Interactive Media

T oday, information abounds. It comes to us in every form — books, video, television, CDs, film, audio-tape, and more. The only problem with this proliferation of media is that it is non-interactive: the information user is a passive rather than an active participant in the information being presented.

With the Apple II came the dawning of interactive media. Programs such as HyperCard GS and HyperStudio, allow you to integrate words, graphics, video, and sound to create an interactive presentation that helps the user to actively participate in the information display.

This chapter will help you understand the basics of hypermedia and explain how you can use your Apple II computer for sophisticated interactive media presentations — whether you're a student, teacher, or professional user.

Hypermedia — An Overview

New and exciting ways to organize information with the Apple II

by Saul Rockman

Hypermedia is an exciting concept that inspires creativity and encourages productivity for all kinds of Apple II users — from children to retirees. If your computer helps you apply your imagination, then the world opened by hypermedia gives your imagination more to work on. It allows you to combine information, in all of its varieties, and actively participate in how it is organized, accessed, and displayed.

Early hypermedia products, such as HyperCard for the Macintosh, encouraged many people to link videodisc and CD-ROM players to their computers. Now, all users can choose from many software programs that create "stacks" to inform, entertain, and enlighten. This article will introduce you to the ideas that underlie hypermedia and multimedia and to the hypermedia software for the Apple II family, including the new HyperCard for the Apple IIGS.

Hypermedia looks like a stack of file cards

Hypermedia is formatted to look like a "file card." Each card holds a piece of information — text, graphics, animation, or sound. Groups of these file cards are then sorted and stored in "stacks." "Buttons" connect the cards, initiate some action, or control a videodisc or CD-ROM player.

While searching through your stack of chicken recipes, you might come across an interesting ingredient, like saffron, and then want to see other recipes that use saffron. They could be among other chicken recipe file cards, or under vegetables or soups. A hypermedia "cookbook" would let you "click" on the word (or button) "saffron" and immediately connect you to the collection of recipes that use it as an ingredient. It might even let you start playing a videodisc version of the Frugal Gourmet showing you how to prepare the recipe you chose.

Hypermedia helps people think associatively

An important characteristic of hypermedia is that ideas do not have to be linked in a linear manner. Hypermedia is more like a dictionary which lets you get in and out anywhere you, the reader, want, rather than a novel, which has a beginning, middle, and end, in sequence. Hypermedia organizes information more like the way we, as humans, store information in our memory — associatively.

A book is linear and has a single perspective on how the reader should obtain the ideas contained in it. Hypermedia permits you to bring your own perspective to the information; it allows for individual points of view and permits more than one model of how information is organized. By selecting associative links, the user can browse or examine information in many ways and from different perspectives.

Now that you have a sense of what hypermedia is, let me give you an idea of what it can accomplish in a school setting:

Scott Gifford likes to take his class to the San Francisco historic ship museum for an overnight field trip on the C.A. Thayer. To prepare his students for their "jobs" in the galley, on fishing nets, or hoisting sails, Scott made a HyperStudio stack that lets students delve into the ship. From a cross-section diagram, students can click on buttons that name the parts of the ship and explain what happens there. Several paths through the

stack let them, and their parents, investigate the crew's roles, review the ship's history, or explore the port of San Francisco. There is even a selection of sea chanteys that the class recorded. "It's a great introduction," said Scott, "and parents get a good idea of what the field trip is designed to accomplish."

Interested learners of all ages can use hypermedia to gain access to large amounts of reference materials — textual, auditory, and visual — to explore ideas, to conduct research, and to help prepare research presentations. Interactive technology and hypermedia provide a convenient and powerful way to help manage today's information load.

There are many existing stacks, as well as videodisc, CD-ROM, and other multimedia materials that can be explored using hypermedia. Commercial and shareware stacks provide games and instruction and management tools to help Apple II users organize and manage information. And using the Apple II Video Overlay Card, you can create your own titles and captions for your home videos.

What happens next is up to you

Another important attribute of hypermedia is interactivity. The user is in control of how to approach the information and can change directions as new ideas and structures emerge. The user must choose where to go next, what to view next, for how long, in what sequence, and so on. It is a dynamic relationship.

Doreen Baldwin's young students were sitting in front of their Apple IIGs. They had little computer experience, had never used a mouse, and did not know HyperCard from hotcakes. Yet, in a matter of hours, they were avidly using paint tools, creating buttons and fields, and pasting art images into a story they were writing using HyperCard IIGs. Another educator, Mathilde Rand, initially used HyperCard "just to try it out." The students started with HyperCard's built-in story templates. "Once they saw the clip art, ideas came fast and furiously," said Doreen. Mathilde was "surprised by how much they accomplished in so short a time. You could almost see the ideas whirling in their heads. All I had to do was introduce them to HyperCard and get out of the way. The program was fostering independent learning. That's what they needed and that's what I wanted for them."

