User's Manual

MossTalk Words

Developed by MossRehab

2.0

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Contents

Overview

Introduction

Welcome to MossTalk Words 2.0 (MTW-2), specialized software developed for individuals with language impairments (i.e. aphasia) typically acquired through stroke or head injury. MTW-2 may also be used with individuals with learning disabilities and other cognitive impairments. MTW-2 is designed to assist speech-language pathologists in efficiently selecting and delivering therapy exercises and tracking results. It is also designed for independent home use by language-impaired individuals and provides hours of practice in comprehending and producing words, phrases and sentences. MTW-2 consists of three therapy modules:

- **Core Vocabulary Module –** a series of matching and naming exercises for the more severely impaired user, featuring a restricted vocabulary of words with high functional significance.
- **Multi-Mode Matching Module –** a series of exercises to facilitate lexical comprehension and vocabulary development using pictures, spoken or printed words.
- **Cued Naming Module –** a series of exercises to facilitate single word production using a hierarchy of spoken and written cues.

Special Features

Large Number of Exercises

To date, we have developed an integrated package of three therapy modules with over 100 standard therapy activities and exercises. Each module can be customized along a number of parameters (e.g., nouns or verbs, word frequency, semantic category, modality of presentation, number of stimuli on the screen). In addition, a custom exercise program enables the user to create a multitude of stimuli combinations for additional practice.

User-Friendly Interface

The software is designed with user-friendly interfaces that permits quick selection of each parameter, allowing the user to customize exercises to match a disability level.

There are three different interfaces available for selecting, customizing and running therapy exercises:

- **The standard clinician interface** allows for rapid selection from predetermined exercise hierarchies, graded from easier to harder.
- **The customizing interface** affords greater control over developing the vocabulary of specific exercises.
- **The user interface allows** rapid and easy access to a pre-specified set of assigned home exercises.

Multimodality Cueing and Feedback

Multimodality cueing and feedback (e.g. auditory-verbal and/or visual-written) are provided for each response. Users can cue themselves prior to a response with a range of multimodality cues, including spoken first sounds, printed first letter, spoken word, printed word, sentence completion cues and descriptions (either spoken or written).

What's New in MossTalk Words 2.0

Automated Record Keeping

A key feature of this software system is an automated record keeping component for ease in tracking user responses and progress both within a treatment session and during independent use. Responses are automatically tabulated trial by trial, and quantitative summaries can be displayed at the completion of an exercise. Results, which are automatically saved, may be printed immediately or retrieved later from the Results Folder on the hard drive.

Windows Operating System Compatibility

MTW-2 is now compatible with current Windows operating systems: XP, Vista and 7.

Speech Recognition

MossTalk Words 2.0 is a version of MossTalk Words that adds an optional speech recognition component. Speech recognition is a technology that allows a computer to listen to people's speech and record the words that they say. Speech recognition in MTW-2 is used in the Cued Naming exercises to listen to what you say and tell you if it matches the picture that's currently showing.

Using Speech Recognition

It's a good idea to be familiar with using MossTalk before using speech recognition.

When you use speech recognition with the Cued Naming task in MTW-2, you will see a picture and then say the word for that picture. If you say the right word, the system will play a tone, say "that's right" with the name of the picture, and show the word. This will give you feedback that you've said the correct word. The speech recognition feature of MTW-2 is experimental, and may not work well for everyone. It is optional, so if it doesn't work well for you, you can use the software without it.

Additional Features

- Natural sounding speech
- Adult-relevant, realistic photographs
- Accessibility by touch screen or mouse
- Interesting, attractive screen design and graphics

About the Authors

Ruth Fink, MA, CCC/SLP, is clinical director of the MossRehab Aphasia Center and a senior staff research associate of the Moss Rehabilitation Research Institute. She has served as co-investigator and project director on several NIH-funded grants. A speech pathologist for three decades, she specializes in working with individuals with aphasia. In addition to her clinical work, Ms. Fink is involved in research projects that seek to understand how language breaks down after a stroke or head injury and how they are best treated. Her research findings have been published in the *American Journal of Speech Language Pathology, Aphasiology, Clinical Aphasiology, Brain and Language* and others. Ms. Fink is a member of the American Speech-Language Hearing Association. She received her master's degree from Temple University.

Adelyn Brecher, MS, CCC/SLP, is a research associate of the Moss Rehabilitation Research Institute. A speech pathologist since 1975, she has provided speech and language services to communicatively impaired adults and children in school and hospital settings. She has been involved in aphasia research aimed at identifying patterns of recovery from naming problems in aphasia as well as software development for clinical use for the past five years. She has co-authored research papers in *Aphasiology, Clinical Aphasiology,* and *Brain and Language*. Ms. Brecher received her master's degree from Vanderbilt University.

Michael Montgomery is a research associate of the Moss Rehabilitation Research Institute with over 15 years experience developing software for business, engineering and artificial intelligence applications. For the past 10 years, he has been working with Dr. Schwartz studying cognitive disorders of everyday action and applying computer technology to research at the Moss Rehabilitation Research Institute. He has co-authored research papers in *Cognitive Neuropsychology, Neuropsychology, Neuropsychologia, Ecological Psychology,* and *The Journal of Head Trauma Rehabilitation.*

Myrna Schwartz, PhD, is associate director of the Moss Rehabilitation Research Institute. A specialist in cognitive neuropsychology, Dr. Schwartz received her doctorate degree from the University of Pennsylvania and completed a fellowship at Johns Hopkins University Medical School. After serving as an assistant professor in psychology at the University of Pennsylvania, she moved to MossRehab to conduct research on disorders of cognition and language. Dr. Schwartz has served as principal investigator on numerous long-running federal grants. She has been a major contributor to the literature on psycholinguistic analysis of aphasic disorders and has pioneered the development of new treatment approaches for aphasic patients. Dr. Schwartz has published extensively in journals and books on cognition, neuropsychology, aphasiology and Alzheimer's disease and has been an invited guest speaker, presenting research findings worldwide.

About MossRehab

MossRehab, the Philadelphia region's leading medical rehabilitation center, is part of the Einstein Healthcare Network. We provide comprehensive care for people with stroke, traumatic brain injuries, spinal cord dysfunction, amputations, joint replacements, neurological disorders, arthritis and more in our modern 197-bed facility. World renowned for its advances in medical rehab, MossRehab is accredited by the Joint Commission on Accreditation of Healthcare Organizations (JCAHO). Select programs, including our Stroke Program, have been accredited by the Commission on Accreditation of Rehabilitation Facilities (CARF). *U.S.News &World Report* has consistently rated MossRehab as one of the top rehabilitation hospitals in the country.

Using the Software System

System Requirements

- Windows XP, Vista, or 7 operating systems
- A screen resolution of 1024x 768 or better
- Internet Explorer web browser (version 6 or higher)

Equipment

To use speech recognition with MossTalk Words 2.0, a microphone is required.

A USB microphone is strongly recommended. Standard microphones that plug into your audio jack often do not to have good enough sound quality for speech recognition. Instead, you should look for a microphone or headset that plugs into your USB port. Good results have been obtained with Logitech microphones, but other USB microphones should also work well.

If you are using a non-USB microphone, it should be plugged into the microphone jack of the computer. Make sure that the microphone is plugged into the microphone jack of your computer, not the earphone jack.

Headset microphones are best, but if wearing a headset is uncomfortable, a desk-top microphone will also work. When you're using a headset microphone, make sure that the microphone is positioned about one inch from your mouth but slightly off to the side.

It's up to you whether you want to use earphones or the computer speakers to hear the audio feedback that MTW-2 produces.

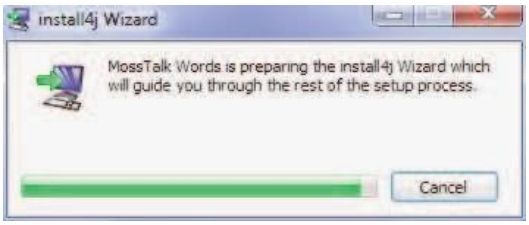
Software Installation

Installation of Moss Talk Words 2.0

Installation should take about 15-20 minutes, depending on the speed of your computer and CD drive (if you are installing from a CD).

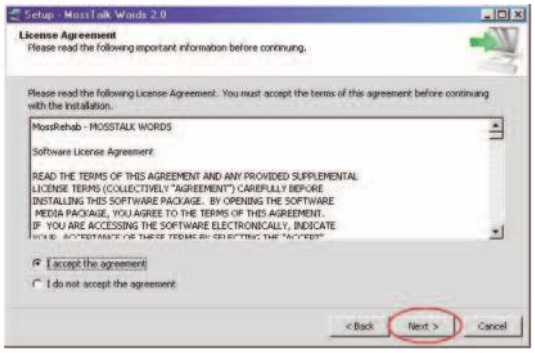
1. If you have an earlier version of MossTalk, delete the *MossTalk* directory under *C:\Program Files* and delete the MossTalk icon on your desktop.
2. Insert the CD and navigate to your CD drive ***OR***
If you downloaded MossTalk from a website go to the location where you saved the downloaded file. If you are installing on Windows XP, you will be installing from the file "MossTalk_windows_2_1XP.exe". If you are installing on Windows Vista or Windows 7, you will be installing from the file "MossTalk_windows_2_1.exe".
4. Right-click on the .exe file that is appropriate for your computer.
5. On Windows XP: select "**Run as...**" Choose "Current user" if it indicates that the current user is an Administrator. If you do not see the word Administrator' by the current username, then choose "The following user", select the username and type in the password of an administrator account. On Windows Vista and 7 choose "**Run as Administrator**".

6. You will see the installation wizard screen appear. Wait for it to finish loading.

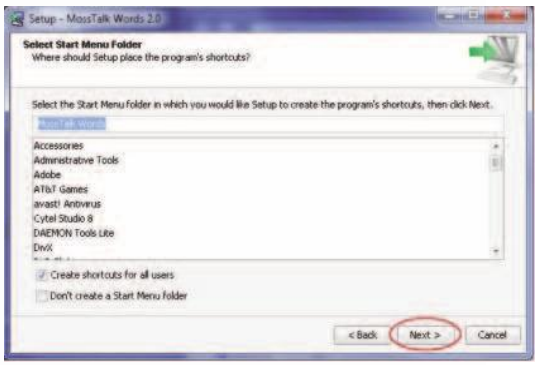


7. Next you will see the welcome screen. Click **[Next >]**.

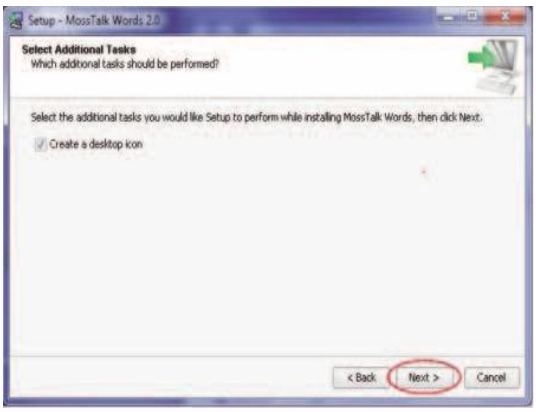
8. You will next see the MossTalk license. You now have a chance to read and agree to the license. Click on **[Accept]** if you agree to the license, then click **[Next >]**.



9. On the Start Menu folder options screen, click **[Next >]**.



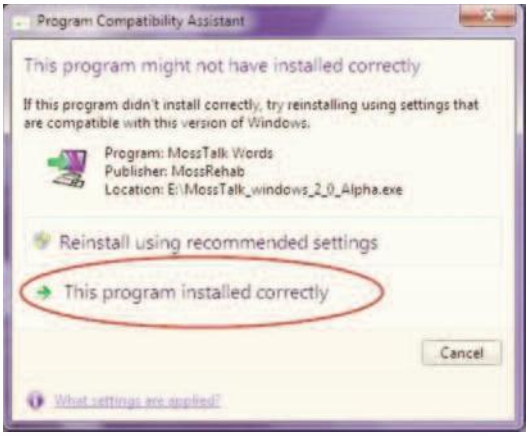
10. On the Create a desktop icon for MossTalk Words screen, click **[Next >]**.



11. The installation will start. It may take several minutes to extract all the files.

12. On the screen titled "Completing the MossTalk Words installation" click **[Finish]** to end the installation.

NOTE: In Windows Vista or 7, you may see an alert from the Program Capability Assistant that the program might not have installed correctly. Click **[This program installed correctly]**.

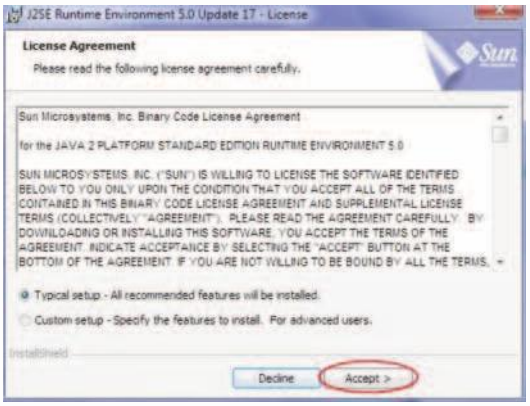


Installation of Java 5.17

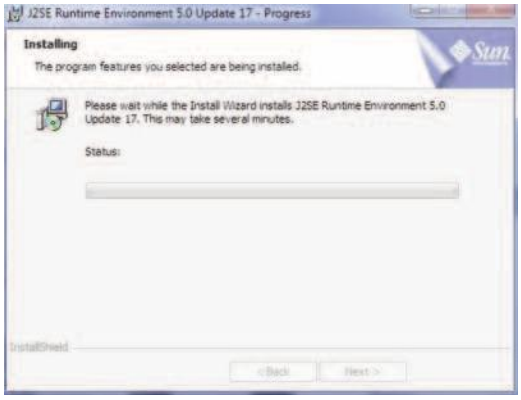
MossTalk will next install the J2SE Runtime Environment (Java 5.17).

If you do not already have JS2E, the next screen you will see is the Java license. If you do not see this screen, turn to the second screen on the next page.

Click the **Typical Setup** button and then click **[Accept >]**.



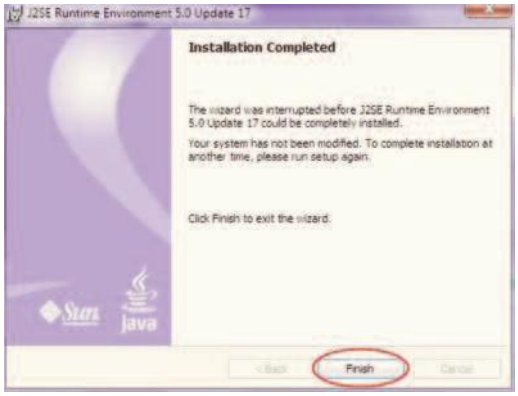
The installation will start. It may take several minutes to extract all the files.



<u>If you see a message</u> "You already have this version of the JRE installed, please uninstall the product through your add/remove programs utility before reinstalling", you do not need to uninstall or reinstall anything.

- In Windows XP just click **[No to All]**.
- In Windows 7 and Vista, just click **[OK]**.

On the Installation Completed screen click **[Finish]**, even if it says the installation was interrupted.



Installation of Java 6.18

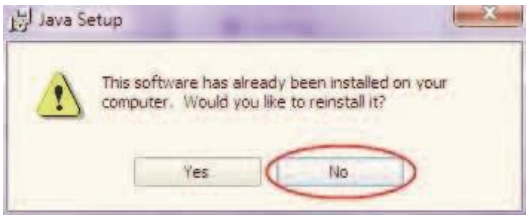
Internet Explorer version 6 and higher is more stable if it can also use Java 6.18. MossTalk will next install Java 6.18.

<u>If you do not already have Java 6.18,</u> the next screen you will see is the screen that Java is being configured. If you do not see this screen, turn to the second screen on the next page.

Next you will see the Java license agreement. Click **[Install >]**.

The installation will start. It may take several minutes to install.

If you see a message "This software has already been installed on your computer, would you like to reinstall it?" just click **[No]**.



Click **[Close]** to exit the wizard.

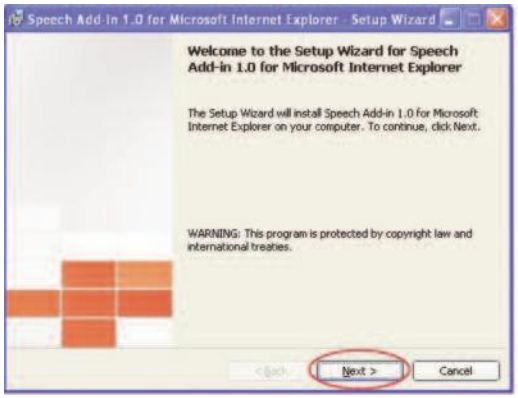
NOTE: In Windows Vista or 7, you may see an alert from the Program Capability Assistant that the program might not have installed correctly. Click **[This program installed correctly]**.

Installation of Speech Recognition

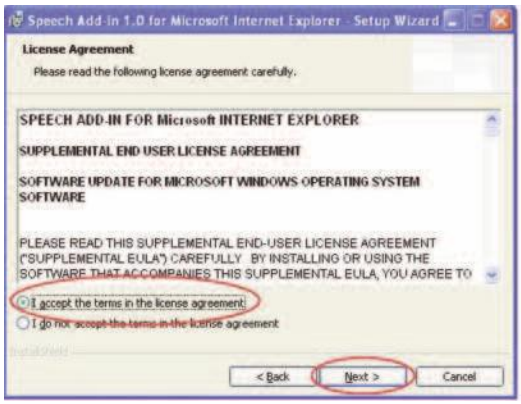
The following steps for installing speech recognition are necessary on Windows XP only. If you are using Windows Vista or Windows 7, speech recognition is already installed as part of the operating system, and you can continue to the section "Setting Up Speech Recognition Windows Vista or 7".

MossTalk Words 2.0 will install the Windows Speech Recognition software.

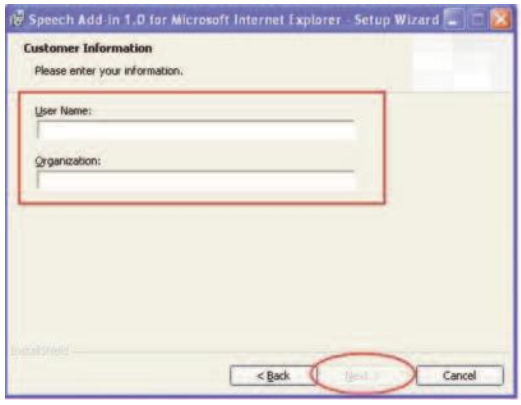
1. If you do not already have the v.6.1 Recognizer, you will see the welcome screen of the Microsoft English (U.S.) v. 6.1 Recognizer installation. Click **[Next >]**.



2. It asks you to accept the license for speech recognition. Click **[Accept]** and click **[Next >].**

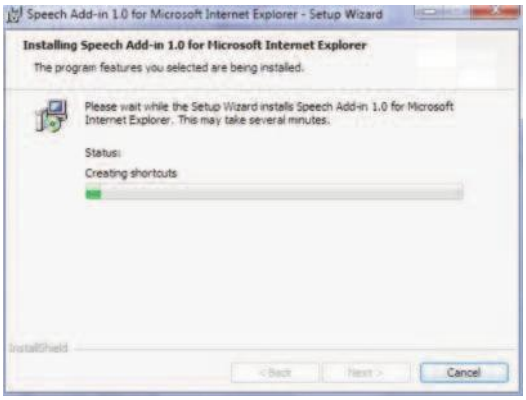


3. When you see the customer information screen, enter your information and click **[Next >]**.



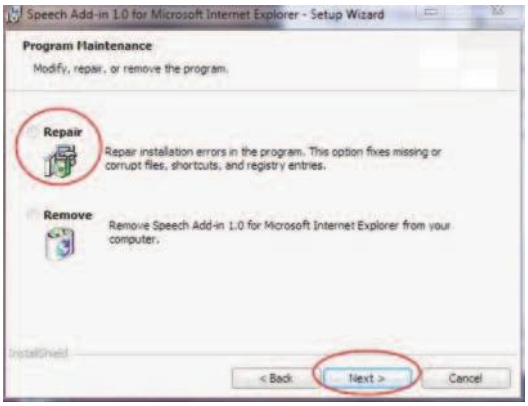
4. Confirm the installation by clicking **[Next >]**.

5. Wait while the Speech Add-In installs.



6. When the installation is complete Click **[Finish]**.

If you already have speech recognition, you will be asked if you want to uninstall or repair the Speech Add-In. Click [**Repair**] and [**Next**]. It will go through the steps described above for installation.

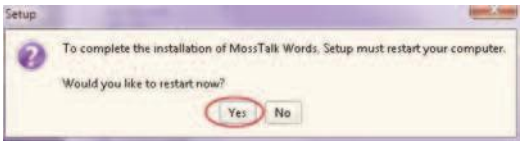


If you see an error box saying "Error 1308 has occurred" click [**Ignore**].

If you see an error box saying it "cannot overwrite the .manifest file" click [**Ignore**].

Reboot Your Computer

You will be prompted to reboot (restart) your computer.



It is very important that you reboot before proceeding with the final steps: adjusting speech recognition and starting MossTalk Words 2.0.

Configuring the Speech Recognition Settings in Windows XP

Setting Up Speech Recognition in Windows XP

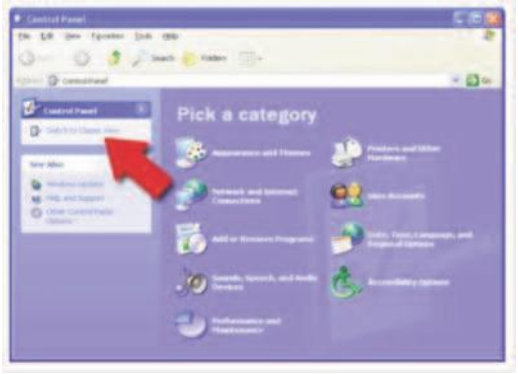
If you want to use the speech recognition feature of MossTalk Words 2.0, you will need to adjust the speech recognition settings on your computer.

1. Plug in your microphone or headset.

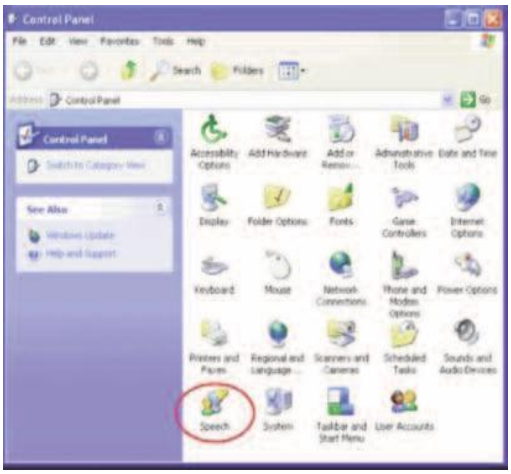
2. Click the Windows **[Start]** button.

Select "**Control Panel**" or you may need to select "**Settings**" then "**Control Panel**".

NOTE: If your Control Panel screen looks like the screen to the right, choose Classic View.

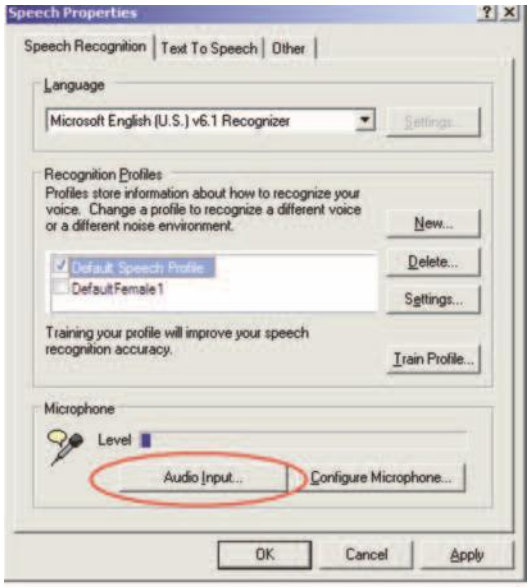


3. Double-click "**Speech**".



NOTE: You may get the error that the "required engine cannot be found" or that "an exception occurred while trying to run..." If you get this error, refer to relevant section in **Appendix D** (p. 77).

4. On the *"Speech Recognition"* tab, click **[Audio Input]**.

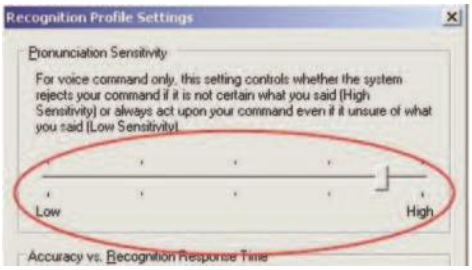


5. Check off "**Use this audio input device**". Use the drop-down menu to select your device. Click **[OK]** to return to the speech recognition tab.

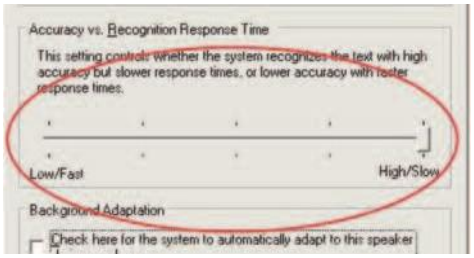
6. Click **[Apply]**.

7. Click on the name of the profile you will be using to select it then click the **[Settings]** button on the right-hand side. (Note: If you will be using a custom profile for an individual user, turn to p. 24, Training a Custom Profile, before proceeding.)

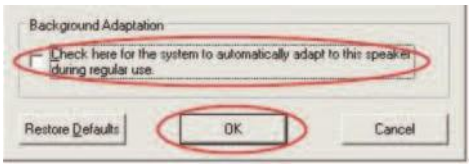
8. On the "*Recognition Profile Settings"* screen you can adjust the Pronunciation Sensitivity slider to make speech recognition stricter (high) or more forgiving (low). A suggested setting is about 90% of the way between "Low" and "High". A stricter speech recognition setting requires a more exact pronunciation in order to recognize a word than a forgiving setting.



9. You should move the slider for "Accuracy vs. Recognition Response Time" all the way to the right, to "High/Slow".



10. Finally, uncheck "**Background Adaptation**". Only check this box if MossTalk will be used by one user alone. Click **[OK]** to return to the speech recognition tab.



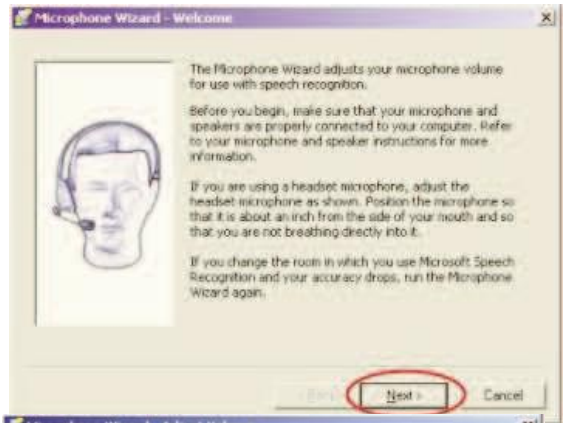
11. Click **[OK**] to save all the settings.

