SILVIA Studio

Documentation, Training, and API Reference Guide

Contents

Introduction

Cognitive Code's SILVIA technology is a robust, conversational artificial intelligence system for developing and deploying a wide variety of practical, conversationally intelligent applications.

SILVIA

SILVIA is a conversational artificial intelligence system. It is usable in many different environments, such as mobile, VR, or Unity engine gaming environments. Additionally, SILVIA can be used in desktop and server versions for individual or enterprise solutions.

SILVIA Studio

SILVIA Studio is the developer tool used to design and implement SILVIA in any of these environments.

Required OS

SILVIA Studio requires Windows XP or higher, though it ideally runs on Windows 7 or higher.

The SILVIA Brain

The foundational component of the SILVIA artificial intelligence system is known as a **SILVIA Brain** file.

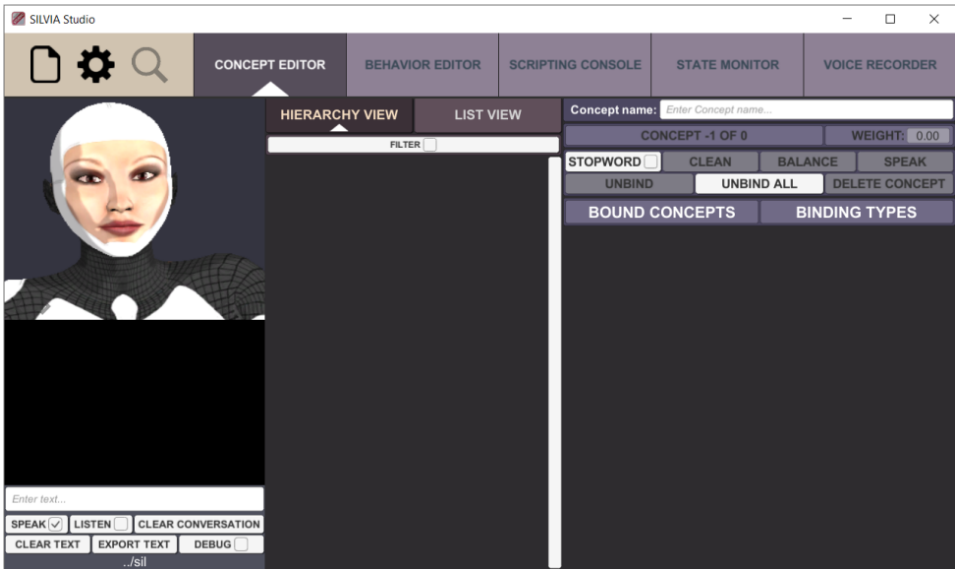
SILVIA Brain file extension:

- **.sil**

A Brain file acts as the container for all the data needed by SILVIA Core for one or more applications. The SILVIA Studio tool enables the developer to program a SILVIA Brain by loading it with data, concepts, relationships, and behaviors specific to the application it is being developed for.

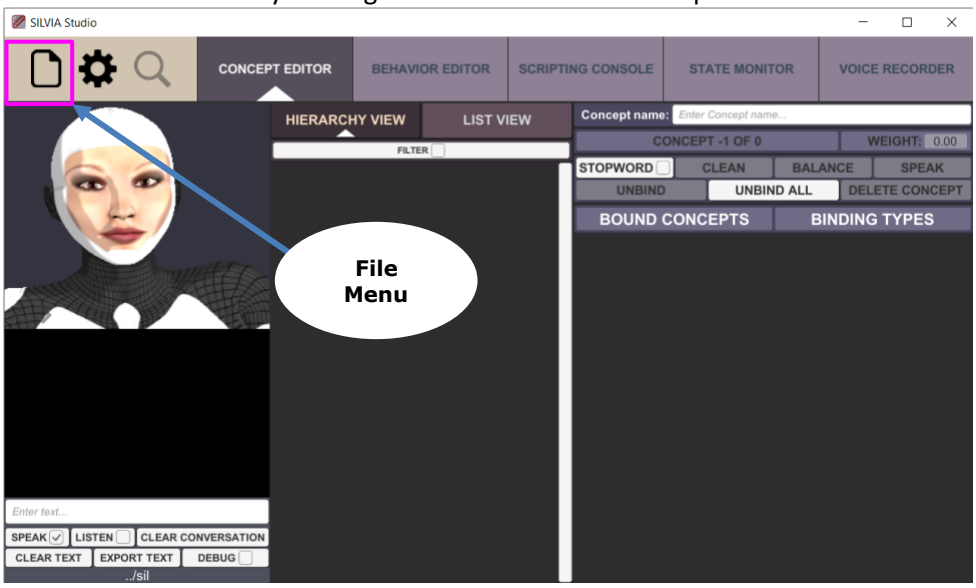
GUI Overview

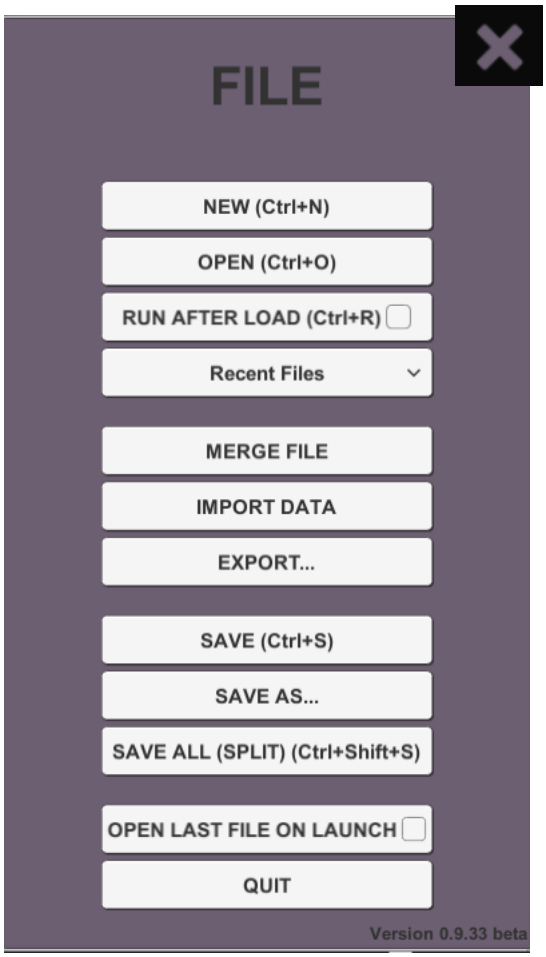
The SILVIA Studio UI



File Menu

Access the file menu by clicking on the "file" icon in the top left corner of Silvia Studio.



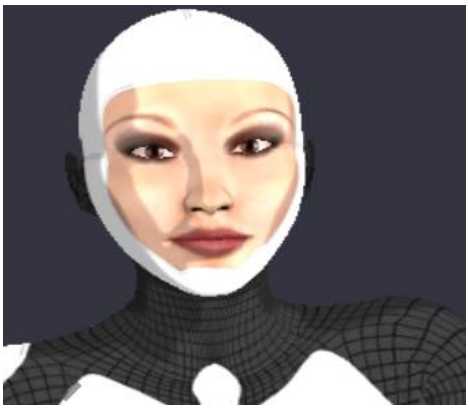


File menu

- **New (CTRL + N)**: Clears the currently loaded Brain and starts a new, empty Brain.
- **Open (CTRL + O)**: Opens and loads a saved Brain file for editing. No boot behavior or other startup programming is run by the Brain when using this option.
- **Run After Load (CTRL + R)**: Opens and loads a saved Brain file, and then runs any boot behavior or other startup programming.
- **Recent Files:** Displays a list of recently opened or modified Brain files.
- **Merge File**: Merges another saved Brain file with the currently loaded Brain.
  - ***Note:*** *This feature can also be performed using scripting or the SILVIA APIs.*
- **Import Data**: Inserts data from an external file into the currently loaded brain file.
- **Export…:** Exports the Brain file as a .txt file for use in the Unity build environment.
- **Save (CTRL + S)**: Saves the currently loaded Brain file, overwriting the previously saved version.
- **Save As…**: Saves the currently loaded Brain file as a new file.

- **Save All (Split) (CTRL + Shift + S):** Saves each group in the currently loaded Brain file into separate Brain files. Each new Brain file is saved into the AI Brains subfolder and is named according to its designation in the Behavior tree.
- **Note**: This function is not recommended for general use; it is intended for specific use cases only. **Open Last File on Launch:** Automatically opens the last Brain file when application is launched.
- **Quit**: Closes the SILVIA Studio tool without saving.

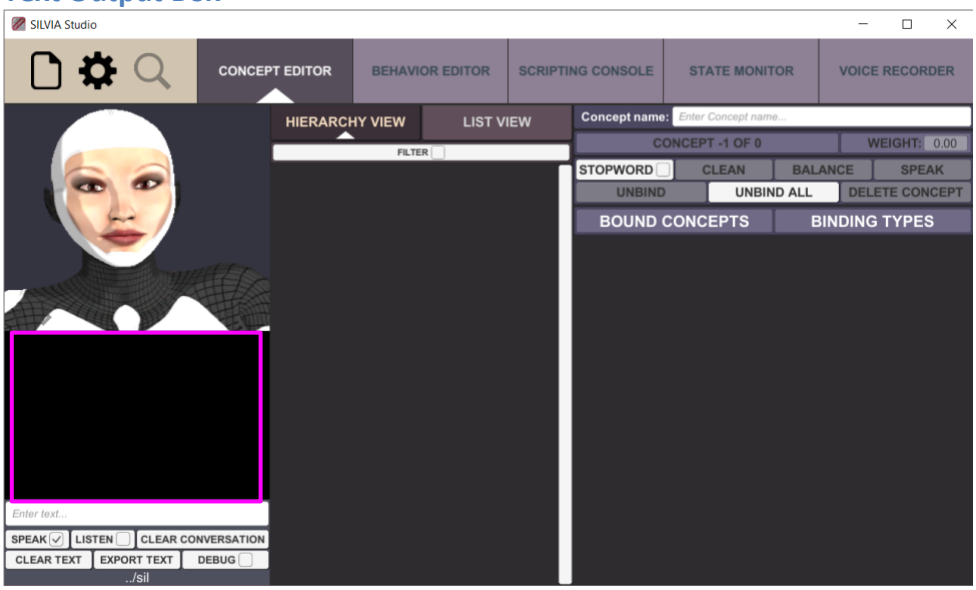
Face



The stock animated Face

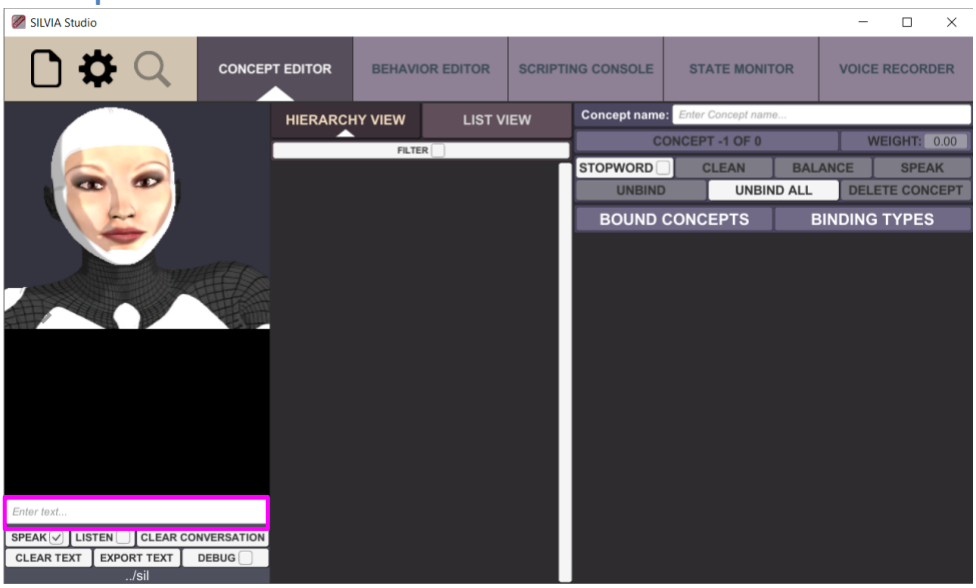
SILVIA Studio loads the default animated Face when creating a new Brain file. Presently the only face available is the default.

Text Output Box



This window displays text output from both the user, via microphone, or the Text Input Box (see below), and the SILVIA Brain.

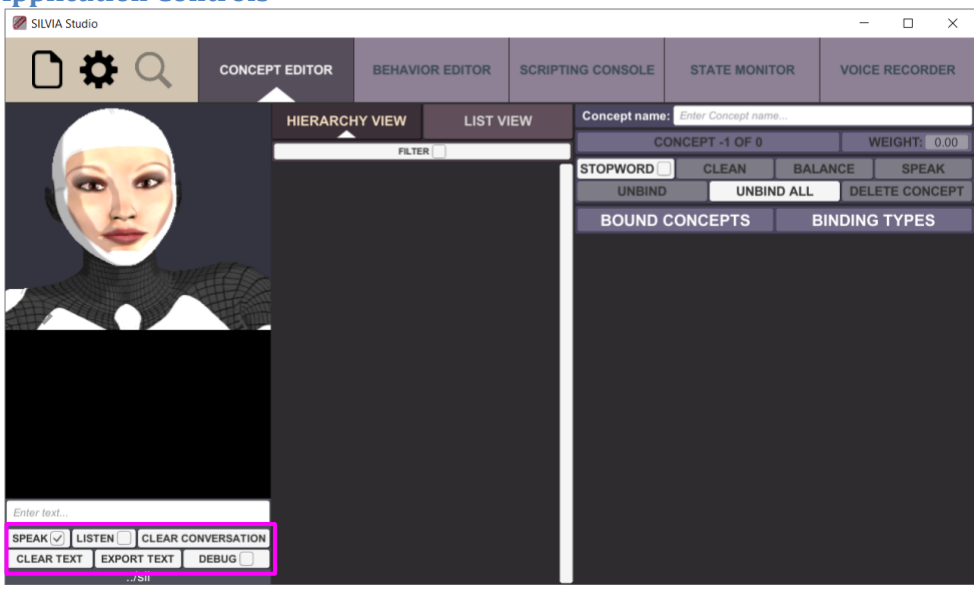
Text Input Box



The text input area for users. Enter text in this box to test the SILVIA Brain's responses.

- **Note: Silvia can be configured to automatically translate input text from one human language to another. Please contact Cognitive Code for more information on this option.**

Application Controls



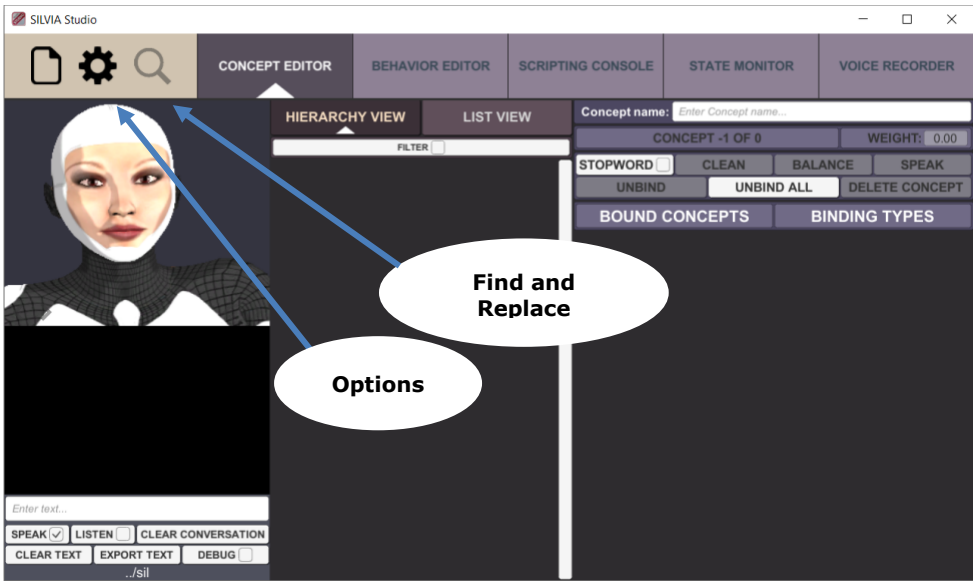
- **Speak:** Toggles the AI voice on and off. When set to off, responses will be displayed in the Text Output Box.
- **Listen:** Toggles the microphone on and off. When enabled, the SILVIA Brain listens to the microphone for voice interaction from the user, and then responds. The title bar will display the word "Listening" when Listen is enabled.

