands you can use to control the movie as it plays.

Playing Multiple Movies

If you open a movie script and click on the Play button, Quick Click Movie Player plays each of the movies in the script in turn. Once the last movie is played, the program starts over, playing the movies endlessly until you tell it to stop.

See “While a movie Plays...” earlier in this chapter, for the keyboard commands you can use to control the movie as it plays.

Close

This command closes the front window. It works on all Quick Click Movie Player script windows and most windows opened by desk accessories.

Save

Saves the contents of the front window. If the front window has never been saved to disk, this command works exactly like the Save As... command.

Save As...

This command brings up a standard Apple save dialog. Apple’s save dialog is described in Apple’s System Disk manual. Once you pick a file name and location and click on the Save button, the movie script is saved as a Quick Click Movie Player script.

Quit

This command leaves Quick Click Movie Player. Before leaving, all windows are closed. If any window has changed since it was last saved to disk (or since it was created, if it has never been saved to disk), you will get a chance to save the file, not save the file, or stop shutting down the program.

Edit Menu

Undo

The *Undo* command is not used in Quick Click Movie Player. It is included for use by desk accessories.

Cut

The *Cut* command is not used in Quick Click Movie Player. It is included for use by desk accessories.

Copy

The *Copy* command is not used in Quick Click Movie Player. It is included for use by desk accessories.

Paste

The *Paste* command is not used in Quick Click Movie Player. It is included for use by desk accessories.

Clear

The *Clear* command is not used in Quick Click Movie Player. It is included for use by desk accessories.