Setting Up a User-Specific Profile in Windows XP

Speech recognition uses the idea of a "profile", or information about a particular person's voice, to improve accuracy. In Windows XP, you can use a generic Default profile or a profile that's specific to one person's voice. Speech recognition is likely to be more accurate with a user-specific profile, but if the generic profile works well for you, it's not necessary to create a user-specific profile. (Note: A user-specific profile might be especially helpful if you have a foreign accent.)

1. Click the **[Start]** button.
2. Select "**Control Panel**" or you may need to select "**Settings**" then "**Control Panel**".
3. Double-click "**Speech**"
4. Click on the "**Speech Recognition**" tab.
5. Click "**New**". The New Profile Wizard will begin. Name your profile based on the user who will be using it.
6. Click "**Next**".

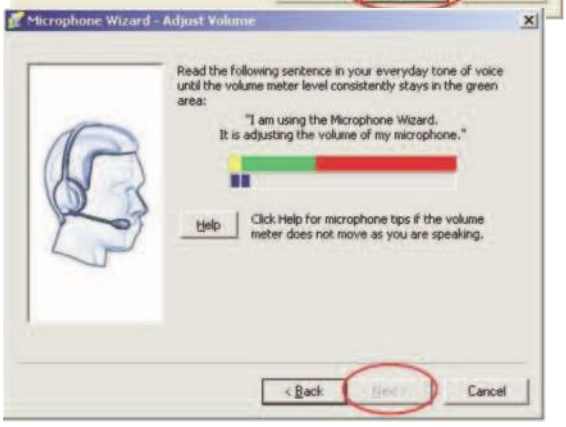
6. Plug in your microphone and put it in place for use. Click "**Next**".



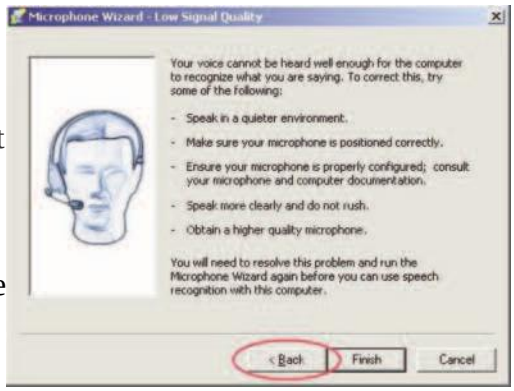
7. The next screen allows the computer to *adjust the volume* of your microphone. Read the sentence shown on the screen.

<u>It is OK to have the user repeat their name several times rather than read the sentence</u>.

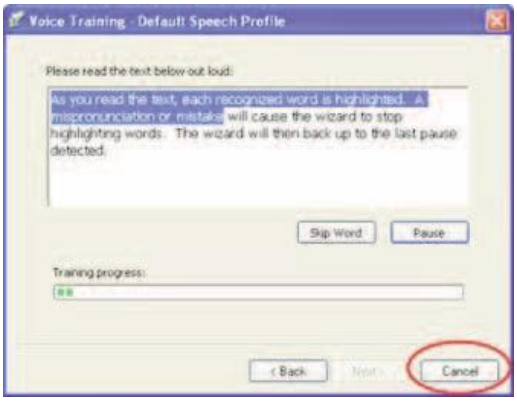
When you have finished, click **[Next]**.



If you see the following screen, the recognizer cannot hear you well enough for recognition. You will need to follow the instructions on the screen to improve your audio quality. The most important suggestion is likely to be to improve your microphone. A headset USB microphone is best. While it is not recommended that you use MossTalk with speech recognition until the audio quality is better you can sample it. Click [**Back**] to try again. You can continue to use MossTalk without speech recognition in the meantime.



8. After successfully adjusting the microphone click **[Finish]**, then the voice training wizard will begin.



It is NOT necessary to do this training.

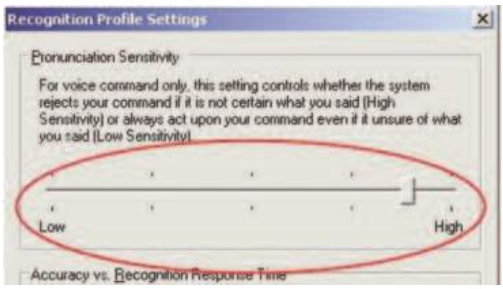
We recommend to **[Cancel]** the training when working with patients.

You might see a message that says the training results will not be saved. It is OK to **[Cancel]**.

Or you might be asked "are you sure you want to cancel training?". Click **Yes**.

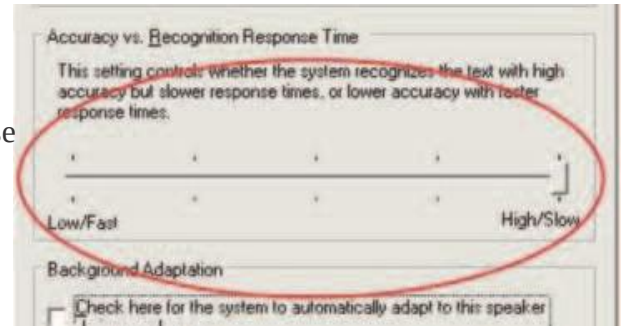
9. You should now see your new profile name in the list of Recognition Profile names. Click on the new profile name. It should have a checkmark and be highlighted. Click **[Settings]**

10. On the "*Recognition Profile Settings"* screen you can adjust the Pronunciation Sensitivity slider to make speech recognition stricter or more forgiving. A suggested setting is about 90% of the way between "Low" and "High". A stricter speech recognition setting will require a more exact pronunciation in order to recognize a word than a forgiving setting.



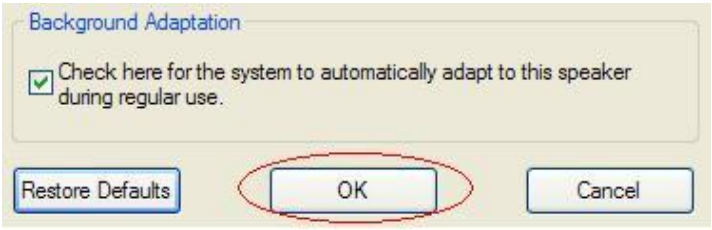
Return to this screen later on if the recognizer is being too strict and not recognizing valid naming attempts.

11. You should move the slider for "Accuracy vs. Recognition Response Time" all the way to the right, to "High/Slow".



12. Finally, check "**Background Adaptation**".

13. Click **[OK**] to save these settings.



14. Click **[OK]** again to save all the changes you have made.

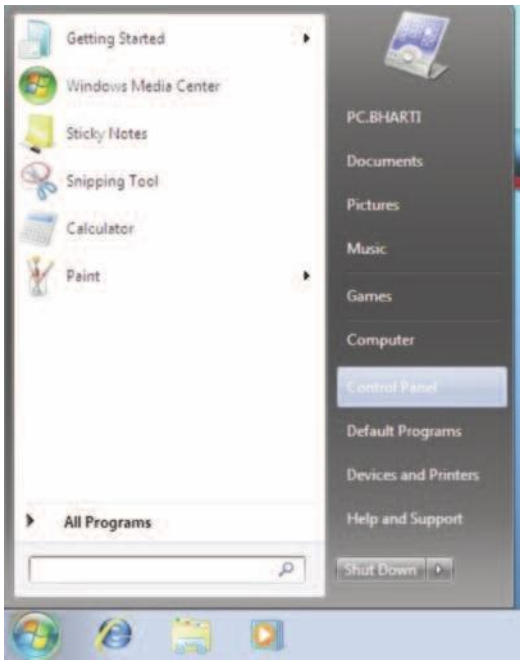
Note: <u>You still must train speech recognition to the individual user</u>. Turn to the next section, Training Speech Recognition, on p. 24, to complete the steps for a user profile.

Setting Up Speech Recognition Windows Vista or 7

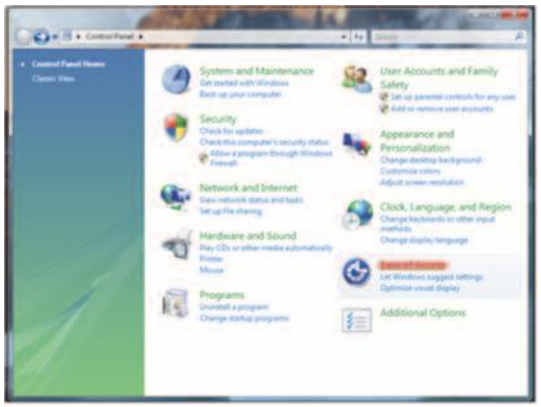
Configuring the Speech Recognition Settings in Windows Vista or 7

1. Plug in your microphone or headset.
2. Click the **[Windows Start]** button.

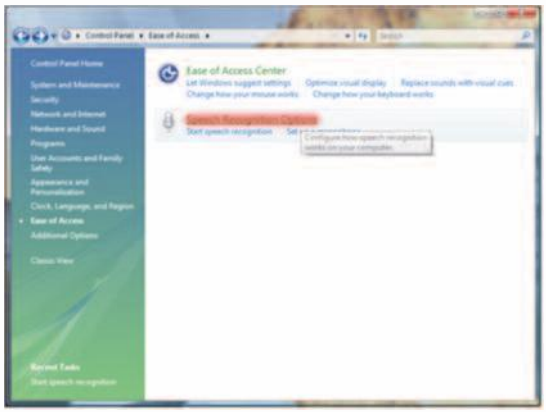
Select "**Control Panel**".



3. If you see the screen to the right Click "**Ease of Access**".
NOTE: You may see many more items, in which case you should look for "Speech Recognition" and skip to step 5.

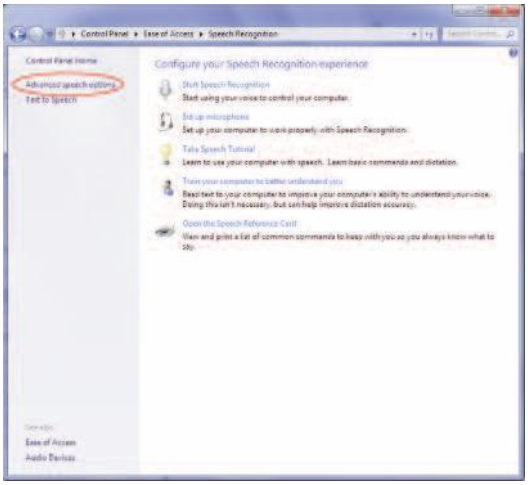


4. Click "**Speech Recognition**".

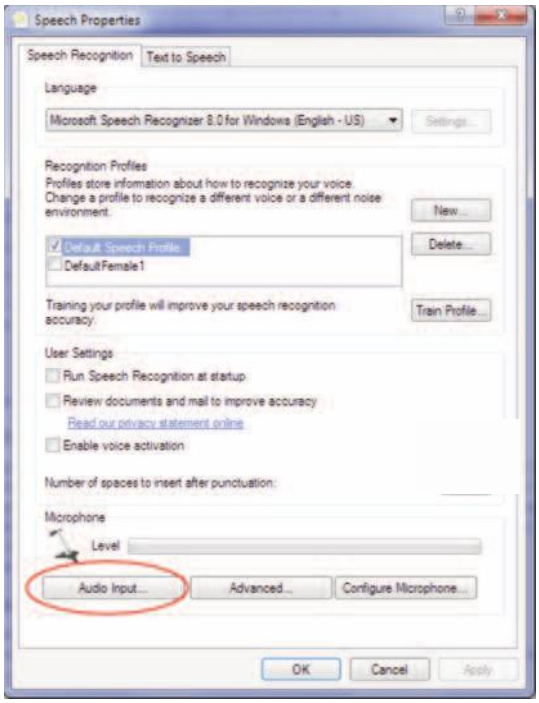


NOTE: You may get the error that the "required engine cannot be found"or that "an exception occurred while trying to run..." If you get this error, refer to relevant section in **Appendix D** (p. 77).

5. Click **"Advanced Speech Options"** on the left hand side.



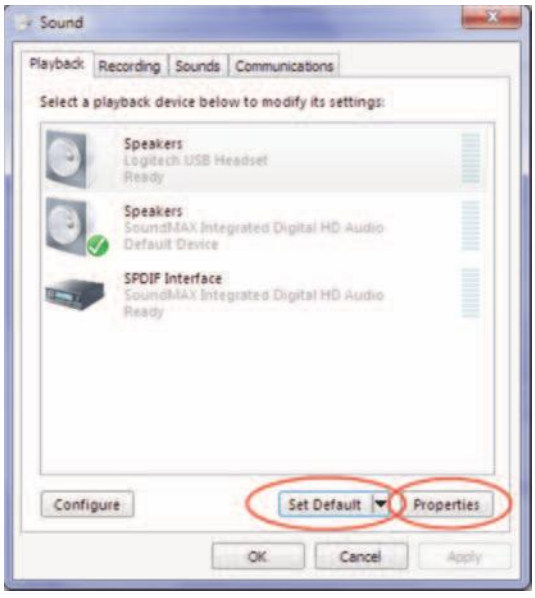
6. Click **[Audio Input]**.



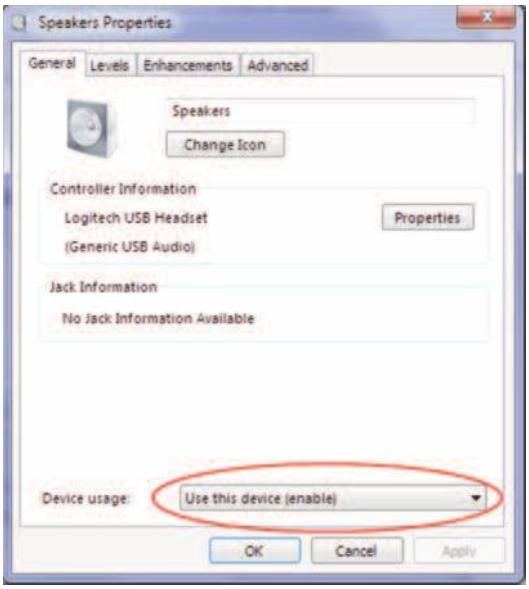
7. On the "*Playback*" tab, click your audio output device (e.g., headset or speakers).

Make sure the audio output device you want to use has a green check mark next to it. If not, click the drop down menu to "Set Default".

Click the **[Properties]** button.



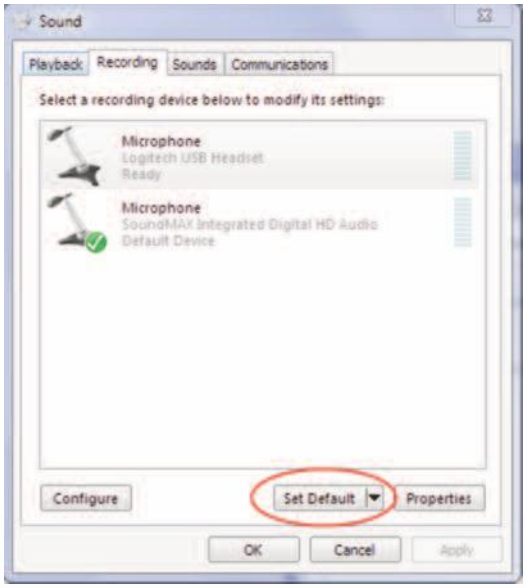
8. On the "*General*" tab, make sure the Device usage drop-down menu says "Use this device (enable)" then click **[OK].**



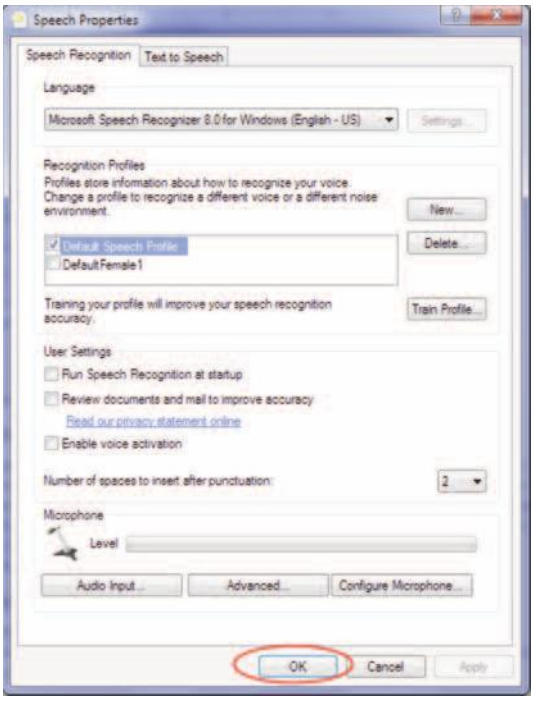
9. Click the "Recording" tab, and click your audio input device (e.g., headset or desktop microphone).

Make sure the audio input device you want to use has a green check mark next to it. If not, click the drop down menu to "Set Default".

Click **[OK]** to return to the speech recognition tab.



10. Click **[OK]** to save.



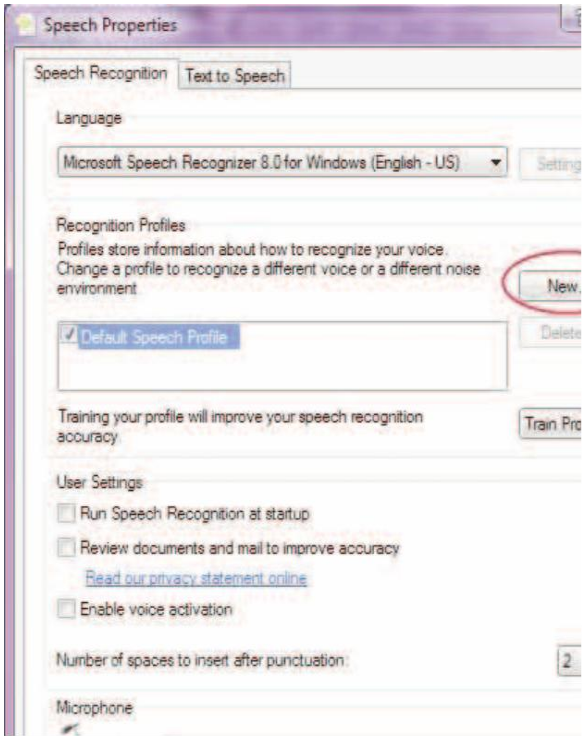
Setting Up a User-Specific Profile in Windows Vista or 7

Speech recognition uses the idea of a "profile", or information about a particular person's voice, to improve accuracy. Speech recognition is likely to be more accurate with a user- specific profile. (Note: A user-specific profile might be especially helpful if you have a foreign accent.)

In Windows Vista and 7, if more than one user will be using MossTalk, **a custom profile MUST be created for each user**. If the Default Profiles are used for multiple users, the Default Profiles will become corrupted and unusable.

1. Click the **[Windows Start]** button.
2. Select "**Control Panel**".
3. Click "**Ease of Access**" or "S**peech Recognition**", depending on your layout.
4. Click "**Speech Recognition**".
5. Click **"Advanced Speech Options"** on the left hand side.

6. Click "**New**". The New Profile Wizard will begin. Name your profile based on the user who will be using it. Click "**OK**".



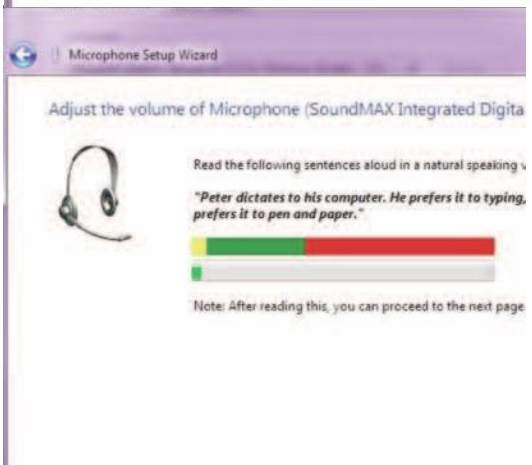
7. Select the device you are using and click **[Next]**.

8. Plug in your microphone and put it in place for use.Click **[Next]**.

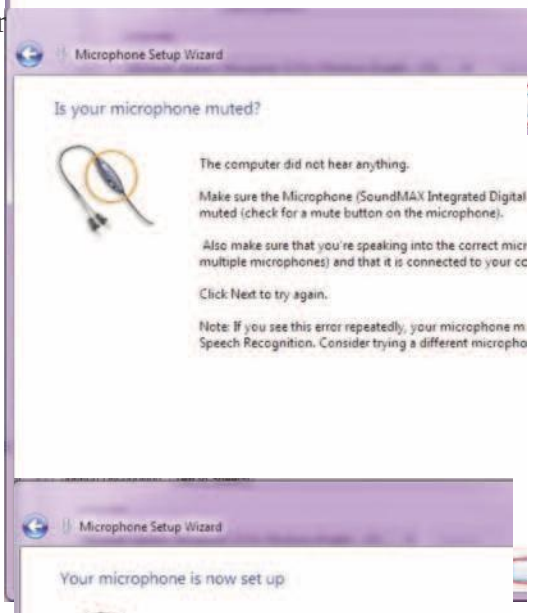
9. The next screen allows the computer to *adjust the volume* of your microphone. Read the sentence shown on the screen.

<u>It is OK to have the user repeat their name several times rather than read the sentence.</u>

When you have finished, click **[Next]**.



If you see the following screen, the recognizer cannot hear you well enough for recognition. You will need to follow the instructions on the screen to improve your audio quality. The most important suggestion is likely to be to improve your microphone. A headset USB microphone is best. It is not recommended that you use MossTalk with speech recognition until the audio quality is better. Click **[Back]** to try again. You can continue to use MossTalk without speech recognition in the meantime.



10. Click **[Finish]** to complete the setup.

11. You should now see your new profile name in the list of Recognition Profile names. Click **[OK]** to save the new profile settings.

Testing Speech Recognition

If you are using a custom profile for speech recognition, you may need to train the new profile for better recognition accuracy.

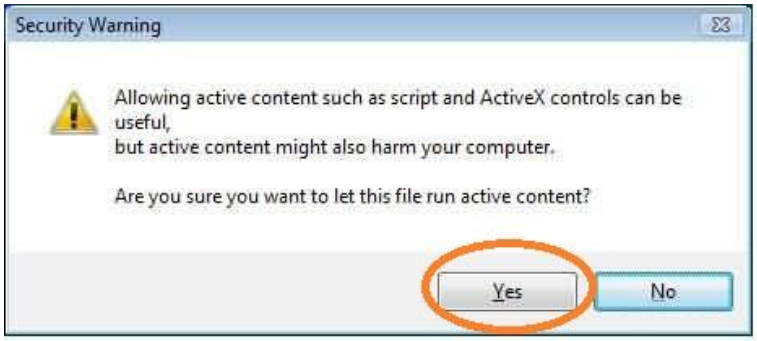
However, we first recommend that you try using MTW-2 with your new profile. Speech recognition works in such a way that it typically trains just by using it. After going through a few exercises in MTW-2, the speech recognizer should be able to accurately recognize the user's speech approximately 80% of the time.

If the speech recognizer's accuracy remains below 80%, we recommend explicitly training a custom profile for that particular user's speech. We have developed a protocol to quickly and efficiently train a custom profile. This protocol is described step-by-step on the next page.

1. Go to your desktop.
2. **Right-click** on the MossTalk desktop icon.
3. Select "**Open with**..." and then "**Internet Explorer**".

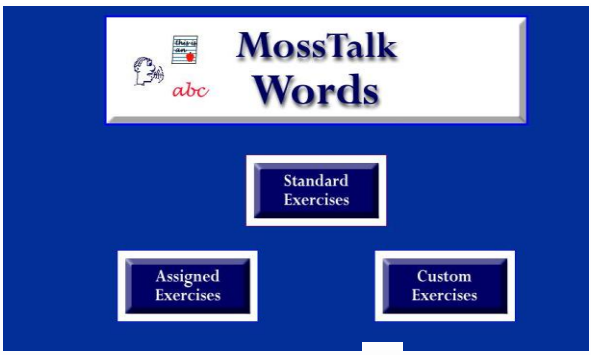
4. Note the yellow warning bar at the top of the screen. The bar will turn blue when you put your mouse cursor over it.
5. You must enable scripts to run MTW-2. To do so, click on the warning and Select "**Allow Blocked Content**" from the pull down menu.

6. Next you will see a Security Warning window. Click on **[Yes]**.

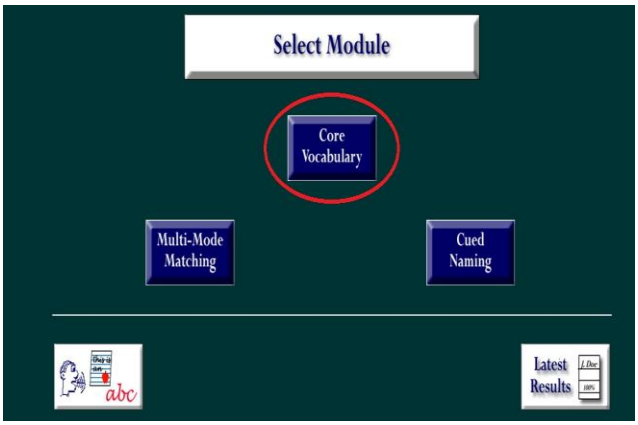


Note: If you do not see this security warning, you may encounter problems with MTW-2 later on. Check to make sure that you opened MTW-2 in Internet Explorer, and not some other internet browser. You should also check to make sure that your version of Internet Explorer is 6.0 or higher; this information is available under 'Help'. If you still do not get the security warning, you may need to upgrade the service pack for your version of Windows. You can find out if you need any upgrades by visiting http://winwdowsupdate.microsoft.com

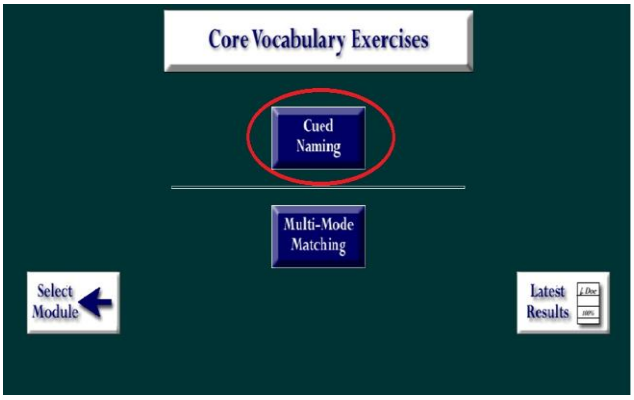
7. Choose to run ***Standard Exercises***.



8. After choosing ***Standard Exercises,*** click on the ***Core Vocabulary*** module**.**



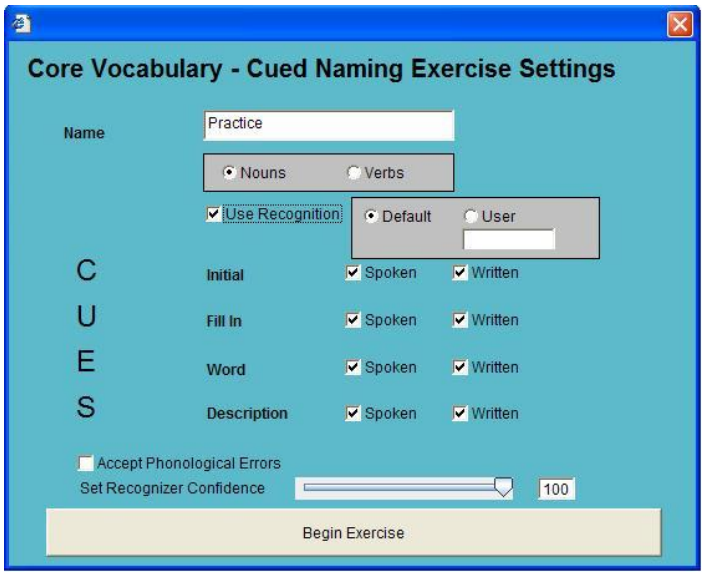
9. After choosing ***Core Vocabulary***, click on ***Cued Naming*** exercise.