- ***Note:*** *The user can also press the* ***Enter*** *key to toggle Listening mode.*

- **Clear Conversation:** Clears the SILVIA Brain's conversation history. The Brain remembers conversations and uses that history to personalize conversations. Pressing this button clears the conversation history from the Brain and starts over.
- **Clear Text:** Clears text from the Text Output Box but does not clear conversation history
- **Export Text:** Not to be confused with the file menu option, Export Text on the Control Panel saves the current dialog to a text file.
- **Debug:** Enables debugging output that provides detailed information about interactions, such as the specific behaviors that were triggered during a response, etc. This information is displayed in the Text Output Box.

Options and Find & Replace

Select the gear icon next to the file menu for options.



Options

- **Avatar**: Option to have animated face on or off.
- **Language:** Changes the language of the application.
- **Restores default:** Clears application to default settings.

SILVIA Voice

SILVIA uses the standard Windows 10 voice font by default. The user is able to switch to a different preferred voice font if desired. However, the SILVIA Core runtime provides a voice font that can be deployed in applications.

Voice fonts can be switched by running a boot script in the SILVIA Brian file. An example of one is:

Example Usage (C#)

```
bool success = _core.ApiApp().SetVoiceFont("Female", "Audrey16", 0);
```

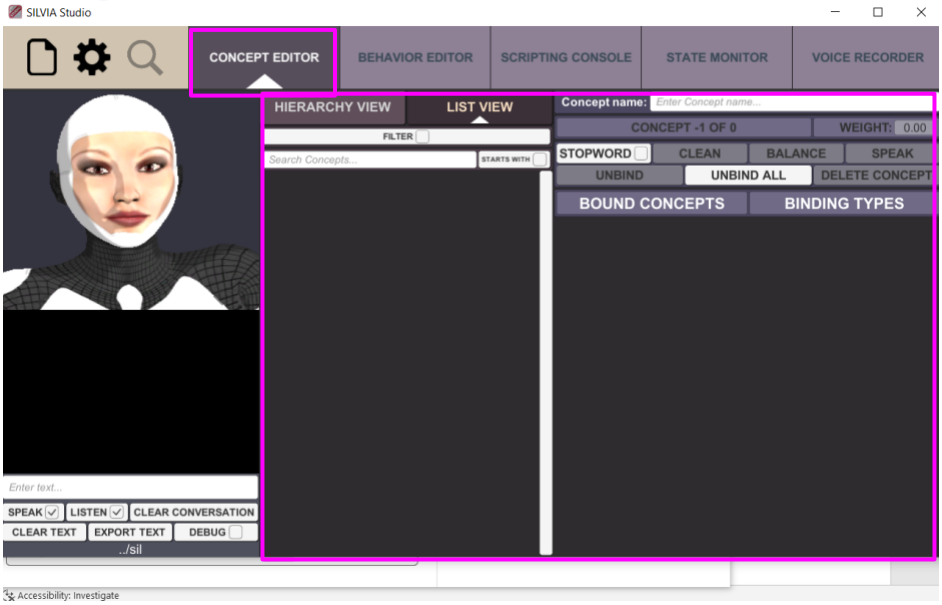
Example Usage (Lua)

```
success = silvia.app.setVoiceFont("Female", "Audrey16", 0)
```

Parameters

gender	The string to specify if the desired font is "Male" or "Female"
fontName	The string to specify the unique name of the font
rate	The numeric speaking rate of the voice. For MSWindows, this is between -10 and 10

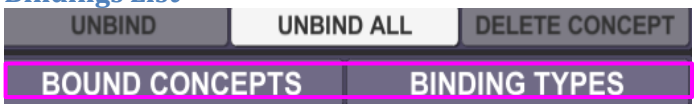
Concept Editor



Concept Browser

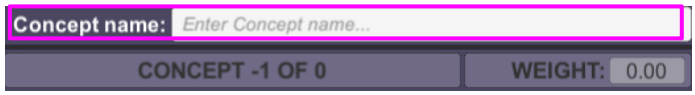
The Concept Browser is an alphabetical tree list view of all existing concepts in the Brain file. Concepts are automatically generated from words within a behavior, and can be manually modified or created in the Concept Editor.

Bindings List



These fields allow the user to define different related concepts and their type to the main concept. This allows to user to define words that would be synonyms, antonyms, plurals, or even the pronunciation of a concept, and attach those definitions to a specific concept.

Name



Displays the name of the concept being edited.

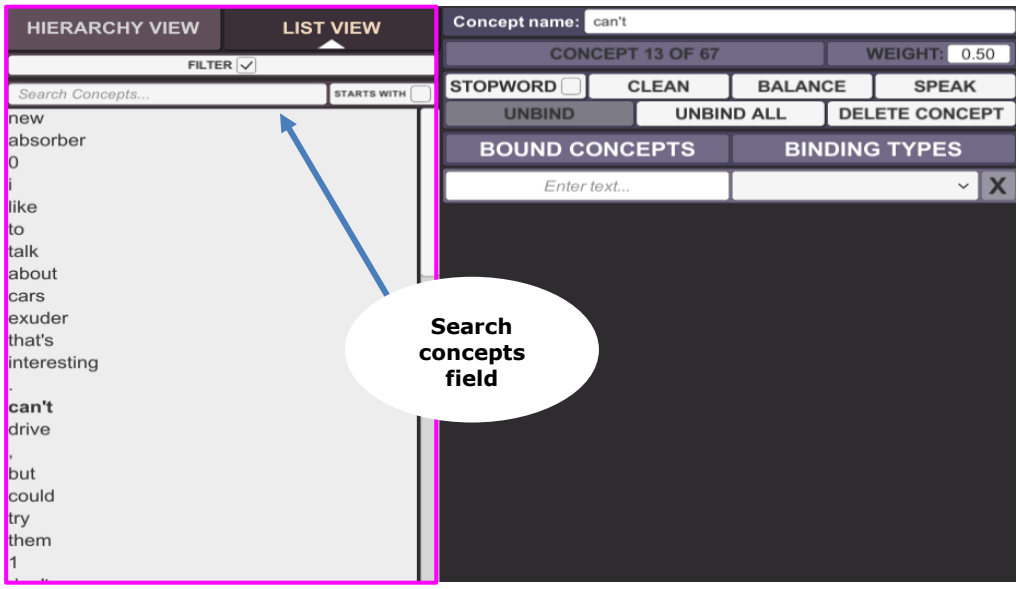
- **To create a new concept**: Type a unique name in the text field and hit enter, a new concept with

that name will be created and added to the tree list view.

- **To edit an existing concept**: Type the name of an existing concept and hit enter, that concept will open in the editor.

Hierarchy and List View

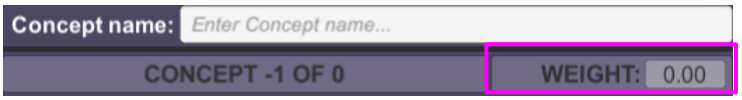
Concepts are stored and organized in hierarchical (i.e., alphabetical, numerical) and list views. To navigate for specific concepts, use the filter option (found in both Hierarchy View and List View) or the 'Search Concepts' field (found in List View).



Filter items include:

- **Stopword**: Stopword (i.e., the, a, an) are words that are usually ignored by natural language engines. Checking this option will incorporate stopwords into your search.
- **Has binding***:* Will include concepts that have additional relationships to another concept.
- **Has no binding**: Will include concepts that have no additional relationships to another concept.

Weight



Weight determines the importance of a concept. The weight value is a coefficient between 0 and 1.0, the default value is 0.50.

Weights are dynamically generated by the program as content is created in the Brain, but can be manually overridden by entering in a desired value.

To manually change weight: Use the up and down arrow keys on the weight text box, or manually type in the desired weight in the weight text box.

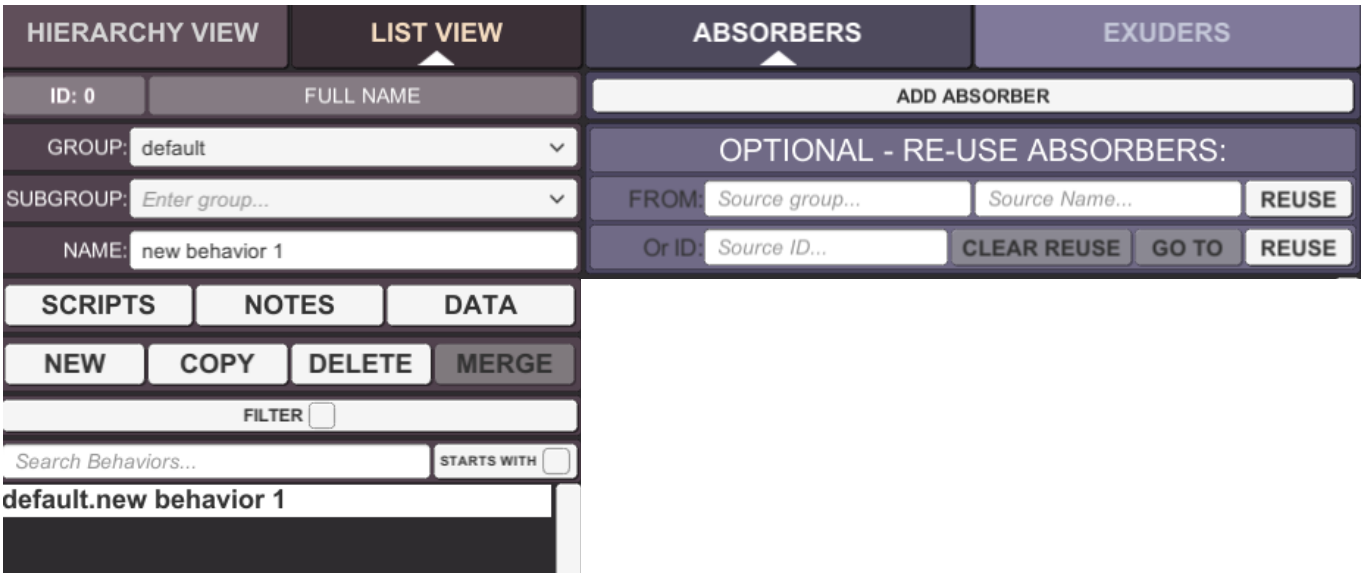
Generally, users should rely on the internal algorithms to adjust concept weights automatically instead of adjusting each one themselves. However, they may have to make hand adjustments to anything that

seems like a glaring anomaly. For example, if a user finds that the concept "artificial intelligence" has a weight of "0.1", or the concept "the" has a weight of "0.7". Both extremes might throw off SILVIA's thought processes and produce odd results.

Concept Buttons

- **Stopword:** Incorporates Stopwords (i.e., the, an, a) that are not ordinarily included in natural language processing.
- **Clean:** Removes concepts from the database that are no longer in use or connected.
- **Balance:** Automatically creates weights for all the concepts in the current Brain file. This is especially useful for readjusting the weights of concepts after creating a lot of new content
- **Speak:** Makes SILVIA say whatever the current concept is. This can be used to test SILVIA's text to speech output. If SILVIA's pronunciation of the concept is incorrect, users can manually spell the word out in phonetics in the bound concept input, and select **verbal** as the binding type to have SILVIA output the correct pronunciation. Users may also use this to have SILVIA pronounce the longer form of an abbreviation.
- **Unbind:** Removes all bindings from the currently selected concept.
    - **Example:** If a concept named 'text' has a bound concept of 'writing' and binding type of 'synonym' using the unbind button will delete the bound concept and binding type, thus leaving the concept in its original state with no related points in the bound concept or binding point fields.
- **Unbind All:** Caution! This button will delete every word and concept from the Concept tree, leaving an empty Concept tree. This button should only be used with full knowledge of the outcome.
- **Delete:** Removes the current concept and all its bindings from the concept editor. Only concepts that are not in-use by an Absorber or Exuder in the behavior data can be deleted.

Behavior Editor



The Behavior Editor is one of the most robust tools in the SILVIA Brain suite. In this editor users may create a wide range of inputs and outputs, as well as associated scripts. At its most basic level a Behavior is node in the SILVIA Brain that handles a particular interaction, like a greeting response or an answer to a question.

There are three reserved name behaviors in the SILVIA Brain, they are:

- **Boot:** A behavior, or set of behaviors, that execute upon starting up a SILVIA Brain.
- **Default:** A behavior response for when SILVIA does not know how to respond to a specific input.
- **Exit:** A customizable behavior that is called before exiting. This behavior can be set to store user information or conversation store states when exiting.

Group, Subgroup, and Name

- **Group:** A user-defined group for the behavior.
- **Subgroup:** A user-defined subgroup for the behavior. This is for organizational purposes only. Unlike Group and Name, subgroup has no effect on SILVIA's understanding of concepts.
- **Name:** A user-defined name that together with the group provide a unique key for the behavior.

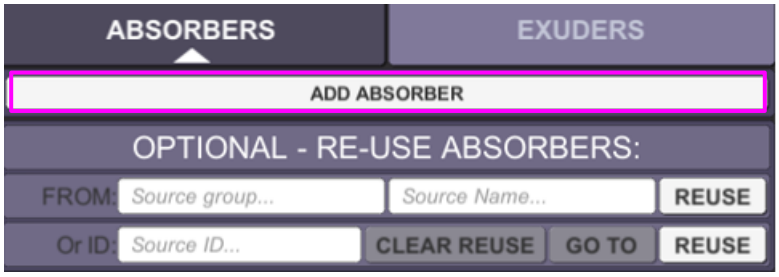
Behavior Editor Actions

- **Scripts:** Shortcut to open Scripting Console.
- **Notes:** Displays a pop-up window to input or edit developer notes for a behavior. This is useful for complex behaviors that may need explanation. The notes function in the same way as comments for other forms of code
- **Data:** Displays a pop-up window that a user may input text-based (plain text or XML) data that should be attached to a behavior, like an image file from the web that should be displayed in relation to the behavior. The information in the Data bucket can be addressed within the C# scripting in the behavior
- **New:** Allows the user to create a new behavior.
- **Copy:** Allows the user to duplicate the current behavior, also allows the user to edit the newly copied behavior.
- **Delete:** Removes the currently selected behavior.
- **Merge:** This merges the current behavior with another behavior (specified by the ID in the Merge text-box). Merging two behaviors will delete the behavior that was merged into the current behavior. This function is useful for consolidating behaviors that have duplicate or similar Absorbers and Exuders.

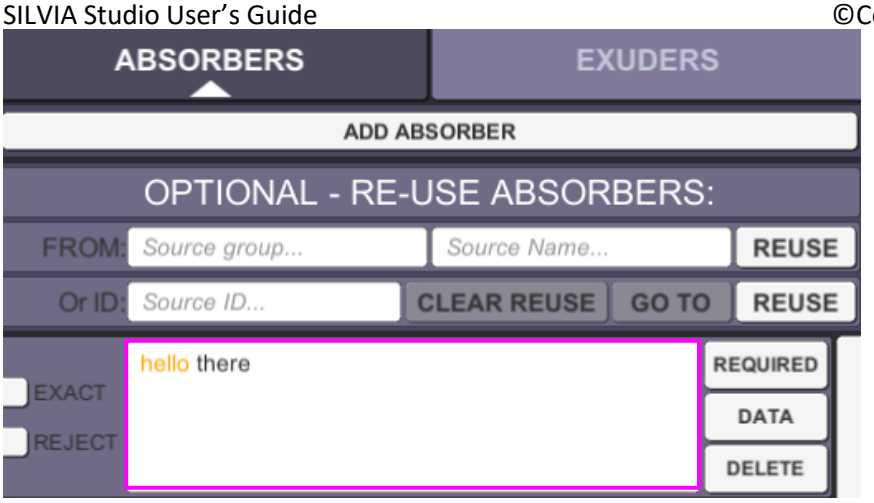
Absorbers

Absorber Definition: An Absorber is a language-specific user input that SILVIA can respond to. The input may be typed in the Text Input box, or understood from microphone input and displayed in the Text Output box.