The purpose of hypermedia is to communicate ideas and information. The goal is communication, not entertainment or direct instruction, although both can be accomplished with hypermedia. Well-developed hypermedia programs encourage independent learning determined by the interests, ideas, goals, and constraints of the learner.

Hypermedia is also a development environment with clear parameters and constraints that make creating a product easier; it adds value similar to a word processor. People use hypermedia to make new products for the communication of ideas.

When managers or students — or others — create a report using hypermedia, they must identify pertinent sources of information, extract the ideas, and combine and organize them in ways that communicate and support their conclusions. It is creative problem solving of the highest order. Whether a hypermedia stack is designed to entertain, inform, organize ideas, or manage

The user is in control of how to approach the information and can change directions as new ideas and structures emerge.

information, its creator must think through the structure of the information to design and build the stack. This kind of effort helps foster critical thinking and creativity.

Using the authoring system of hypermedia products, like HyperCard and HyperStudio, reports can incorporate sounds and visuals from videodiscs or use an interactively annotated map. These interactive multimedia reports capture the attention and interest of practically every audience.

Present information in different forms to capture your audience

Finally, an intrinsic characteristic of hypermedia is its capability to control and manipulate multimedia features, such as graphics, sound, text, and full-motion video. People get information in many forms: teachers use lectures, movies, books, and hands-on experiences as ways to teach concepts to students; children view a lot of television and absorb ideas from books by looking at text, graphics, and pictures. And adults, too, use all of the technologies and information sources around them to help them understand their world. Now all of these ways to communicate can be combined and controlled through interactive multimedia.

People learn and organize ideas in different ways. Each of us has a unique way of working. Hypermedia is flexible in that it addresses our multiple learning styles; it can present audio, video, text, and graphics.

With the Apple II Video Overlay Card, an Apple IIGS can be a one-screen multimedia machine. You can capture images from a VCR, videodisc, video camera, or television and put

them directly on the screen. You can express your ideas using the full range of technologies that help you communicate.

Given that various hypermedia programs are available, how do we know which one to use?

The issues: Planning for hypermedia technology

First, not all programs will work on all computers in the Apple II family. There are hypermedia opportunities for each of the widely-used Apple II computers, each taking advantage of the capabilities of the specific hardware.

Second, an important consideration is the ease with which you can create a product or use a program. Most people do not create all of their own programs; they use existing stacks that are commercially available or informally shared, or they customize stacks to make them more useful. Authoring tools, sort of an erector set for developing a program, make it easier to develop a stack that does exactly what you want it to do. The capabilities and ease-of-use of authoring tools and systems vary greatly among the hypermedia software. Some programs have menu-driven controls; others have more complete programming languages; still others have a little of both.

A third issue to think about is the program's ability to control other devices to create and use multimedia. Because most people will not be creating all of their own materials for hypermedia or for multimedia applications, it's important to consider the kinds of connections the software has to peripheral equipment. Does it support the kind of videodisc player you have? Can you add your own sounds and import graphics. How easy

The chart below will help you select the best software and hardware for your hypermedia adventures.

Hypermedia Software	for the Apple IIe/IIGS		for the Apple IIGS		for the Macintosh Classic/LC
Attributes	Tutor-Tech™ 2.6	HyperScreen™ 2.0	HyperStudio® 2.1	HyperCard IIGS 1.0	HyperCard 2.0
Implements buttons/cards metaphor	○	○	◑	●	●
Paint/draw tools	◑	◑	●	●	◑
Scripting capabilities	○	○	◑	●	●
Animation	○	○	●	○	○
Printers	◑	◑	◑	●	●
Video Overlay Card management	○	○	●	◑	○
Laser disc control	◑	◑	●	◑	●
One screen video[1]	◑	◑	●	●	○
Records to VCR	◑	◑	◑	◑	○
CD-ROM access[2]	○	○	●	◑	●
Imports sound	○	○	●	●	●
Built-in microphone					● LC only
Search stacks			◑	◑	◑
Third-party stacks	●	○	●	○[3]	●
Minimum System Requirements	128K, ProDOS 8	128K, ProDOS 8	1 MB, GS/OS	1.5 MB, GS/OS 5.0.4[A] Hard Disk[B]	2 MB, System 6.0.7, Hard Disk

○ Good support for this attribute
◑ Better support for this attribute
● Exceptional support for this attribute

[1] Apple II Video Overlay Card permits computer images to be superimposed over the video screen.
[2] CD-ROM requires the use of an Apple II High Speed SCSI card for Apple II computers.
[3] Software developers can use HyperMover to go between Macintosh Hypercard stacks and HyperCard IIGS stacks.