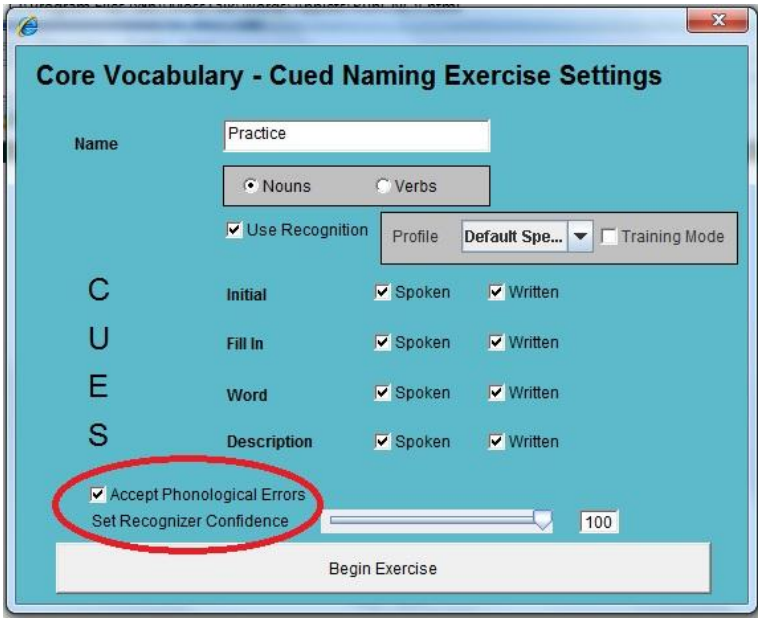
10. Next you will get a Java security warning. Click [**Run**] to continue.

11. A screen will appear that allows you to customize the exercise parameters. Check mark the "**Use Recognition Box**".

12. For XP: Click "**User**" and type in EXACTLY the same name you gave to the new recognition profile.



For Vista/7: Choose name from the drop down menu.



13. **Cues**: select the type of cues that will be available
14. **Accept Phonological Errors** – Check this box if you want the recognizer to be more lenient and accept target responses that contain phonological errors.

15. **Set Recognizer Confidence**- This slider allows you to select how sure the recognizer must be to call something correct (100% is very sure).
    Note: We recommend starting with a 90-100% confidence setting. If the user says the correct word (or has a mild sound error but is understandable to you) and the recognizer fails to "accept" it, try setting the slider at 50%. If, however, you do not want the recognizer to accept responses with phonological errors, then keep the setting high (90-100%).

13. Click [**Begin Exercise**]

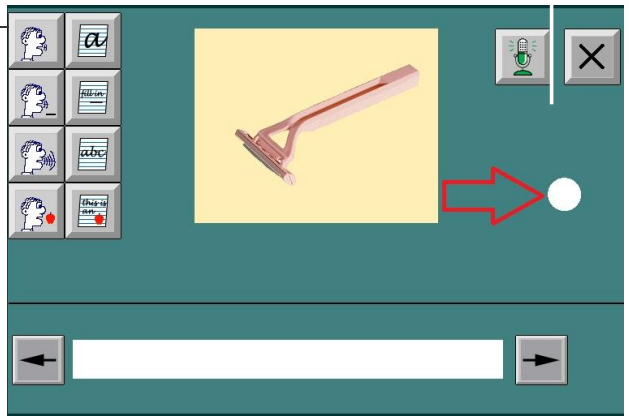
Note: You may see an error that "the selected profile cannot be found". Check to make sure that you have spelled the User profile correctly by looking in the Speech Recognition settings in the Control Panel. Click [**OK**] and exit out of MTW-2. If the spelling is correct, turn to the instructions on how to fix errors when importing the default profiles in **Appendix D**, p.77. Skip to next section, "**Speaking to the System**"

Speaking to the System

The exercise starts out with the microphone turned on.

All you have to do is say the name of the item in the picture.

<u>When MossTalkWords 2.0 hears a sound, it will display a white circle.</u>

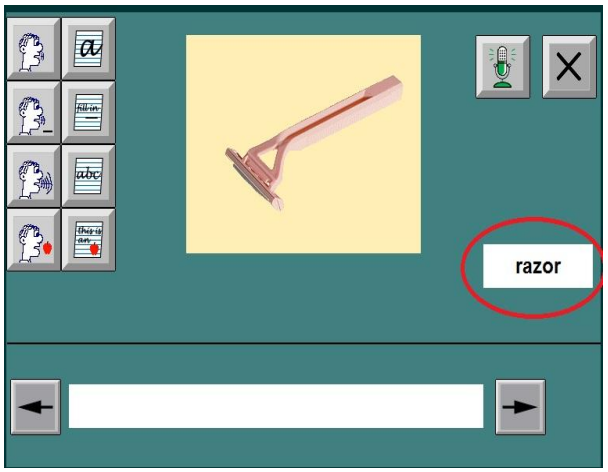


If you do not see a white circle, check to make sure that the microphone is plugged in and not muted.

See **Appendix D** (pp.77) for additional help if sound is not being received

When you say something that the speech recognition recognizes:

1. You will hear a tone.
2. The voice will say "That's right" and the name of the item.
3. Then you will see the written word.



If you say a synonym of the target (for example if you say "Kleenex" but MossTalk Words 2.0 is listening for "tissues") you will hear "It's also called" and the word that MTW-2 is listening for.

The recognizer is programmed to accept:
• the target
• a response that is recognizable as the target (e.g., may have a phonemic error such as tar/car; cars/car)
• an acceptable semantic alternative (sofa/couch; phone/telephone

The recognizer is programmed only to accept the target, so be careful that you do not say any words before the target, such as "It's a..." before the target word "razor".

Further, be sure to say the target naturally, with no additional pauses, e.g., "ra - zor" because the recognizer might think you are saying two separate words.

If you say something that the recognizer doesn't recognize at all it won't do anything.

- Click on ⇨ to advance to the next item.
- Click on ⇦ to return to a prior item.
- Click on ? to hear instructions.
- Click on cue icons on the left side of the screen for assistance with naming.
- If you are not using the speech recognition feature, click on the "happy face" to record all correct responses or results WILL NOT be saved.

Ending the Exercise (after the set or at any point before then)
- Click on ⇦ **Back** on the Navigation Bar (beneath File bar and above address bar) to return to the previous window ***OR***
- Quit program by selecting **File** on the Menu bar and then selecting **Close**.

Improving Speech Recognition with training

To improve Recognition Accuracy we have developed two procedures: Adaptation and Direct Training. We suggest you first try the Adaptation procedure.

Adaptation Procedure

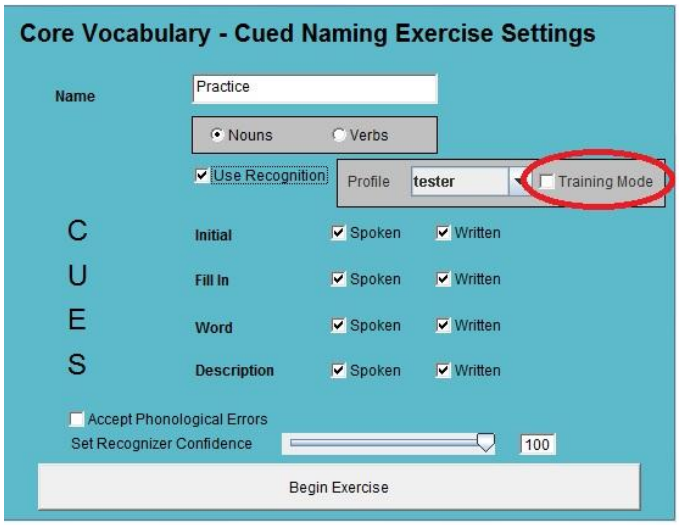
When training a User profile, you must use MossTalk a little differently:
Start out in Core Vocabulary → Cued Naming.

1. On each trial, the user should attempt to say the object name THREE to FIVE times. Even if the recognizer gets the target correct on the first or second try, the user should still say the target 3 to 5 times so that the recognizer hears more utterances.

2. If the user cannot say the target, it is OK to say the name aloud and ask the user to repeat it. It is important to say only the target word, independently, without an article. For example, "an apple" or "apple apple apple" will not be recognized correctly. Instead say "apple <pause> apple <pause> apple" where <pause> is a time interval of at least one second. **Clinicians should not say the name into the microphone, otherwise the recognizer will try to train to the clinicians voice instead of the user's.**

3. After training, try the Core Vocabulary exercise again with the user. The goal is to see how much better the recognizer does after training. Ideally, the recognizer should go up to 90% accuracy. You can go through training again with the user if accuracy is not yet acceptable.

If the recognizer accuracy is still not good enough after adaptation training, training mode provides the recognizer with even more information about the individual's voice.

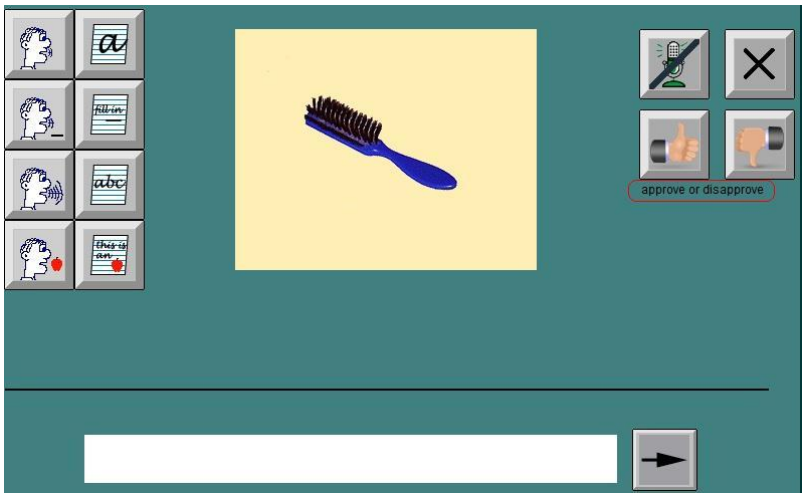


Training Procedure

1. As with Adaptation Training, open *Standard Exercise* → *Core Vocabulary* → *Cued Naming*.
2. Click on "Use Recognition".
3. Type in user's name:

For XP: Click "**User**" and type in EXACTLY the same name you gave to the new recognition profile.

For Vista/7: Choose name from the drop down menu.
4. Click the box next to "**Training Mode**".



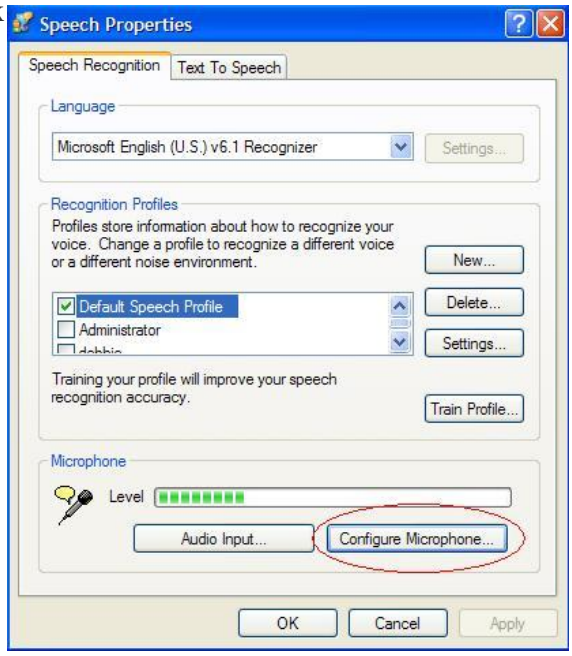
5. Have user name the picture. When you see the words to "approve" or "disapprove", Click on the thumbs up button if it is acceptable; Click on the thumbs down button if the response is unacceptable.

6. Repeat this 4 more times with the same picture.
7. Repeat steps 4 and 5 with each of the 25 pictures.
7. Repeat this entire procedure (steps 4-6) 3 times using the entire set of 25 pictures.

Adjusting Your Microphone in Windows XP

Before starting an exercise, you should adjust the volume of your microphone. This should be done for every time you start a new session with a user.

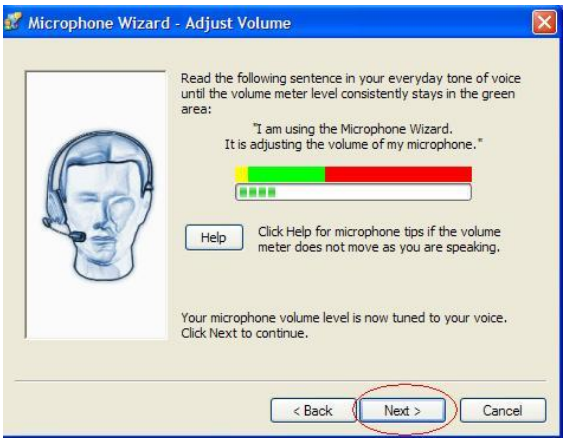
1. Plug in your microphone and put it in place for use.
2. Follow the directions in the section above, "Adjusting the Speech Recognition Settings in Windows XP", to return to the Speech Properties window.
3. On the "Speech Recognition" tab click the appropriate Profile name. It should have a checkmark and be highlighted. Click **[Configure Microphone]**.



4. The microphone wizard will begin. Follow the directions and click **[Next]**.

5. The next screen allows the computer to adjust the volume of your microphone. Read the sentence shown on the screen. It is OK to hae the user repeat their name several times rather than read the sentence.

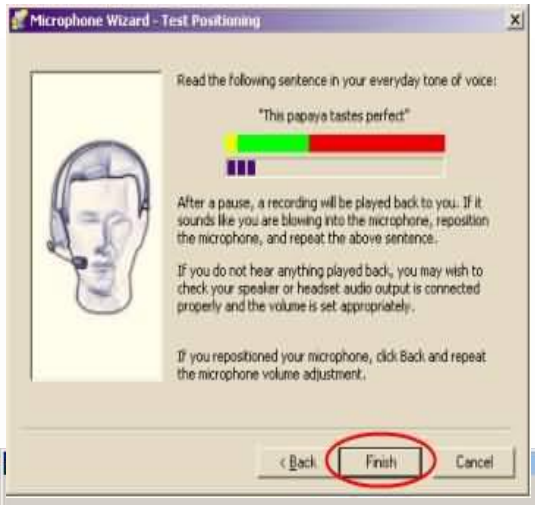
When you have finished, click **[Next]**.



6. After clicking next, you will see one of three screens:

Test Positioning screen

The recognizer has heard your speech well. Read the sentence shown on the screen. It is OK to have the user repeat their name several times rather than read the sentence. You will then hear your speech. Follow the instructions on the screen to make any additional adjustments to your microphone.

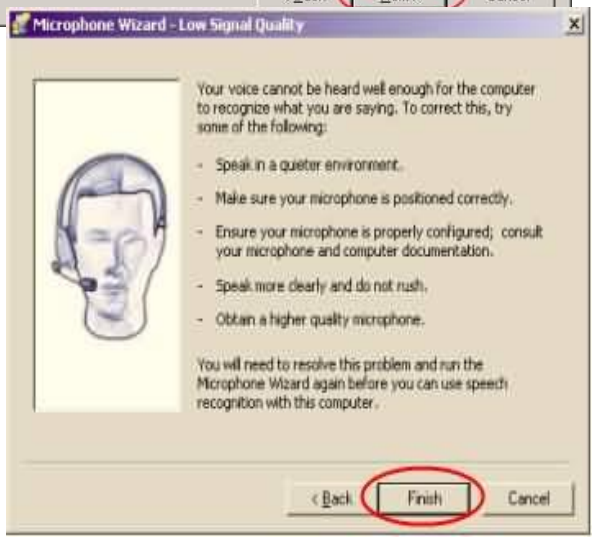


Average Signal Quality screen

The recognizer did not hear you well. There are some improvements you can make in the environment to provide better sound quality. For MossTalk, it is possible that you will still get good recognition even if the environment or microphone is not ideal. It is recommended that you start using MossTalk if you get this screen and see if your recognition is satisfactory. If it is not, try the suggestions on this screen.

Low Signal Quality screen

The recognizer cannot hear you well enough for recognition. You will need to follow the instructions on the screen to improve your audio quality. The most important suggestion is to improve your microphone. A headset USB microphone is best. It is not recommended that you use MossTalk with speech recognition until the audio quality is better. You can continue to use MossTalk without speech recognition in the meantime.



7. Click **[Finish]**. After you have completed adjusting the microphone you can begin to use the speech recognition feature of MossTalk Words 2.0.

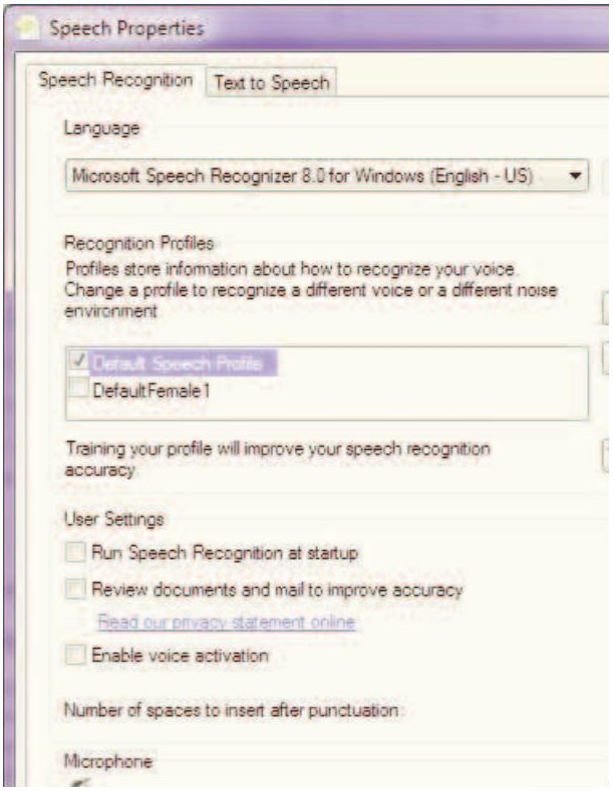
Adjusting Your Microphone in Windows Vista or 7

You should adjust the volume of your microphone every time you start a new session and between different users.

1. Plug in your microphone and put it in place for use.
2. Follow the directions in the section above, "Adjusting the Speech Recognition Settings in Windows Vista or 7", to return to the Speech Properties window.
3. On the "Speech Recognition" tab click the appropriate Profile name. It should have a checkmark and be highlighted.

(Note: If you will be using MossTalk with more than one user, you will need to create a custom profile for each user. The Default profiles can only be used for one individual.)

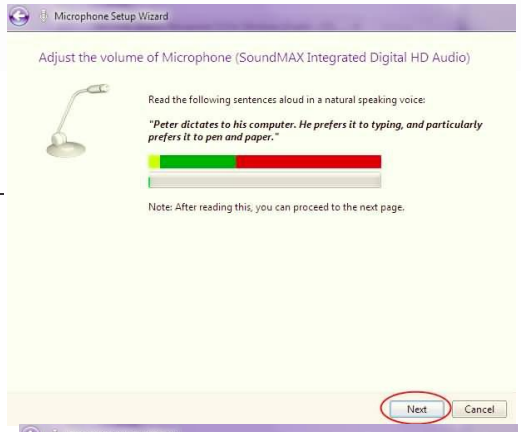
Click **[Configure Microphone]**.



4. Choose your microphone setup according to the instructions. Click **[Next].**

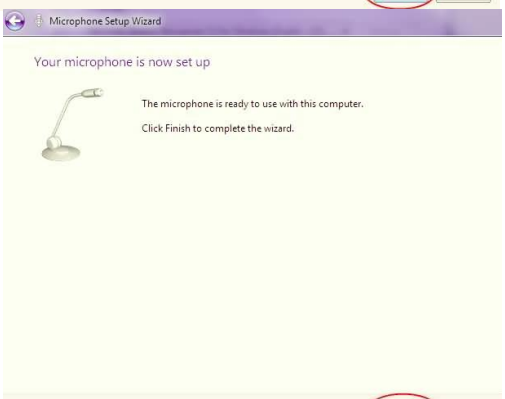
5. Follow the instructions on microphone placement. (The picture and instructions will vary based on the setup you indicated in the previous step.) Click **[Next]** again.

6. The next screen allows the computer to adjust the volume of your microphone. (The picture will vary based on your setup.) Read the sentence shown on the screen. <u>It is OK to have the user repeat their name several times rather than read the sentence</u>. When you have finished, click **[Next]**.

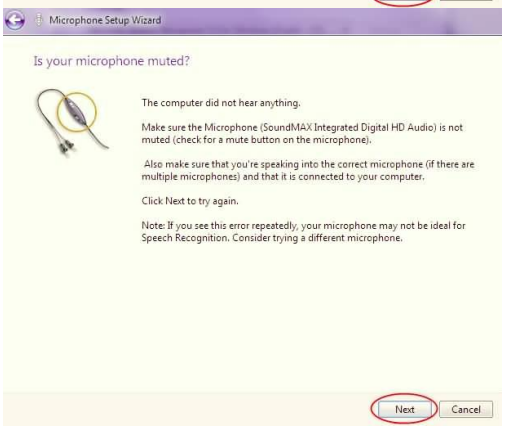


7. After clicking next, you will see one of three based on your microphone setup):

<u>Your Microphone is Now Setup screen</u>
The recognizer has heard your speech well.



<u>Is Your Microphone Positioned Correctly screen</u>
The recognizer did not hear you well.
There are some improvements you can make in the environment or the microphone to provide better sound quality. For MossTalk, it is possible that you will still get good recognition even if the environment or microphone is not ideal. It is recommended that you start using MossTalk and see if it your recognition is satisfactory. If it is not, you may wish to try some of the suggestions
on this screen.



Is Your Microphone Muted? screen

In this case the recognizer cannot hear you well enough for recognition. You will need to follow the instructions on the screen to improve your audio quality. The most important suggestion is likely to be to improve your microphone. A headset USB microphone is best. It is not recommended that you use MossTalk with speech recognition until the audio quality is better. You can continue to use MossTalk without speech recognition in the meantime.

8. Click **[Finish]**. After you have completed adjusting the microphone you can begin to use the speech recognition feature of MossTalk Words 2.0.

Running MossTalk Words 2

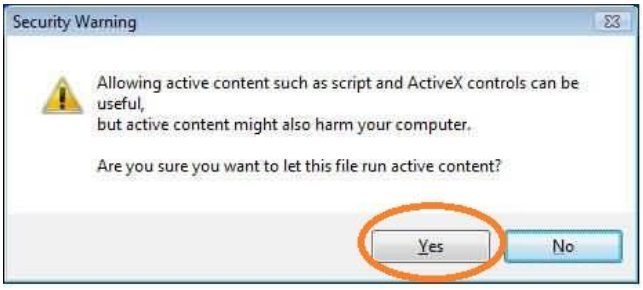
Starting up MossTalk Words 2.0

1. Go to your desktop.
2. Right-click on the MossTalk desktop icon.
3. Select "**Open with**..." and then "**Internet Explorer**".

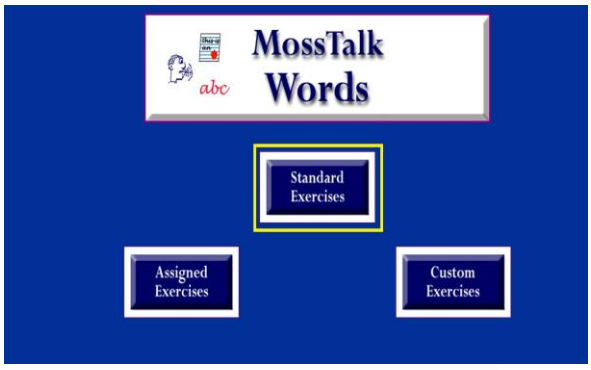
4. Note the yellow warning bar at the top of the screen. The bar will turn blue when you put your mouse cursor over it.
5. You must enable scripts to run MTW-2. To do so, click on the warning and Select "**Allow Blocked Content**" from the pull down menu.

Note: If you do not see this security warning, you may encounter problems with MTW-2 later on. Check to make sure that you opened MTW-2 in Internet Explorer, and not some other internet browser. You should also check to make sure that your version of Internet Explorer is 6.0 or higher; this information is available under 'Help'. If you still do not get the security warning, you may need to upgrade the service pack for your version of Windows. You can find out if you need any upgrades by visiting http://winwdowsupdate.microsoft.com

6. Next you will see a Security Warning window. Click on **[Yes]**.



7. Choose to run ***Standard Exercises*** or ***Assigned Exercises,*** or access ***Custom Exercises.***



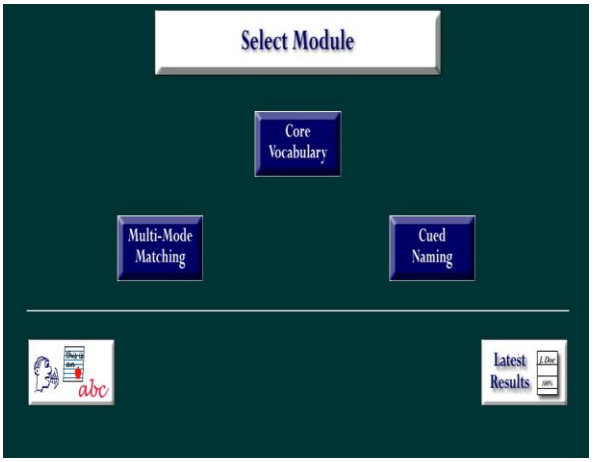
Click on ***Standard Exercises*** to select one of three therapy modules.

Click on ***Assigned Exercises*** to create or view assignments for user practice.

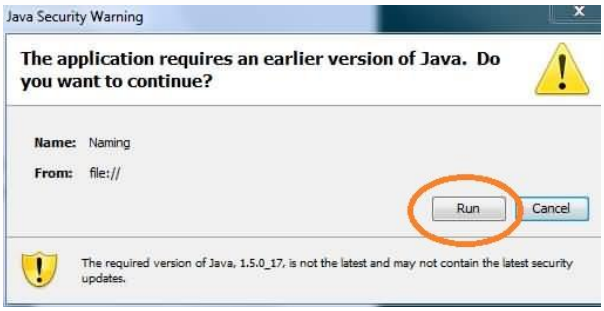
Click on ***Custom Exercises*** to build or run individualized exercises.

Using Standard Exercises

8. After choosing ***Standard Exercises,*** select Module. Click on ***Core Vocabulary***, ***Multi-Mode Matching,*** or ***Cued Naming.***



9. Next you will get a Java security warning. Click [**Run**] to continue.



Module 1: Core Vocabulary

A core vocabulary unit for more severely language-impaired users is included.

Description: The program targets 25 functional nouns and 15 functional verbs (see Appendix A) in a variety of **cued naming** and **matching** exercises.