There can be multiple Absorbers for a Behavior. To add new Absorbers-click 'Add Absorber' button.



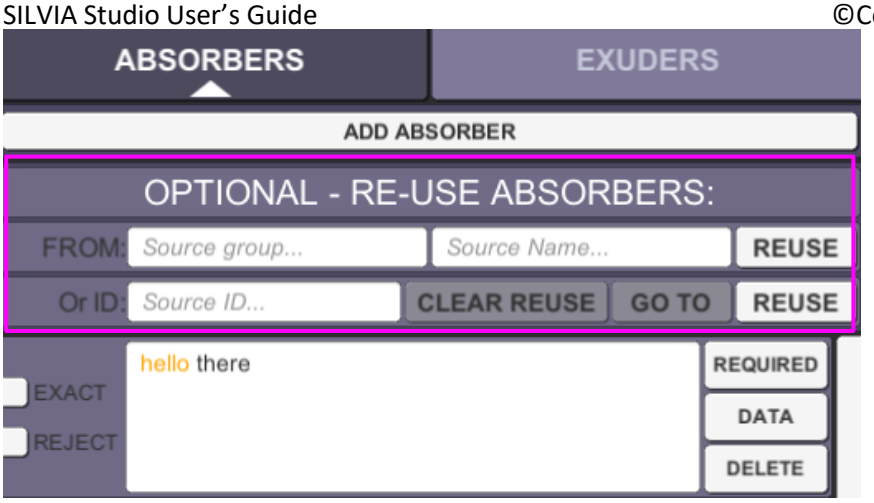
SILVIA looks for concepts instead of exact string matches. For example, if you have an Absorber that is 'Hello there', typing either 'Hello' or 'Hello there' into the text output box will bring up SILVIA's Exuder responses. To SILVIA the two concepts are similar enough to mean the same thing. However, typing 'Go there' will also bring up SILVIA's 'Hello' Exuder responses because both words in the Absorber hold equal important.



To prevent all words in an Absorber from holding equal importance, users can have behaviors trigger off specific concepts (words) in the Absorber. Select the 'required' button to make the word yellow. This will make that concept a requirement for SILVIA to respond with the associated Exuders. This means typing 'Hello' or 'Hello there' will bring up SILVIA's Exuder responses, while typing 'Go there' will no longer do so.

- ***Note**: All concepts that are highlighted must be present in the input for the behavior to be triggered.*

- **Exact:** Selecting this checkbox requires that the user input exactly match the Absorber. Using the example above, saying 'Hello' or 'Go there' will not trigger SILVIA's Exuder responses, only typing 'Hello there' will. This is useful for gating behavior responses to specific language.
    - ***Tip:** Use the Concept Editor to create bound relationships for variations of the word 'Hello' (Hi, Hiya, Hey there, Aloha, etc.)*
- **Reject:** Selecting this checkbox makes sure SILVIA does not trigger her Exuder responses for the behavior.
    - **Example:** There is an Absorber to respond to the input, 'Your Favorite Movie.' But this behavior will also get triggered by the input, 'Your Least Favorite Movie.' To correct this, add a rejection Absorber to filter out the 'Your Least Favorite Move.'
- **Required**: To ensure Silvia knows that a word must be present to prompt a given response, select the word, then select 'Required'. This will turn the word from black to yellow, signifying that it will be a requirement in a particular utterance.
- **Data:** Displays a pop-up window that a user may input text-based (plain text or XML) data that should be attached to an Absorber. This is a reserved data space for use by external applications, and is not specifically related to a SILVIA brain file. It is purely for user-defined purposes.
- **Delete:** Removes the Absorber from the behavior.

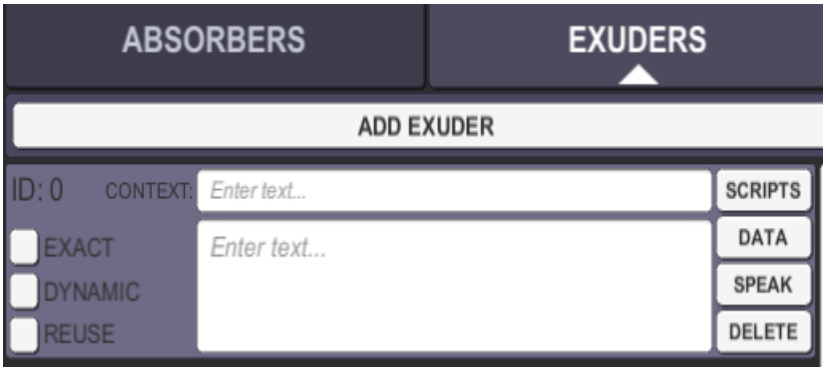


- **Optional – Re-use Absorbers:** Used to populate the Absorber in the currently selected behavior, with the Absorbers from another behavior by typing in the group and the name into the separate text input boxes. This is useful for commonly used Absorbers with multiple contexts.
    - **Example:** If there is behavior for 'Yes' that is located 'Default – Response – Yes' and a new behavior for 'Yes' at 'MyGroup – Response – Yes', then filling in the textboxes for the new behavior with 'Default' and 'Yes' will populate the new behavior with the Absorbers from 'Default – Response – Yes'.

If there are duplicate Absorbers within the same tree, the text field will turn red to alert the user to the error. A button will appear between the Data and Delete buttons that will have the identifying number of where the duplication occurred. Pressing this number allows the user to toggle between the duplicates. Users can fix duplicates by using the merge function in the behavior editor.

The concept editor also relates to the Absorber and Exuder tab. Adding the behavior 'Hello' with the Absorber 'Hello' and the Exuder 'Hello to you as well.' adds all words used to the concept list view. From the concept editor a user may add synonyms to the concept 'Hello' via the bindings list, such as 'Hi' or 'Hey'. The end result is that SILVIA will recognize those synonyms in the Absorber input as well as be able to sub them into her Exuder outputs, giving more variety in responses without having to create specific multiple Absorbers or Exuders. Absorbers can be added by Source ID, Group Name, or Source Name.

Exuders

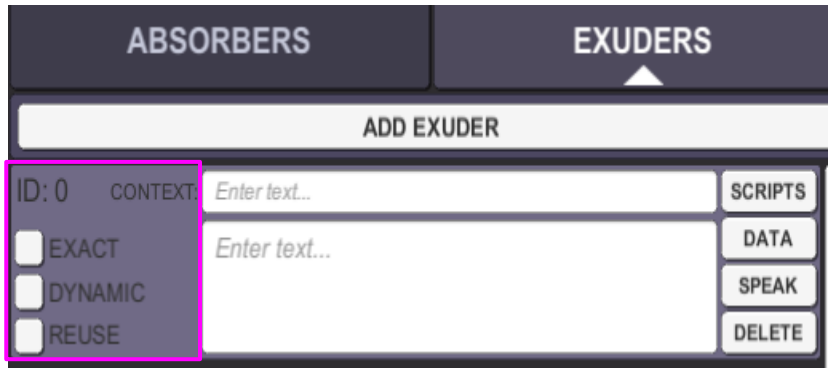


Exuder Definition: An Exuder is a language-specific filter to help SILVIA construct human language output.

There can be multiple Exuders for a behavior. To add new Exuders right-click the blue area in the Absorber tab and select 'New Exuder'.

When working within a SILVIA Brain file, Exuders that are part of an already saved boot behavior will trigger upon startup. Generally, SILVIA needs to have an Absorber input before she can generate an Exuder output.

- **Exuder Text:** The input box for SILVIA Exuder responses. If a concept is within square brackets [] it will automatically be treated as dynamic, independent of surrounding content. For example, [silence] in an Exuder will suppress verbal output. Variables preceded by $ or $_ may be used in Exuders, 'system' variables include $_wild, $_wild2, $_a, $_u, etc.

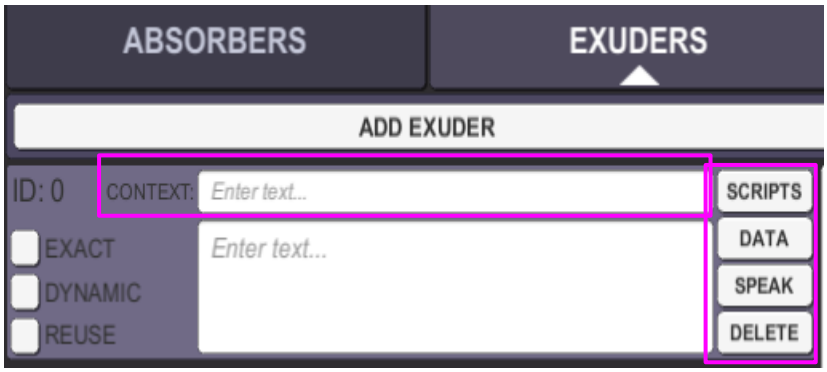


There are several options to flag that will change how SILVIA uses Exuder responses:

- **Exact:** When flagged, SILVIA's Exuder response to the behavior's Absorber will be exactly what is typed into the Exuder text. SILVIA will not substitute words or phrases that have been bound through the Concept Editor.
- **Dynamic:** When flagged, SILVIA will use the words in the Exuder to generate dynamic content that pulls from any other Exuders that have been flagged with the 'Re-Use' flag. When flagging dynamic content, the Exuder text box should not contain full sentences, just concepts.
-

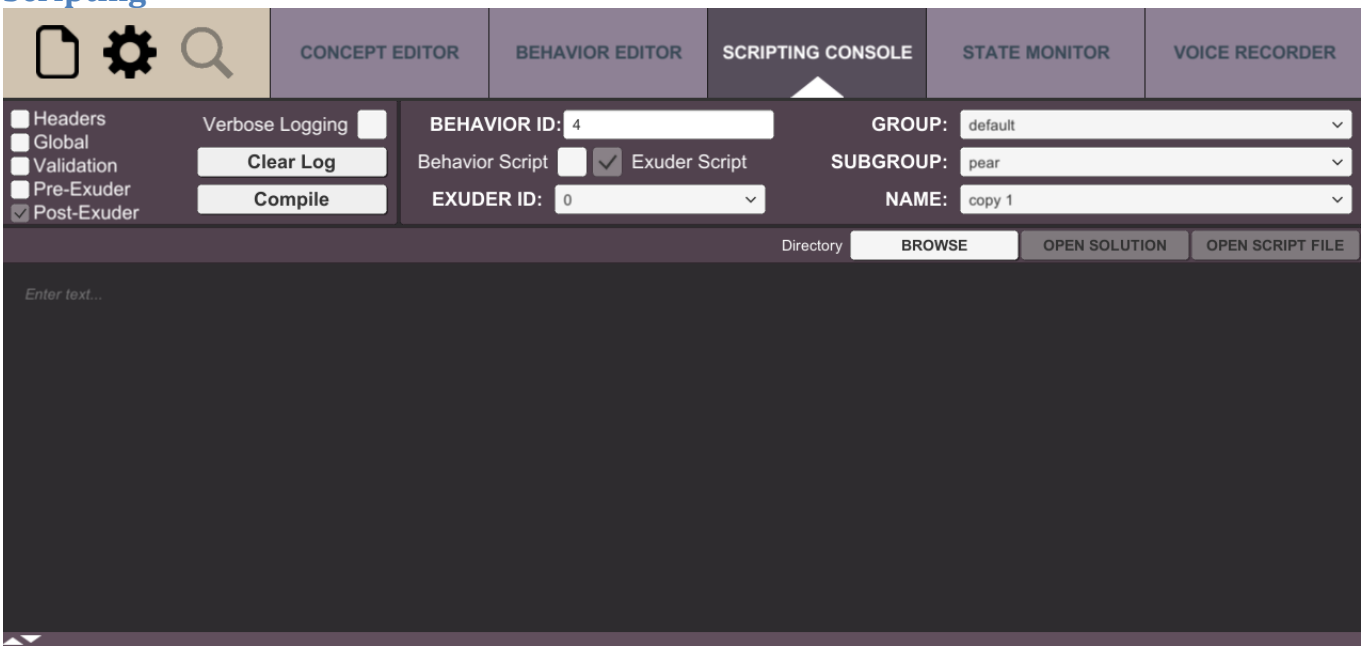
- **Example:**
  - Absorber:-→I'm hungry
  - Exuder:→ Restaurant
- With the 'Dynamic' box checked, SILVIA will synthesize a dynamic response from the concept 'Restaurant'. Any corresponding Exuders that have been flagged for 'Re-Use' that are relevant will be used by SILVIA to construct her own response.

- **Re-use:** Flags the Exuder response text as being reusable by other behaviors that are generating content dynamically.



- **Context:** Words can be placed in this field to assist SILVIA in selecting contextually relevant Exuders when the concept of the Absorber has multiple meanings. The words placed in the Context field must already be present in SILVIA's recent conversational memory in order to be considered. You can list multiple words within brackets, and SILVIA will consider any one of them as relevant. All words outside of brackets are required in order for the Exuder to be used.
- **Scripts:** Shortcut to open scripting console.
- **Data:** Displays a pop-up window that a user may input text-based (plain text or XML) data that should be attached to an Exuder.
- **Speak:** Makes SILVIA say whatever is in the Exuder text box exactly, this can be used to test SILVIA's text-to-speech output.
- **Delete**: Removes the Exuder from the behavior. The last Exuder may not be removed, as there must always be at least one per behavior.

Scripting



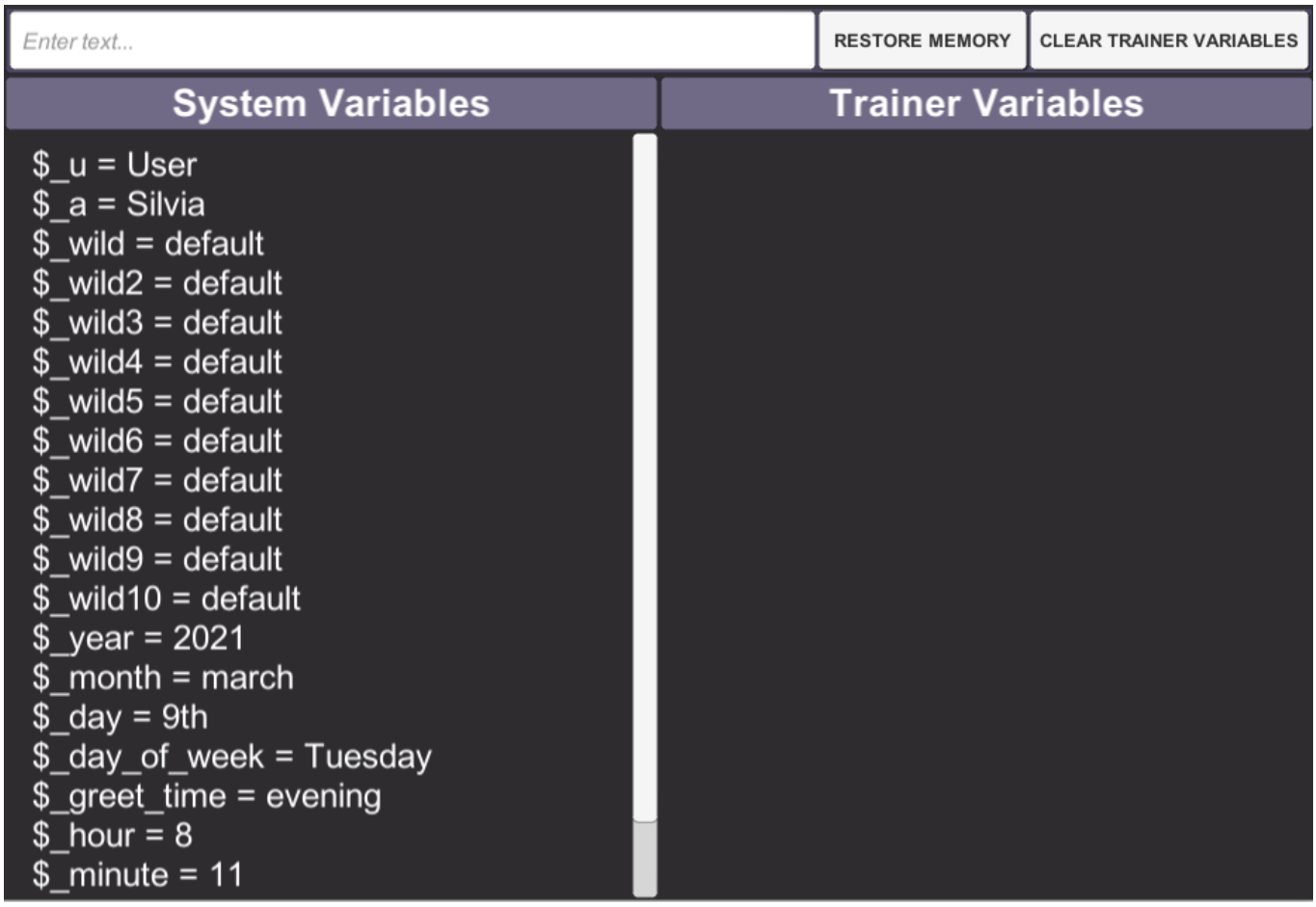
Each behavior and Exuder has embedded scripting. Scripting can be done one of two ways, through C# or LUA. However, C# scripting is more portable to all of the platforms that SILVIA supports, and LUA only works on PC and server applications. LUA is present as a scripting language because of historical usage, but it is actually deprecated. Support for LUA is not official, but it is retained in SILVIA Studio because of legacy applications prior to the implementation of embedded C# scripting. Users may mix and match scripting languages, but it is recommended that C# be primarily used.