[A] Third-party card required for ROM 01 Apple IIGS computers.
[B] Apple now bundles a HyperCard package that includes a 40 MB hard disk drive with GS/OS 5.0.4 and HyperCard IIGS already installed, an Apple High Speed SCSI interface card, and an Apple IIGS Memory Expansion Card.

Apple IIe	Apple IIGS	Macintosh Classic	Macintosh LC
Interactive media software package for Apple IIe ProDOS 128K memory At least one Apple 5.25 in. drive or UniDisk 3.5 in. drive	Interactive media software package for Apple IIe/IIGS Apple IIGS System Software v5.0.4 2 MB memory 40 MB hard drive and one 3.5 in. drive or network environment	HyperCard 2.0 Macintosh System Software 6.0.7 or later 2 MB memory 40 MB internal hard drive	HyperCard 2.0 Macintosh System Software 6.0.7 or later 2 MB memory 40 MB internal hard drive
Apple Video Overlay Card Laser disc player VCR (to record computer screen)	Apple Video Overlay Card Laser disc player VCR (to record computer screen)	Laser disc player and TV monitor	Laser disc player and TV monitor
2nd Apple 5.25 in. drive or 2nd UniDisk 3.5 in. drive Apple Mouse IIe Apple CD-ROM drive Apple 40SC or 80SC external hard drive Apple ImageWriter II printer Apple LaserWriter family of printers JoyStick II	Apple CD-ROM drive Apple 80SC hard drive Apple ImageWriter II printer Apple LaserWriter family of printers JoyStick II	Apple CD-ROM drive Apple Scanner Apple ImageWriter II printer Apple LaserWriter family of printers StyleWriter printer Apple 80SC or 160SC hard drive	Apple CD-ROM drive Apple Scanner Apple ImageWriter II printer Apple LaserWriter family of printers StyleWriter printer Apple 80SC or 160SC hard drive Apple IIe Card

is it to accomplish these tasks? If you want to work with a touchscreen, will it be possible? How about using CD-ROMs?

Still another issue is the availability of existing resources that help you use the software productively. Does the publisher provide a hotline to help you if problems arise? Are there many published hypermedia programs that meet your needs or capture your interest?

The next step: Word of mouth

As you consider the hypermedia products that match the computer you have, remember that you should also talk to people who use them and take advantage of their experience. Meet people with similar interests at user groups; they'll be happy to share their experiences and even their stacks.

To some degree, each of the programs described below has basic hypermedia characteristics: they can help organize information, they facilitate interactivity, and they can help control a variety of multimedia technologies.

The last step: Finding the hypermedia program that's right for you

HyperCard for the Apple IIGS is a powerful software tool that takes full advantage of the advanced color graphics of the Apple IIGS. It comes with ready-to-use stacks and templates for cards and programs. Users can progress from browsing an existing stack to full scripting. HyperCard has built-in paint tools, clip art, clip sounds, and an extensive on-line help system.

HyperStudio, for the Apple IIGS is used to create hypermedia with paint tool boxes and pull-down menus. In addition to sample stacks, sounds, and clip art, it can record and edit sounds. A separate disk lets advanced users program scripts. HyperStudio public domain software is plentiful, and several newsletters are devoted to it.

Tutor-Tech is designed for use on both the Apple IIe and the Apple IIGS. It lets the user build simple stacks and control the various multimedia components such as laserdisc and one-screen video. With a tool box of writing and drawing tools, and pull-down menus and dialog boxes, it is simple to create programs. Third-party stacks are available in a range of content areas.

HyperScreen is a multimedia tool for interactive presentations on both the Apple IIe and the Apple IIGS. Users can create screens and link them together with buttons; simple pull-down menus and a variety of clip art and drawing tools are included. The program lets the user control a range of multimedia devices.

Saul Rockman has been a consultant on technology and learning for corporations, state and federal organizations, and school systems for the past 20 years. He has great admiration for the Apple II computers.

HyperStudio 3.0

Hypermedia for kids and poets on the Apple IIGS

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by Roger Wagner

HyperStudio is a creative environment designed specifically for the Apple IIGS. It artfully integrates the use of not only text and graphics, but high-quality sound, animation, and even full-motion video.