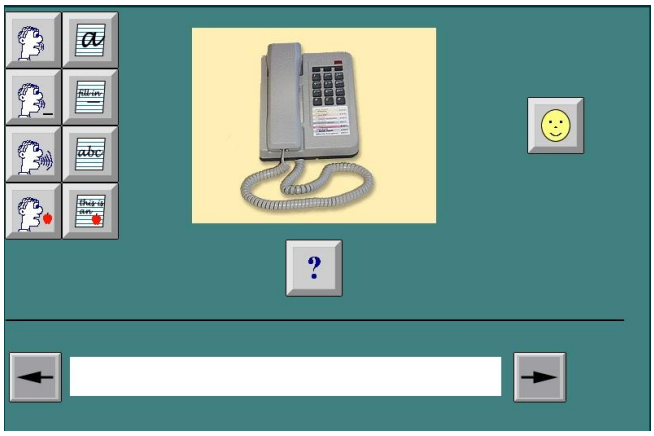
Objectives:

- To assess user's basic visual processing ability for exact matching of pictures and/or words.
- To stimulate single-word comprehension and expression of a core vocabulary with high functional significance.
- To establish the user's suitability for treatment using the computerized format.

Cued Naming Task

Pictures of items to be named appear individually on the screen. The noun exercise consists of a block of all 25 items. The verb exercise consists of all 15 items. After clicking the "?" below the picture, the user is asked, "What is this?"

Note: The screen shot shown to the right is for the version of MossTalk without speech recognition



There are four spoken and four written cues available to prompt the correct noun response. These include:


Spoken initial phoneme


Spoken sentence fill-in


Spoken word (repetition)


Spoken description


Written initial letter


Written sentence fill-in

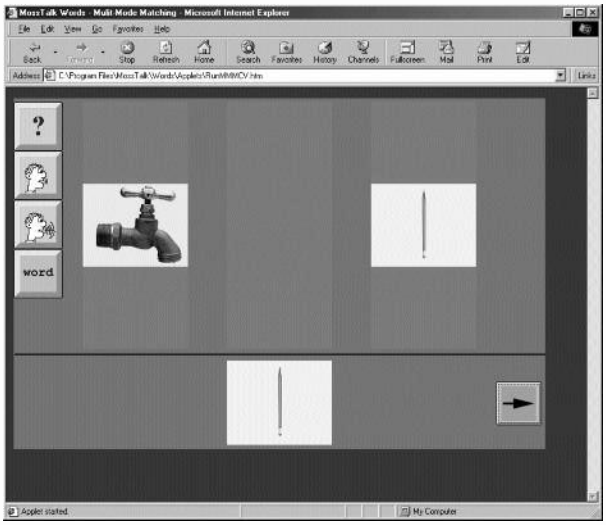

Written word (oral reading)


Written description

Note: Only four cue choices are available for verbs. There are no fill-in or description cues.

The user is encouraged to use any cues that facilitate naming and to gradually withdraw from use of the cues. You have the option of deactivating any or all of the cues by clicking on the square box next to each one. The check mark will disappear and the cue will be crossed out on the screen. **If you are not using the speech recognition function, feedback will not be automatically provided by the computer. Instead, someone must click on the "happy face" to record targets named correctly.**

Matching Task



Pictures or words are presented with one or two words or pictures acting as foils in a multiple choice matching format. The available match types include: picture to picture, written word to written word, written word to picture, picture to written word, spoken word to picture and spoken word to written word. A variety of cues are available to assist selection of the different match types (spoken initial phoneme, spoken or written word, or picture cues). After the user selects a response, the simple feedback "that's right" or "no, try again" is heard.

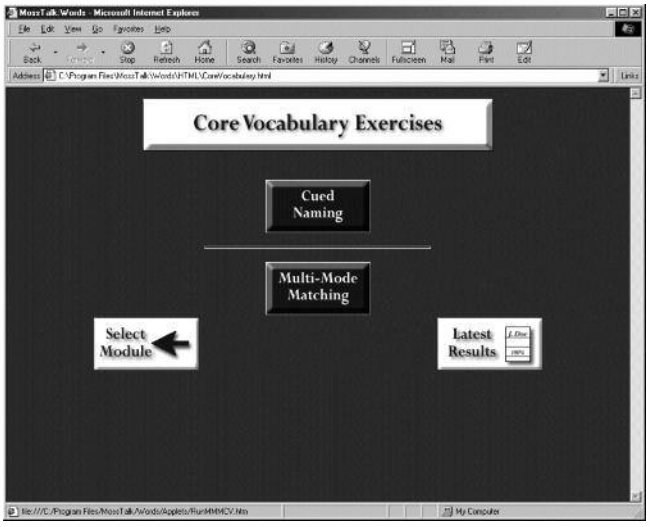
The Matching task has three levels of difficulty determined by three factors:

1. **Vocabulary familiarity** will always be "easy" since all targets within this set are high frequency words.

2. **Choice relatedness** refers to the degree of relatedness between the target and its foils. "Easy" means that other choices appearing with the target are unrelated semantically. "Mixed" means that half the trials, on average, include choices that will be semantically related to the target. "Hard" means all other choices appearing with the target will be semantically related to it. Choices appearing with verbs are always "hard."

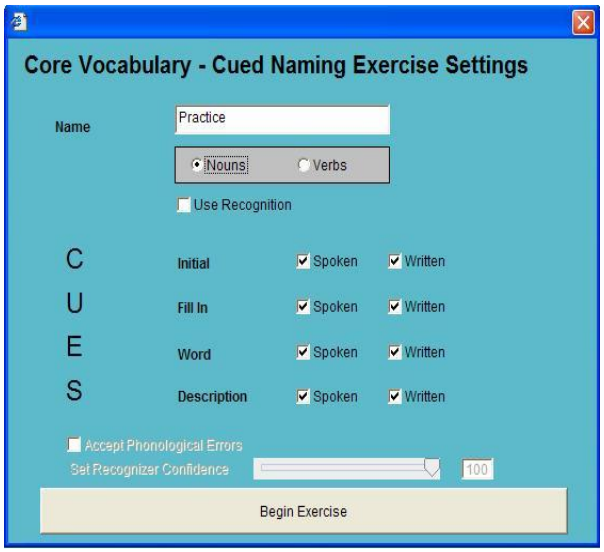
3. **Number of choices** will appear on the screen including the target response and foils.

Running Module 1



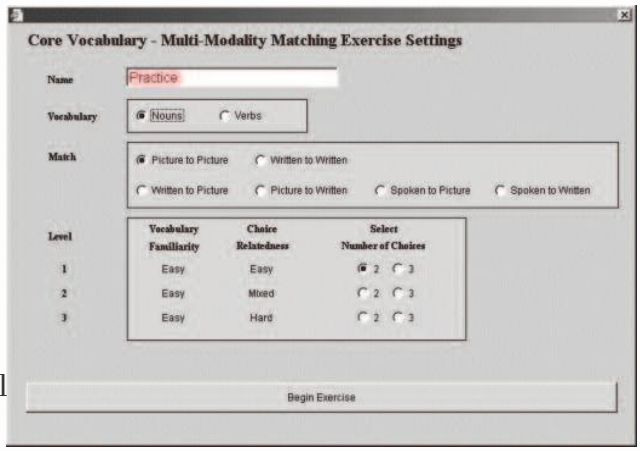
When you click on ***Core Vocabulary***, you will access a screen that allows you to choose either a ***Cued Naming*** module or a ***Multi-Mode Matching*** module.

Running Module 1 (continued)



If you select ***Cued Naming,*** a screen will appear that allows you to customize the exercise parameters (right). Highlight the boxed word **"Practice"** (press, hold down and drag mouse) and key in user's last name followed by first initial (up to 11 characters). This ensures that data regarding all responses will automatically be saved in the user's personal file for later retrieval. You will have access to 25 specially chosen nouns or 15 verbs **ONLY**. All cues (eight for nouns and four for verbs) will be available to the user unless deselected (clicked on) in the box next to each.

If you wish to use the ***Speech Recognition*** feature, turn to ***Module 3*** on p. 41.



If you select ***Multi-Mode Matching*** of Core Vocabulary, a screen will appear that allows you to customize the presentation of the exercise. Highlight the boxed word **"Practice"** (press, hold down and drag mouse) and key in user's last name followed by first initial (up to 11 characters). The data regarding all responses will automatically be saved in the user's personal file for later retrieval. Choose the parameters for the exercise (choice relatedness and number of choices).

Beginning the Exercise
- Click on ***Begin Exercise***.
- Click on ⇨ to start and to advance.
- Click on ⇦ to return to a prior item.
- Click on **?** to hear instructions.
- Click on cue icons on the left side of screen for assistance with naming or matching.
- Click on "happy face" to record all correct responses (for Cued Naming).

Ending the Exercise
- Click on ⇦ **Back** on the Navigation Bar (beneath File bar and above address bar) to return to the previous window.
- Quit program by selecting **File** on the Menu bar and then selecting **Close**.

Module 2: Multi-Mode Matching

Description: The program targets 422 words from three main categories of animals/objects, actions and people. Specifically, vocabulary includes 50 animals, 39 items of clothing, 81 foods, 53 larger objects (including vehicles, rooms and other parts of a house, furniture and appliances, and items in the landscape) and 117 smaller objects (including kitchen items, tools, office items, personal care and leisure items), 26 people depicting various occupations and 56 actions.

Objectives:

- To stimulate auditory and/or visual recognition and comprehension for improved semantic and phonological processing.
- To provide practice in repetition, picture naming and oral reading of single words.

The level of difficulty in this program is determined by three factors:

1. Vocabulary familiarity is based on word frequency[1] and is categorized as follows: "Easy" are words from the highest frequency quartile, "Hard" are words from the lowest frequency quartile, and "Mixed" are words from all quartiles.

2. Choice relatedness refers to the degree of semantic relatedness between the target and its foils. "Easy" means choices appearing with the target are from different semantic categories. "Mixed" means that half the choices, on average, will be from the same semantic category. "Hard" means choices appearing with the target are from the same semantic category. Choices that appear with actions and people are always "Hard."

3. Number of choices refers to the number of choices that will appear on the screen including the target response and foils.

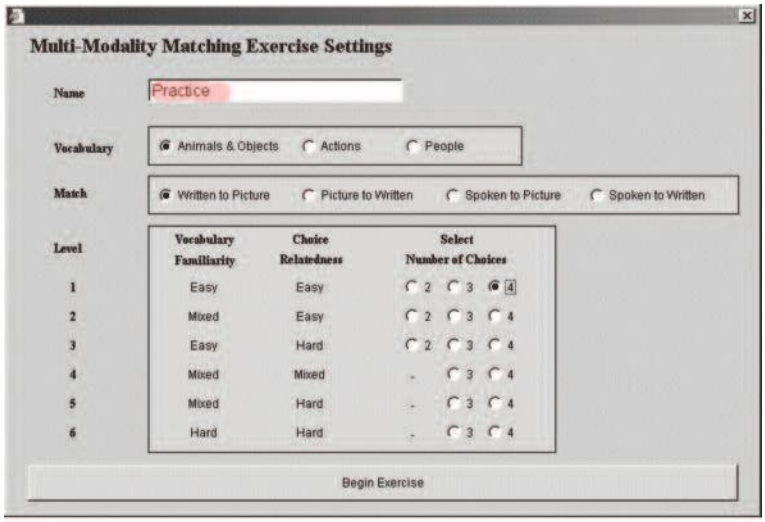
In a typical exercise, the user selects a matching task at an appropriate level of difficulty. If, for example, a written word to picture matching task is selected with three choices, the user would see a printed word (the target) along with four pictures (the target picture and three foils) from which he or she must select the image that corresponds to the printed word. Spoken initial phoneme and word cues are available to assist selection. For other matching exercises, different cues are available. After the user selects a response, the simple feedback "that's right" or "no, try again" is heard. Each exercise consists of a block of 20 items which are randomized automatically so that different combinations of words and pictures appear during each exercise block. Occasionally, categories have less than 20 items (See **Appendix D**, p. 77).

[1] Word frequencies were determined by combined ratings from Francis, W.N. and Kucera, H., *Frequency Analysis of English Usage* (1982) Houghton Mifflin Co. Boston, and Baayen, R.H., Piepenbrock, R. and Van Rijn, H. (1983), the CELEX Lexican Database (C-ROM), Linguistic Data Consortium, University of Pennsylvania, PA.

Running Module 2

When you click on the ***Multi-Mode Matching*** box, you will access a screen that allows you to customize the presentation of the exercise.

Highlight the boxed word **"Practice"** and key in user's last name followed by first initial (up to 11 characters). This ensures that data regarding all responses will automatically be saved in the user's personal file for later retrieval.



Choose the following parameters for the exercise by clicking on the small circle next to your choice:

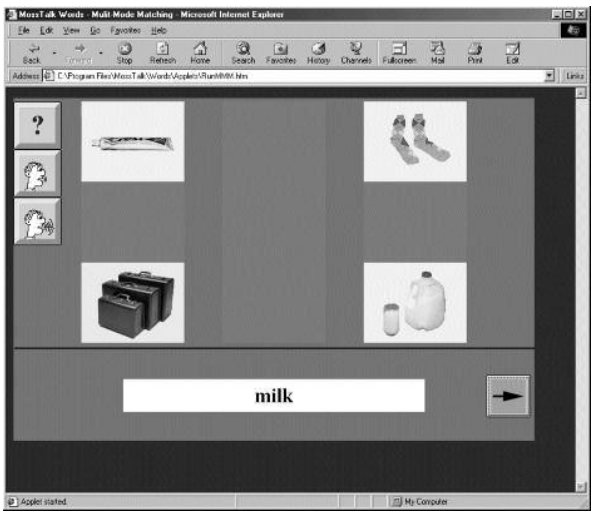
Vocabulary: The program contains 422 target words – 340 animals and objects, 56 actions and 26 people. (See **Appendix A**)

Type of Match: Targeted items (pictures, printed words or spoken words) are matched to a multiple choice set (printed word or picture) which includes the target (answer) plus one to three foils. The match may be: a) a written word to pictures, b) a picture to written words, c) a spoken word to pictures, or d) a spoken word to written words.

Level of Difficulty is determined by three parameters:

- Familiarity of the vocabulary included in the exercise (frequency).
- Semantic relatedness of the foil choices to the target. "Easy" indicates all foils are unrelated semantically to the target, "mixed" indicates up to half may be semantically related to the target, and "hard" indicates all foils are related to the target
- Number of choices. This indicates how many other pictures or words will be presented with the target (one to three).

Cues: Initial phoneme, word or picture cues are provided to assist selection of the different match types.



Running Module 2 (continued)

Beginning the Exercise

- Click on ***Begin Exercise***.
- Click on ⇨ to start and to advance.
- Click on ⇦ to return to a prior item.
- Click on **?** to hear instructions.
- Click on icons on the left side of screen to access spoken, written or picture cues.

Ending the Exercise (after the typical 20 item set or at any point before then)

- Click on ⇦ **Back** on the Navigation Bar (beneath File bar and above address bar) to return to the previous window ***or***
- Quit program by selecting **File** on the Menu bar and then selecting **Close**.

Note: You will not be able to close the exercise parameter setting screens by the ☒ in the upper right corner. If you change your mind about running the exercise as you're choosing parameters, simply press ***Begin Exercise*** and exit the program as noted above.

Module 3: Cued Naming

Description: The program targets 422 words from five main categories of animals, foods, objects, actions and people. Specifically, targets include 50 animals, 39 items of clothing, 81 foods, 53 larger objects (including vehicles, rooms and other parts of a house, furniture and appliances, and items in the landscape) and 117 smaller objects (including kitchen items, tools, office items, personal care and leisure items), 26 people depicting various occupations and 56 actions. The vocabulary items may be selected within category or in a mixed category set.

Objective:

- To improve word retrieval.
- To provide practice in repetition, picture naming and oral reading of single words, phrases and sentences.

The level of difficulty in the Cued Naming Module is determined by two factors:

1. Familiarity is based on word frequency[1] and is categorized as follows: "Easy" are words from the highest frequency quartile, "Hard" are words from the lowest frequency quartile and "Mixed" are words from all quartiles.

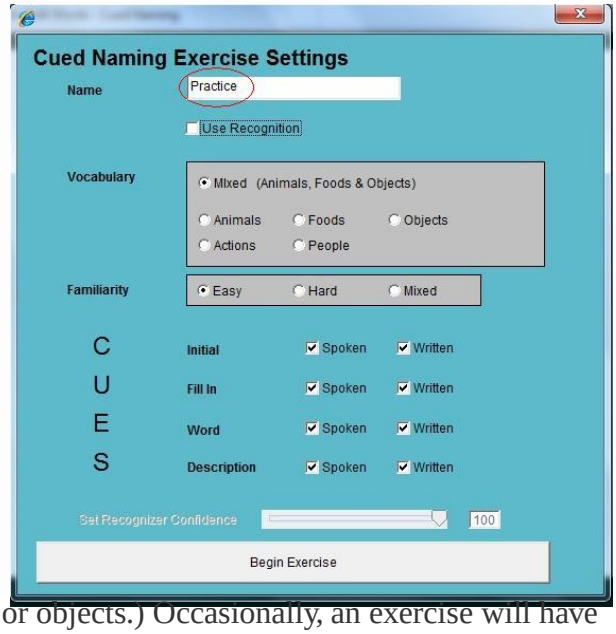
2. Cues: The number and type of cues made available for naming assistance are spoken or written initial phoneme, word, fill-in and description cues. (Eight for nouns, four for verbs). The user is encouraged to use any cues that facilitate naming as many times as needed and to gradually withdraw from use of the cues. Users can check for correctness by comparing their responses to the spoken name cue. Self-perception of accuracy is logged once the user clicks on the "happy face" icon or, if using the speech recognition feature, it will be logged automatically.

Note: The "?" only appears if you are not using speech recognition

In a typical exercise, pictures of 20 items to be named appear singly on the screen. Occasionally, categories have less than 20 items (See Appendix D: Troubleshooting Guide, p. 77). After clicking the "**?**" below the picture, the user is asked "What is this?" The user is encouraged to use any cues that facilitate naming and to gradually withdraw from use of the cues.

Running Module 3

When you click on ***Cued Naming***, you will access a screen that allows you to customize the exercise presentation.



Highlight the boxed word **"Practice"** and key in the user's last name followed by first initial (up to 11 characters). This ensures that data regarding all responses will automatically be saved in the user's personal file for later retrieval.

Vocabulary: The program contains 422 target words to choose from: 340 animals and objects, 56 actions and 26 people. (See **Appendix A**)

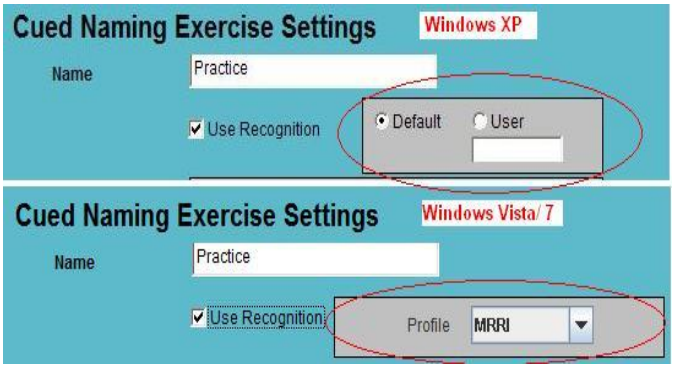
Choose your 20 item vocabulary target set from the same category (e.g. all animals) or from mixed categories (e.g. targets from mixed animals, foods or objects.) Occasionally, an exercise will have less than 20 items (See **Appendix D**, p. 77.)

Familiarity: "Easy" refers to those targets that have been designated high frequency words. "Hard" refers to those targets that have been designated low frequency words and "Mixed" refers to all targets with high, medium or low frequencies. (See **Appendix A** for further explanation.)

Cues: All eight cue choices, including spoken and written initial phoneme, word, fill-in and description, will be available and activated when you select animals, foods or objects. Only four cue choices are available for actions and people (there are no fill-in or description cues). You have the option of deactivating any or all of the cues by clicking on the square box next to each one. The check mark will disappear and the cue will be crossed out on the screen. If you change exercise parameters to a new vocabulary category, always double check your cue selections.

Turning on Speech Recognition for an Exercise

When you are about to start a module that has a speech recognition option (the Cued Naming Exercises), you will see the Exercise Settings screen.



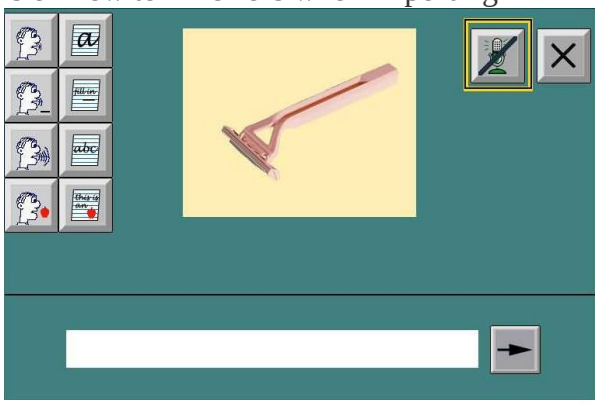
1. Check the "**Use Recognition Box**".
2. Click the appropriate profile
Windows XP: Select either "Default" or type in the user's exact profile name.
Windows Vista/ 7: Select the users exact profile from drop down menu

3. Click [**Begin Exercise**].

Note: Don't click on "User" unless you have already created a custom user profile. You will need to type in the name of the profile you created earlier.

Turning Off the Microphone

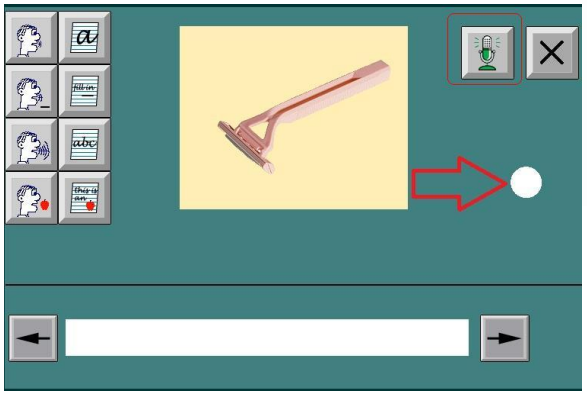
Note: You may see an error that "the selected profile cannot be found". Click [**OK**] and exit out of MTW-2. Turn to the instructions on how to fix errors when importing the default profiles in **Appendix D**, p. 71.



If for some reason you need to leave the exercise, or you want to turn off speech recognition for a few minutes, you can click the [**microphone**] button. Clicking it again will turn the speech recognition back on.

Using the Microphone

If speech recognition is being used in an exercise, the exercise starts out with the microphone turned on.



All you have to do is say the name of the item in the picture.

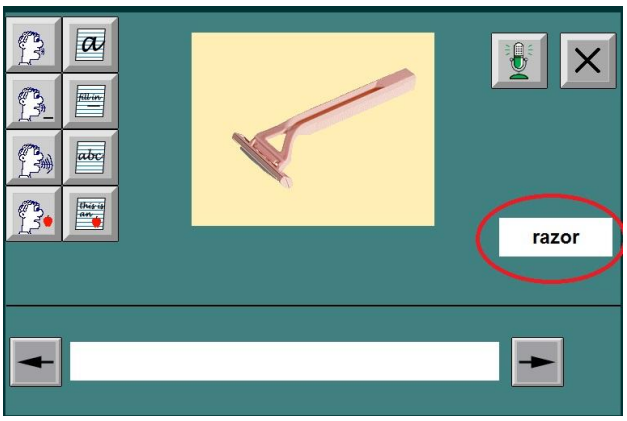
The cues on the left of the screen work just like the cues in the version of MossTalk without speech recognition

When Moss Talk Words 2.0 hears a sound, it will display a white circle.

If you do not see a white circle, check to make sure that the microphone is plugged in and not muted.
See **Appendix D** (p. 77) for additional help if sound is not being received by MTW-2..

When you say something that the speech recognition recognizes:

1. You will hear a tone.
2. The voice will say "That's right" and the name of the item.
3. Then you will see the written word.



If you say a synonym of the target (for example if you say "Kleenex" but MossTalk Words 2.0 is listening for "tissues") you will hear "It's also called" and the word that MTW-2 is listening for.

The recognizer is programmed to accept:
- the target
- a response that is recognizable as the target (e.g., may have a phonemic error such as tar/car; cars/car)
- an acceptable semantic alternative (sofa/couch; phone/telephone)

Recording an Objection

The recognizer is programmed only to accept the target, so be careful that you do not say any words before the target, such as "It's a..." before the target word "razor". Further, be sure to say the target naturally, with no additional pauses, e.g., "ra - zor" because the recognizer might think you are saying two separate words.

If you say something that the recognizer doesn't recognize at all it won't do anything.

Next to the microphone you will see an "**X**". Clicking "**X**" inserts a record of your disagreement into the results of the exercise.

Register an objection to the computer's assessment by pressing the "**X**" button if the recognizer:
- accepts an attempt that you consider incorrect.
- does not accept a response which you consider correct. (Try saying the object name twice.)

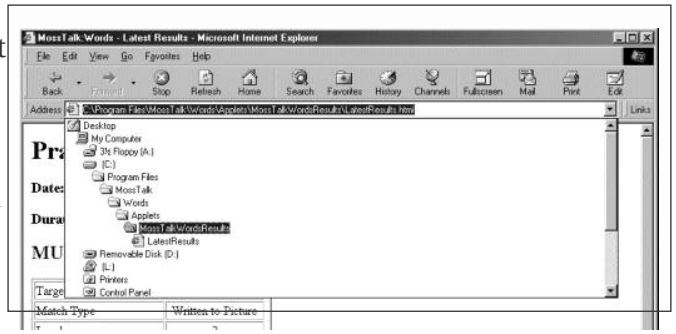
If you continue to have problems with the computer recognizing your voice, but the white dot appears to show it is listening, you may need to make a custom profile. See the custom profile section of **Appendix D**, p. 77.

Ending the Exercise (after the typical 20 item set or at any point before then)
- Click on ⇦ **Back** on the Navigation Bar (beneath File bar and above address bar) to return to the previous window ***OR***
- Quit program by selecting **File** on the Menu bar and then selecting **Close**.

Automated Record Keeping

Viewing the Latest Results

MossTalk Words 2.0 allows for automatic saved results from each treatment exercise. A user's data will be saved under his or her last name if it was keyed into the **"Practice"** box. If you forgot this step, the user's data will still automatically store, but it will be saved under the name "Practice." The file should be identifiable by date and exercise type.



To view the latest results:

- Click on ⇦ ***Back*** and automatically return to ***Select Module.***
- Click on ***Latest Results.***
  Results are also stored on the hard drive for later retrieval. (See illustration at right.) They can be retrieved through ***Latest Results.*** On address bar, access the **MossTalk Words Results** folder directly above the file you are currently viewing. Double click on any file to open or access directly from the hard drive. (C→ Program files→ MossTalk→ Words→ Applets→ MossTalk Words Results).

You may also access the Results folder in the hard drive by going through the Start menu (in lower left side of desktop)→ Programs→ MossTalk→ Results

Note: "Duration" refers to the amount of time the user spent on the exercise from starting until manually quitting the exercise. This will include any time taken for rest breaks.

Printing Results

If you are connected to a printer, you may choose to print the results immediately. Results are automatically saved on the hard drive for later retrieval.