Every time a behavior and/or an Exuder is invoked by SILVIA to express a thought, any associated scripts are executed as well. For instance, SILVIA could use an Exuder to express the concept, "I like science fiction movies". If there is an attached script, this script could invoke the display of a movie clip from the movie 2001: A Space Odyssey. Later, if the user asks SILVIA if she likes science fiction, the potential Exuder responses could include one that says "I already told you that I do." However, attached to that particular Exuder would be a validation script or other context cue that checks if SILVIA was already asked the question, and rejects the Exuder from consideration if the question was not yet asked by the user, potentially defaulting to a response of something like, "Oh that's great. I like sci fi as well".

- **Headers:** Headers of a C# script. This is usually where you put the "using' statements, i.e., using System; using CognitiveCode.Silvia.Api.
- **Global**: Script that is true globally throughout the application.
- **Validation:** Script that determines if the behavior will be considered for interaction in deeper levels in language searches. If the behavior returns a false value, it will not be considered.
- **Pre-Exuder:** Script that does something prior to the output generation. If the behavior is selected to be invoked, the pre-Exuder script is executed before output of any associated Exuder.
- **Post-Exuder:** Script that does something post output generation. After the output is sent back to the application, additional actions can be performed, for instance talking to a database, moving to another behavior, or setting some post output conditions.
- **Verbose Logging**: Ensures every item being executed will be logged.

- **Clear Log**: Clears text in Scripting console.
- **Compile:** Compiles the written C# script for execution within the behavior.
- **Browse:** Opens file manager.
- **Open Solution:** Opens Microsoft Visual Studio solutions (i.e., with extension .sln).
- **Open Script File:** Opens files with extension .cs.

State Viewer Monitor



This viewer shows all variables and events within the current SILVIA Brain file. The system comes loaded with a number of system level variables that will always be present within the file. All files have 10 different wildcard variables numbered wild, wild 2, 3, 4, 5, 6, 7, 8, 9, and 10 that can be put into Absorbers as the star character.

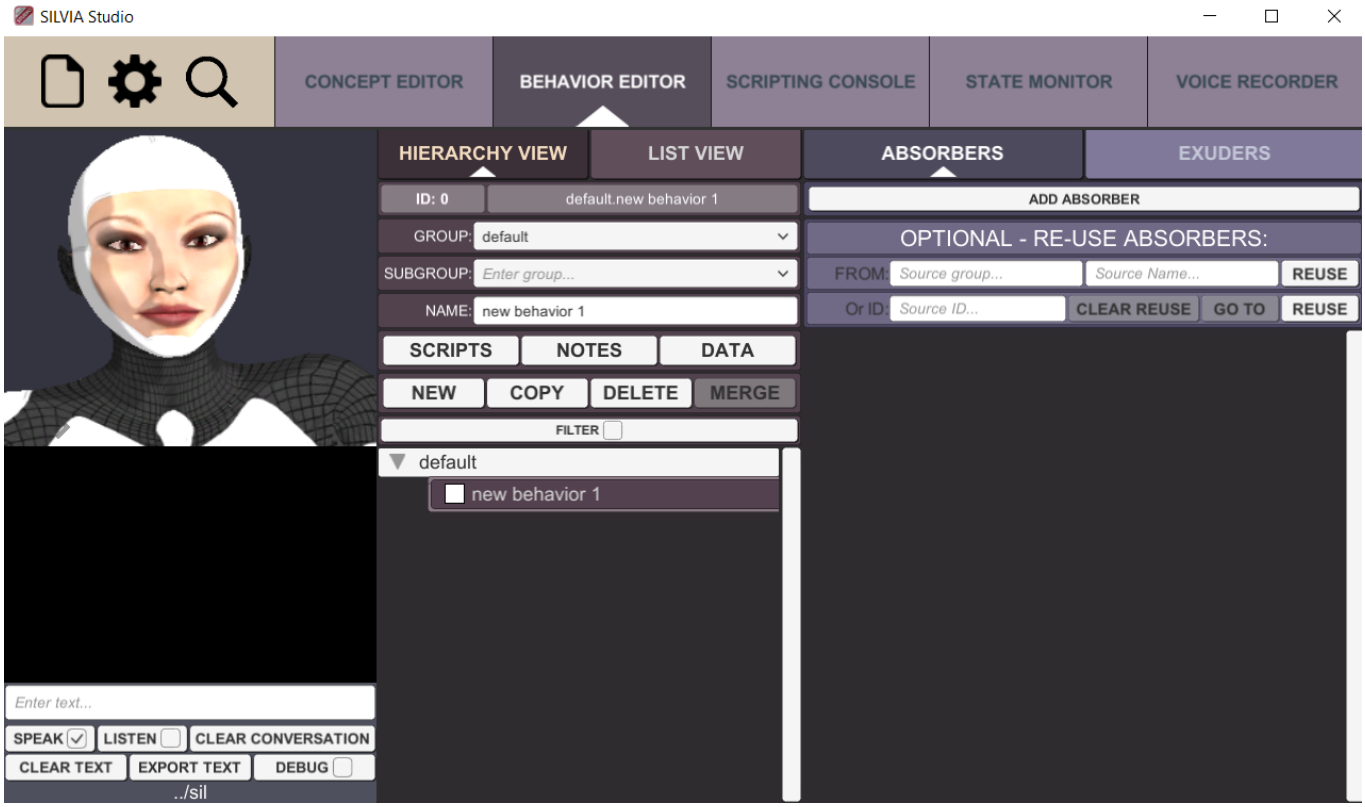
Voice Recorder

Please note Voice Recorder is a future feature.

Training

Creating Simple Behaviors

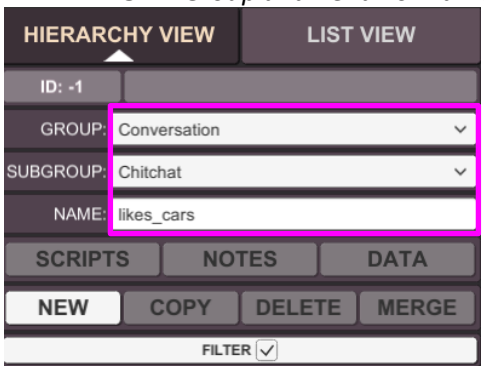
Start a new session and select the preferred audio device for input and/or output. Once SILVIA Studio is launched the following main application window will appear.



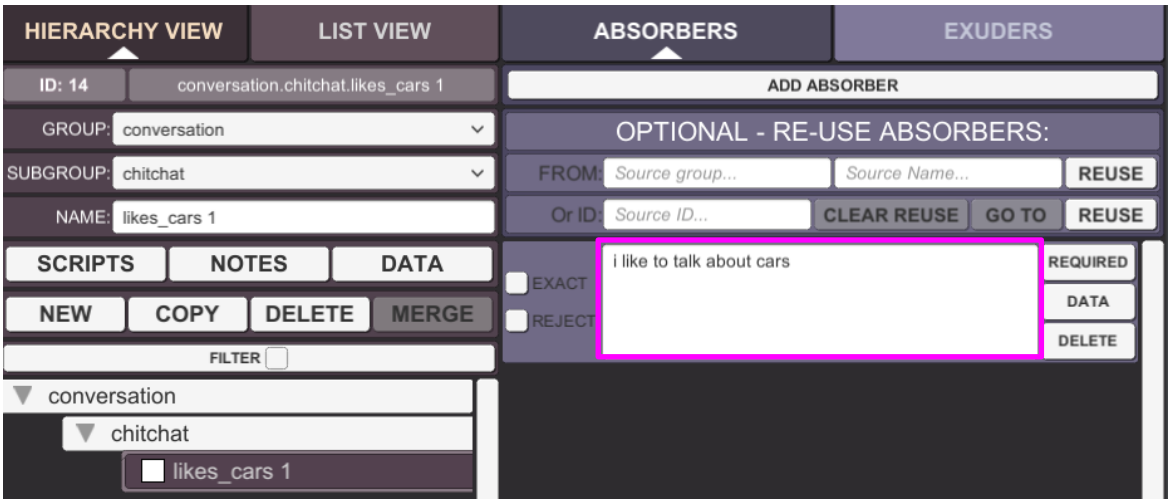
The behavior editor (F2) is the default starting editor. Since this is a new session, only a single behavior has already been created and placed in the default group with a default name.

Step 1: Change the name of the Group, Sub-Group, and Behavior Name. You can change names by using the text boxes in the 'behaviors' tab. For the purpose of this example change the Group name to 'conversation', the Sub-Group name to 'chitchat', and the Behavior name to 'likes_cars'.

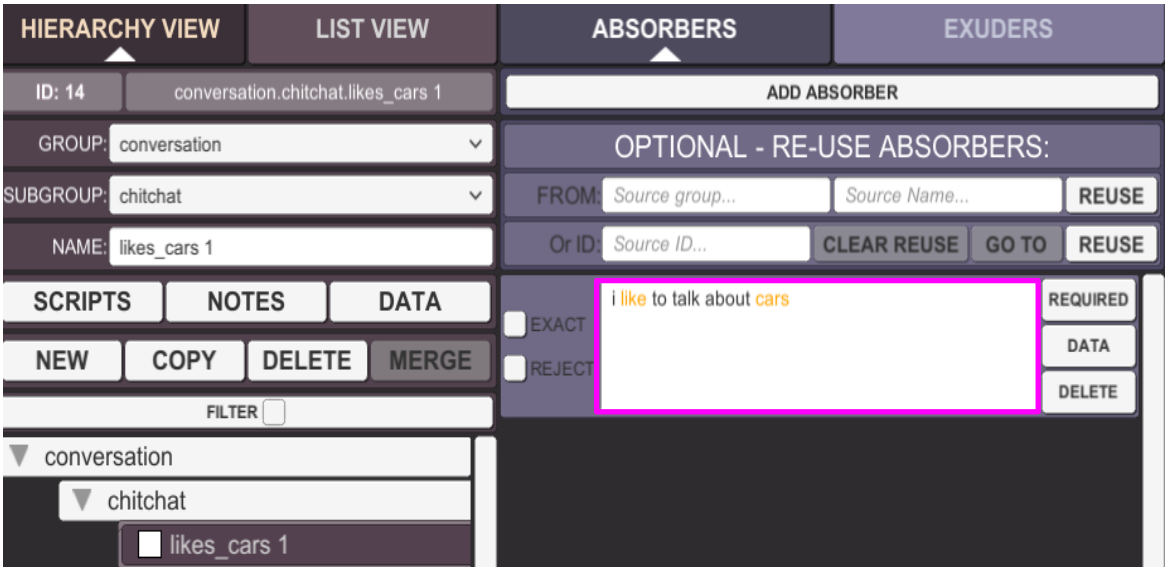
- **NOTE:** *Group and Behavior names cannot contain spaces.*



Step 2: Select the 'Absorbers' tab and select 'Add Absorber' to create a new Absorber. Select the black text box and delete the text 'new Absorber 0' and replace it with 'I like to talk about cars'.

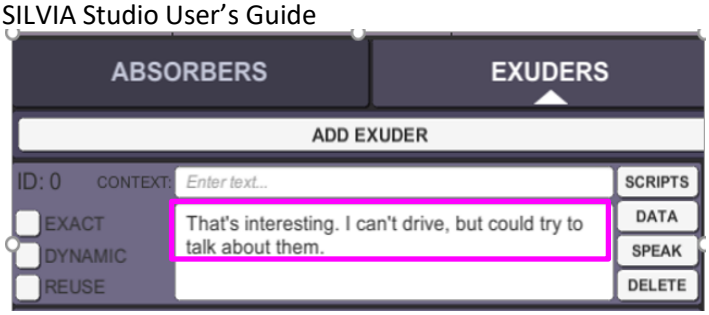


Step 3: Click on 'like' and then select the 'required' button. This concept will now be highlighted in bright yellow. Repeat the same process with "cars." Both like and cars should be bright yellow.

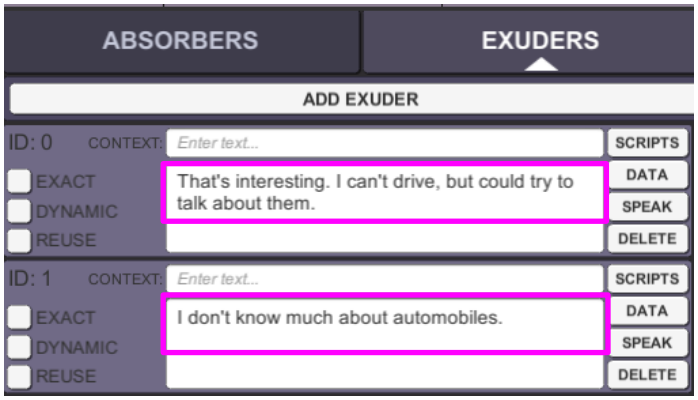


Highlighting the concepts 'like' and 'cars' tells SILVIA that these two concepts are required within the user input for her to use any of the associated Exuder outputs.

Step 4: Select the 'Exuders' tab, and click 'add Exuder'. Here will already be a default Exuder created. Select text box and replace 'New Exuder 1" with 'That's interesting. I can't drive, but I could try to talk about them.'



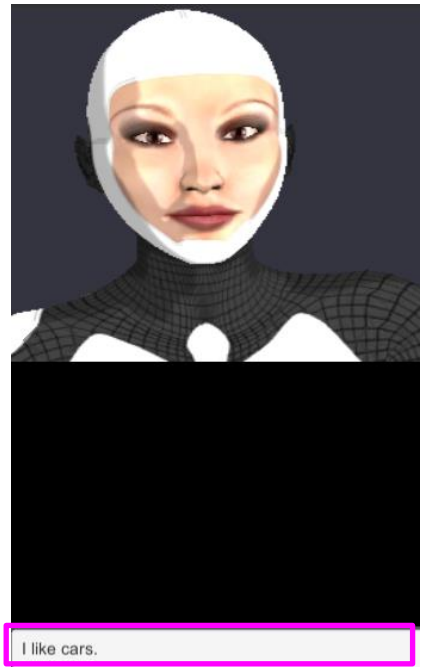
Step 5: Add another Exuder selecting 'Add Exuder'. A new Exuder will appear with the default text 'new Exuder 1' and an index of 1. The index is the number in the upper left corner of each Exuder. Replace the default text with 'I don't know much about automobiles'.