With more than 20,000 copies in schools and homes, HyperStudio has become the defining software for the Apple IIGS. This article will give you a brief overview of HyperStudio's use and applications. At the end of this article, you can find out where to get more information and how schools can take advantage of Roger Wagner Publishing's "Workshop In A Box." In that special offer, everything you need for a hands-on experience with HyperStudio and exciting hypermedia peripherals is loaned free of charge.

HyperStudio is sometimes called "Hypermedia for Kids and Poets" because making the power of the computer accessible to the casual and non-technical computer user is central to its design. HyperStudio is used by kindergartners and fourth graders, high school students and teachers with only an hour to prepare for the next day's lesson. It's the vehicle for a literary "magazine" on disk, and an alternative to paper manuals in a number of commercial products, including the Zip GS and Q-Labs hard disk.

The hardware requirements for HyperStudio reflect the typical Apple IIGS setup: with 1 MB of RAM and a 3.5-inch disk drive, you'll be up and running in minutes. If you have other peripherals such as a hard disk or a printer, you'll find they're equally easy to use. Even the more "exotic" hypermedia add-ons, such as laserdisc players, the Apple II Video Overlay Card, and the Edmark

TouchWindow, have built-in support and are simple to use. HyperStudio is also compatible with AppleShare and several other network file systems.

Creating and viewing with HyperStudio means interacting with stacks

HyperStudio applications, called "stacks," link together a sequence of computer screens, or "cards," using buttons. Each card can contain a wide variety of information units, or "objects." Typically, you'll find objects such as text fields, graphic illustrations, and buttons that link to other cards and/or trigger various computer actions.

With a Pioneer 2200, 4200, or 8000 laserdisc player, video sequences can be placed on a card, almost like clip-art, and motion sequences can be viewed as part of the information presented.

There are two main ways that you'll interact with stacks. The first might be going through a stack that someone else has created — learning about a foreign country, the secrets of space, or enjoying an interactive story. Probably more important, however, is the use of hypermedia as an expressive and creative environment. HyperStudio and the Apple IIGS provide people of all ages with an engaging new way to share their thoughts and ideas with others. You might create a stack from scratch, or you might take an existing stack and change or enhance it to meet your own needs.

To give you an idea of the actual process involved in creating a stack, let's look at some of the basic operations involved in making a card or two with various backgrounds, including creating buttons that move between the cards and

trigger various actions. We'll also look at some of the advanced features available to HyperStudio users.

How stacks are created: Step by step through Africa

Let's suppose that you were creating a report on the various animals in Africa. After a title screen, you might want to display a map of Africa, and let the user click on different countries to learn about the wildlife in different parts of the continent.

As the stack creator, you would bring in the background graphic using the File menu. Backgrounds, and other graphics, may be either 320 or 640 Super Hi-Res pictures, or even 256-color graphics.
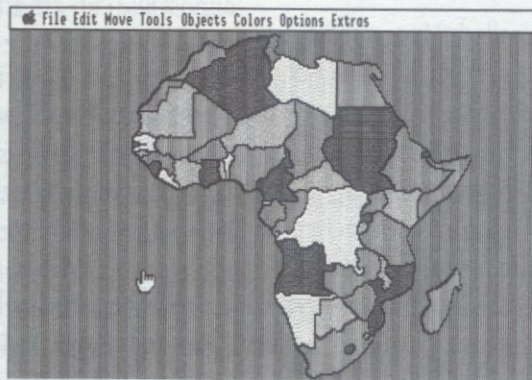
To create a button to link a country to another card, you choose "Add a Button" from the Objects menu, and you'd get one of the most important screens in HyperStudio: the "Button Info" dialog box:
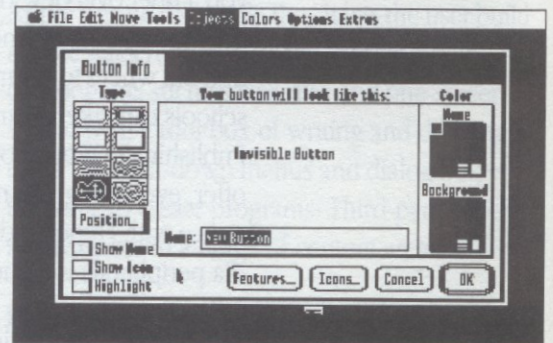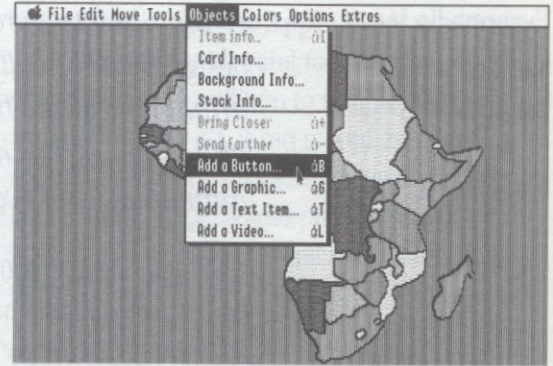
This dialog box lets you choose what a button will look like. Besides the usual types of buttons that you may recognize from other Apple IIGS programs, you also have the option of creating special kinds of buttons. In this example, let's suppose that you want to create a button for the country of Zaire. Further, it would be nice if the button area was exactly the shape of the country. By choosing the "expanding lasso" button icon, HyperStudio will temporarily take you back to