Scoring Clarifications

Many items on the scoresheet are self-explanatory and will therefore not be described in detail. What follows is a summary of issues that are either complex or specific to the MossTalk Words Words 2.0 scoring system.

Note: To ensure optimal functioning of the MossTalk Words 2.0 exercises and the automatic scoring, please be sure to close out **all** other programs (Word, Excel, etc.) before starting the MTW-2 program.

The scoring system in Cued Naming is different from the other exercises.

- If you do not use the speech recognition feature, you must remember to click on the "happy face" to record all correct responses.
- If you do use the speech recognition feature, the system will automatically record each response that is recognized as being correct. "No response" is interpreted as incorrect.

NOTE: When using speech recognition, you must record your objection to override the speech recognition score if you disagree with the recognizer's acceptance.

Cued Naming

Trials Viewed will reflect the score of all screens that are displayed **whether a response is attempted or not.** Therefore, within an exercise, as soon as you advance to the next screen the scoring will count this item in the number of **Trials Viewed** and score it as INCORRECT if you don't respond to that item. In order to avoid this, make sure you record a response to each screen item. If you are not completing all items in an exercise, **close** the exercise before advancing to the next screen. "No response" is interpreted as incorrect in this exercise scoring.

The scoresheet shows correct responses that are both cued and uncued so you can take this into consideration when interpreting progress.

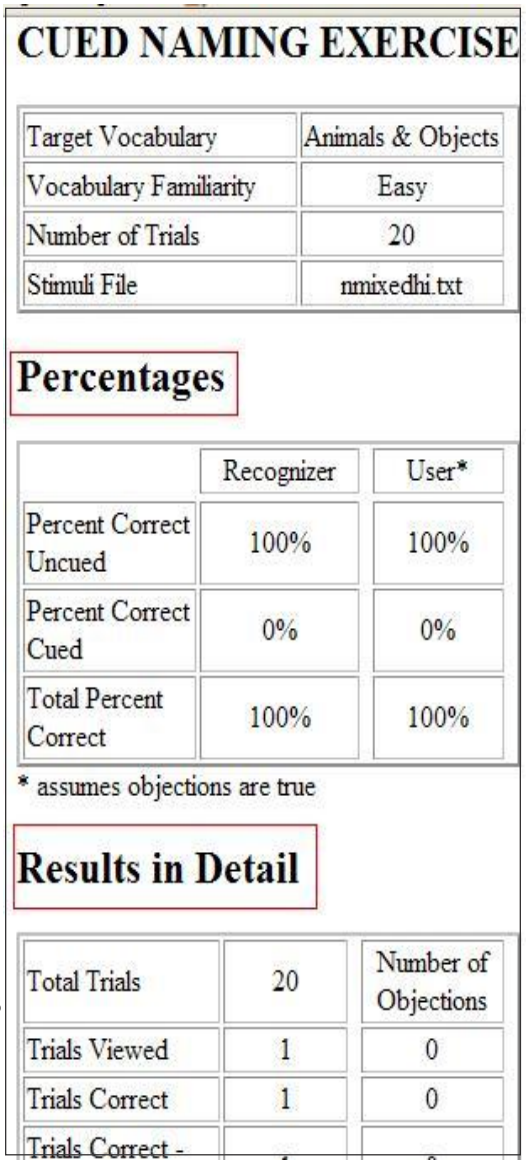
If a patient misnames a picture, then uses a cue and names the same item correctly, the computer scoring will **not** reflect the first error. However, it will note that it is cued correctly.

"Results in Detail" Table

[1] The user viewed 25 trials and objected to the speech recognizer result 8 times.
[2] "Trials Correct" line: The Recognizer thought that 17 of the 25 trials were correctly answered.
[3] "Trials Correct" line: The User objected 3 times. That means that the user actually thought that the word he/she said was incorrect, although the recognizer thought it was correct.
[3a] There is a "Cued" and "Uncued" breakdown of correct responses.
[3b] "Trials Not Correct" line: The Recognizer thought that the user responded incorrectly to 8 trials.
[3c] "Trials Not Correct" line: The User objected to 5 of these, meaning that the user thought he/she said the correct word, but the recognizer did not.

"Percentages" Table

[1] Because the user can object to the recognizer's decision when he/she thinks the recognizer is wrong, there are two ways of looking at the question of "Percent Correct": the recognizer's opinion and the user's opinion.
[2] To get the user's Percent Correct, we subtract the User's objections to correct responses (as denoted by the User with the Objection button), and add the User's objections to correct responses (as denoted by the User with the Objection button).
[3] "Total Percent Correct" line: In this case, the user thought that 19 of his/her responses were correct, so the user's percent correct is 19/25, or 76%.



CUED NAMING EXERCISE

Target Vocabulary	Animals & Objects
Vocabulary Familiarity	Easy
Number of Trials	20
Stimuli File	nmixedhi.txt

Percentages

	Recognizer	User*
Percent Correct Uncued	100%	100%
Percent Correct Cued	0%	0%
Total Percent Correct	100%	100%

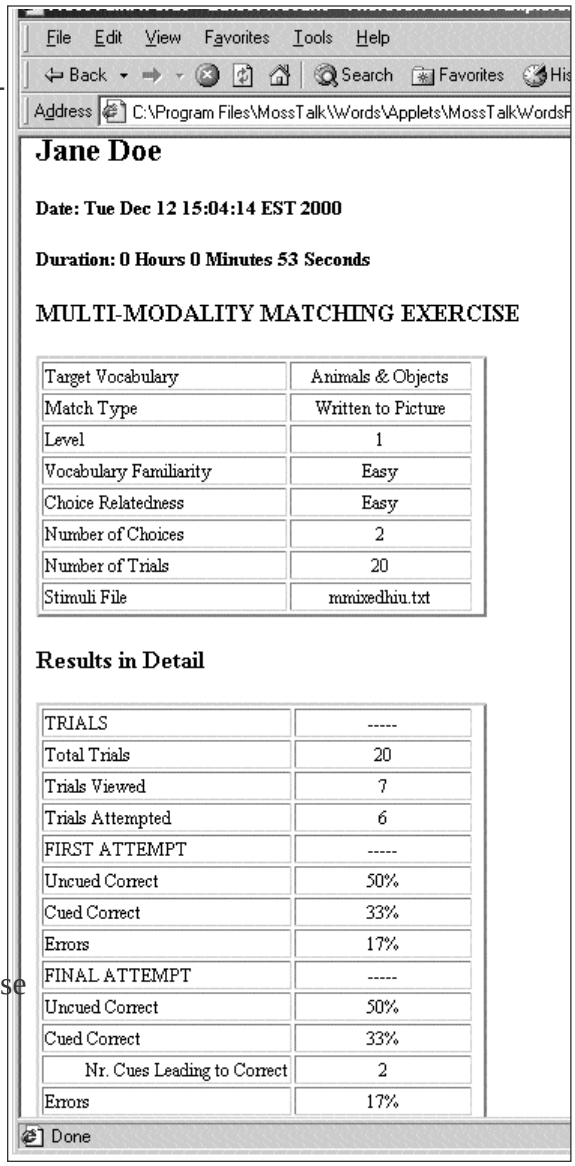
* assumes objections are true

Results in Detail

Total Trials	20	Number of Objections
Trials Viewed	1	0
Trials Correct	1	0
Trials Correct -		

Multimodality Matching

Unlike **Cued Naming**, both **Trials Viewed** and **Trials Attempted** appear on this scoresheet and are tracked separately. However, only **Trials Attempted** will reflect correct vs. I ncorrect scores in this exercise. **Trials Viewed** will reflect those screens that were viewed whether or not a response was attempted. **Trials Viewed** but not attempted are **not** scored as incorrect because the computer cannot evaluate whether "no response" is an accidental omission or an inability to respond.



Remember, "no response" is **not** counted as an error in this exercise. Therefore, try to get a response to all items viewed and track "no responses" through the scores in **Trials Viewed** vs. **Trials Attempted** (manually noting those patients who show an inability to respond).

Results in Detail is divided into two:

- **First Attempt** is the patient's first response only.
- **Final Attempt** is patient's last response only (if more than one attempt at an item). If the patient makes **only one** response to an item then this will be reflected in both the **Final Attempt** and **First Attempt** categories.

Number of cues leading to correct refers only to those cues that ultimately result in a correct response. Therefore, if a correct response is never elicited, the computer will not count those cues that preceded the error attempts.

Custom Exercises

The scoresheets for the custom exercises will label the exercise parameters differently than in the standard exercises. However, the "Percentages," "Results in Detail" and "Cue Breakdown" sections remain the same as the standard scoresheets.

Here, we list how custom exercise parameters are listed for Multi-Mode Matching and Cued Naming:

Multi-Mode Matching

Target vocabulary: Custom
Match Type
Trials Number of Choices
Number of Trials
Stimuli File

Cued Naming

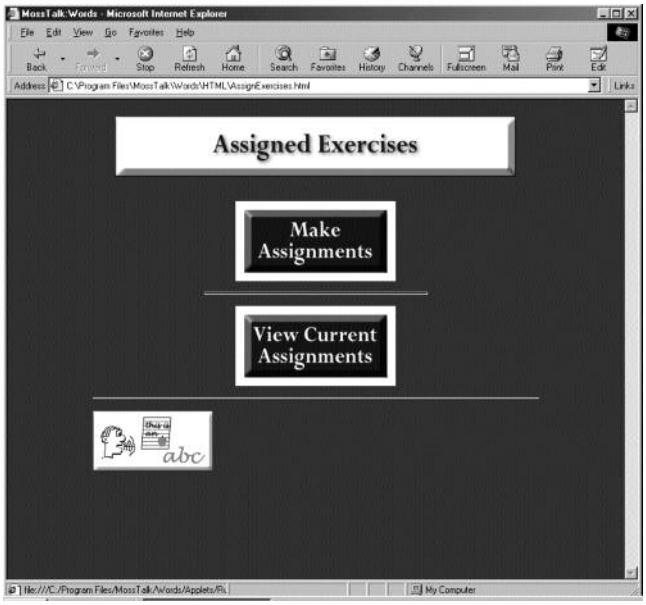
Target Vocabulary: Custom
Number of
Stimuli File

Assignments

Assigning Exercises

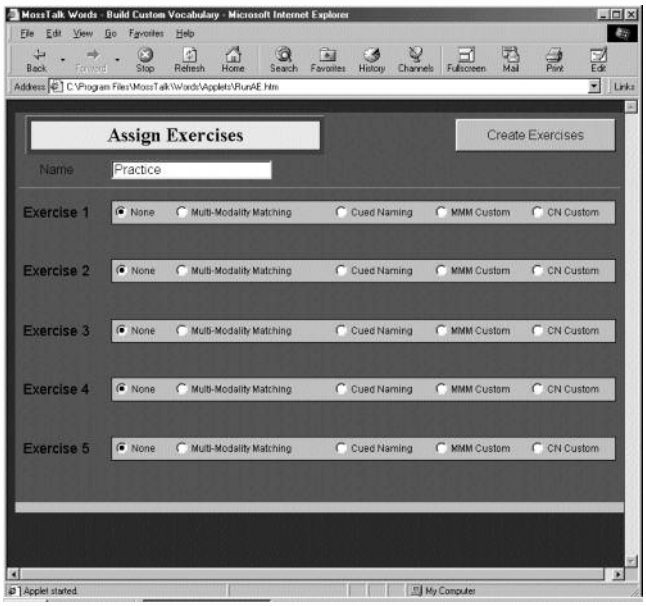
If starting program:
Click on ***Assigned Exercises*** on the MossTalk Words menu.
Click on ***Make Assignments***.

If at the end of an exercise:
Click on ⇦ ***Back*** until you reach the MossTalk Words menu.
Click on ***Assigned Exercises.***
Click on ***Make Assignments.***

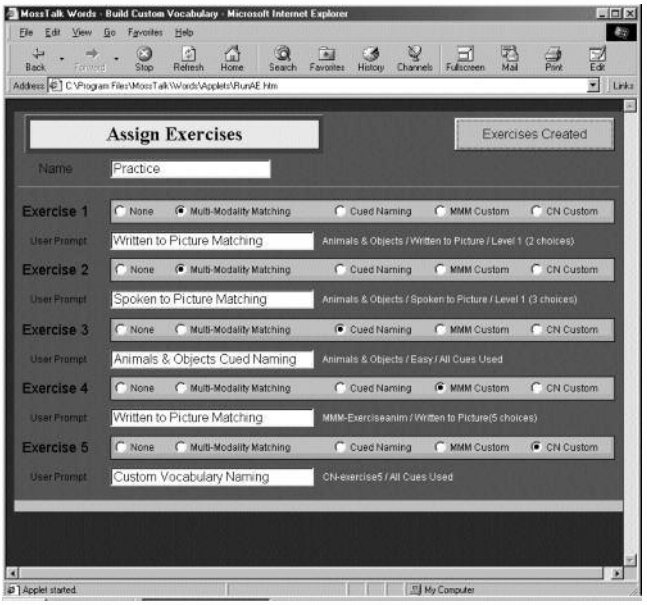


Select up to five exercises from any combinations of Multimodality Matching, Cued Naming, Multi-Mode Matching Custom (MMM) or Cued Naming Custom (CN).

Core Vocabulary exercises can ONLY be assigned through MMM-Custom or CN-Custom. Click on MMM- or CN-Custom, depending on how you want the vocabulary to be practiced.



Click on ***Set Vocabulary.*** In the dialog box double click on the MossTalk Custom Vocabulary folder from the folder hierarchy, (Drive C ⇢ Program Files ⇢ MossTalk ⇢ Words ⇢ Custom Vocabulary ⇢ Core Vocabulary)



Double click on CN or MMM and make final choice from four selections: Nouns 1 (contains core vocabulary nouns one to 10), Nouns 2 (contains core vocabulary nouns 11 to 25), Nouns–all (contains all 25 items from which 20 will be randomly displayed each time accessed) or Verbs, (contains all 15 core vocabulary verbs).

Select ***Exercise Parameters*** just as you did when running the exercise (See Running Module 1,2,3) Unlike the standard exercise modules, you must manually disable description and fill-in cues for actions and people while programming assigned exercises in MMM-Custom or CN-Custom. After programming each exercise, click on ***Return to Assigned Exercises.***

Click on ***Create Exercises*** only **once** when you have programmed **all** the exercises you need. The screen will change to show the exercises you created.

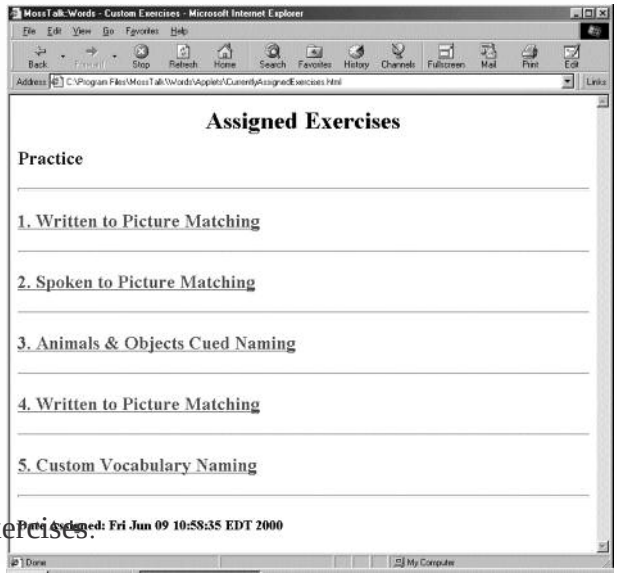
Close window and return to ***Assigned Exercises*** screen by clicking on the ⇦ ***Back*** in the navigation bar.

Click on ***View Current Assignments*** to check or run newly created exercises. If you decide to make changes after viewing the exercises and reopen ***Make Assignments,*** any new assignments will overwrite **all** previous assignments. However, before you have closed out of the "exercises created" window you may go back and add or change assignments without losing other ones.

Click on the ⇦ ***Back*** or on the MossTalk Words icon to return to MossTalk Words menu.

Viewing Current Assignments

If starting program:
Click on ***Assigned Exercises*** on MossTalk Words screen. Click on ***View Current Assignments.*** Click on each exercise to view and run.
or
Click on the ***Assigned Exercises*** icon on the desktop or in the Start menu ⇢ Programs ⇢ MossTalk ⇢ Assigned Exercises.



Custom Exercises

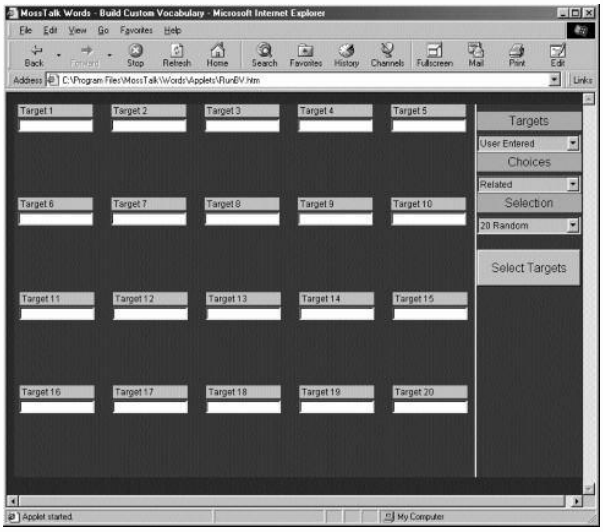
Custom Exercise Program

A program for customizing the available 422 vocabulary items as targets or foils in individualized exercises is included.

Description: The program allows the user to access the 422 vocabulary items nouns, actions and people) from the MTW-2 program. The user can then individualize sets of vocabulary in terms of which target items will be viewed, which foils will appear with selected targets in the Multi-Mode Matching exercises and how many target items will be viewed during an exercise (one to 20). Users can choose to start with a preprogrammed target vocabulary set and modify desired items, or to select the "user-entered" option and choose all desired targets. The ability to modify the foil choices that appear with targets in the Multi-Mode Matching program allows for fine adjustments in the level of difficulty in an exercise. Naming or matching exercises can be saved for subsequent viewing or for use as an assigned exercise.

When you click on ***Custom Exercises*** on the MossTalk screen, you will access a screen that allows you to choose either ***BuildVocabulary*** (to establish desired vocabulary and foils) or ***Run Custom Exercise*** (to run an already custom designed exercise).

If you select ***BuildVocabulary,*** a screen will appear with blanks for 20 targets and three menu selections for "Targets" (vocabulary), "Choices" (relatedness of foils for Multi-Mode Matching) and "Selection" (number of targets in an exercise).



Access **Vocabulary** menu and select targets from a choice of User Entered (default setting) or preselected subsets of the 422 word vocabulary. Preselected subsets include:

mixed (animals, foods and objects)	large objects
animals	small objects
food	mixed (high frequency)
objects	mixed (low frequency)
clothes	actions
personal care	people

Access **Choices** and select foil choices for Multi-Mode Matching:
unrelated,
related (default setting), or
mixed.

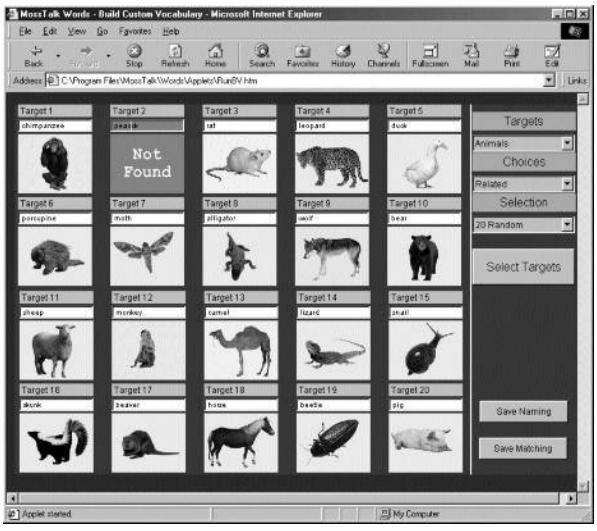
Access **Selection** and select number of targets to be displayed:
20 (default setting), 15, 10, or 5.

About "User Entered" Targets

If you select the "User Entered" option from the **Target** menu:

- Select choice relatedness if you want to use the targets in a Multi-Mode Matching exercise.
- Select number of targets from the selection menu.
- Click on ***Select Targets*** BEFORE starting to key in desired targets.
- Place cursor and click in the white box beneath Target 1 and begin to type in desired target names from the available vocabulary list (**Appendix A**). You may tab to get from target box to target box or continue to place cursor in succeeding target boxes.

If you misspell a target name or attempt to access a vocabulary item not in the program, a red indicator will appear stating that the item was "Not Found." Simply delete and retype item name. If found, the corresponding picture will appear under the word.



When building vocabulary for a Multi-Mode Matching exercise, you can view choices that will automatically appear with your selected target by clicking on the picture. If you intend to use the vocabulary only for a cued naming exercise, you do not need to view c hoices as targets appear singly upon the screen.

To view choices click on the target picture. You will access a screen (see illustration at right) that shows the target (upper left corner) and eight possible foil choices. You may decide at this point to change any or all of the foil choices from the original preselected set.

To change all foil choices for general relatedness, select the appropriate circle on the gray display bar above the eight pictures (unrelated, related, mixed).

To change individual foil choices to different vocabulary items, type in an alternate choice under any number of the eight displayed foils by highlighting the printed choice word and retyping another word.

Note: If your targets are people or actions, ONLY related foils are available. If you decide to mix people or actions with objects, you will need to individually select ALL foils if you want them to be unrelated or have mixed relatedness.

When choice selection is determined, click on ***Back to Target Selection*** to return to your target selection screen.

Continue this process if desired with the remaining targets.

Regardless of the selection number chosen (5, 10, 15 or 20), the user may opt to key in any number of targets between one and 20, and the program will run only that number of targets. You do not need to press ***Select Targets*** again at this point. However, you **MUST** save to the appropriate naming and/or matching file for your exercise to run correctly. For example, ***Save Naming*** saves targets as a Cued Naming exercise while ***Save Matching*** saves targets as a Multi-Mode Matching exercise. You may save the same targets as BOTH a Cued Naming and a Multi-Mode Matching exercise, but you will need to save the targets twice.

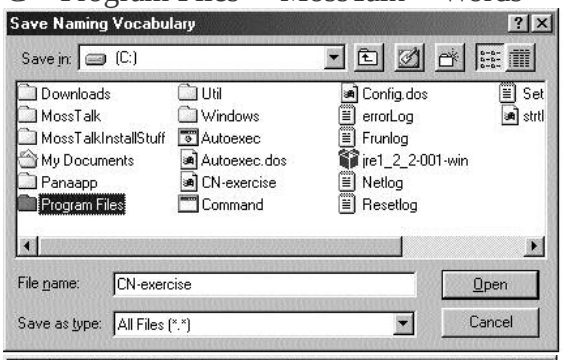
Saving a Cued Naming Exercise

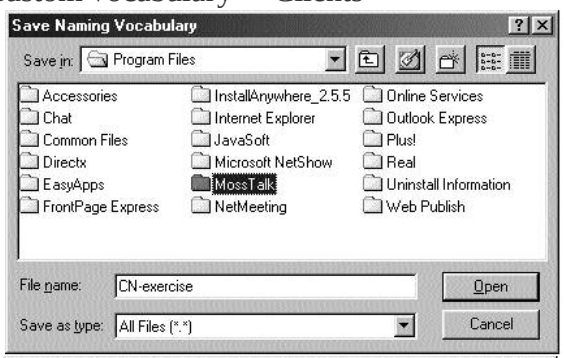
Click on ***Save Naming***.

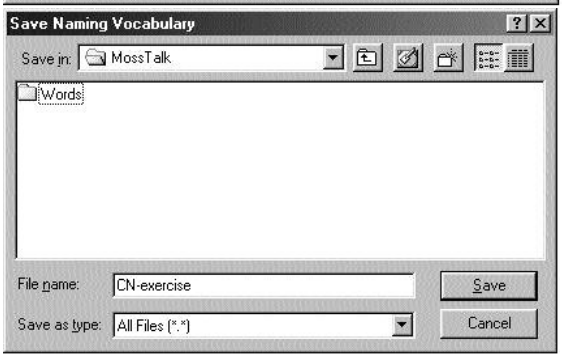
When the ***Save Naming*** Vocabulary dialog window appears, make sure you are in the desired location. The Dialog window will open to the most recently used folder, not automatically to your user file directory.

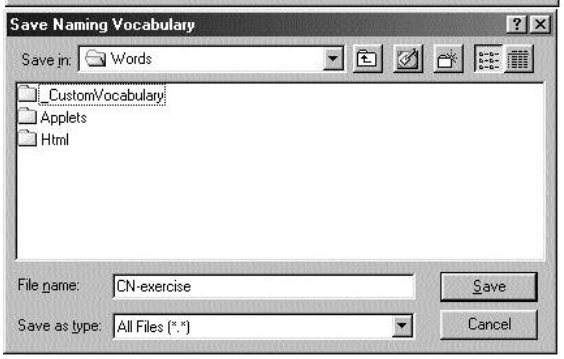
Navigate to your folder by double clicking on the hierarchy of visible folders within the Save dialog box.

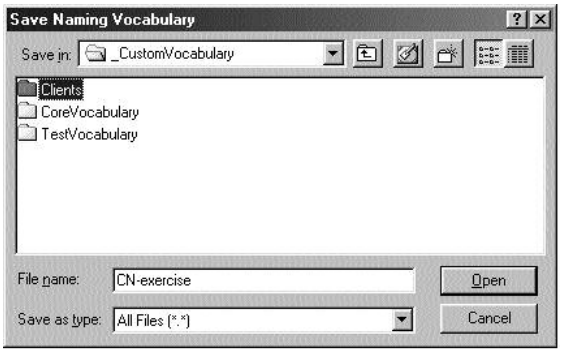
C→ Program Files→ MossTalk→ Words→ Custom Vocabulary→ Clients

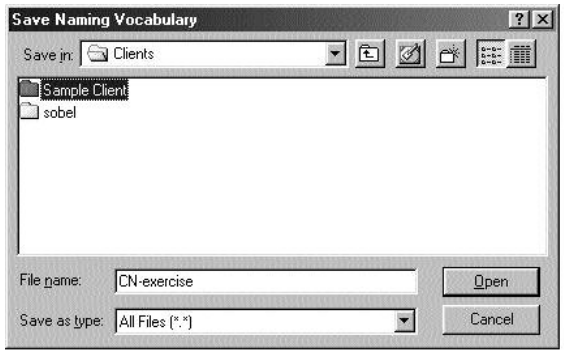


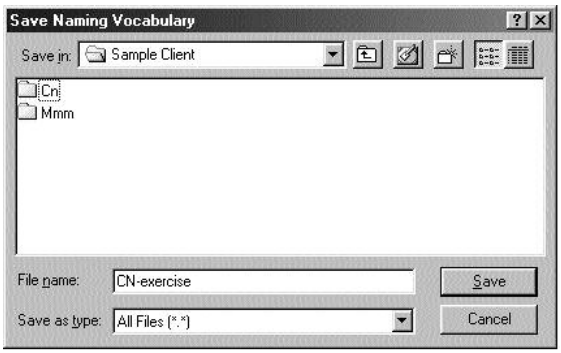


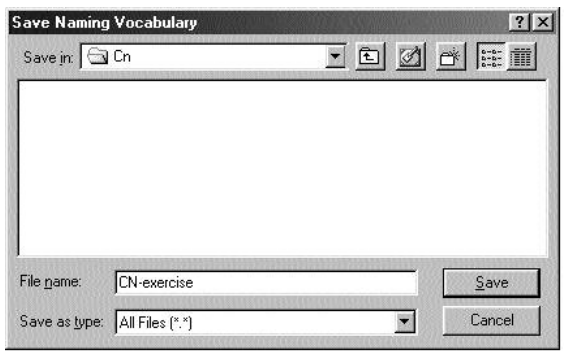












Select an existing user folder or create a new one.