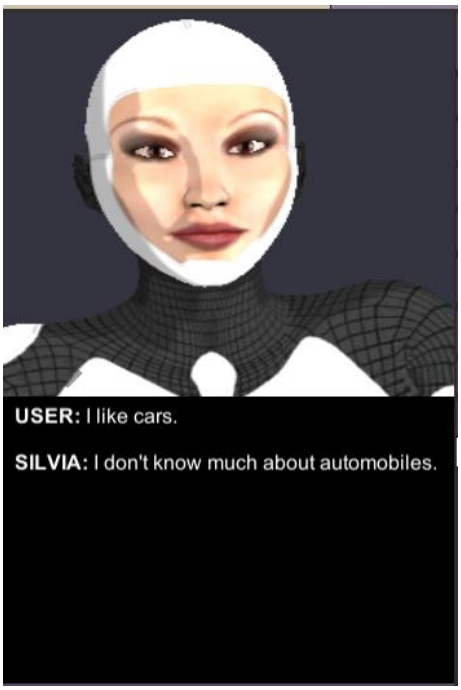
Note: Switching to the Concept Browser (F1) will show that any punctuation that is not part of a word has been split into its own conceptual component. This has no effect on final output during operation, since all punctuation is re-integrated for such output.

Step 6: Test the simple behavior using the interface application on the left side of SILVIA studio.

In the light gray text entry field below the animated face of Silvia write 'I like cars' and press enter.



SILVIA should reply with one of the two Exuder responses assigned to her in the black output window. She will also audibly play the response if the 'speak' button is enabled.



Note: Even though the input does not match the Absorber, it is accepted as valid because the two required concepts from the Absorber 'like' and 'cars' were present.

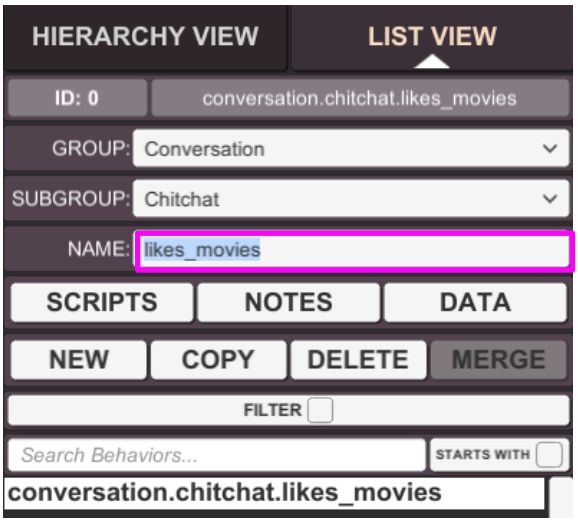
This is how to create a very simple behavior.

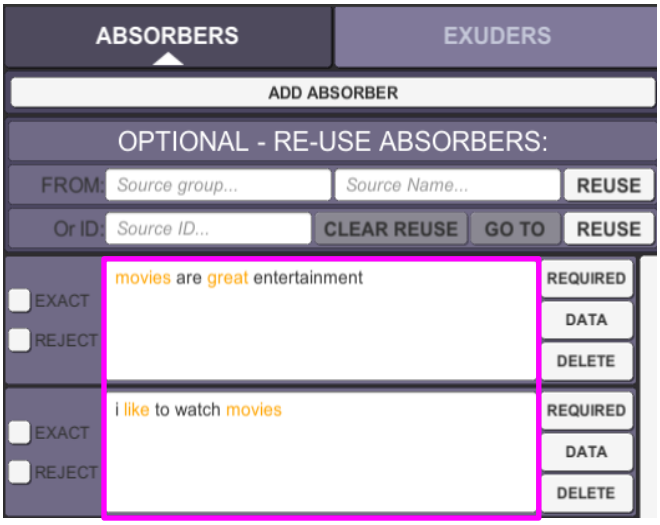
Advanced Behaviors

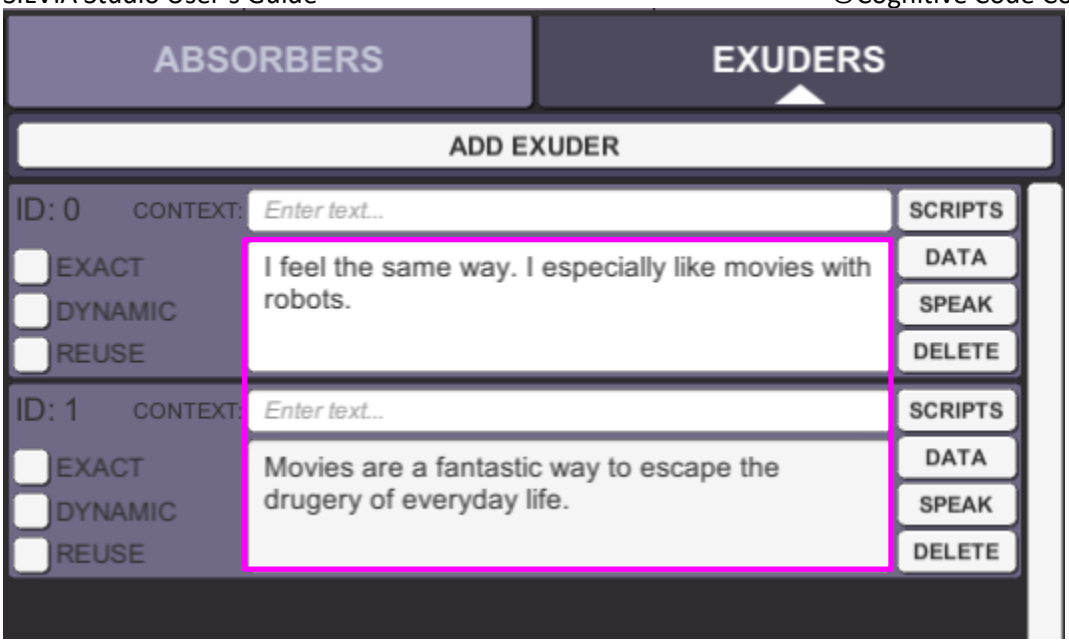
You can expand the previous AI by adding more behaviors, and learning to use some of the other controls and scripting to make behaviors more interesting.

Step 7: - Select the 'Behavior Editor' click the 'New' button.

Like in Step 1, edit the GROUP/SUB-GROUP/NAME fields, the Absorbers, and the Exuders of the new behavior, until the first three tabs look like the following images.







Note that the exact text for the Exuders and Absorbers isn't that important, as long as the critical concepts in the Absorbers are highlighted. As the SILVIA brain grows, this becomes less important because of SILVIA's ability to infer what concepts are most important automatically, but with small sets of data SILVIA needs a little help.

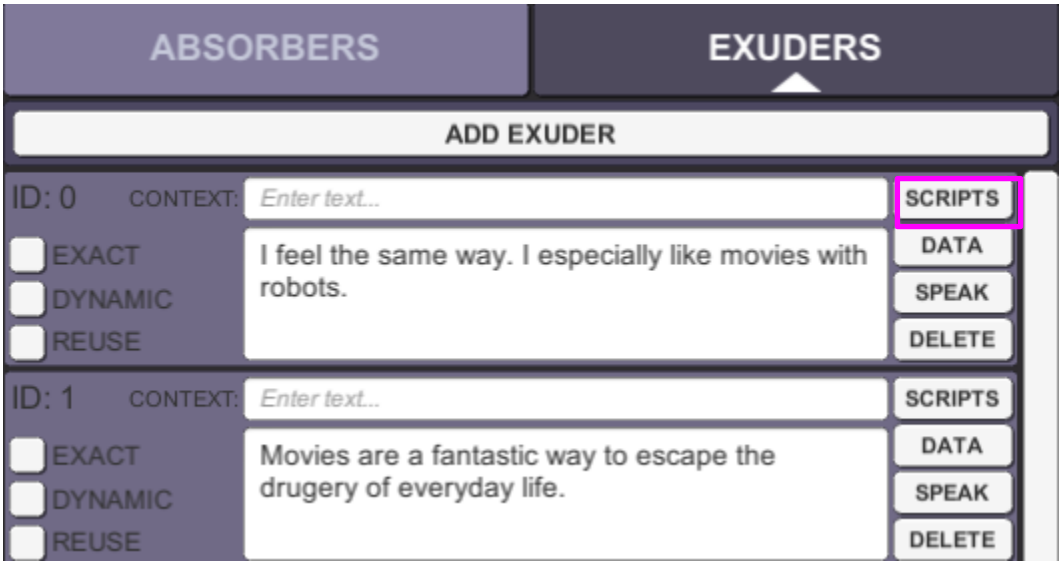
Now there are two sets of behaviors to work with.

Step 8: Enter the text 'I like movies' in the user input box and hit the Enter key.

One of the Exuders from the second new behavior should display as a response. This shows that SILVIA is able to discern the conceptual difference between the sets of Absorbers in each behavior. She has no idea what "cars" or "movies" are yet, but in the abstract, she knows when one or the other is being talked about.

Behaviors can also be added and edited with a script.

Step 9: Go the 'Exuders' tab and click on the Scripts. A separate window with the script editor will pop up.

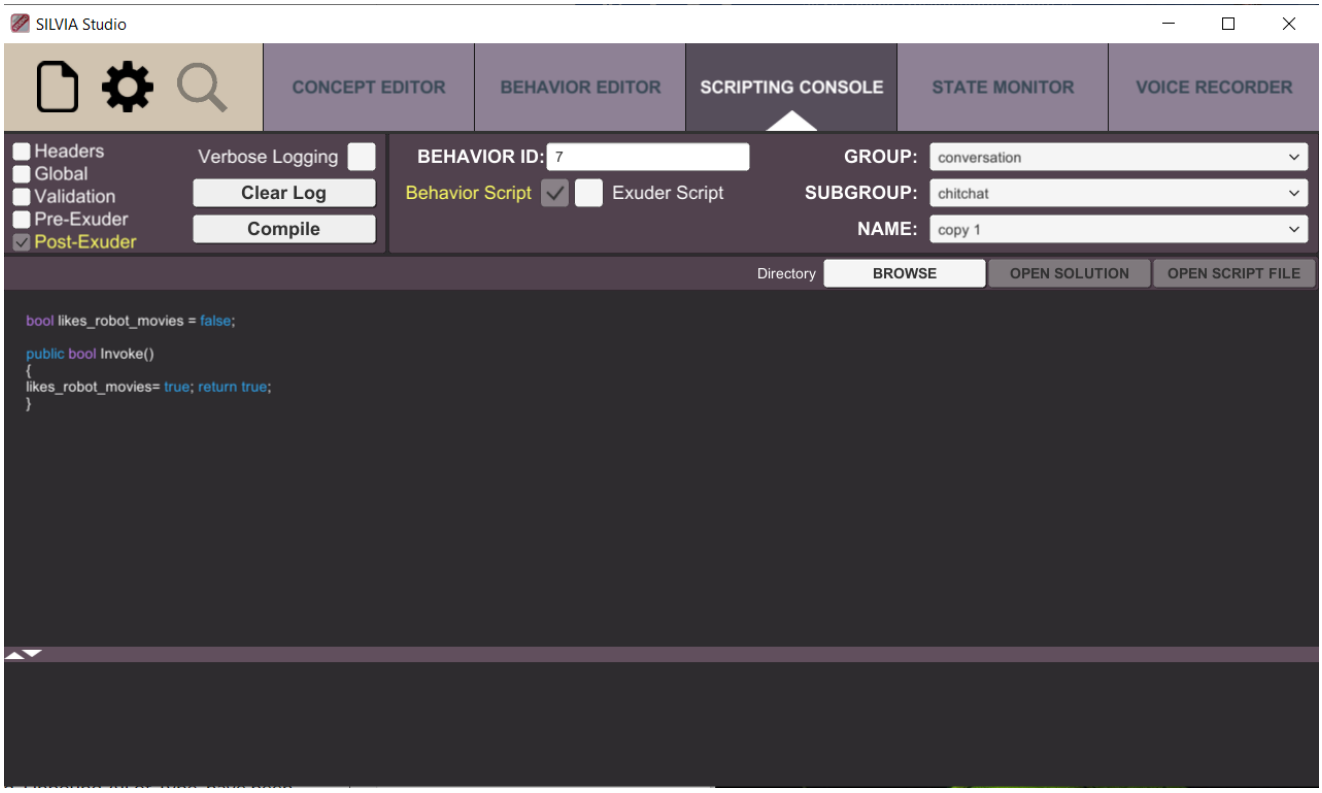


Step 10: The 'Post-Exuder' radio button is highlighted by default. This means that the script will be executed after the Exuder has been invoked. Enter the following block of C# script into the script editor:

```
bool likes_robot_movies = false;

public bool Invoke()
{
        likes_robot_movies = true;
        return true;
}
```

The POST-EXUDER radio text should change to yellow, indicating that there is now a post-Exuder script to be executed. If you do not see the yellow automatically, click away from the Scripting Console and then back into it.



Press the "COMPILE C#" button in the script interface. If the syntax is correct, no error (debug) window will appear and the code will be compiled and ready.

Note: Any C# script code in a SILVIA brain is automatically compiled when loading that brain. The manual process of recompiling is only necessary when editing.

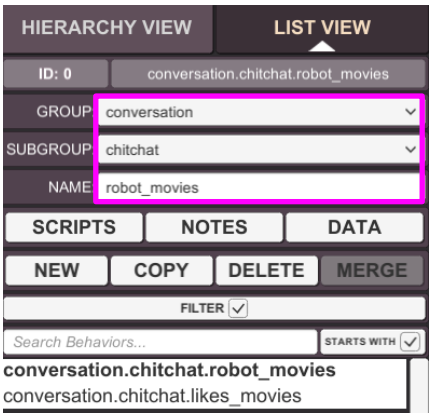
Now there are several lines of 'Post-Exuder' script in Exuder 0 for this new behavior. This means that if Exuder 0 in this behavior is ever used to express an AI response, this script will be invoked after the output is expressed to the user.

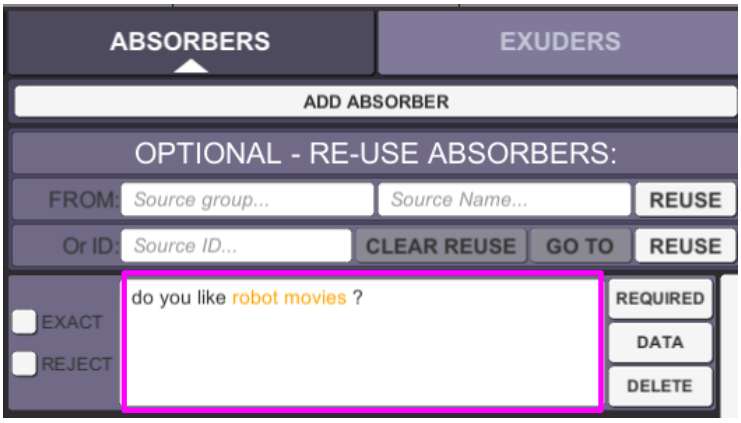
The first line of code in the script declares a global variable and sets it to "false". However, within the standard execution block for the Exuder (Invoke), the value is set to "true" so that it can later be detected that the Exuder was invoked.

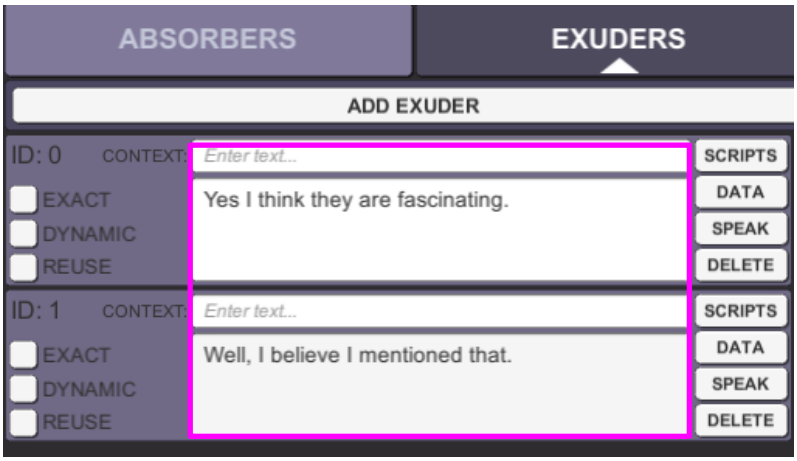
Before testing this new behavior, make another behavior that can test the **likes_robot_movies** variable and do something based on that test:

Step 11: Return to the 'Behaviors' tab in the 'Behavior Editor' and select the 'New Behavior' button in the upper right of the editor.

