

Chapter 4

Understanding Voice Recognition

Now that you've installed and registered your copy of Simon Says, you're almost ready to begin training Simon to respond to your spoken commands.

Before training Simon, it's important to understand some key concepts and terms associated with voice recognition. By taking a few minutes to read this chapter, you'll gain an understanding of Simon's vocabulary, how Simon recognizes commands, and which type of microphone will work best in your environment.

What Is Simon's Vocabulary?

Simon's vocabulary is the set of commands (words and phrases) Simon recognizes and executes. When you launch Simon Says for the first time, you begin by training Simon's built-in words and the menu commands for the NeXT Workspace Manager™ application. These commands consist of keystrokes or mouse clicks that you would normally perform manually.

The commands and phrases in Simon's vocabulary such as **⌘Check Spelling**, **⌘Close Window**, **⌘Return**, and **⌘Cover Your Ears** are saved in the Library folder of your log-in account. Simon uses these words and phrases to execute corresponding commands in his vocabulary. The process of recording yourself saying commands is called *Training*. It takes just a few minutes to train most applications.

How Does Simon Recognize Commands?

It's important to understand that Simon responds to sounds. He does not understand the meaning of words or phrases. When you say a command or phrase into the microphone, Simon searches his vocabulary for the closest match; when Simon finds a match, he executes the associated commands.

What Are Voice-Activated Macros?

Let's begin with a definition of the word Macro straight from Webster.

²**macro** *n, pl macros*

[short for *macroinstruction*]

(1959)

: a single computer instruction that stands for a sequence of operations

Any command or phrase in Simon's vocabulary can be thought of as a voice-activated macro. When the command is spoken, Simon executes the macro associated with the command. The steps you would normally perform using your keyboard or mouse are no longer necessary.

Each macro is comprised of at least one of Simon's built-in objects. The one you'll probably use the most is Simon's Keystroke object which types a key or combination of keys in response to a spoken command. Instead of typing [Command-C], you'll just say ^aCopy.^o This is an example of a simple voice-activated macro using just one object.

But the true power of Simon Says lies in the ability to create macros which combine several of Simon's objects, then execute the sequence with a single spoken command. Using built-in objects, Simon can press keystrokes, play sound files, paste text, execute UNIX shell commands, address a NeXTmail message, and play mouse actions in response to a single spoken command!

Microphones

The importance of the microphone to the overall performance of Simon Says is critical. The microphone is the link between the voice commands you give, and what Simon Says hears. Having a microphone properly suited for your work environment will help you obtain the best results with Simon Says.

All new NeXT computer's have a built-in microphone and a jack for connecting an external microphone. The original NeXTcube has only a microphone jack. If your computer is located in

a quiet office or at home, your built-in microphone should work fine. If your computer is located in a noisy office with lots of background noise, you may want to connect an external microphone.

There are several types of external microphones to choose from:

Desktop Microphones. Desktop microphones work best in low sound environments and have performance similar to your built-in microphone. They are generally more sensitive to background noise than other microphones because they are usually positioned farther away from your mouth.

Clip-on Microphones. Whether worn on your tie or lapel, the performance of clip on microphones varies considerably. Like desktop microphones, they are best suited for use in a low sound environment since they are usually positioned farther from your mouth. Clip on microphones are more sensitive to background noise than most other microphones.

Hand-held Microphones. Most hand-held microphones work well in a low to moderate sound environment. Since the microphone is held close to your mouth, it usually blocks out some background noise. Hand held microphones with a noise-cancelling cartridge, which eliminates background noise, work well in a noisy environment.

Headset Microphones. Headset microphones normally work well in almost any sound environment. They are probably the best choice for use in a high sound or noisy office environment because the microphone element is close to your mouth and kept in a constant position. Many headset microphones include a noise-cancelling cartridge which further eliminates background noise.

Wireless Microphones. Depending on the type, a wireless microphone may work well in almost any sound environment. Although more expensive than other microphones, wireless microphones provide the convenience of hands-free operation and freedom of movement. There are three basic types: clip-on, hand-held, and headset. Many wireless microphones have a noise-cancelling cartridge built-in.