Create a Cued Naming folder within your user folder as you normally would in the Save dialog window.

Title your exercise by starting with CN and add additional identifying information of your choice. Avoid spaces in your title.

e.g. CN-Smith,John2/5 **NOT** CN Smith, John 2/5

Click on SAVE in the dialog box.

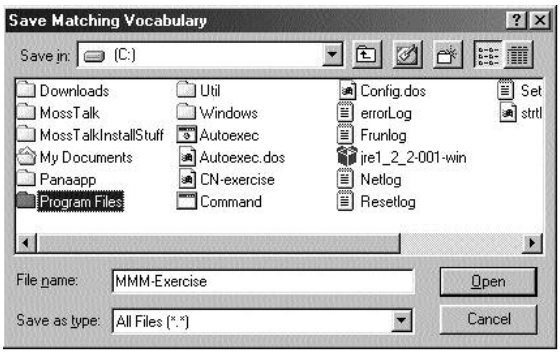
Saving a Multi-Mode Matching Exercise

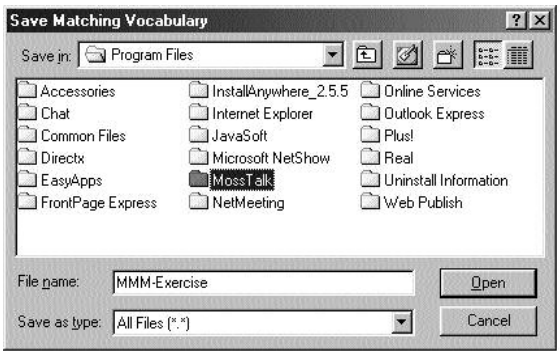
Click on ***Save Matching.***

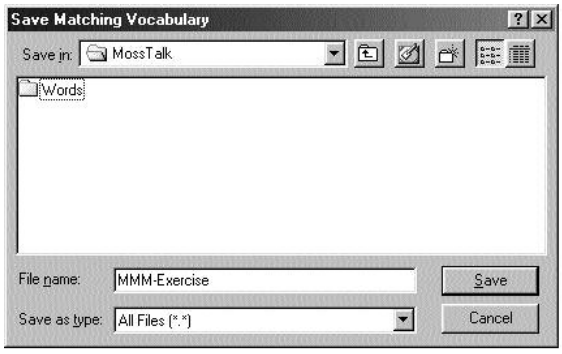
When the ***Save Matching*** dialog window appears, make sure you are in the desired location. Dialog window will open up at its most recent point of use, not automatically to your user file.

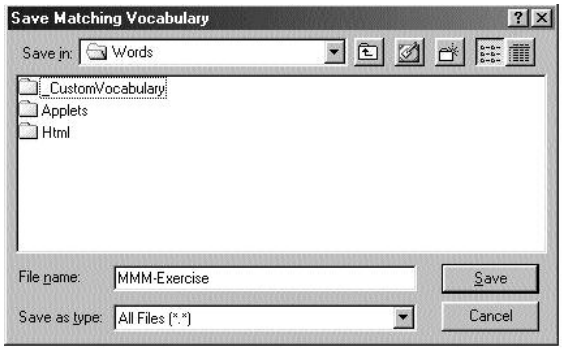
Navigate to your folder by double clicking on the hierarchy of visible folders within the Save dialog box.

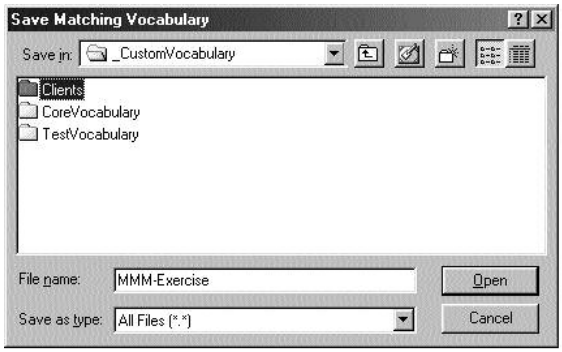
C ⇢ Program Files ⇢ MossTalk ⇢ Words ⇢ Custom Vocabulary ⇢ Clients

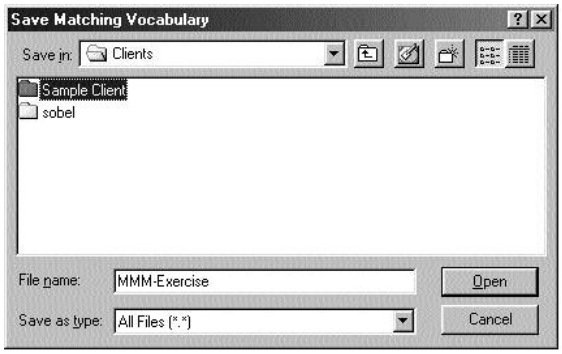


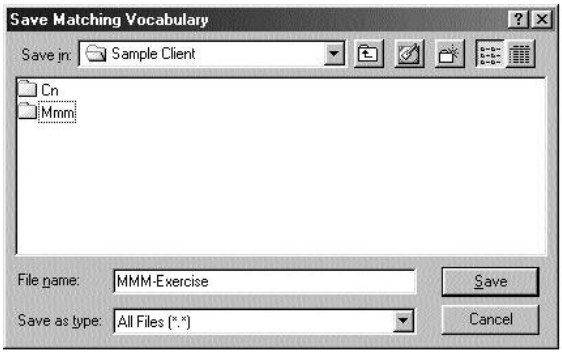


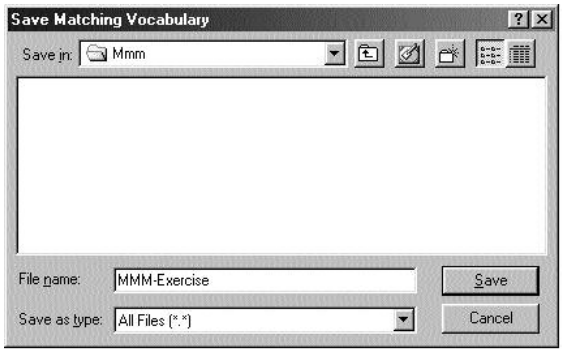












Select an existing user folder or create a new one.

Create a Multi-Mode Matching folder within your user folder as you normally would in the Save dialog window.

Title your exercise by starting with MMM, and add additional identifying information of your choice. Avoid spaces in your title.

e.g. MMM-Smith,John2/5 **NOT** MMM Smith, John 2/5

Click on SAVE in the dialog box.

> Note: Always check the top of the Save dialog window to make sure you are saving to the right folder.

Running Custom Built Exercises

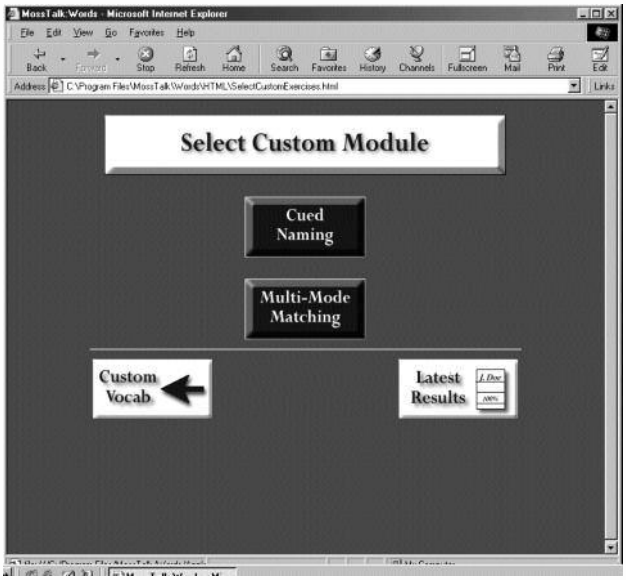
Close ***Build Custom Vocabulary*** screen by clicking ⇦ ***Back*** on the Standard Navigation bar.

Click on ***Run Custom Exercises*** on the Custom Vocabulary screen.

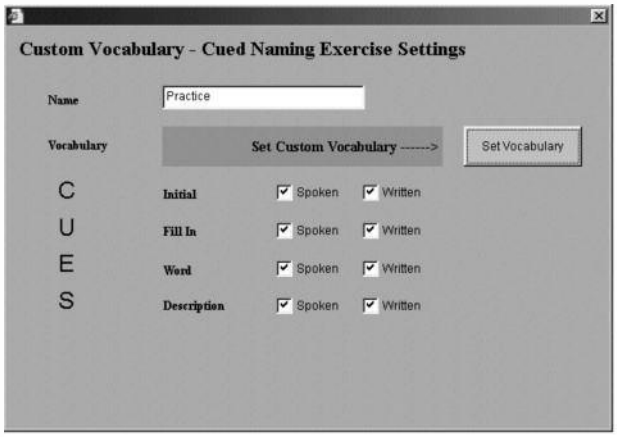
Select ***Cued Naming*** or ***Multi-Mode Matching*** on the Select Custom Module screen.

If you select ***Cued Naming*** a screen will appear that prompts you to key in the user's name, deselect cues as desired, and select custom vocabulary exercises.

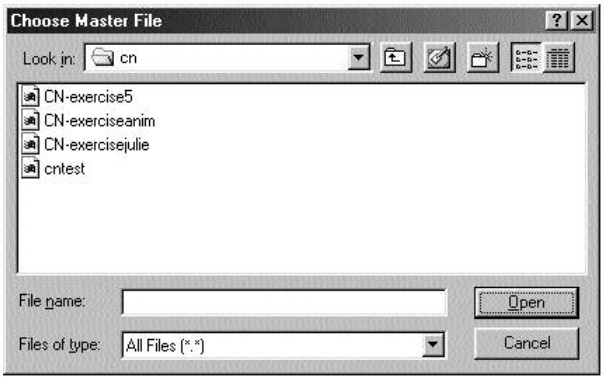
Unlike in the Standard Exercises, the user must manually deselect fill-in and description cues for people and actions in the custom program.



Select desired exercises by clicking on ***SetVocabulary*** to find the user's folder. You may need to navigate to the patient's folder where the exercise is saved through the dialog box.

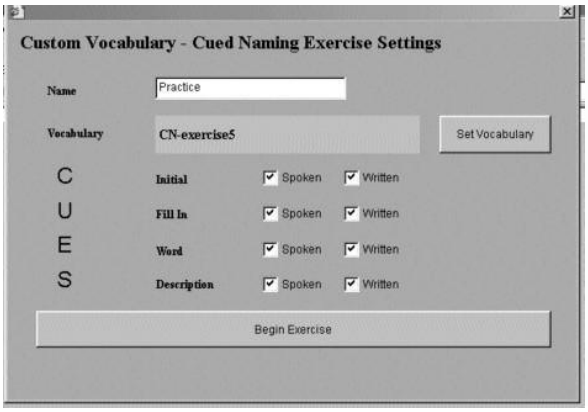


Double click on the desired exercise. **NOTE**: Make sure that you correctly open a Cued Naming Exercise is you are in the Cued Naming Custom Module. Similarly, make sure that you open a Multi-Mode Matching Exercise only when you are in the Multi-Mode Matching Custom Module.

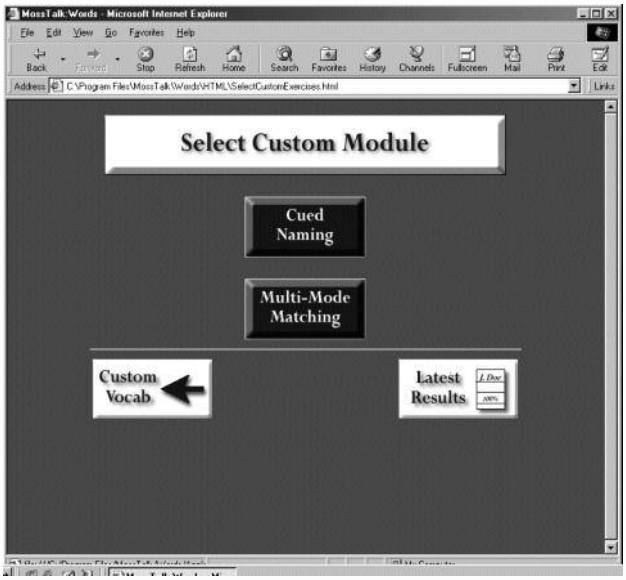


The Selected exercise name will be displayed in the vocabulary box.

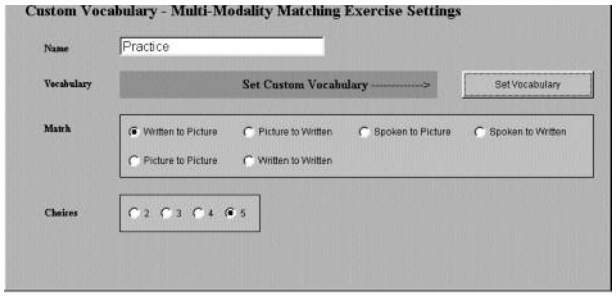
Click on ***Begin Exercise.***



If you select ***Multi-Mode Matching*** a screen will appear that prompts you to key in the user's name, choose the match type and the number of choices to be displayed. The custom program allows up to five pictures to be displayed on the screen; the target and up to four foils.



Select desired exercises by clicking on ***SetVocabulary*** to find the user's folder.

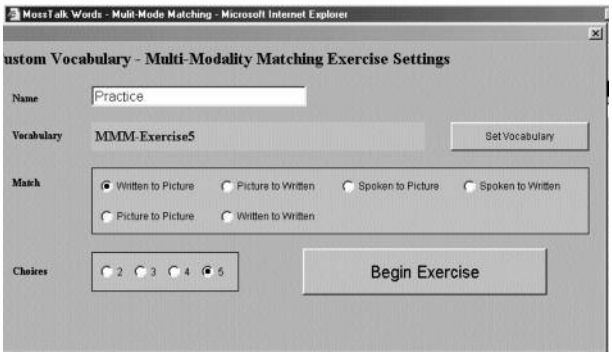


You may need to navigate to the patient's folder where the exercise is saved through the dialog box.

Double click on the desired exercise.

Selected exercise name will be displayed in the vocabulary box.

Click on ***Begin Exercise.***



NOTE: If you find that the exercise seems to have errors (e.g., pictures are not showing up in the cued naming exercise),check again what kind of exercise you created (Cued or Matching) and that you opened it under the right Custom Module (Cued or Matching). If you are still finding errors, make sure that you are running MTW-2 in Internet Explorer 6.0 or higher.

Viewing Results

Select ⇦ ***Back*** on the Standard Navigation bar.

Click on ***Latest Results*** to view results.

Suggestions for Using MossTalk Words 2.0

Word retrieval difficulty is common to most patients with aphasia, yet the nature of these difficulties may stem from different underlying sources (i.e., semantic versus phonological) and therefore, patients respond to different treatment methods (See *Nickels and Best,* 1996, for a review of naming studies). MossTalk Words provides the clinician with flexibility to integrate the modules to address the nature of each patient's deficit.

The **Multi-Mode Matching** module is more than a matching program. It's a semantic processing program that aims to strengthen the association between words and pictures. Research suggests that strengthening the semantic link prior to naming has lasting effects on acquisition of target vocabulary (See *Howard et al,* 1985 a, b). As such, specific naming targets can first be presented in a simple exposure/matching format for priming prior to the actual cued naming task (*Fink et al,* 1997). Also, the flexibility in match types allows the clinician to treat the impaired modality directly or to bypass the deficit and focus on the patient's strengths.

The **Cued Naming** module provides built-in cues that can be systematically applied in a hierarchy to promote retrieval. Hierarchical cueing has been demonstrated to be an effective technique in the acquisition of target vocabulary (*Linebaugh,* 1977; *Thompson and Kearns,* 1981; *Hillis,* 1991; *Thompson, Raymer and LeGrand,* 1991; *Raymer et al,* 1993; *Fink, Brecher and Schwartz,* 2000).

The cued naming exercises can be used in more ways than the standard format. Feedback and scoring will not reflect these varied modifications.

- With nouns, the central picture can be covered and the patient can be asked to produce the noun in response to the fill-in cue or description cue. This will change the exercise to a sentence completion or responsive naming task.
- The patient may look at the picture and provide his or her own description. This will encourage the use of a compensatory strategy for naming.
- With nouns or verbs, the module can also function as a confrontation writing tool (off-line). Computer-generated cues are still available for feedback and facilitation, although the patient must use paper and pencil to respond.
- With nouns or verbs, the module can be a stepping stone to sentence production.
- With verbs, picture description can be developed.
- You will notice an arrow in pictures where the action is ambiguous. It is placed to direct the patient's attention to the targeted action.
- There may be several alternate verbs to describe a particular action. It may be helpful to do a **Multi-Mode Matching** exercise first to familiarize the patient with the intended targets. You may also simply prompt for another word to describe the picture or accept the patient's response as correct realizing that feedback will not match his or her alternative vocabulary choice.

The **Custom Exercise** program of MossTalk Words 2.0 allows flexibility in choosing the number of items to be trained and the relatedness of any accompanying foils in administering treatment protocols. In keeping with an errorless learning paradigm, positive results can be attained when treatment starts with easier words in smaller fields and with unrelated foil choices. Gradually, exercise difficulty can be increased as the patient experiences success. Customizable exercises make it as easy to program for the patient who benefits from relearning vocabulary in small sets as it is for the patient who benefits from larger randomized sets (e.g., a general stimulation approach). The **Custom Exercise** program also makes it simple for clinicians and researchers to design pre- and post- tests, as well as treatment projects for their patients.

The **Assigned Exercises** interface allows a clinician or family member the ability to preprogram up to five customized or standard exercises in just a few minutes. This feature makes it easy for the individual with aphasia to access assigned exercises and practice independently (or with minimal assistance) at home or in the clinic, thus extending the amount of practice time.

The **Results** feature automatically tracks performance, both within a treatment session and during independent use. This makes it easy to keep accurate and detailed records of responses and progress. Results, which are also automatically saved, can be displayed at the end of each exercise or retrieved later and printed for chart documentation. This automated record keeping feature is a real time saver for the busy clinician. In addition to providing a quantitative summary of performance, it keeps documentation time to a minimum.

Appendix A: Vocabulary Lists and Frequencies

Vocabulary Lists

1. Core Vocabulary Items

2. Mixed Vocabulary: Multi-Mode Matching and Cued Naming (animals, clothing, foods, larger objects and vehicles, smaller objects)

- 340 nouns by alphabet
- 340 nouns by alphabet in category
- 340 nouns by alphabet and frequency rating in category

3. Additional vocabulary (people and actions)

Core Vocabulary Items

Twenty-five nouns and 15 verbs were selected by the Speech and Language Pathology Staff of MossRehab in Philadelphia. Words were not chosen based on frequency (See frequency rating next to each target's name in Appendix A), but rather on strong familiarity and functional significance.

Word Frequency Ratings for Mixed and Additional Vocabulary

Word frequencies were determined by using ratings from *Francis, W.N. and Kucera, H., (1982)* and the Celex data base *(Baayen, R.H., Piepenbrock, R. and Van Rijn, H. (1993)* for oral and written word frequency, generating two lists for each "animals and objects" target. When frequencies were unlisted for a target, the item was classified in the low frequency category. Frequencies for "people and actions" were determined separately by the same procedure, since the vocabulary items appear in separate exercises from "animals and objects."

Medians and subsequent highest and lowest quartiles were obtained for each list. Targets were then selected for the high frequency group if they appeared in the highest frequency quartile of either resource. Likewise, low frequency targets were selected from the lowest frequency quartile of each resource. Remaining targets were designated as medium frequency range. By "selecting" we are referring to our process of incorporating clinical judgment to ensure that only those targets that were truly "Easy" were labeled as high frequency. For example, the targets *bills, bush, cap, check, computer, curtain, desk, frame, mirror, oil, rock, tape* and *wire* appeared in the highest frequency quartile of one of either resource. These items were moved to our medium frequency group. Likewise, to ensure that targets labeled as low frequency were truly "Hard," the targets *bathtub, cookie, hotdog, pizza, pretzel* and *sandwich,* which appeared in the lowest frequency quartile of one of either resource, were moved to the medium frequency group.

When choosing vocabulary parameters for the exercises:

Easy includes only targets from the "selected" high frequency group.
Hard includes only targets from the "selected" low frequency group.
Mixed includes targets from both groups above *plus* those that fell in the middle quartiles or the medium frequency range.

Appendix A: Core Vocabulary Items

Appendix A: Core Vocabulary Items

NOUNS

	Item	Frequency
1	coat	high
2	pants	medium
3	shirt	high
4	shoes	high
5	apple	medium
6	coffee	high
7	water	high
8	bathroom	high
9	bed	high
10	car	high
11	chair	high
12	toilet	medium
13	brush	high
14	glasses	high
15	pencil	high
16	razor	medium
17	soap	medium
18	tissues	medium
19	toothbrush	low
20	fork	medium
21	key	high
22	knife	high
23	lamp	medium
24	telephone	high
25	TV	high

VERBS

	Item	Frequency
1	cooking	medium
2	digging	medium
3	drinking	high
4	eating	medium
5	kicking	medium
6	kissing	low
7	pouring	medium
8	reading	high
9	riding	medium
10	running	high
11	sitting	high
12	sleeping	medium
13	smoking	medium
14	walking	high
15	writing	high

Appendix A: All Vocabulary: Multi-Mode Matching and Cued Naming

	Item	Frequency		Item	Frequency		Item	Frequency		Item	Frequency
1	airplane	medium	60	cheese	medium	119	fruit	high	178	mouse	medium
2	alligator	low	61	chicken	high	120	garage	medium	179	muffin	low
3	ambulance	medium	62	chimpanzee	low	121	garbage	medium	180	mustard	medium
4	apple	high	63	chips	low	122	glass	high	181	nail clippers	medium
5	applesauce	medium	64	clock	high	123	glasses	high	182	nails	medium
6	bag	high	65	coat	high	124	gloves	medium	183	necklace	low
7	bagel	medium	66	coffee	high	125	grapes	medium	184	newspaper	high
8	ball	high	67	coffeepot	low	126	grass	high	185	nickel	low
9	balloons	medium	68	comb	medium	127	hair dryer	medium	186	nightgown	medium
10	banana	medium	69	computer	medium	128	ham	medium	187	nuts	medium
11	bathing suit	medium	70	cookies	medium	129	hamburger	medium	188	oatmeal	low
12	bathroom	high	71	corn	high	130	hammer	medium	189	oil	medium
13	bathtub	medium	72	cow	high	131	hanger	low	190	onion	medium
14	beans	medium	73	crackers	low	132	hat	high	191	orange	medium
15	bear	medium	74	cricket	low	133	hearing aid	low	192	outlet	medium
16	beaver	low	75	cucumber	medium	134	helicopter	low	193	oven	medium
17	bed	high	76	cup	high	135	horse	high	194	owl	low
18	bedroom	high	77	curtains	medium	136	hose	low	195	paintbrush	medium
19	beer	high	78	datebook	medium	137	hot dog	medium	196	pajamas	medium
20	beetle	low	79	deck	medium	138	ice cream	medium	197	pan	medium
21	belt	high	80	deer	medium	139	ice cubes	low	198	pants	high
22	bicycle	medium	81	dentures	low	140	jacket	high	199	paper	high
23	bills	medium	82	deodorant	low	141	jar	medium	200	paperclip	medium
24	bird	high	83	desk	medium	142	jeans	low	201	parking meter	medium
25	blanket	high	84	dime	medium	143	jelly	medium	202	parrot	low
26	blouse	low	85	dining room	low	144	juice	medium	203	patio	low
27	book	high	86	dishwasher	low	145	kangaroo	low	204	peacock	low
28	bookcase	low	87	disk	medium	146	ketchup	low	205	peanut butter	medium
29	boots	low	88	dog	high	147	key	high	206	pear	medium
30	bow	low	89	dollar	high	148	kitchen	high	207	peas	medium
31	bowl	medium	90	donkey	low	149	kitten	medium	208	pen	medium
32	bra	medium	91	donut	low	150	knife	high	209	pencil	high
33	bracelet	low	92	door	high	151	ladder	medium	210	penny	medium
34	bread	high	93	doorbell	low	152	ladle	low	211	pepper	medium
35	breakfast	high	94	drawer	medium	153	lamb	medium	212	peppers	medium
36	broccoli	low	95	dress	high	154	lamp	high	213	piano	high
37	broom	low	96	dresser	low	155	lawn mower	medium	214	pickle	low
38	brush	high	97	dryer	medium	156	leaf	high	215	pie	medium
39	bucket	medium	98	duck	low	157	lemon	medium	216	pig	high
40	bus	high	99	dustpan	low	158	leopard	low	217	pigeon	low
41	bush	medium	100	earrings	low	159	lettuce	medium	218	pillow	medium
42	butter	high	101	eggs	high	160	lightbulb	medium	219	pills	medium
43	butterfly	low	102	elephant	medium	161	lion	medium	220	pin	medium
44	cabinets	medium	103	envelope	medium	162	lipstick	medium	221	pineapple	low
45	cake	medium	104	eraser	low	163	living room	low	222	pipe	medium
46	camel	low	105	fan	medium	164	lizard	low	223	pitcher	low
47	camera	high	106	faucet	low	165	lock	medium	224	pizza	medium
48	candy	medium	107	fireplace	medium	166	luggage	medium	225	plate	high
49	cane	medium	108	fish	high	167	magazine	medium	226	pliers	low
50	cans	medium	109	flag	medium	168	mailbox	low	227	plunger	low
51	cap	medium	110	flashlight	medium	169	mayonnaise	low	228	popcorn	low
52	car	high	111	flour	medium	170	measuring tape	low	229	porcupine	low
53	cards	high	112	flower	high	171	menu	medium	230	pot	high
54	carrot	low	113	fly	high	172	microwave	low	231	potato	high
55	cat	high	114	fly swatter	medium	173	milk	high	232	pretzel	medium
56	celery	low	115	fork	high	174	mirror	medium	233	puppy	low
57	cereal	medium	116	frame	medium	175	monkey	medium	234	purse	medium
58	chair	high	117	french fries	medium	176	mop	low	235	quarter	high
59	check	medium	118	frog	low	177	moth	low	236	rabbit	medium