Step 12: – Edit the GROUP/SUB-GROUP/NAME fields, the Absorbers, and the Exuders of the new behavior, until the first three tabs look like the following images.

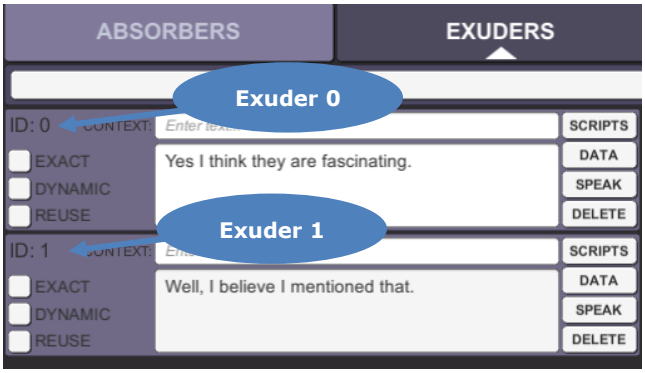






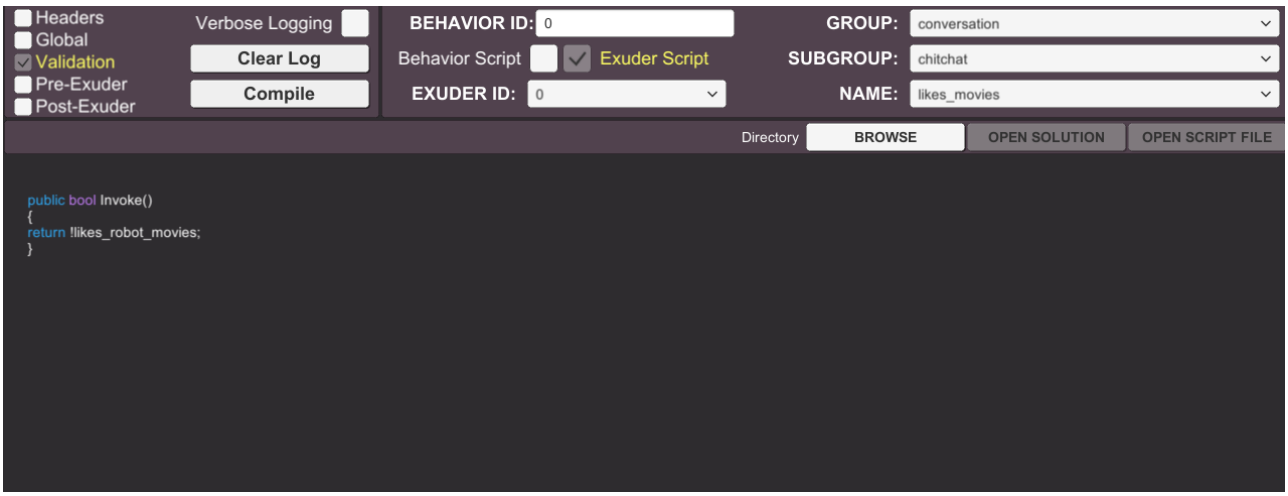
Now there is a third behavior. Add a couple of validation scripts that will constrain which Exuders are used during what circumstances.

Step 13: Go to the 'Exuders' tab and click on the Scripts button on the first exuder (Exuder 0).



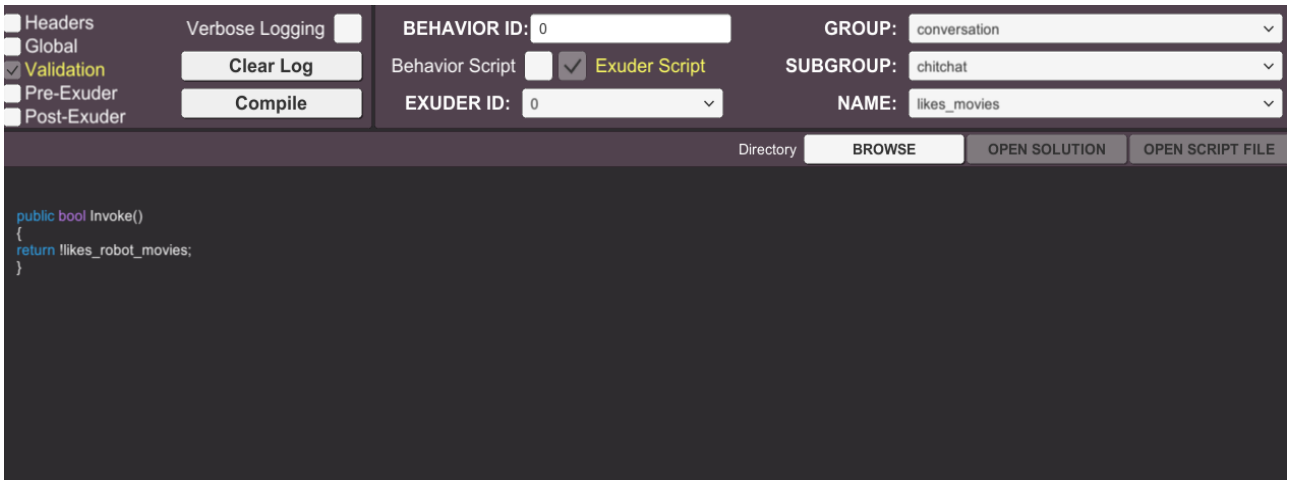
A separate window with the script editor will pop up. By default, the 'Post-Exuder' radio button will be selected. Select the 'Validation' radio button to change the setting, and add the following lines of script to the editor:

```
public bool Invoke()
{
        return !likes_robot_movies;
}
```



Step 14: Click on the script button on the second Exuder (Exuder 1). Do this again to re-open the editor. In the script editor, the 'Validation' script should now be blank. This is fine as the content in the first Exuder (Exuder 0) was automatically saved. Make sure the 'Validation' radio button is selected and add the following lines of script to the editor:

```
public bool Invoke()
{
        return likes_robot_movies;
}
```



Note that there is an important difference in the two scripts. The first script has the "not" symbol while the second script does not.

With this third behavior SILVIA now behaves differently, depending on a condition that may or may have not been set. In this case, unless the **likes_robot_movies** global variable has been set to true, Exuder 1 cannot be used as a response, and Exuder 0 will be used instead.

Step 15: Press the "COMPILE C#" button again to make sure that there are no syntax or other errors in the scripts.

Save this SILVIA brain by selecting 'File - Save As...'. Now this brain can be loaded and experimented upon. Be careful not to save over the demo SILVIA brain files as they may be useful as examples for later development.

With this newly created brain, SILVIA can set and check variables, invoke a web browser to show a particular website, and if she already said that she likes robot movies, she can tell that she already mentioned it if asked again.

This example also shows how to write, compile, and run a few simple C# scripts with SILVIA's scripting system.

These simple examples are intended to get you familiar with navigating parts of the SILVIA Studio interface. There are many more capabilities built into the system and the tools, as well as advanced tips and tricks that will be explored in future training sessions.

Remember that as you develop applications, SILVIA is capable of evolving her own complex behaviors and responses, but by using the tools and scripting creatively, you can get a jump-start on creating interesting and complex behaviors with just a few behaviors, and a little bit of thought and planning.

APPENDIX

SILVIA API

silvia.app

This class, implemented as part of the SILVIA C#/LUA API, provides access to SILVIA's application interfaces. These interfaces are for applications to communicate with the SILVIA Core about application-specific data. For instance, the parent application can sample the SILVIA Core's text output, and modify a TextBox that is visible to the user based on that sampling.

Summary

silvia.app	This class, implemented as part of the SILVIA C#/LUA API, provides access to SILVIA's application interfaces.

FUNCTIONS

silvia.app.setVoiceFont	Sets the voice font for output of AI speech (TTS)
silvia.app.setVoiceType	Sets the type (TTS Provider) of voice font for output of AI speech (TTS)
silvia.app.getVoiceType	Returns the type (TTS Provider) of voice font for output of AI speech (TTS)
silvia.app.getVoiceFontGender	Gets the gender of the last successfully set voice font for speech (TTS).
silvia.app.getVoiceFontName	Gets the name of the last successfully set voice font for speech (TTS).
silvia.app.getVoiceFontRate	Gets the numeric rate of the last successfully set voice font for speech (TTS).
silvia.app.loadVisemes	Loads visemes for lip-synced animation from the given folder
silvia.app.loadVisemesCrop	Loads visemes for lip-synced animation from the given folder, including a mouth cropping coefficient
silvia.app.getVisemesFolder	Returns the currently set visemes folder for lip-synced animation
silvia.app.enableVoiceOutput	Enables or disables the attached voice output
silvia.app.voiceOutputEnabled	Returns the enabled flag of the attached voice output
silvia.app.enableTextOutput	Enables or disables the attached text output
silvia.app.textOutputEnabled	Returns the enabled flag of the attached text output
silvia.app.enableSocketOutput	Enables or disables the attached socket output
silvia.app.socketOutputEnabled	Returns the enabled flag of the attached socket output
silvia.app.enableDiagOutput	Enables or disables the attached diagnostic output
silvia.app.diagOutputEnabled	Returns the enabled flag of the attached diagnostic output
silvia.app.enableApplicationMessage	Enables or disables the attached application message output

silvia.app.applicationMessageEnabled	Returns the enabled flag of the attached application message output
silvia.app.setVoiceOutput	Sets the voice output object's text field for subsequent output
silvia.app.getVoiceOutput	Returns the first (FIFO) string in the voice output object
silvia.app.clearVoiceOutput	Clears the voice output FIFO stack
silvia.app.isSpeaking	Checks the status of the application's voice output
silvia.app.setIsSpeaking	Forces an override of the status of the application's voice output
silvia.app.setTextOutput	Pushes the output onto the text output object's FIFO stack
silvia.app.getTextOutput	Returns the first (FIFO) string in the text output object
silvia.app.clearTextOutput	Clears the text output FIFO stack
silvia.app.setSocketOutput	Sends the string to the currently attached socket
silvia.app.setDiagOutput	Pushes the output onto the diagnostic output object's FIFO stack
silvia.app.getDiagOutput	Returns the first (FIFO) string in the diagnostic output object
silvia.app.clearDiagOutput	Clears the diagnostic FIFO stack
silvia.app.setApplicationMessage	Pushes the message output onto the application message object's FIFO stack
silvia.app.getApplicationMessage	Returns the first (FIFO) string in the application message object
silvia.app.clearApplicationMessage	Clears the application message FIFO stack
silvia.app.setListening	Enables or disables the parent application's speech recognition "hearing"
silvia.app.isListening	Returns the boolean status of the parent application's speech recognition "hearing"
silvia.app.consoleOut	Sends a text message to the SILVIA Studio debugging console, if available

Functions

silvia.app.setVoiceFont

Sets the voice font for output of AI speech (TTS)

Description

If a "SetVoiceFont" function has been registered with the core via the application, this method allows for scripted changes of the voice font used for speech output. Very useful for switching AI characters on the fly. Note that the application, not the core, is responsible for registering its own SetVoiceFont function via a delegate, as this feature is not native to the platform-independent core.

Example Usage (C#)

```
bool success = _core.ApiApp().SetVoiceFont("Female", "Audrey16", 0);
```

Example Usage (LUA)

```
success = silvia.app.setVoiceFont("Female", "Audrey16", 0)
```

Parameters

`gender`	The string to specify if the desired font is "Male" or "Female"
`fontName`	The string to specify the unique name of the font
`rate`	The numeric speaking rate of the voice. For MSWindows, this is between -10 and 10

Returns

The boolean success or failure of the operation.

See Also

- silvia.app.setVoiceOutput
- silvia.app.loadVisemes
- silvia.app.getVoiceFontGender
- silvia.app.getVoiceFontName
- silvia.app.getVoiceFontRate

silvia.app.setVoiceType

Sets the type (TTS Provider) of voice font for output of AI speech (TTS)

Description

This method allows for scripted changes of the voice font provider used for speech output. The type of voice determines which special tags are allowed or stripped in voice output. Note that ALL speech tags are stripped from the text output.

Example Usage (C#)

```
bool success = _core.ApiApp().SetVoiceType("loquendo");
```

Example Usage (LUA)

```
success = silvia.app.setVoiceType("loquendo")
```

Parameters

`type`	The string to specify the desired font type. Currently allowed types include: "undefined", "att", "cepstral", "loquendo", and "microsoft".

Returns

The boolean success or failure of the operation.

See Also

- silvia.app.getVoiceType
- silvia.app.setVoiceOutput
- silvia.app.loadVisemes
- silvia.app.getVoiceFontGender
- silvia.app.getVoiceFontName
- silvia.app.getVoiceFontRate

silvia.app.getVoiceType

Returns the type (TTS Provider) of voice font for output of AI speech (TTS)

Description

This method returns the currently selected voice font provider used for speech output. The type of voice determines which special tags are allowed or stripped in voice output. Note that ALL speech tags are stripped from the text output.

Example Usage (C#)

```
String voicetype = _core.ApiApp().GetVoiceType();
```

Example Usage (LUA)

```
voicetype = silvia.app.getVoiceType()
```

Parameters

none

Returns

A string representing the currently selected voice font type. Current possible types include

"undefined", "att", "cepstral", "loquendo", and "microsoft".

See Also

- silvia.app.setVoiceType
- silvia.app.setVoiceOutput
- silvia.app.loadVisemes
- silvia.app.getVoiceFontGender
- silvia.app.getVoiceFontName
- silvia.app.getVoiceFontRate

silvia.app.getVoiceFontGender

Gets the gender of the last successfully set voice font for speech (TTS).

Description

If a "SetVoiceFont" function has been registered with the core via the application, and a voice font has been successfully set, this method returns the gender of that voice font, either "Male" or "Female". Note that the application, not the core, is responsible for registering its own SetVoiceFont function via a delegate, as this feature is not native to the platform-independent core.

Example Usage (C#)

```
String gender = _core.ApiApp().GetVoiceFontGender();
```

Example Usage (LUA)

```
gender = silvia.app.getVoiceFontGender()
```

Parameters

none

Returns

A string representing the gender, "Male" or "Female" of the current voice font. Returns a nil value if no voice font has been set.

See Also

- silvia.app.setVoiceOutput
- silvia.app.loadVisemes
- silvia.app.setVoiceFont
- silvia.app.getVoiceFontName
- silvia.app.getVoiceFontRate

silvia.app.getVoiceFontName

Gets the name of the last successfully set voice font for speech (TTS).

Description

If a "SetVoiceFont" function has been registered with the core via the application, and a voice font has been successfully set, this method returns the name of that voice font. Note that the application, not the core, is responsible for registering its own SetVoiceFont function via a delegate, as this feature is not native to the platform-independent core.

Example Usage (C#)

```
String name = _core.ApiApp().GetVoiceFontName();
```

Example Usage (LUA)

```
name = silvia.app.getVoiceFontName()
```

Parameters

none

Returns

A string representing the name of the current voice font. Returns a nil value if no voice font has been set.

See Also

- silvia.app.setVoiceOutput
- silvia.app.loadVisemes
- silvia.app.setVoiceFont
- silvia.app.getVoiceFontGender
- silvia.app.getVoiceFontRate

silvia.app.getVoiceFontRate

Gets the numeric rate of the last successfully set voice font for speech (TTS).

Description

If a "SetVoiceFont" function has been registered with the core via the application, and a voice font has been successfully set, this method returns the rate of output for that voice font. A rate of 0 means that the output is at a "normal" speed. Numbers between 1 and 10 mean that the voice output is faster than normal, whereas numbers between -1 and -10 denote slower than normal output. Note that the application, not the core, is responsible for registering its own SetVoiceFont function via a delegate, as this feature is not native to the platform-independent core.

Example Usage (C#)

```
int rate = _core.ApiApp().GetVoiceFontRate();
```

Example Usage (LUA)

```
rate = silvia.app.getVoiceFontRate()
```

Parameters

none

Returns

A number representing the output rate of the current voice font. Returns a 0 value by default if no voice font has been set.