your map of Africa, where clicking inside the part of the map that corresponds to Zaire will automatically create a button of just that shape.
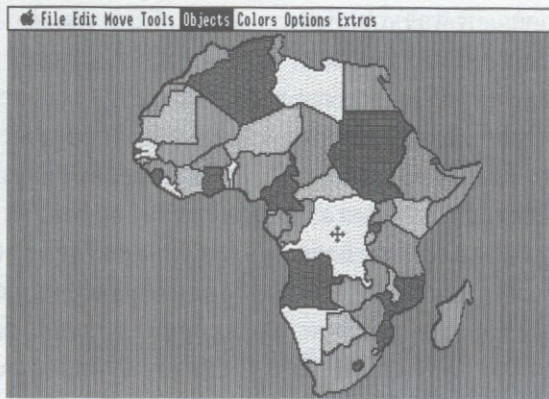

After choosing the button appearance, the next screen that appears lets you decide just what actions the computer should take when the user clicks on that button. This "Button Actions" dialog box is the heart of HyperStudio's ease of use, because it allows you to define everything a button does by simply clicking on items in the dialog box.
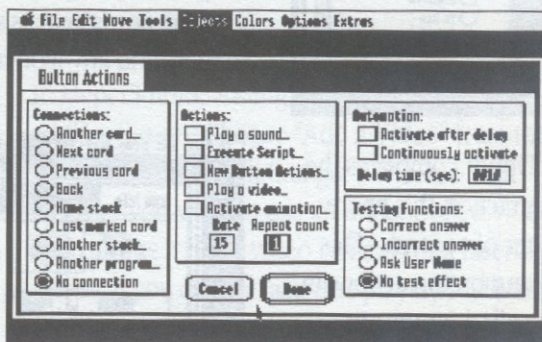
The basic kinds of responses include Connections: branching to other cards, stacks, and applications. (You can even use HyperStudio as a replacement for the Finder or another program selector on a network. User groups and schools can also create tutorial stacks about other applications like AppleWorks GS or FredWriter, having the stack launch the application and automatically return to the same card in HyperStudio when the user quits the second program.)

Other Button Actions include playing a sound, starting an animation, playing a video sequence, or even launching another application. Let's suppose that, in this case, you wanted to move to the next card and play the sound of a lion roaring. Clicking on the radio button for "Next Card" tells the button where to go and presents you with a list of "transitions" that let you choose what visual effect you'd like to have as you move to the next card. You can try out any effect to see what it looks like, and more transitions can also be added to HyperStudio from disk-based libraries (instead of "clip-art," they're "clip-transitions").
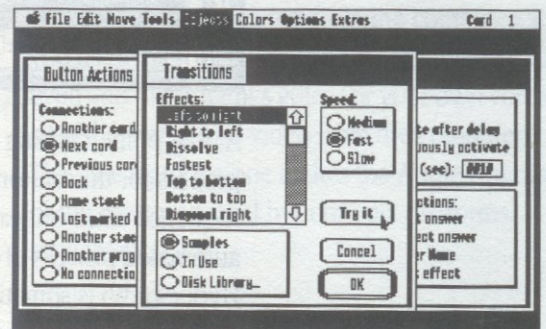
After specifying the "Next Card" action, we'll add the lion's roar by choosing "Play a Sound." Remember, the Button Actions dialog box is a "mix and match" arrangement, where you can combine the different options any way you wish. When you choose "Play a Sound," a dialog box appears with a picture of a tape player. You can use the microphone and digitizer card that come with HyperStudio to record your own sound, but you can also use the "clip-sounds" included in the package. By choosing "Disk File," you'll see the sounds on the HyperStudio Sounds disk, and that the lion's roar has been added to your new button. (Once a sound is added, it is compressed for efficient use of memory. That sound can then also be shared by other buttons in the stack, again conserving valuable memory.)
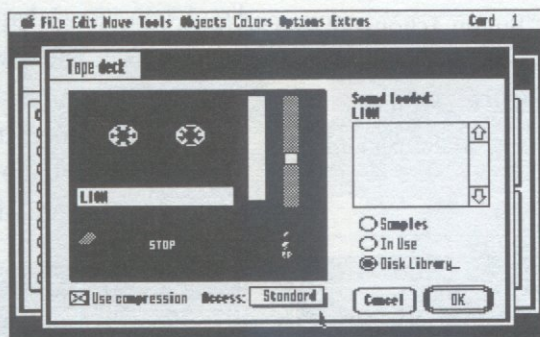
At that point, clicking on "Done" completes the process for this button. In practice, this entire sequence takes only a matter of seconds. This automated process of creating button actions in HyperStudio is sometimes called "auto-scripting," because the program automatically creates the internal sequence for a button, without requiring that you know a scripting language to accomplish the typical kinds of operations in a hypermedia project (like playing a sound).