Appendix A: All Vocabulary: Multi-Mode Matching and Cued Naming

Item	Frequency
237 raccoon	low
238 radio	high
239 raincoat	low
240 rake	low
241 rat	medium
242 razor	high
243 refrigerator	medium
244 ring	high
245 robe	medium
246 rock	medium
247 rolls	medium
248 rooster	low
249 rug	medium
250 salad	medium
251 salt	high
252 sandwich	medium
253 saw	low
254 scarf	medium
255 scissors	low
256 screw	low
257 shampoo	low
258 shears	low
259 sheep	high
260 shirt	high
261 shoes	high
262 shorts	high
263 shovel	low
264 shower	medium
265 shrimp	low
266 sink	medium
267 skirt	high
268 skunk	low
269 snail	low
270 snake	high
271 sneakers	medium
272 soap	high
273 socks	medium
274 soda	medium
275 sofa	medium
276 soup	medium
277 spaghetti	low
278 spatula	low
279 spider	low
280 sponge	medium
281 spoon	medium
282 stairs	high
283 stapler	low
284 steak	medium
285 stethoscope	low
286 stew	medium
287 stool	medium
288 stove	medium
289 strawberry	low
290 string	medium
291 sugar	high
292 sunglasses	medium
293 sweater	medium
294 sweatpants	medium
295 sweatshirt	low
296 syrup	medium
297 table	high
298 tape	medium
299 taxi	medium
300 tea	high
301 teapot	low
302 teeshirt	medium
303 telephone	high
304 thermometer	medium
305 tie	medium
306 tiger	medium
307 tissues	high
308 toast	medium
309 toaster	low
310 toilet	high
311 toilet paper	low
312 tomato	medium
313 toolbox	medium
314 toothbrush	high
315 toothpaste	low
316 towel	medium
317 train	high
318 trashcan	medium
319 tree	high
320 truck	high
321 turtle	low
322 TV	high
323 umbrella	medium
324 underpants	low
325 vacuum cleaner	medium
326 vegetables	high
327 waffles	low
328 wallet	medium
329 washer	low
330 wasp	low
331 watch	high
332 water	high
333 wheelchair	medium
334 window	high
335 wine	high
336 wire	medium
337 wolf	medium
338 worm	medium
339 wrench	low
340 zebra	low

Appendix A: Vocabulary By Category: Multi-Mode Matching and Cued Naming

	Animals	Frequency
1	alligator	low
2	bear	medium
3	beaver	low
4	beetle	low
5	bird	high
6	butterfly	low
7	camel	low
8	cat	high
9	chimpanzee	low
10	cow	high
11	cricket	low
12	deer	medium
13	dog	high
14	donkey	low
15	duck	low
16	elephant	medium
17	fly	high
18	frog	low
19	horse	high
20	kangaroo	low
21	kitten	medium
22	lamb	medium
23	leopard	low
24	lion	medium
25	lizard	low
26	monkey	medium
27	moth	low
28	mouse	medium
29	owl	low
30	parrot	low
31	peacock	low
32	pig	high
33	pigeon	low
34	porcupine	low
35	puppy	low
36	rabbit	medium
37	raccoon	low
38	rat	medium
39	rooster	low
40	sheep	high
41	skunk	low
42	snail	low
43	snake	high
44	spider	low
45	tiger	medium
46	turtle	low
47	wasp	low
48	wolf	medium
49	worm	medium
50	zebra	low

	Clothing	Frequency
51	bathing suit	medium
52	belt	high
53	blouse	low
54	boots	low
55	bra	medium
56	bracelet	low
57	cap	medium
58	coat	high
59	dress	high
60	earrings	low
61	gloves	medium
62	hat	high
63	jacket	high
64	jeans	low
65	necklace	low
66	nightgown	medium
67	pajamas	medium
68	pants	high
69	purse	medium
70	raincoat	low
71	ring	high
72	robe	medium
73	scarf	medium
74	shirt	high
75	shoes	high
76	shorts	high
77	skirt	high
78	sneakers	medium
79	socks	medium
80	sunglasses	medium
81	sweater	medium
82	sweatpants	medium
83	sweatshirt	low
84	teeshirt	medium
85	tie	medium
86	umbrella	medium
87	underpants	low
88	wallet	medium
89	watch	high

	Foods	Frequency
90	apple	high
91	applesauce	medium
92	bagel	medium
93	banana	medium
94	beans	medium
95	beer	high
96	bread	high
97	breakfast	high
98	broccoli	low
99	butter	high
100	cake	medium
101	candy	medium
102	carrot	low
103	celery	low
104	cereal	medium
105	cheese	medium
106	chicken	high
107	chips	low
108	coffee	high
109	cookies	medium
110	corn	high
111	crackers	low
112	cucumber	medium
113	donut	low
114	eggs	high
115	fish	high
116	flour	medium
117	french fries	medium
118	fruit	high
119	grapes	medium
120	ham	medium
121	hamburger	medium
122	hot dog	medium
123	ice cream	medium
124	ice cubes	low
125	jelly	medium
126	juice	medium
127	ketchup	low
128	lemon	medium
129	lettuce	medium
130	mayonnaise	low
131	milk	high
132	muffin	low
133	mustard	medium
134	nuts	medium
135	oatmeal	low
136	oil	medium
137	onion	medium
138	orange	medium
139	peanut butter	medium
140	pear	medium
141	peas	medium
142	pepper	medium
143	peppers	medium
144	pickle	low
145	pie	medium
146	pineapple	low
147	pizza	medium

	Foods	Frequency
148	popcorn	low
149	potato	high
150	pretzel	medium
151	rolls	medium
152	salad	medium
153	salt	high
154	sandwich	medium
155	shrimp	low
156	soda	medium
157	soup	medium
158	spaghetti	low
159	steak	medium
160	stew	medium
161	strawberry	low
162	sugar	high
163	syrup	medium
164	tea	high
165	toast	medium
166	tomato	medium
167	vegetables	high
168	waffles	low
169	water	high
170	wine	high

Appendix A: Vocabulary By Category: Multi-Mode Matching and Cued Naming

	Large Objects	Frequency
171	airplane	medium
172	ambulance	medium
173	bathroom	high
174	bathtub	medium
175	bed	high
176	bedroom	high
177	bicycle	medium
178	bookcase	low
179	bus	high
180	bush	medium
181	cabinets	medium
182	car	high
183	chair	high
184	curtains	medium
185	deck	medium
186	desk	medium
187	dining room	low
188	dishwasher	low
189	door	high
190	drawer	medium
191	dresser	low
192	dryer	medium
193	fireplace	medium
194	flower	high
195	garage	medium
196	grass	high
197	helicopter	low
198	kitchen	high
199	leaf	high
200	living room	low
201	microwave	low
202	mirror	medium
203	oven	medium
204	parking meter	medium
205	patio	low
206	piano	high
207	refrigerator	medium
208	rock	medium
209	rug	medium
210	shower	medium
211	sink	medium
212	sofa	medium
213	stairs	high
214	stool	medium
215	stove	medium
216	table	high
217	taxi	medium
218	toilet	high
219	train	high
220	tree	high
221	truck	high
222	washer	low
223	window	high

	Small Objects	Frequency
224	bills	medium
225	blanket	high
226	book	high
227	brush	high
228	camera	high
229	cane	medium
230	cards	high
231	check	medium
232	comb	medium
233	computer	medium
234	datebook	medium
235	dentures	low
236	deodorant	low
237	dime	medium
238	disk	medium
239	dollar	high
240	envelope	medium
241	eraser	low
242	glasses	high
243	hair dryer	medium
244	hearing aid	low
245	lipstick	medium
246	magazine	medium
247	nail clippers	medium
248	newspaper	high
249	nickel	low
250	paper	high
251	paperclip	medium
252	pen	medium
253	pencil	high
254	penny	medium
255	pillow	medium
256	pills	medium
257	pin	medium
258	quarter	high
259	razor	high
260	scissors	low
261	shampoo	low
262	soap	high
263	stapler	low
264	tape	medium
265	thermometer	medium
266	tissues	high
267	toilet paper	low
268	toothbrush	high
269	toothpaste	low
270	towel	medium
271	wheelchair	medium
272	bag	high
273	ball	high
274	balloons	medium
275	bow	low
276	bowl	medium
277	broom	low
278	bucket	medium
279	cans	medium
280	clock	high

	Small Objects	Frequency
281	coffeepot	low
282	cup	high
283	doorbell	low
284	dustpan	low
285	fan	medium
286	faucet	low
287	flag	medium
288	flashlight	medium
289	fly swatter	medium
290	fork	high
291	frame	medium
292	garbage	medium
293	glass	high
294	hammer	medium
295	hanger	low
296	hose	low
297	jar	medium
298	key	high
299	knife	high
300	ladder	medium
301	ladle	low
302	lamp	high
303	lawn mower	medium
304	lightbulb	medium
305	lock	medium
306	luggage	medium
307	mailbox	low
308	measuring tape	low
309	menu	medium
310	mop	low
311	nails	medium
312	outlet	medium
313	paintbrush	medium
314	pan	medium
315	pipe	medium
316	pitcher	low
317	plate	high
318	pliers	low
319	plunger	low
320	pot	high
321	radio	high
322	rake	low
323	saw	low
324	screw	low
325	shears	low
326	shovel	low
327	spatula	low
328	sponge	medium
329	spoon	medium
330	stethoscope	low
331	string	medium
332	teapot	low
333	telephone	high
334	toaster	low
335	toolbox	medium
336	trashcan	medium
337	TV	high

	Small Objects	Frequency
338	vacuum cleaner	medium
339	wire	medium
340	wrench	low

Appendix A: Additional Vocabulary for Multi-Mode Matching and Cued Naming

	People	Frequency
1	astronaut	low
2	baby	high
3	baker	medium
4	barber	medium
5	boy	high
6	butcher	medium
7	carpenter	low
8	chef	low
9	couple	medium
10	crossing	low
11	dancer	medium
12	dealer	medium
13	doctor	high
14	doorman	low
15	engineer	medium
16	fireman	low
17	girl	high
18	man	high
19	manicurist	low
20	photographer	medium
21	pilot	medium
22	policeman	medium
23	scientist	medium
24	vet	medium
25	waiter	medium
26	woman	high

	Actions	Frequency
1	biking	low
2	buying	medium
3	camping	medium
4	celebrating	low
5	chopping	low
6	cooking	medium
7	dancing	medium
8	digging	medium
9	drinking	medium
10	drying	medium
11	eating	medium
12	examining	medium
13	exercising	low
14	feeding	medium
15	fishing	medium
16	fixing	medium
17	gardening	low
18	getting	high
19	giving	high
20	hammering	low
21	helping	medium
22	hiking	low
23	holding	high
24	hugging	medium
25	ironing	low
26	kicking	medium
27	kissing	low
28	knitting	low
29	looking	high
30	paying	medium
31	picking	medium
32	playing	high
33	pointing	medium
34	pouring	medium
35	pruning	low
36	reaching	medium
37	reading	high
38	relaxing	low
39	riding	medium
40	running	high
41	shaking	medium
42	shoveling	low
43	showing	high
44	sitting	high
45	skiing	low
46	sleeping	medium
47	smelling	low
48	smoking	medium
49	stretching	medium
50	taping	low
51	teaching	high
52	threading	low
53	vacuuming	low
54	walking	high
55	weighing	medium
56	writing	high

Appendix A: Multi-Mode Matching and Cued Naming Vocabulary Frequency

	High Frequency	Medium Frequency	Low Frequency
Animals	bird cat cow dog fly horse pig sheep snake	bear deer elephant kitten lamb lion monkey mouse rabbit rat tiger wolf worm	alligator beaver beetle butterfly camel chimpanzee cricket donkey duck frog kangaroo leopard lizard moth owl parrot peacock pigeon porcupine puppy raccoon rooster skunk snail spider turtle wasp zebra
Food	apple bread breakfast butter chicken coffee corn eggs fruit beer milk potato salt sugar tea vegetables water wine fish	applesauce bagel banana beans cake candy cereal cheese cookies cucumber flour french fries grapes ham hamburger hot dog ice cream jelly juice lemon lettuce mustard nuts oil onion orange pear peas pepper peppers pie pizza pretzel rolls salad sandwich soda soup steak stew syrup toast tomato	broccoli carrot celery chips crackers donut ice cubes ketchup mayonnaise muffin oatmeal pickle pineapple popcorn shrimp spaghetti strawberry waffles
Large Objects	bathroom bed bedroom bus car chair door flower grass kitchen leaf piano stairs table toilet train tree truck window	airplane ambulance bathtub bicycle bush cabinets curtains deck desk drawer dryer fireplace garage mirror oven parking meter refrigerator rock rug shower sink sofa stool stove taxi	bookcase dining room dishwasher dresser helicopter living room microwave patio washer
Small Objects	bag ball blanket book brush camera cards clock cup dollar fork glass glasses key knife lamp newspaper paper pencil plate pot quarter radio razor soap telephone tissues toothbrush TV	balloons bills bowl bucket cane cans check comb computer datebook dime disk envelope fan flag flashlight fly swatter frame garbage hair dryer hammer jar ladder lawn mower lightbulb lipstick lock luggage magazine menu nail clippers nails outlet paintbrush pan paperclip pen penny pillow pills pin pipe sponge spoon string tape thermometer toolbox towel trashcan vacuum cleaner wheelchair wire	dentures deodorant eraser hearing aid nickel scissors shampoo stapler toilet paper toothpaste bow broom coffeepot doorbell dustpan faucet hanger hose ladle mailbox measuring tape mop pitcher pliers plunger rake saw screw shears shovel spatula stethoscope teapot toaster wrench
Clothing	belt shirt dress shorts jacket watch ring shoes skirt	bathing suit bra cap gloves nightgown pajamas purse robe scarf sneakers socks sunglasses sweater sweatpants teeshirt tie umbrella wallet	blouse boots bracelet earrings jeans necklace raincoat sweatshirt underpants
coat			
hat			
pants			

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Appendix B: Fill-In Cues

	Animal	Sentence Completion
1	alligator	See you later
2	bear	We saw a grizzly
3	beaver	That dam was built by a buck-toothed
4	beetle	On that flower there's a Japanese
5	bird	Listen to the mocking
6	butterfly	The caterpillar turned into a
7	camel	He rode through the desert on the hump of a
8	cat	Curiosity killed the
9	chimpanzee	A smart, small, monkey is called a
10	cow	The farmer milked the
11	cricket	In the grass I heard the chirping
12	deer	A doe is a female
13	dog	Watch out for the barking
14	donkey	Pin the tail on the
15	duck	It quacked like a
16	elephant	Feed the peanuts to the
17	fly	Shut the screen door to keep out that
18	frog	Near the lake there is a bull
19	horse	Put a saddle on that
20	kangaroo	In the mother's pouch was a baby
21	kitten	A baby cat is called a
22	lamb	March comes in like a lion, and out like a
23	leopard	The coat was made from the spotted skin of a
24	lion	He roared like a
25	lizard	An iguana is a type of
26	monkey	An animal that likes bananas is a
27	moth	Fluttering round the light was a large, gray
28	mouse	The cat chased the
29	owl	All through the night, we heard the hooting
30	parrot	A bird that talks is called a
31	peacock	That bird is as proud as a
32	pig	"Oink" went the
33	pigeon	They went to the park to feed the
34	porcupine	Don't go near the prickly quills of a
35	puppy	A young dog is called a
36	rabbit	Bugs bunny is a
37	raccoon	That mischievous animal with rings around his eyes is a
38	rat	In the sewer they found a
39	rooster	At dawn I heard a crowing
40	sheep	To fall asleep I count
41	skunk	The dog smelled like it had been sprayed by a
42	snail	He moves as slow as a
43	snake	He got bitten by a rattle
44	spider	The web was spun by a black, widow
45	tiger	He's as strong as Tony the
46	turtle	A slow-moving animal with four legs and a hard shell is a
47	wasp	Whack the stinging
48	wolf	"The better to see you with," said the big bad
49	worm	The early bird gets the
50	zebra	A striped African animal that looks like a horse is called a

	Clothing	Sentence Completion
60	earrings	The piercer reached for a pair of gold hoop
61	gloves	Put on your hat, scarf, and
62	hat	On her head she wore a
63	jacket	It's chilly, zip up your
64	jeans	You relax in a pair of denim
65	necklace	She wore her mother's pearl
66	nightgown	I'm going to sleep in my loose flannel
67	pajamas	I think I'll wear my silk
68	pants	The suit had one jacket and two pair of
69	purse	The thief stole the woman's
70	raincoat	It poured so I put on my
71	ring	For an engagement, you get a diamond
72	robe	After a shower, you pull on your terry cloth
73	scarf	I need my long woolen
74	shirt	You iron the collar of your cotton
75	shoes	Put on your socks and
76	shorts	He changed into a t-shirt and a pair of
77	skirt	Put on a blouse and a
78	sneakers	The basketball player wore high-top
79	socks	Find a matching pair of
80	sunglasses	Don't squint from the glare, put on your
81	sweater	He wore a warm
82	sweatpants	You work out in a pair of warm
83	sweatshirt	If you get cold while jogging, pull on a hooded
84	teeshirt	When it's hot, you just wear a short sleeved
85	tie	He got gravy on his new, silk
86	umbrella	It started to rain, so he opened his
87	underpants	Find a clean pair of
88	wallet	The thief stole his money and credit cards out of his
89	watch	You tell time with a

	Food	Sentence Completion
90	apple	He bit into a red, juicy
91	applesauce	You crush and cook apples to make
92	bagel	Put some cream cheese and lox on the
93	banana	The monkey peeled the
94	beans	We made hot dogs and baked
95	beer	They tapped a keg of
96	bread	Bake a loaf of
97	breakfast	You can eat bacon and eggs for
98	broccoli	It's not cauliflower, it's green
99	butter	I got some bread and a pat of
100	cake	She baked a
101	candy	For Halloween, the kids get lots of
102	carrot	We fed the rabbit a crunchy
103	celery	Make the soup with onions, carrots and a stalk of
104	cereal	Put some milk in your bowl of
105	cheese	Serve the crackers with a chunk of Swiss
106	chicken	I'm going to make a roasted Perdue
107	chips	Buy me a bag of potato
108	coffee	Have a hot cup of
109	cookies	I baked a dozen chocolate chip
110	corn	Take the husks off the
111	crackers	Serve the cheese with the saltine
112	cucumber	He was cool as a
113	donut	With your coffee, have a jelly
114	eggs	He ate bacon and
115	fish	Would you like beef, poultry, or
116	flour	Sift a cup of
117	french fries	He ordered a hamburger and an order of

Appendix B: Fill-In Cues

118 fruit Slice up a bowl of some fresh
119 grapes I ate a bunch of
120 ham I bought a canned
121 hamburger McDonald's serves a juicy
122 hot dog I like mustard and relish on my
123 ice cream I ate apple pie with a scoop of vanilla
124 ice cubes Out of the freezer came a tray of
125 jelly For lunch, I had peanut butter and
126 juice I like fresh squeezed orange
127 ketchup On your hamburger, squeeze out some tomato
128 lemon Garnish the fish with a slice of
129 lettuce Wash and cut up the head of
130 mayonnaise Spread my BLT with some
131 milk The child had some cookies with a glass of
132 muffin For breakfast I had a cup of coffee and a blueberry
133 mustard I'd like a pretzel with
134 nuts Squirrels hide
135 oatmeal For breakfast eat a hot bowl of
136 oil Fry it in a tablespoon of
137 onion You cry when you peel an
138 orange You can make juice from a freshly-squeezed
139 peanut butter Do you like smooth or chunky
140 pear I ate a ripe, juicy, Bartlett
141 peas Eat your carrots and tiny green
142 pepper This stew needs more salt and
143 peppers To make it spicy, add some hot, chili
144 pickle Take a bite out of your dill
145 pie It's as American as apple
146 pineapple Top the ham with slices of
147 pizza I think I'll have a slice of pepperoni
148 popcorn At the movies I ate a tub of hot, buttered
149 potato I ate a baked
150 pretzel I ate a Philadelphia, soft
151 rolls Please pass the butter with the dinner
152 salad I'll have a Ceasar
153 salt The soup needed a pinch of
154 sandwich For lunch I had soup and a
155 shrimp At the seafood bar I peeled a dozen
156 soda You buy a case of
157 soup For lunch you have a steaming bowl of
158 spaghetti Do you want meatballs and
159 steak He ate a thick, juicy, porterhouse
160 stew I'll make some dumplings for the beef
161 strawberry I picked a red, juicy
162 sugar It was as sweet as
163 syrup In Vermont, you can get real maple
164 tea It's just not my cup of
165 toast Serve the cream chipped beef over a slice of
166 tomato I ordered bacon, lettuce and
167 vegetables Mothers tell children, eat your
168 waffles I put syrup on my Belgian
169 water I'd like a glass of cold
170 wine I ordered a glass of sweet, red

Large Objects **Sentence Completion**

171 airplane Fly in the
172 ambulance It's an emergency, call an
173 bathroom I have to go to the
174 bathtub Sit down and soak in the
175 bed Sleep in a
176 bedroom My daughters share a
177 bicycle The child rode a ten speed
178 bookcase The lawyer's journals filled the
179 bus The kids waited for the big, yellow, school
180 bush Use the clippers and trim the rose
181 cabinets Put the dishes away in the kitchen
182 car Drive your
183 chair Please sit down on that
184 curtains The kitchen window needed a pair of lace
185 deck Buy some furniture so we can sit out on the
186 desk The important papers are kept in the top drawer of the
187 dining room We eat a holiday meal in the
188 dishwasher After the dinner party, he loaded the
189 door I heard a knock at the
190 drawer Put the utensils back in the
191 dresser Your clothes are folded and stacked on top of your
192 dryer I need a washer and
193 fireplace Stack and light the logs in the
194 flower A daisy is a summer
195 garage We have a two-car
196 grass Get out the mower and cut the
197 helicopter The news crew flew over in a
198 kitchen The stove, sink and refrigerator are in the
199 leaf Canada's flower is the maple
200 living room The couch and end tables are in the
201 microwave Zap the food in the
202 mirror She looked in the
203 oven Bake the cookies in the
204 parking meter Put a quarter in the
205 patio They barbecued out on the flag-stone
206 piano They had a beautiful, baby grand
207 refrigerator Please put the butter back in the
208 rock It's hard as a
209 rug The room's floor needed a 5 by 7 foot
210 shower Do you prefer to take a bath or a
211 sink You wash the dishes in the
212 sofa Go in the living room and sit on the
213 stairs Walk up the
214 stool Climb up and sit on the
215 stove Make sure you turn off the pot on the
216 table Put four placemats on the dining room
217 taxi In New York it's hard to hail a
218 toilet Flush the
219 train All aboard the
220 tree The bird built a nest in the old oak
221 truck The load of dirt spilled out of the dump
222 washer You put a load of dirty clothes in the
223 window The baseball broke the

Small Objects **Sentence Completion**

224 bills Pay your
225 blanket I snuggled into bed under the warm, woolen
226 book Read a
227 brush Fix your hair with this soft-bristled
228 camera "Smile, you're on Candid"
229 cane He walked with a
230 cards Shuffle and deal the deck of

Appendix B: Fill-In Cues

231 check To pay the doctor I wrote a
232 comb You part your hair with a fine-toothed
233 computer I put a disk into my
234 datebook Jot the time down in your
235 dentures Take out and soak your
236 deodorant You can choose between a stick, a roll-on or a spray
237 dime If your brakes are good, you can stop on a
238 disk Save that computer program on a floppy
239 dollar Four quarters equal one
240 envelope Put a stamp on the
241 eraser The rubber tip of a pencil is called an
242 glasses If you can't read that, put on your
243 hair dryer At the beauty parlor, you sit under the
244 hearing aid I needed a battery for my
245 lipstick I bought a bright new shade of
246 magazine *Family Circle* is a
247 nail clippers She snipped the jagged toe nail with the
248 newspaper The headline was printed on the front page of the
249 nickel 5 cents = one
250 paper You write on a piece of
251 paperclip Fasten the pages together with a
252 pen Would you like a pencil or a
253 pencil Sharpen the
254 penny 1 cent = one
255 pillow Lay your head on the fluffy
256 pills The doctor said "swallow two"
257 pin Fasten the diaper with a safety
258 quarter 25 cents = one
259 razor Shave with a
260 scissors Cut paper with a pair of
261 shampoo Wash your hair with
262 soap Wash with water and
263 stapler To put these papers together I pushed down on a
264 tape Seal the wrapping paper with a piece of scotch
265 thermometer Take your temperature with a
266 tissues My cold was so bad, I used a whole box of
267 toilet paper We need a new roll of
268 toothbrush Put some Crest on your
269 toothpaste Mint flavored gel is my favorite kind of
270 towel Dry off with a
271 wheelchair He couldn't walk so he was pushed in a
272 bag Pack your groceries in a brown paper
273 ball Throw the
274 balloons At the party they popped all the
275 bow Tie the ribbon into a big
276 bowl Measure the ingredients into a mixing
277 broom You sweep the floor with a
278 bucket Fetch a mop and
279 cans Open up the tin
280 clock Tell time with the
281 coffeepot Plug in the
282 cup Eight ounces, equals one
283 doorbell Ring the
284 dustpan You brush crumbs into a
285 fan It's stuffy; let's turn on the
286 faucet Go to the sink and turn on the
287 flag We pledge allegiance to the
288 flashlight When the power goes out, turn on a
289 fly swatter Kill it on the wall with the
290 fork Pick up the meat with your
291 frame I'm going to put her picture in a
292 garbage Throw out the
293 glass You drink out of a
294 hammer Hit the nail with a
295 hanger Put the suit on a
296 hose Water your garden with a
297 jar Unscrew the lid on the glass
298 key A lock and
299 knife Cut your meat with a
300 ladder Climb up a
301 ladle Dish out the soup with a big
302 lamp Change the bulb in the
303 lawnmower Cut the grass with a
304 lightbulb The lamp is flickering, so change the
305 lock Do you know the combination for that
306 luggage Go to the baggage claim and get your
307 mailbox The postman puts letters in your
308 measuring tape To find out the dimensions take out your
309 menu Let's see what they have on the
310 mop Wash the floor with a bucket and a
311 nails You use a hammer to pound
312 outlet To plug it in you need to find the electrical
313 paintbrush Dab some color on with a small
314 pan Fry the onions in a frying
315 pipe The plumber fixed the broken
316 pitcher Pour some water from the
317 plate Put the meat and potatoes on your
318 pliers In his tool kit he found a pair of
319 plunger To unclog the toilet you suction it with a
320 pot Boil the spaghetti in a 10 quart
321 radio Listen to AM or FM on the
322 rake Clear the leaves with the
323 saw To cut that wood I need a
324 screw Tighten the loose
325 shears You trim the hedges with
326 shovel Dig the hole with a
327 spatula Flip the burger with a
328 sponge Squeeze out the water from the
329 spoon You stir with a
330 stethoscope He listened to my heart through a
331 string The kite flew high at the end of a
332 teapot Boil some water in the
333 telephone Talk on the
334 toaster Pop two slices of bread in the
335 toolbox Put the hammer away in your
336 trashcan Empty the
337 TV Put your feet up and watch
338 vacuum cleaner Clean the carpet with a
339 wire Electricity runs through
340 wrench Loosen the pipe with a