See Also

- silvia.app.setVoiceOutput
- silvia.app.loadVisemes
- silvia.app.setVoiceFont
- silvia.app.getVoiceFontGender
- silvia.app.getVoiceFontName

silvia.app.loadVisemes

Loads visemes for lip-synced animation from the given folder

Description

If a "LoadVisemes" function has been registered with the core via the application, this method allows for scripted changes of the character images used for visual display of lip-synced animation. Like the "setVoiceFont" function, this is very useful for switching AI characters on the fly. Note that the application, not the core, is responsible for registering its own LoadVisemes function via a delegate. While support for animation is embedded in the SILVIA Studio for windows, this feature is not native to the platform-independent core.

Example Usage (C#)

```
bool success = _core.ApiApp().LoadVisemes("robotGuy/images", true);
```

Example Usage (LUA)

```
success = silvia.app.loadVisemes("robotGuy/images", true)
```

Parameters

`folder`	The string to specify the relative or absolute folder where the new viseme images reside
`useVideo`	The boolean flag for enabling streaming character animation video

Returns

The boolean success or failure of the operation.

See Also

- silvia.app.loadVisemesCrop
- silvia.app.setVoiceFont
- silvia.app.getVisemesFolder

silvia.app.loadVisemesCrop

Loads visemes for lip-synced animation from the given folder, including a mouth cropping coefficient

Description

If a "LoadVisemes" function has been registered with the core via the application, this method allows for scripted changes of the character images used for visual display of lip-synced animation. Like the "setVoiceFont" function, this is very useful for switching AI characters on the fly. An additional feature of this method is that you can specify a cropping coefficient for the mouth visemes. This is useful for when you have expressive eye animations that have been rendered at full resolution and not pre-cropped. In this case, cropping will be performed at runtime. Note that the application, not the core, is responsible for registering its own LoadVisemes function via a delegate. While support for animation is embedded in SILVIA Studio for windows, this feature is not native to the platform-independent core.

Example Usage (C#)

```
bool success = _core.ApiApp().LoadVisemesCrop("robotGuy/images", true, 0.33f);
```

Example Usage (LUA)

```
success = silvia.app.loadVisemesCrop("robotGuy/images", true, 0.33)
```

Parameters

`folder`	The string to specify the relative or absolute folder where the new viseme images reside
`useVideo`	The boolean flag for enabling streaming character animation video
`mouthCrop`	The floating point coefficient for where the mouth should be cropped

Returns

The boolean success or failure of the operation.

See Also

- silvia.app.loadVisemes
- silvia.app.setVoiceFont
- silvia.app.getVisemesFolder

silvia.app.getVisemesFolder

Returns the currently set visemes folder for lip-synced animation

Description

If a "LoadVisemes" function has been registered with the core via the application, and visemes have been successfully loaded using said function, this method returns the folder of that most recent successfully loaded set of visemes. Note that the application, not the core, is responsible for registering its own LoadVisemes function via a delegate. While support for animation is embedded in SILVIA Studio for windows, this feature is not native to the platform-independent core.

Example Usage (C#)

```
String folder = _core.ApiApp().GetVisemesFolder();
```

Example Usage (LUA)

```
folder = silvia.app.getVisemesFolder()
```

Parameters

`folder`	The string to specify the relative or absolute folder where the new viseme images reside

Returns

A string containing the relative or absolute folder where the current viseme images reside. nil is returned if no visemes have been successfully set.

See Also

- silvia.app.setVoiceFont
- silvia.app.loadVisemes

silvia.app.enableVoiceOutput

Enables or disables the attached voice output

Description

This method enables or disables the SILVIA core's ability to write to the voice output FIFO stack. Note that the application must fetch the contents of the FIFO stack using "GetVoiceOuput", and implement some sort of TTS system, as the SILVIA core does not support TTS natively.

Example Usage (C#)

```
_core.ApiApp().EnableVoiceOutput(true);
```

Example Usage (LUA)

```
silvia.app.enableVoiceOutput(true)
```

Parameters

`enabled`	The boolean flag to turn the feature on or off. The default setting is true.

Returns

None.

See Also

- silvia.app.enableTextOutput
- silvia.app.enableSocketOutput
- silvia.app.enableDiagOutput
- silvia.app.setVoiceOutput
- silvia.app.getVoiceOutput
- silvia.app.clearVoiceOutput

silvia.app.voiceOutputEnabled

Returns the enabled flag of the attached voice output

Description

This method checks the state, enabled or disabled, of the SILVIA core's ability to write to the voice output FIFO stack.

Example Usage (C#)

```
bool enabled = _core.ApiApp().VoiceOutputEnabled();
```

Example Usage (LUA)

```
enabled = silvia.app.voiceOutputEnabled()
```

Parameters

none

Returns

A boolean flag representing the enabled (true) or disabled (false) state of the voice output.

See Also

- silvia.app.textOutputEnabled
- silvia.app.socketOutputEnabled
- silvia.app.diagOutputEnabled
- silvia.app.enableVoiceOutput
- silvia.app.setVoiceOutput
- silvia.app.getVoiceOutput
- silvia.app.clearVoiceOutput

silvia.app.enableTextOutput

Enables or disables the attached text output

Description

This method enables or disables the SILVIA core's ability to write to the text output FIFO stack. Note that the application must fetch the contents of the FIFO stack using "GetTextOuput", and implement some sort of text display or other output system, as the SILVIA core does not support text display natively.

Example Usage (C#)

```
_core.ApiApp().EnableTextOutput(true);
```

Example Usage (LUA)

```
silvia.app.enableTextOutput(true)
```

Parameters

`enabled`	The boolean flag to turn the feature on or off. The default setting is true.

Returns

None.

See Also

- silvia.app.enableVoiceOutput

- silvia.app.enableSocketOutput
- silvia.app.enableDiagOutput
- silvia.app.setTextOutput
- silvia.app.getTextOutput
- silvia.app.clearTextOutput

silvia.app.textOutputEnabled

Returns the enabled flag of the attached text output

Description

This method checks the state, enabled or disabled, of the SILVIA core's ability to write to the text output FIFO stack.

Example Usage (C#)

```
bool enabled = _core.ApiApp().TextOutputEnabled();
```

Example Usage (LUA)

```
enabled = silvia.app.textOutputEnabled()
```

Parameters

none

Returns

A boolean flag representing the enabled (true) or disabled (false) state of the text output.

See Also

- silvia.app.voiceOutputEnabled
- silvia.app.socketOutputEnabled
- silvia.app.diagOutputEnabled
- silvia.app.enableTextOutput
- silvia.app.setTextOutput
- silvia.app.getTextOutput
- silvia.app.clearTextOutput

silvia.app.enableSocketOutput

Enables or disables the attached socket output

Description

If a socket connection has been created and the appropriate LUA function has been globally defined and attached to the silvia.socket table via the application, this LUA function enables or disables the sending of the output to that socket. Note that while this may be set from C#, the actual socket output is via LUA only. In C#, you may set up your own socket output via direct scripting, or through a loaded and registered plugin.

Example Usage (C#)

```
_core.ApiApp().EnableSocketOutput(true);
```

Example Usage (LUA)

```
silvia.app.enableSocketOutput(true)
```

Parameters

`enabled`	The boolean flag to turn the feature on or off. The default setting is false.

Returns

None.

See Also

- silvia.app.enableTextOutput
- silvia.app.enableVoiceOutput
- silvia.app.enableDiagOutput
- silvia.app.setSocketOutput

silvia.app.socketOutputEnabled

Returns the enabled flag of the attached socket output

Description

This method checks the state, enabled or disabled, of the SILVIA core's ability to write to the attached (LUA) socket output. Note that while this state may be checked from C#, any actual socket output is via LUA only. In C#, you may set up your own socket output via direct scripting, or through a loaded and registered plugin.

Example Usage (C#)

```
bool enabled = _core.ApiApp().SocketOutputEnabled();
```

Example Usage (LUA)

```
enabled = silvia.app.socketOutputEnabled()
```

Parameters

none

Returns

A boolean flag representing the enabled (true) or disabled (false) state of the socket output.

See Also

- silvia.app.voiceOutputEnabled
- silvia.app.textOutputEnabled
- silvia.app.diagOutputEnabled
- silvia.app.enableSocketOutput
- silvia.app.setSocketOutput

silvia.app.enableDiagOutput

Enables or disables the attached diagnostic output

Description

This method enables or disables the SILVIA core's ability to write to the diagnostic output FIFO stack. Note that the application must fetch the contents of the FIFO stack using "GetDiagOuput", and implement some sort of diagnostic display or logging system, as the SILVIA core does not support text display or logging natively.

Example Usage (C#)

```
_core.ApiApp().EnableDiagOutput(true);
```

Example Usage (LUA)

```
silvia.app.enableDiagOutput(true)
```

Parameters

`enabled`	The boolean flag to turn the feature on or off. The default setting is true.

Returns

None.

See Also

- silvia.app.enableTextOutput
- silvia.app.enableSocketOutput
- silvia.app.enableVoiceOutput
- silvia.app.setDiagOutput
- silvia.app.getDiagOutput
- silvia.app.clearDiagOutput

silvia.app.diagOutputEnabled

Returns the enabled flag of the attached diagnostic output

Description

This method checks the state, enabled or disabled, of the SILVIA core's ability to write to the diagnostic output FIFO stack.

Example Usage (C#)

```
bool enabled = _core.ApiApp().DiagOutputEnabled();
```

Example Usage (LUA)

```
enabled = silvia.app.diagOutputEnabled()
```

Parameters

none

Returns

A boolean flag representing the enabled (true) or disabled (false) state of the diagnostic output.

See Also

- silvia.app.voiceOutputEnabled
- silvia.app.socketOutputEnabled
- silvia.app.textOutputEnabled
- silvia.app.enableDiagOutput
- silvia.app.setDiagOutput
- silvia.app.getDiagOutput
- silvia.app.clearDiagOutput

silvia.app.enableApplicationMessage

Enables or disables the attached application message output

Description

This method enables or disables the SILVIA core's ability to write to the application message FIFO stack. Note that the application must fetch the contents of the FIFO stack using "GetApplicationMessage", and implement some sort message handling for the application.

Example Usage (C#)

```
_core.ApiApp().EnableApplicationMessage(true);
```

Example Usage (LUA)

```
silvia.app.enableApplicationMessage(true)
```

Parameters

`enabled`	The boolean flag to turn the feature on or off. The default setting is true.

Returns

None.

See Also

- silvia.app.applicationMessageEnabled
- silvia.app.setApplicationMessage
- silvia.app.getApplicationMessage
- silvia.app.clearApplicationMessage

silvia.app.applicationMessageEnabled

Returns the enabled flag of the attached application message output

Description

This method checks the state, enabled or disabled, of the SILVIA core's ability to write to the application message FIFO stack.

Example Usage (C#)

```
bool enabled = _core.ApiApp().ApplicationMessageEnabled();
```

Example Usage (LUA)

```
enabled = silvia.app.applicationMessageEnabled()
```

Parameters

none

Returns

A boolean flag representing the enabled (true) or disabled (false) state of the application message output.

See Also

- silvia.app.enableApplicationMessage
- silvia.app.setApplicationMessage
- silvia.app.getApplicationMessage
- silvia.app.clearApplicationMessage

silvia.app.setVoiceOutput

Sets the voice output object's text field for subsequent output

Description

If the voice output has been enabled (default), via the application, this method pushes the output of a string via the voice output stack. Either the application or a script may poll and fetch voice output messages via the getVoiceOutput method. Note that the application, not the core, is responsible for handling the fetch and subsequent operations on such messages.

Example Usage (C#)

```
bool success = _core.ApiApp().SetVoiceOutput("I'm feeling much better now, Dave.");
```

Example Usage (LUA)

```
success = silvia.app.setVoiceOutput("I'm feeling much better now, Dave.")
```

Parameters

`output`	The string for voice output via the AI output handler.

Returns

The boolean success or failure of the operation.

See Also

- silvia.app.setVoiceFont
- silvia.app.setTextOutput
- silvia.app.setSocketOutput
- silvia.app.setDiagOutput
- silvia.app.enableVoiceOutput
- silvia.app.getVoiceOutput
- silvia.app.clearVoiceOutput

silvia.app.getVoiceOutput

Returns the first (FIFO) string in the voice output object

Description

If the voice output has been enabled (default), via the application, this method fetches the first string from the voice output stack. Either the application or a script may poll and fetch voice output via this method. Note that the application, not the core, is responsible for handling the fetch and subsequent operations on such output.

Example Usage (C#)

```
String voice = _core.ApiApp().GetVoiceOutput();
```

Example Usage (LUA)

```
voice = silvia.app.getVoiceOutput()
```

Parameters

none

Returns

The string value representing the voice output. nil is returned if disabled or empty.

See Also

- silvia.app.getTextOutput
- silvia.app.getDiagOutput
- silvia.app.enableVoiceOutput
- silvia.app.setVoiceOutput
- silvia.app.clearVoiceOutput

silvia.app.clearVoiceOutput

Clears the voice output FIFO stack

Description

This method clears out the voice output FIFO stack. Either an API call from the application or a call from a script may be used to invoke this method as a housecleaning tool, in order to clear out any unused or otherwise undesirable voice output messages.

Example Usage (C#)

```
bool cleared = _core.ApiApp().ClearVoiceOutput();
```

Example Usage (LUA)

```
cleared = silvia.app.clearVoiceOutput()
```

Parameters

none

Returns

The boolean success or failure of the operation. If the FIFO stack was already empty, then false is returned.

See Also

- silvia.app.clearTextOutput
- silvia.app.clearDiagOutput
- silvia.app.enableVoiceOutput
- silvia.app.setVoiceOutput
- silvia.app.getVoiceOutput

silvia.app.isSpeaking

Checks the status of the application's voice output

Description

This method returns a true or false. Great for holding off execution of functions until the app is done with speech output.

Example Usage (C#)

```
bool speaking = _core.ApiApp().IsSpeaking();
```

Example Usage (LUA)

```
speaking = silvia.app.isSpeaking()
```

Parameters

none

Returns

The boolean condition of the application's speaking state. Default is false.

See Also

- silvia.app.enableVoiceOutput
- silvia.app.setVoiceOutput
- silvia.app.getVoiceOutput

silvia.app.setIsSpeaking

Forces an override of the status of the application's voice output

Description

This method forces a set of the "isSpeaking" value. Great for holding off execution of functions until the app is done with speech output. From script, always set "force" to true.

Example Usage (C#)

```
_core.ApiApp().SetIsSpeaking(true, true);
```

Example Usage (LUA)

silvia.app.setIsSpeaking(true, true)

Parameters

`enabled`	the boolean flag to set the status on or off
`force`	the boolean flag to force the status to remain on or off for a few seconds

Returns

None.

See Also

- silvia.app.enableVoiceOutput
- silvia.app.setVoiceOutput
- silvia.app.getVoiceOutput
- silvia.app.isSpeaking

silvia.app.setTextOutput

Pushes the output onto the text output object's FIFO stack

Description

If the text output has been enabled (default), via the application, this method pushes the output of a string to the text output stack. Either the application or a script may poll and fetch text output via the getTextOutput method. Note that the application, not the core, is responsible for handling the fetch and subsequent operations on such output.

Example Usage (C#)

bool success = _core.ApiApp().SetTextOutput("Shall we continue in text only mode?");

Example Usage (LUA)

success = silvia.app.setTextOutput("Shall we continue in text only mode?")

Parameters

`output`	The string for text output.

Returns

The boolean success or failure of the operation.

See Also

- silvia.app.setSocketOutput
- silvia.app.setVoiceOutput
- silvia.app.setDiagOutput
- silvia.app.enableTextOutput
- silvia.app.getTextOutput
- silvia.app.clearTextOutput

silvia.app.getTextOutput

Returns the first (FIFO) string in the text output object

Description

If the text output has been enabled (default), via the application, this method fetches the first string from the text output stack. Either the application or a script may poll and fetch text output via this method. Note that the application, not the core, is responsible for handling the fetch and subsequent operations on such output.