On the next card, we might load a background of a page from a photo album, and put a picture of a lion from the HyperStudio clip-art disk on the card. Another card might have a picture of an elephant. Cards can also be put together in groups, where they can share common buttons, text fields, or any other object you want repeated on each card. This feature is handy, because you can adjust the position or appearance of an object on one card and have all the other cards in your stack instantly reflect the change in layout. Individual objects, like the picture of the animal or the text description, can be added "on top" of the basic group card to create the specific card in the stack. Using the database functions of HyperStudio, we could also search a stack for text information or sort the cards based on specific text fields in a group of cards.

Buttons can also have graphics, called "icons," directly associated with them. The advantage of this approach is that when you copy the Home Card button, for example, and paste it in another stack, everything about the button moves with it into the new stack: its actions, the location on the screen, and any icon attached to the button.
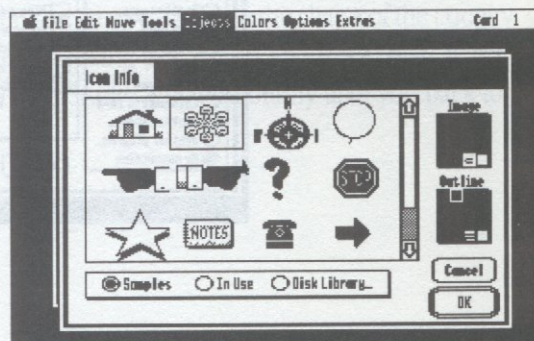
Notice in the Button Icon dialog box that the same choices you saw earlier with transitions and sounds ("Samples," "In Use," and "Disk Library") appear here as well. HyperStudio automatically manages the use of a powerful Apple IIGS system software feature called "resources" and attaches sounds, transitions, button icons, and other data to your stack without your having to worry about using special utilities. The advantage of these resources is that the sounds and other data can be shared among many buttons and cards in your stack without using extra memory.

True video: A reality with HyperStudio

Another exciting aspect of hypermedia and the Apple IIGS is the ability to integrate true video into your presentations and projects. Other computers many times use a "pseudo-video" system, where a video image is digitized and later replayed, but the Apple IIGS can put real, full-motion video on your RGB monitor by using the Apple II Video Overlay Card (VOC). If you don't have the VOC, you can still use a laserdisc player or other video source; you'll just need a second monitor.

In HyperStudio, adding a video is as simple as adding clip-art. Choose "Add a Video" from the Objects menu. You'll first get a choice about whether you want to use an uncontrolled video source (like a "live" video camera) or a laserdisc player. If you choose laserdisc player, you'll then get the laserdisc remote control. At this point, you simply use the buttons on the remote control (such as Play, Step, and Pause) to mark the beginning and end of the video sequence you want to attach to that card. When you click "Done," HyperStudio will remember the sequence you've specified and replay it whenever the user goes to that card in the stack.
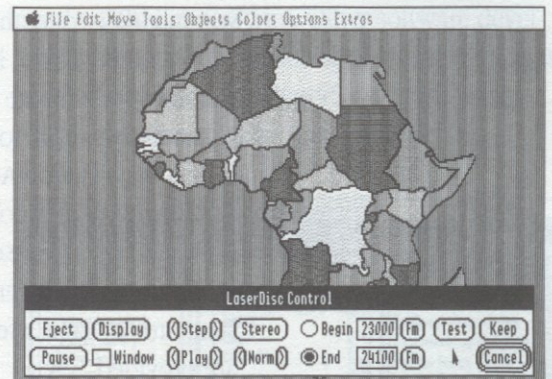