Appendix C: Description Cues

		Animal
1	alligator	A big reptile that lives in the swamp
2	bear	A large brown animal that hibernates in the
3	beaver	An animal with a flat tail that builds dams
4	beetle	A hard-shelled bug found on roses
5	bird	An animal with wings, that flies and builds a nest
6	butterfly	A beautiful insect with colorful wings
7	camel	An animal with a big hump found in Egypt
8	cat	An animal that purrs and meows
9	chimpanzee	A small smart monkey
10	cow	A farm animal that gives milk
11	cricket	A bug that makes noise on a summer night
12	deer	A graceful animal frequently hunted
13	dog	An animal that barks
14	donkey	A beast of burden that looks like a horse
15	duck	A bird with a bill and webbed feet
16	elephant	A large, gray animal with tusks and a trunk
17	fly	An annoying insect that you swat
18	frog	An animal that croaks and leaps in the water
19	horse	An animal that you ride or race on
20	kangaroo	An Australian animal with a pouch
21	kitten	A baby cat
22	lamb	A baby sheep
23	leopard	A spotted jungle animal
24	lion	King of the jungle
25	lizard	A small land reptile
26	monkey	An animal that swings from the trees
27	moth	An insect that is attracted to light
28	mouse	A small rodent that likes cheese
29	owl	A wise bird that hoots
30	parrot	This colorful bird can talk
31	peacock	This beautiful bird can open its tail into a fan
32	pig	A farm animal that likes to roll in the mud
33	pigeon	A city bird
34	porcupine	An animal with quills
35	puppy	A baby dog
36	rabbit	This animal has long ears and hops
37	raccoon	An animal with black circles around its eyes
38	rat	It's bigger than a mouse, with a long tail
39	rooster	Farm bird that crows at dawn
40	sheep	A wooly farm animal
41	skunk	A black and white animal that gives off a bad
42	snail	A small slow animal with a shell
43	snake	A long slithery reptile
44	spider	An eight-legged creature that makes webs
45	tiger	A big cat with stripes that lives in the jungle
46	turtle	This animal can hide its head in its shell
47	wasp	Stinging insect with a long body
48	wolf	A wild animal that howls and looks like a dog
49	worm	It lives in the dirt and birds catch it
50	zebra	A striped animal that looks like a horse
		Clothing
51	bathing suit	You wear this when you swim
52	belt	You wear this around your waist to hold up your
53	blouse	Dressy clothing with buttons, that is worn with a
54	boots	Things we wear on our feet in winter
55	bra	A woman's undergarment worn beneath her shirt
56	bracelet	Jewelry worn around your wrist
57	cap	A small hat with a brim that covers your eyes

Appendix C: Description Cues

58	coat	Heavy outerwear for cold weather
59	dress	Women's clothing worn with stockings and good shoes
60	earrings	Jewelry that hangs on both sides of your head
61	gloves	They keep your hands warm in winter
62	hat	It's worn on the head
63	jacket	A shorter coat that you wear when it's cold
64	jeans	Casual pants made of denim
65	necklace	Jewelry like a pendent or a locket
66	nightgown	Loose clothing a woman sleeps in
67	pajamas	You change into this pants and shirt before you go to sleep
68	pants	The bottom half of a man's suit
69	purse	Another name for a pocketbook
70	raincoat	Outerwear for wet weather
71	ring	Jewelry that you wear on your finger
72	robe	Warm clothing worn over pajamas
73	scarf	You wrap this around your neck when it's cold
74	shirt	Clothing that a man buttons before he puts on a tie
75	shoes	We wear them on our feet
76	shorts	Pants cut off at or above the knees
77	skirt	The bottom half of a dress
78	sneakers	Sport or gym shoes with a rubber sole
79	socks	You wear these with your shoes
80	sunglasses	Used to protect your eyes from bright light
81	sweater	Warm clothing that you put on when you're chilly
82	sweatpants	Athletic wear that covers the waist down
83	sweatshirt	Athletic wear that covers the waist up
84	teeshirt	A short sleeved undergarment
85	tie	A strip of silk worn around a man's neck
86	umbrella	Something that opens and protects us in the rain
87	underpants	Clothing that you put on first, along with a t-shirt
88	wallet	You keep your money and identification in this
89	watch	You wear this on your wrist to tell time
	Foods	
90	apple	This is the tempting red fruit that Eve gave to Adam
91	applesauce	Musselmann's or Mott's makes this dessert from crushed apples
92	bagel	Bread with a hole in the middle can be spread with cream cheese
93	banana	This is a long, yellow fruit that is peeled
94	beans	These are small vegetables the size of peas that can be thrown
95	beer	An alcoholic drink like Coors or Miller, that can come in a six-
96	bread	You need two slices of this to make a sandwich
97	breakfast	This is what we call the first meal of the day
98	broccoli	A green vegetable that looks like cauliflower
99	butter	You spread this on bread
100	cake	You put candles on top of this dessert at birthday parties
101	candy	Kids get lots of this on Halloween
102	carrot	Rabbits love this long orange vegetable
103	celery	A green vegetable with a stalk and a leafy top
104	cereal	A breakfast food like cheerios or rice crispies
105	cheese	Mice like to eat this
106	chicken	This dinner meat has legs, breast, wings and thighs
107	chips	A salty snack food that's good with dips
108	coffee	A hot caffeinated drink that smells great while it's brewing
109	cookies	Sweet dessert snacks baked in a batch
110	corn	A vegetable with kernels that you can eat on the cob
111	crackers	Dry, thin, crispy food served with cheese
112	cucumber	A long green vegetable that you can pickle
113	donut	Small round cakes that have a hole in the middle
114	eggs	A chicken lays them
115	fish	A food that comes from the sea

Appendix C: Description Cues

116	flour	Finely ground grain used to make bread or cake
117	french fries	Strips of potato fried in oil
118	fruit	A food group with strawberries, grapes, oranges and the like
119	grapes	A fruit that grows on a vine and is made into wine
120	ham	A meat that comes from a pig, often baked with pineapple slices
121	hamburger	A beef patty you can get at McDonald's
122	hot dog	A vendor sells this at the ball park, you eat it with baked beans
123	ice cream	A frozen dessert you can scoop onto a cone
124	ice cubes	You put these in a drink to make it cold
125	jelly	A fruit spread used with butter on toast
126	juice	You squeeze any fruit to get this drink
127	ketchup	You put this thick, red stuff on burgers or fries
128	lemon	A sour yellow citrus fruit
129	lettuce	You use the leaves of this common garden vegetable in salad
130	mayonnaise	A white dressing or sandwich spread
131	milk	A drink that comes from a cow
132	muffin	A blueberry or corn breakfast treat that looks like a cupcake
133	mustard	A yellow spread that tastes great on a hotdog
134	nuts	Squirrels eat these by cracking their shells first
135	oatmeal	A hot breakfast cereal
136	oil	A liquid used to dress your salad or coat your frying pan
137	onion	This vegetable makes your eyes tear when you cut it
138	orange	A round citrus fruit that you squeeze to make juice
139	peanut butter	A spread made from pureed peanuts
140	pear	This fruit is narrow at the top and wide at the bottom
141	peas	These tiny green vegetables come in a pod
142	pepper	The black, spicy seasoning often found next to salt
143	peppers	These spicy vegetables can be red or green, hot or sweet
144	pickle	A preserved cucumber often served alongside your sandwich
145	pie	You roll out dough to make this round pastry shell filled with fruit
146	pineapple	A tropical fruit with a spiky, hard skin and leaves coming out of the top
147	pizza	A pie topped with cheese, tomato sauce and sometimes other things
148	popcorn	People munch on this at the movies
149	potato	A food that can be baked, mashed or french fried
150	pretzel	A crunchy, brown snack food often shaped like a knot
151	rolls	Small servings of bread that are often served with dinner
152	salad	A cut-up mix of lettuce, tomatoes, cucumbers and other ingredients
153	salt	A common seasoning that we shake onto many foods
154	sandwich	You eat this for lunch, it's two slices of bread with something in the middle
155	shrimp	A type of shellfish often served with cocktail sauce
156	soda	A sweet soft drink like Pepsi or gingerale
157	soup	You can have a cup or a bowl of this hot, liquid meal
158	spaghetti	Thin strings of pasta often covered with sauce
159	steak	A cut of red meat such as porterhouse or sirloin
160	stew	A thick soup made with meat, potatoes, and vegetables
161	strawberry	A small red fruit used to make a shortcake with whipped cream dessert
162	sugar	We use these white crystals to sweeten food
163	syrup	You put this thick, sweet, sticky stuff on pancakes
164	tea	A hot drink served with lemon
165	toast	This is what you get when you brown bread
166	tomato	A red, pulpy food that's sliced for salads or sandwiches
167	vegetables	A food group that includes lettuce, broccoli, peas and other things
168	waffles	You make this breakfast food with a special, hot iron
169	water	A clear, fresh liquid that we drink and wash with
170	wine	This fine alcoholic drink is made from grapes

Large Objects

171	airplane	It flies and takes people to far away places
172	ambulance	It takes people to the hospital in an emergency
173	bathroom	A place where a shower, toilet and sink are usually found

Appendix C: Description Cues

174	bathtub	You sit and relax in this to get washed
175	bed	A cozy piece of furniture where we sleep at night
176	bedroom	A place in the house where you sleep or get dressed
177	bicycle	You ride this two or three wheeler
178	bookcase	Furniture that can hold novels, dictionaries and other things to read
179	bus	A vehicle that carries many passengers to school or work
180	bush	A low branched shrub
181	cabinets	Places in the kitchen where you store, food, plates or glasses
182	car	You drive and park it
183	chair	A piece of furniture you can sit on
184	curtains	Material that covers your window
185	deck	An outdoor wooden structure attached to the back of your house
186	desk	A piece of furniture that you sit at to write or pay bills
187	dining room	A formal place in your home to eat
188	dishwasher	An appliance that cleans dinnerwear automatically
189	door	You open this to enter a house or a room
190	drawer	A storage place for clothing or objects that glides in and out
191	dresser	Furniture with drawers in the bedroom where clothing is stored
192	dryer	An appliance that we use after clothes are washed
193	fireplace	A stone or brick place where you light logs
194	flower	You pick this from the garden
195	garage	A place where you keep your car
196	grass	Your lawn is made of this
197	helicopter	It flies with a rotor and is also known as a chopper
198	kitchen	The room where you cook
199	leaf	It falls from a tree in autumn
200	living room	A place in your house where you sit and talk with company
201	microwave	An appliance that zaps your food quickly
202	mirror	Glass that reflects your image
203	oven	A large appliance that bakes your food
204	parking meter	You put money in it when you park your car
205	patio	An outside living area made of cement or stones
206	piano	A large musical instrument with black and white keys
207	refrigerator	An appliance used to keep food cold
208	rock	A large piece of stone
209	rug	A floor covering made of wool or cotton
210	shower	A place in the bathroom where you stand to get washed
211	sink	A place that you can fill with water to wash your face or dishes
212	sofa	A piece of living room furniture where several people can sit
213	stairs	You climb these to get from one floor to another in a house
214	stool	A seat without a back or arms
215	stove	Appliance that you cook on in the kitchen
216	table	You sit around this when you eat
217	taxi	You call for this or hail one if you need to be taken somewhere
218	toilet	You flush this after you use it
219	train	It runs on a railroad track
220	tree	A large woody plant such as a maple, pine or oak
221	truck	A large vehicle that transports goods or hauls trash
222	washer	A large appliance that cleans your clothes
223	window	You open this to get fresh air
Small Objects		
224	bills	You have to pay these every month
225	blanket	A large covering that keeps us warm
226	book	You read this
227	brush	Something with bristles that fixes your hair
228	camera	You take pictures with this
229	cane	A stick that helps you walk
230	cards	You play poker, bridge or rummy with these
231	check	We write this to pay our bills

Appendix C: Description Cues

232	comb	Something with “teeth” that fixes your hair
233	computer	A machine with a mouse and a keyboard
234	date book	It’s used to keep track of your appointments
235	dentures	False teeth
236	deodorant	Toiletry that prevents body odor and excess perspiration
237	dime	A small silver coin worth ten cents
238	disk	You put this thin, plastic square into your computer
239	dollar	Paper money worth 100 cents
240	envelope	You put your letter in this before you mail it
241	eraser	A rubber object used to remove pencil marks
242	glasses	They help you see clearly
243	hair dryer	An appliance used on wet hair
244	hearing aid	A tiny amplifier, worn in the ear, that helps you listen
245	lipstick	Cosmetic that’s applied to the mouth
246	magazine	You read these publications while you wait for an appointment
247	nail clippers	A small tool to help groom your toes and fingers
248	newspaper	It’s delivered to your door and you can read what’s happening in the
249	nickel	A coin worth 5 cents
250	paper	Something to write on
251	paper clip	Used to hold papers together
252	pen	Used for writing, it needs ink
253	pencil	You write and erase with this
254	penny	A copper coin worth one cent
255	pillow	You put your head on this when you sleep
256	pills	Another word for medication
257	pin	A small sharp metal item that fastens diapers
258	quarter	A coin worth 25 cents
259	razor	Something to shave with
260	scissors	You cut paper with these
261	shampoo	You wash your hair with this
262	soap	It comes in a bar or liquid to clean your face and body
263	stapler	Office tool that clamps papers together
264	tape	Thin plastic with adhesive on one side to stick things together
265	thermometer	Measures your temperature when you’re sick
266	tissues	Soft things that you use to wipe your nose
267	toilet paper	Soft tissue to use at the toilet
268	toothbrush	An item with bristles to clean your teeth
269	toothpaste	You squeeze some of this out to clean your teeth
270	towel	Used to dry your body after a shower
271	wheelchair	A rolling seat used by patients who can’t walk
272	bag	A brown paper object that the supermarket packs your food in
273	ball	Sports equipment that you kick, hit, throw or bounce
274	balloons	These are blown up for party decorations
275	bow	Ornamental ribbon used to decorate a present
276	bowl	You mix foods in this
277	broom	Used to sweep the dirt off the floor
278	bucket	You fill it with soap and water to wash the floor
279	cans	Sealed, metal, food containers
280	clock	Found on the wall or table and used to tell time
281	coffeepot	You can brew 12 cups in it
282	cup	Something you drink coffee from
283	doorbell	You ring this button to announce your arrival
284	dustpan	Something used to collect dirt or crumbs off the floor
285	fan	Blows cool air by blades that turn round and round
286	faucet	Water comes out of this in your sink
287	flag	It has stars and stripes and waves in the breeze
288	flashlight	Handheld tool that allows you to see in the dark
289	fly swatter	An object used to kill annoying insects
290	fork	A utensil that you pick up pieces of meat with
291	frame	Something which goes around a picture

Appendix C: Description Cues

292	garbage	This is what old food or other trash is called
293	glass	You drink from it
294	hammer	A tool used to pound nails
295	hanger	An item used to place clothes on the rod in your closet
296	hose	It's used to water your lawn or wash your car
297	jar	A glass container with a lid
298	key	It unlocks a door
299	knife	Used to cut food
300	ladder	You climb on this to reach high places
301	ladle	You scoop soup out with it
302	lamp	You reach under the shade and turn this on to see when it's dark
303	lawn mower	It's used to cut the grass
304	lightbulb	You screw it into a light fixture
305	lock	It can take a key or have a combination
306	luggage	Used to carry clothing and personal belongings when you travel
307	mailbox	The place where the postman puts your letters
308	measuring tape	Used to check the size of things
309	menu	What you read to choose what you'll eat at a restaurant
310	mop	Used to wash the floor
311	nails	You hammer these into wood
312	outlet	A place in the wall where you plug cords
313	paintbrush	A tool used to apply liquid color to a canvas
314	pan	You fry things in this
315	pipes	Metal tubes used in plumbing
316	pitcher	A container for holding or pouring liquid
317	plate	You put your food on this and eat from it
318	pliers	A pinching, pulling or cutting tool
319	plunger	Used to unclog toilets or drains
320	pot	You boil things in this
321	radio	You tune in a station on this to listen to music or news
322	rake	A garden tool used to clear leaves
323	saw	This tool is used to cut wood
324	screw	This tool is used instead of nails to hold things together
325	shears	Used to clip hedges
326	shovel	You dig with this tool
327	spatula	You flip hamburgers with it
328	sponge	It absorbs water and is used to scrub dishes
329	spoon	A utensil that you stir your coffee with
330	stethoscope	Used by doctors to listen to your heart
331	string	A thin cotton cord used to fasten or tie
332	teapot	You brew a hot drink in this whistling container
333	telephone	You dial a number and talk on it
334	toaster	You brown bread in this small appliance
335	toolbox	You carry a wrench, hammer and nails in this
336	trashcan	A container where you put junk, rubbish or garbage
337	TV	You watch your favorite shows on this
338	vacuum	Small appliance that sucks up dirt
339	wire	Pieces of metal used to connect things or conduct electricity
340	wrench	A tool for loosening pipes

Appendix D: Troubleshooting Guide

MossTalk Words 2.0 uses the latest Internet-based technology: written in the Java programming language and meant to be run within an Internet browser. Everyone familiar with using the Internet has experienced occasional delays. Sometimes clicking something will not produce an immediate response. Every once in a while the browser will freeze. While this is rare, the solution is to close the browser and start over.

Can I run other programs while running MossTalk Words 2.0?
To ensure optimal functioning of the exercises and automatic scoring, please be sure to close out all other programs (Word, Excel, etc.) before starting the program.

Why can't I see the whole screen?
When the program opens, the screen may not be fully visible. Place the cursor on the bottom right hand corner. The single arrow will change to a double-headed arrow. Press cursor, hold and drag to enlarge the screen or click on the Maximize Screen icon in the program window (top right of screen, middle button).

Why does it take a long time for the program to start up?
The first time you start the program, the Sun Java Plug-in (which extends the capabilities of your browser) will also be loaded. It will take some time to load. If it fails to load at this point, simply turn off the computer and restart the process.

What should I do when I get a "Low on Memory" message?
Your computer and browser are cleaning up behind the scenes while you are working. If you are working quickly the system may not have time to catch up. You may still continue working, but the system may start to give you problems or freeze. If this happens, quit out of your browser. Then restart your program.

What should I do if the program freezes?
Press "Control+Alt+Delete" to shut down your browser. Then restart.

Why is the sound distorted?
If sound quality starts to distort, skip or lag, it may be a memory issue. Turning off and restarting the computer may alleviate these sound problems. It may also depend on the quality of the speakers associated with your computer. If so, it can only be fixed by attaching better quality external speakers to your computer.

Why does a button fail to respond when I click?
Some computers are sensitive to registering mouse movement when depressing the mouse button. If the mouse moves while the button is depressed, it is interpreted as a mouse "drag" rather than a mouse "click". We recommend that you hold your hand very still when clicking the mouse button. This oversensitivity to mouse movement may vary by the type of mouse, e.g., a bluetooth mouse may be more sensitive. You may want to try a different mouse, or change the mouse settings in Control Panel.

Why are there less than 20 trials in certain exercises?
Although all exercises are set to provide 20 trials, you will note that if you choose easy or hard vocabulary, sometimes you will get less than 20. For instance, if you choose Animals-Easy you will only get nine items, because there are only nine animal targets that fall in the easy or highest frequency quartile.

Why are my results printed using such big fonts?
Because the results are saved as HTML files and viewed in a browser, the settings of your browser control the font size. To print out results with the most efficient use of space, open the desired "results file" and change the font size in your browser, using View ⇢ Fonts ⇢ Smallest. Then print your results.

Why do my results occasionally show a 1% when it should be 0%?
Intermittently, on the Multi-Mode Matching scoresheet, a "0" is incorrectly rounded to 1% in the "Error" and "Uncued" categories. This is a quirk of the Java VM and a fix is being worked on.

Why doesn't the MossTalk icon or the Assigned Exercises folder show up on my Desktop?
You did not install MossTalk Words 2.0 as an administrator. Re-install MTW-2 using the Software Installation instructions. Be sure to right-click the MossTalk installation file to choose "Run as..." and select "Administrator".

Why doesn't MossTalk Words 2.0 run after clicking on a Cued Naming or Multimodal Matching exercise?
Java Runtime Environment (JRE) is not enabled in the web browser. If the JRE is already installed but a small red "X" appears in your browser instead of the animated Java logo, you may need to enable the JRE through your web browser. Please follow these instructions to enable the Sun JRE though your Web browser:
Internet Explorer 4 and Up
1. Click "Tools" ⇢ "Internet Options"
2. Select the Advanced Tab, and scroll down to "Java (Sun)"
3. Check the box next to the "Use Java 2" version
4. Next, select the Security Tab, and select the "Custom Level" button
5. Scroll down to "Scripting of Java applets"
6. Make sure the "Enable" radio button is checked.
7. Click OK to save your preference.

How can I make the audio from MTW-2 play through my speakers?
Windows XP Instructions:
1. Click on the [Start] button
2. Click on "Control Panel"
3. Click on "Sound and Audio Devices"
4. Click on "Audio"
5. Make sure that the Sound Playback Default device is your computer speakers. If it is not, click on the drop-down menu and select your microphone.
6. Click on the [Volume…] button and make sure the Volume Control slider is all the way at the top. Close this menu with the red X button.
7. Click on the "Voice" tab and repeat steps 5-6 for the Voice Recording settings.
8. Click "OK" to save your changes.

Windows Vista and Windows 7 Instructions:
1. Click on the [Windows Start] button
2. Click on "Control Panel"
3. Click on "Sound"
4. Click on the "Playback" tab. You should see your speakers and your headset listed.

5. Click on the speakers and choose "Set Default" in the pull-down menu at the bottom of the window. A green check-mark should appear by the speakers.
6. Click the [Properties] button. Click the "Levels" tab and make sure the speakers volume slider is set to 100%.
7. Click ['OK] to save your changes.

Why is my video display too large/small?

Windows XP Instructions:

1. Right-click on the desktop.
2. Select "Properties" from the drop-down menu.
3. Click on "Settings"
4. Adjust the Screen Resolution slider to be Less (for larger windows and text) or More (for smaller windows and text). The minimum display required for MossTalk Words 2.0 is 1024 x 768.

Windows Vista and Windows 7 Instructions:

1. Right-click on the desktop.
2. Select "Screen Resolution"
3. Click the pull-down menu for "Resolution"
4. Adjust the slider to be smaller (for larger windows and text) or larger (for smaller windows and text). The minimum display required for MTW-2 is 1024 x 768.

Why don't I see a white circle when using speech recognition?

This may be a sign of several problems. Try these simple solutions first:

1. Make sure that the microphone is plugged into microphone jack and not speaker jack (if not a USB microphone).
2. Check whether your microphone has a button or switch that turns it off and on.
3. Make sure the microphone is near your mouth.
4. Make sure the microphone isn't turned off in the MossTalk Words 2.0 program (there isn't a line through the microphone icon).
5. If the microphone is turned on close MTW-2 and reopen the program.

6. You can also check to make sure that sound is being received by the computer by testing with the Sound Recorder.

Windows XP Instructions

a. Click on the [Start] button
b. Click on "Programs"
c. Click on "Accessories"
d. Click on "Entertainment"
e. Click on "Sound Recorder".
f. To record a test sound, click on the red circle and speak into the microphone.
g. Click on the "rewind" button (the leftmost button).
h. Press the "play" button (the middle button). You should hear what you just said.
i. If you are unable to hear any sound when you record from the microphone, you need to make sure that the audio settings are set to record only from the micro phone that you plugged in, and that the volume of the microphone is adequate.
    1) Click on the [Start] button.
    2) Click on "Control Panel"
    3) Click on "Sounds and Audio Devices"
    4) Click on "Audio" tab

5) Make sure that the Sound Recording Default device is your microphone. If it is not, click on the drop-down menu and select your microphone.

6) Click on the [Volume…] button and make sure the Volume slider is all the way at the top. Close this menu with the red X button.

7) Click on the "Voice" tab and repeat steps 5-6 for the Voice Recording settings.

8) To see if this has fixed the problem you can click the "Test Hardware" button and follow the instructions.

9) Click "OK" to save your changes.

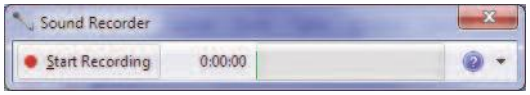
Windows Vista and Windows 7 Instructions

a. Click on the [Windows Start] button

b. Click on "All Programs"

c. Click on "Accessories"

d. Click on "Sound Recorder".



e. To record a test sound, click on the red circle and speak into the microphone.

f. Click the button again to stop recording.

g. You will be asked to save the sound file. Note where the file is saved before hitting the "Save" button. The default location is your "Documents" directory.

h. Go to that directory and double-click on the sound file.

i. An audio player, such as Windows Media player (which is part of Windows Vista and Windows 7), should start and play what you just said.

j. If you are unable to hear any sound when you record from the microphone, you need to make sure that the audio settings are set to record only from the microphone that you plugged in, and that the volume of the microphone is adequate.

1) Click on the "Windows Start" button

2) Click on "Control Panel"

3) Click on "Sound"

4) Click on the "Recording" tab. You should see your microphone device listed.

5) Click on the microphone and then the "Properties" button.

6) On the first tab, General, make sure the jack information matches what you are using (Audio Jack or USB) and that the Device Usage pull-down menu says "Use this Device (enable)".

7) Click on the "Levels" tab and make sure the microphone volume slider is set to "100%".

8) Click "OK" to save your changes.

I see the white circle, so why doesn't the recognizer understand me?

1. Determine whether you can record from the micrphone using the Sound Recorder. Instructions are under point number 5 of the question above.
2. Make sure that you follow the instructions to configure the microphone in XP (p. 13) or Vista/7 (p. 19). You may need to configure the microphone differently than our suggested settings. Try reducing the sensitivity, accuracy/response time and/or toggling background adaption.
3. Make sure the microphone settings are adjusted for that individual in XP (p. 13) or Vista/7 (p. 19). When you are adjusting and using the microphone make sure that you are in a quiet place. Microphones can pick up stray noises.
4. Speak strongly & clearly; pretend you are giving a speech. Other tips are on p. 27.
5. If none of these steps helped, follow the instructions on Creating a User-Specific Profile in XP (p. 29) or Vista/7 (p. 31).

NOTE: Only turn on background adaptation if the current speech recognition profile is only being used by one person.

Why do I get an error when I open "Speech" in Control Panel?

The problem is usually that the speech engine is not being automatically started on your system and you will need to start it manually each time.

1. Close the "Speech" panel.
2. Navigate to: Program Files ⇨ Common Files ⇨ Microsoft Shared ⇨ Speech
3. Double-click the file "sapisvr.exe". (Note: You won't see anything happen.)
4. If you see the file "sapisvr.exe.manifest", delete it. Be sure it is NOT "sapisrvr.exe".
5. Reopen "Speech" from the Control Panel.
6. You will need to follow these steps EVERY TIME you open the "Speech" panel. If your computer is networked, you may want to bring this issue to the attention of your network administrator because they might be able to fix it.

Why can't I get files to save from MTW-2? (e.g., Results are missing from the Results folder or show up as "Page not Found" in MTW-2; Custom Exercises or Assigned Exercises are not in the folder you saved them to.)

This problem mostly occurs on Windows Vista and 7 and has to do with permissions settings that are overriding the administrator status needed to run MTW-2.

<u>In Windows Vista:</u>

1. Open Control Panel.
2. Under User Account and Family settings click on "Add or remove user account".
3. Click on your current user account.
4. Under the user account click on the "Go to the main User Account page" link.
5. Under "Make changes to your user account" click on "Change security settings" link.
6. Make sure that "Turn on User Account Control (UAC) to make your computer more secure" is **<u>unselected</u>**. Click on the OK button.
7. Reboot your computer when prompted.

<u>In Windows 7:</u>

1. Go to User Account Control Settings.
2. Type in UAC, or go to the System and Security applet.
3. Click on the "Change User Account Control Settings" link.
4. To turn off UAC, move the slider to the Never Notify position, and then click OK. If you are prompted for an administrator password or confirmation, type the password and provide confirmation.
5. Reboot your computer.

When looking for files, why do I see "Program Files" and "Program Files (x86)?

If your computer is 64-bit you will see both of these folders. You should save exercises in "Program Files (x86)" if it appears as an option.

Drive C→Program Files (x86)→MossTalk→Words→Custom Vocabulary→Core Vocabulary

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