The VCR: The printer of the 90s

Whether or not you have a laserdisc player or Video Overlay Card, one of the most exciting ways of using HyperStudio and the Apple IIGS is to connect the computer to a standard VCR, and use the VCR to record the sound and video output of the computer. With just a few dollars worth of simple cables, students can now take home their computer reports or do them on their Apple IIGS at home and bring them to school. Teachers can share their projects at conferences and meetings without having to worry about any equipment beyond a VCR. Essentially, the VCR replaces your printer and captures the entire hypermedia presentation from the computer. If you use a microphone during the taping, you can even add the student's voice (or your own voice) over the sound and video from the computer. This one feature alone makes the Apple IIGS one of the most powerful hypermedia platforms available today.

### Advanced features: The elegant depth of HyperStudio

Although designed foremost with the needs of the casual user in mind, HyperStudio also offers a degree of depth to its advanced features not found in programs on any other computer. For example, when choosing your button actions,

you might discover that a particular action you had in mind was not in the immediate list of actions offered in the Button Actions dialog. However, you will notice that there's a choice called "New Button Actions" (NBAs). This is an expansion option provided in HyperStudio that lets Apple II software developers add to the basic functionality of HyperStudio in the future. In the standard package, a few examples of these NBAs are provided.
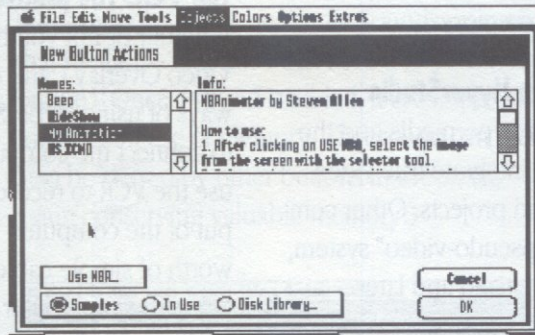
When you choose New Button Actions, you're provided with a list of the current NBAs available. Like with sounds, transitions, and icons in HyperStudio, you also have the option of going to a disk file to bring in new NBAs. One of the more popular NBAs in HyperStudio is the Animation function. After selecting the "Animation" NBA and clicking "Use NBA," you're then temporarily returned to your card where you can select an object and then move it around your card with the mouse. When you finish, HyperStudio remembers the exact path and speed with which you moved the object, and then replays it when the animation is triggered. A three-dimensional effect is achieved if you have graphic objects on the screen, because the animation will occur in front of your background, but behind any other

graphic objects or buttons on the card. If you decide to edit the animation later, HyperStudio will show the complete path of the animation, with convenient "handles" for adjusting the path.
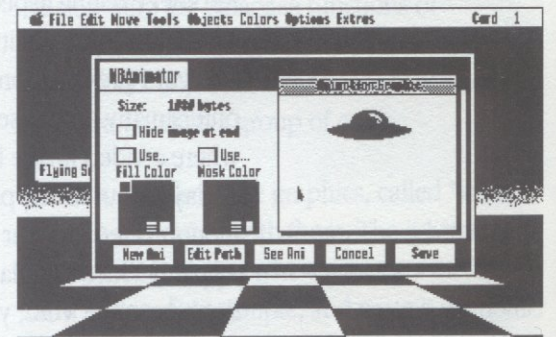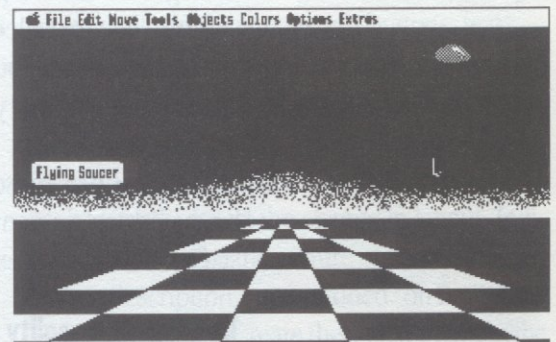

SimpleScript: Innovations in scripting

Although HyperStudio's main strength is in the use of auto-scripting for the non-technical user, an innovative programming environment is available for those requiring a structured language for their applications. SimpleScript is the built-in language of HyperStudio; it offers the same menu- and dialog-box interface when programming that is found in the rest of HyperStudio.

When writing a SimpleScript program, you don't have to memorize reference books or study the language for weeks before beginning the first program. Every command in SimpleScript is presented via pull-down menus in the SimpleScript editor. For example, if you wanted to get the current position of the mouse, you would choose "Get Mouse Position" from the "Screen" menu, and SimpleScript would write the line for you, even listing any variables you used elsewhere in your program. Using the menus, it's virtually impossible to make a syntax error in entering a program.

SimpleScript offers floating-point math; conditional program operation with IF-THEN-ELSE, REPEAT-UNTIL, and other structures; named procedures; transcendental and random math functions; and even a debug option that steps through your program one line at a time. It's also so direct and simple in its approach that even grade-schoolers can use it as their first exploration into the principles of programming.
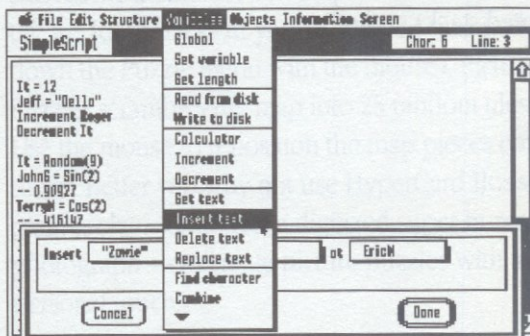
Language expandability: The language pool grows

If your interest is in programming languages, you'll be happy to learn that HyperStudio allows other languages, such as LOGO, Pascal, BASIC, or C, to be substituted for (or even used concur-

rently with) SimpleScript. Other software developers are working on making alternate languages available from within HyperStudio, and some may be available by the time you read this.
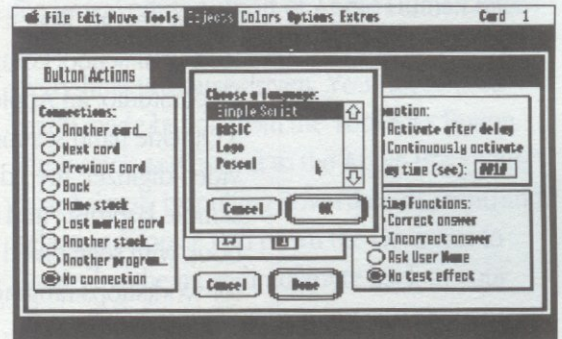
Where to go from here

Roger Wagner Publishing, Inc. is committed to facilitating the use of hypermedia in education, and promoting the use of hypermedia as a creative and expressive environment. HyperStudio is just part of that effort.

For example, we maintain a database of companies providing a wide variety of hypermedia-related products. Did you know that Magno Sound and Video, in New York, will create your own laserdisc for you for just $250? This information and more can be obtained free by just calling us, or you may want to request the *Hypermedia Resource Guide.* For just $10, you'll get a ten-disk set of sample HyperStudio applications, plus a 40-page resource guide with information on how to conduct a workshop; answers to common questions about HyperStudio; the names, addresses, and other information about companies providing hypermedia materials; and more.

If your interest is in the computer-to-VCR connection, just write to us or give us a call and we'll send you our free *VCR Connections* brochure.

If you're at a school where Apple IIGS computers are used, you may also want to inquire about the "Workshop In A Box." This offer helps schools conduct workshops, in-services, and other teacher training events relating to hypermedia. For no charge, Roger Wagner Publishing will loan your school complete copies of HyperStudio, an Apple II Video Overlay Card, a Quickie hand scanner, the ComputerEyes video digitizer, the Edmark TouchWindow, a sample laserdisc, and an excellent activity work-book with segmented exercises that can be used for workshops ranging from a few hours to several days.

If you're interested in HyperStudio, and hyper-media in general, you'll be pleasantly surprised by the amazing variety and quantity of materials available. On-line services such as GEnie, America Online, CompuServe, and AppleLink now offer more than 250 MB of public domain HyperStudio stacks. There are several magazines related to HyperStudio, and Roger Wagner Pub-lishing's StudioWare Catalog offers an extensive selection of education-related stacks and other hypermedia materials.

We have found the Apple IIGS to be the optimum, cost-effective hypermedia platform in personal computers, and over the last few years have been helping people share their own visions and excitement about hypermedia with others. If you plan to attend a conference or workshop in the near future, be sure to look for presentations on hypermedia. You may also want to contact Roger Wagner Publishing for help with putting together your own presentations, or for assistance in implementing hypermedia on *your* computer today.

Roger Wagner taught junior and senior high school math and science before founding his software company in 1978. Today, his company produces the best-selling hyper-media software for the Apple II in education.