Example Usage (C#)

```
String text = _core.ApiApp().GetTextOutput();
```

Example Usage (LUA)

```
text = silvia.app.getTextOutput()
```

Parameters

none

Returns

The string value representing the text output. nil is returned if disabled or empty.

See Also

- silvia.app.getVoiceOutput
- silvia.app.getDiagOutput
- silvia.app.enableTextOutput
- silvia.app.setTextOutput
- silvia.app.clearTextOutput

silvia.app.clearTextOutput

Clears the text output FIFO stack

Description

This method clears out the text output FIFO stack. Either an API call from the application or a call from script may be used to invoke this method as a housecleaning tool, in order to clear out any unused or otherwise undesirable text output messages.

Example Usage (C#)

```
bool cleared = _core.ApiApp().ClearTextOutput();
```

Example Usage (LUA)

```
cleared = silvia.app.clearTextOutput()
```

Parameters

none

Returns

The boolean success or failure of the operation. If the FIFO stack was already empty, then false is returned.

See Also

- silvia.app.clearVoiceOutput
- silvia.app.clearDiagOutput
- silvia.app.enableTextOutput
- silvia.app.setTextOutput
- silvia.app.getTextOutput

silvia.app.setSocketOutput

Sends the string to the currently attached socket

Description

If the socket connection and output function has been established via a SILVIA LUA script (see socket.slv for an example), this method forces the sending of the string as a message to that socket's connection. Note that the application specific LUA script, not the core, is responsible for the setup and attachment of the appropriate socket scripts and the connection to an external client or server.

Example Usage (C#)

```
bool success = _core.ApiApp().SetSocketOutput("I am an in game character.");
```

Example Usage (LUA)

```
success = silvia.app.setSocketOutput("I am an in game character.")
```

Parameters

`output`	The string for socket message output via the pre-attached socket

Returns

The boolean success or failure of the operation.

See Also

- silvia.app.setVoiceOutput
- silvia.app.setTextOutput
- silvia.app.setDiagOutput
- silvia.app.enableSocketOutput

silvia.app.setDiagOutput

Pushes the output onto the diagnostic output object's FIFO stack

Description

If the diagnostic output has been enabled (default), via the application, this method pushes the output of a string via the diagnostic output stack. Either the application or a script may poll and fetch diagnostic output via the getDiagOutput method. Note that the application, not the core, is responsible for handling the fetch and subsequent operations on such output.

Example Usage (C#)

```
bool success = _core.ApiApp().SetDiagOutput("MYWARNING user response was incorrect.");
```

Example Usage (LUA)

```
success = silvia.app.setDiagOutput("MYWARNING user response was incorrect.")
```

Parameters

`output`	The string for diagnostic output.

Returns

The boolean success or failure of the operation.

See Also

- silvia.app.setVoiceOutput
- silvia.app.setTextOutput
- silvia.app.setSocketOutput
- silvia.app.enableDiagOutput
- silvia.app.getDiagOutput
- silvia.app.clearDiagOutput

silvia.app.getDiagOutput

Returns the first (FIFO) string in the diagnostic output object

Description

If the diagnostic output has been enabled (default), via the application, this method fetches the first string from the diagnostic output stack. Either the application or a script may poll and fetch diagnostic output via this method. Note that the application, not the core, is responsible for handling the fetch and subsequent operations on such output.

Example Usage (C#)

```
String diag = _core.ApiApp().GetDiagOutput();
```

Example Usage (LUA)

```
diag = silvia.app.getDiagOutput()
```

Parameters

none

Returns

The string value representing the diagnostic message. nil is returned if disabled or empty.

See Also

- silvia.app.getVoiceOutput
- silvia.app.getTextOutput
- silvia.app.enableDiagOutput
- silvia.app.setDiagOutput
- silvia.app.clearDiagOutput

silvia.app.clearDiagOutput

Clears the diagnostic FIFO stack

Description

This method clears out the diagnostic FIFO stack. Either an API call from the application or a call from script may be used to invoke this method as a housecleaning tool, in order to clear out any unused or otherwise undesirable diagnostic messages.

Example Usage (C#)

```
bool cleared = _core.ApiApp().ClearDiagOutput();
```

Example Usage (LUA)

```
cleared = silvia.app.clearDiagOutput()
```

Parameters

none

Returns

The boolean success or failure of the operation. If the FIFO stack was already empty, then false is returned.

See Also

- silvia.app.clearVoiceOutput
- silvia.app.clearTextOutput
- silvia.app.enableDiagOutput
- silvia.app.setDiagOutput
- silvia.app.getDiagOutput

silvia.app.setApplicationMessage

Pushes the message output onto the application message object's FIFO stack

Description

If the application message output has been enabled (default), via the application, this method pushes the output of a string via the application message stack. Either the application or a script may poll and fetch application messages via the getApplicationMessage method. Note that the application, not the core, is responsible for handling the fetch and subsequent operations on such messages.

Example Usage (C#)

```
bool success = _core.ApiApp().SetApplicationMessage("Close Main Form");
```

Example Usage (LUA)

```
success = silvia.app.setApplicationMessage("Close Main Form")
```

Parameters

`output`	The string representing the message to be sent to the application.

Returns

The boolean success or failure of the operation.

See Also

- silvia.app.enableApplicationMessage
- silvia.app.getApplicationMessage
- silvia.app.clearApplicationMessage

silvia.app.getApplicationMessage

Returns the first (FIFO) string in the application message object

Description

If the application message output has been enabled (default), via the application, this method fetches the first string from the application message stack. Either the application or a LUA/C# script may poll and fetch application messages via this method. Note that the application, not the core, is responsible for handling the fetch and subsequent operations on such messages.

Example Usage (C#)

```
String appMessage = _core.ApiApp().GetApplicationMessage();
```

Example Usage (LUA)

```
appMessage = silvia.app.getApplicationMessage()
```

Parameters

none

Returns

The string value representing the message for the application. nil is returned if disabled or empty.

See Also

- silvia.app.enableApplicationMessage
- silvia.app.setApplicationMessage
- silvia.app.clearApplicationMessage

silvia.app.clearApplicationMessage

Clears the application message FIFO stack

Description

This method clears out the application message FIFO stack. Either an API call from the application or a call from script may be used to invoke this method as a housecleaning tool, in order to clear out any unused or otherwise undesirable application messages.

Example Usage (C#)

```
bool cleared = _core.ApiApp().ClearApplicationMessage();
```

Example Usage (LUA)

```
cleared = silvia.app.clearApplicationMessage()
```

Parameters

none

Returns

The boolean success or failure of the operation. If the FIFO stack was already empty, then false is returned.

See Also

- silvia.app.enableApplicationMessage
- silvia.app.setApplicationMessage
- silvia.app.getApplicationMessage

silvia.app.setListening

Enables or disables the parent application's speech recognition "hearing"

Description

If the listening toggle object (System.Windows.Forms.CheckBox) has been registered via the application, this method sets that CheckBox.Checked value. Note that the application, not the core, is responsible for attaching and handling the CheckBox.CheckedChanged event, and for setting up a platform specific speech recognition solution.

Example Usage (C#)

```
bool success = _core.ApiApp().SetListening(true);
```

Example Usage (LUA)

```
success = silvia.app.setListening(true)
```

Parameters

`enabled`	a boolean value to enable or disable listening in the parent application

Returns

The boolean success or failure of the operation.

See Also

- silvia.app.isListening

silvia.app.isListening

Returns the boolean status of the parent application's speech recognition "hearing"

Description

If the listening toggle object (System.Windows.Forms.CheckBox) has been registered via the application, this method returns that CheckBox.Checked value. Note that the application, not the core, is responsible for attaching and handling the CheckBox.CheckedChanged event, and for setting up a platform specific speech recognition solution.

Example Usage (C#)

```
bool listening = _core.ApiApp().IsListening();
```

Example Usage (LUA)

```
listening = silvia.app.isListening()
```

Parameters

none

Returns

The boolean value of the listening status, always false if no registered CheckBox object.

See Also

- silvia.app.setListening

silvia.app.consoleOut

Sends a text message to the SILVIA Studio debugging console, if available

Description

If the runtime is SILVIA Studio, and the debugging console is open, the given text message string is posted to the console, and a boolean value of true is returned. If the console is not open, or the runtime is not SILVIA Studio, nothing is posted and a value of false is returned.

Example Usage (C#)

```
bool success = _core.ApiApp().ConsoleOut("I reached this point in my script.");
```

Example Usage (LUA)

```
success = silvia.app.consoleOut("I reached this point in my script.")
```

Parameters

`message`	a string value representing the message to be posted to the console

Returns

The boolean value representing the success or failure of the operation

See Also

- silvia.app.setDiagOutput
- silvia.app.getDiagOutput

silvia.brain

This class, implemented as part of the SILVIA API, provides access to high-level SILVIA runtime functionality. Specifically, this class controls basic SILVIA brain operations, and provides an interface to invoke brain interactions, and to control certain brain parameters in order to customize global aspects of how a brain responds to input. Examples are shown in Java, C#, and LUA.

Summary

silvia.brain	This class, implemented as part of the SILVIA API, provides access to high-level SILVIA runtime functionality.

FUNCTIONS

silvia.brain.setUserSecurityLevel	Sets the numeric integer security level for the current user.
silvia.brain.getUserSecurityLevel	Returns the integer security level for the current user.
silvia.brain.addConcepts	Invokes the core SILVIA algorithms to register the concepts in a string

silvia.brain.getResponse	Invokes the core SILVIA algorithms to get a response to the input
silvia.brain.getResponseBehaviorID	Returns the behavior id in the given position on the response stack
silvia.brain.getResponseAbsorberID	Returns the Absorber id in the given position on the response stack
silvia.brain.getResponseWeight	Returns the numeric weight of the match in the given position on the response stack
silvia.brain.transformNarrativeMode	Invokes the core SILVIA algorithms to transform the string from second to first-person or first to second person.
silvia.brain.executePostEvents	Invokes the core SILVIA algorithms to execute post-response events and scripts
silvia.brain.setJump	Sets the group and name of the behavior to "jump" to next
silvia.brain.setBypassResponse	On the next input, the "GetResponse" function will ignore the input and jump to the given behavior
silvia.brain.removeStopwords	Takes an input string and removes the stopword concepts, returning the result
silvia.brain.setDynamicAttraction	Modifies the state of the SILVIA Core algorithms, changing the "attaction" parameter for dynamic output
silvia.brain.setDynamicDepth	Modifies the state of the SILVIA Core algorithms, changing the "depth" parameter for dynamic output
silvia.brain.setDynamicFalloffDepth	Modifies the state of the SILVIA Core algorithms, changing the "falloff depth" parameter for dynamic output
silvia.brain.setDynamicFalloff	Modifies the state of the SILVIA Core algorithms, changing the "falloff" parameter for dynamic output
silvia.brain.setDynamicAdaptation	Modifies the state of the SILVIA Core algorithms, setting the "adaptation" parameter for dynamic output
silvia.brain.generateDynamic	Invokes the core SILVIA algorithms to generate a dynamic output
silvia.brain.generateDynamicLimited	Invokes the core SILVIA algorithms to generate a dynamic output from a limited set of behaviors
silvia.brain.generateDynamicFromMemory	Invokes the core SILVIA algorithms to generate a dynamic output from the feedback stack
silvia.brain.dynamicHasAllConceptsInOne	Returns a true or false indication of result suitability after a call to generateDynamic
silvia.brain.setAbsorberThreshold	Invokes the core SILVIA algorithms to change the "threshold" for Absorber acceptance
silvia.brain.setReusableThreshold	Invokes the core SILVIA algorithms to change the "threshold" for Exuder matching acceptance
silvia.brain.setAddressByName	Enables or disables the SILVIA core's requirement to be addressed by name before

	responding
silvia.brain.getAddressByName	Returns the boolean enabled/disabled status of the SILVIA core's AddressByName mode
silvia.brain.setAllEars	Enables or disables the SILVIA core's ability to respond to the next input
silvia.brain.getAllEars	Returns the boolean enabled/disabled status of the SILVIA core's AllEars mode
silvia.brain.loadCommandAssembly	Loads the name command assembly so that the functions are available to SILVIA

Functions

silvia.brain.setUserSecurityLevel

Sets the numeric integer security level for the current user.

Description

This method sets the current security level for the user. The security range is 0 to n, where 0 is the lowest "public" level of security. Within the SILVIA brain data itself, any behavior and/or Exuder security value higher than 0 must be met with an equal or greater user security level for the behavior/Exuder to be invoked. Note that a higher behavior security level can override a lower Exuder security level.

Example Usage (Java)

```
boolean success = _core.ApiBrain().SetUserSecurityLevel(3);
```

Example Usage (C#)

```
bool success = _core.ApiBrain().SetUserSecurityLevel(3);
```

Example Usage (LUA)

```
success = silvia.brain.setUserSecurityLevel(3)
```

Parameters

`level`	The numeric integer value representing the new security level to apply to the user

Returns

The boolean success or failure of the operation.

silvia.brain.getUserSecurityLevel

Returns the integer security level for the current user.

Description

This method returns the current security level for the user. The security range is 0 to n, where 0 is the lowest "public" level of security. Within the SILVIA brain data itself, any behavior and/or Exuder security value higher than 0 must be met with an equal or greater user security level for the behavior/Exuder to be invoked. Note that a higher behavior security level can override a lower Exuder security level.

Example Usage (Java/C#)

```
int level = _core.ApiBrain().GetUserSecurityLevel();
```

Example Usage (LUA)

```
level = silvia.brain.getUserSecurityLevel()
```

Parameters

none

Returns

`level`	The number value representing the current security level of the user.

silvia.brain.addConcepts

Invokes the core SILVIA algorithms to register the concepts in a string

Description

This method invokes AI run-time to add the concepts contained in the given string. Any concepts that are already registered will be ignored. This function is useful for pre-loading concepts that may be used dynamically within a variable or other dynamic construct, but are not yet part of SILVIA's current dictionary.

Example Usage (Java)

```
boolean success = _core.ApiBrain().AddConcepts("how are you today", false, false);
```

Example Usage (C#)

```
bool success = _core.ApiBrain().AddConcepts("how are you today", false, false);
```

Example Usage (LUA)

```
success = silvia.brain.addConcepts("how are you today", false, false)
```

Parameters

`input`	The string representing the concept(s) to be processed.
`punctuate`	The boolean flag to determine if punctuation is considered
`conceptualize`	The boolean flag to determine if existing concatenated concepts are considered

Returns

The boolean success or failure of the operation.

See Also

- silvia.brain.getResponse

silvia.brain.getResponse

Invokes the core SILVIA algorithms to get a response to the input

Description

This method invokes AI run-time to produce a response. This response can be returned as a text string for output, but this function can also potentially invoke scripts, and can change the state of the AI depending on the input, the current state of the variable data, the current knowledge base, and behavorial data. The exceptions are any registered events and post-Exuder scripts. These must be invoked explicitely via the silvia.brain.executePostEvents method.

Example Usage (Java/C#)

```
String result = _core.ApiBrain().GetResponse("how are you today", "logs/mylogfile.txt");
```

Example Usage (LUA)

```
result = silvia.brain.getResponse("how are you today", "logs/mylogfile.txt")
```

Parameters

`input`	The string representing the input to be processed.
`logFile`	An optional file to store logging information. With pre-existing files,

logging is additive.

Returns

The string representing the output produced by SILVIA.

See Also

- silvia.brain.executePostEvents

silvia.brain.getResponseBehaviorID

Returns the behavior id in the given position on the response stack

Description

After invoking the AI run-time to produce a response, a stack of zero-indexed "best possible" behavioral results is available for query. Using these methods, the application developer can determine at runtime exactly which behaviors and Absorbers were considered the top candidate matches for the user input. This particular method returns the integer id of the behavior in the given position on the stack. Note that this is the same data as shown in the text output window of SILVIA Studio when in debug mode.

Example Usage (Java/C#)

```
int behavior = _core.ApiBrain().GetResponseBehaviorID(0);
```

Example Usage (LUA)

```
behavior = silvia.brain.getResponseBehaviorID(0)
```

Parameters

`index`	The integer zero-based index into the "best match" stack

Returns

The integer index of the best matching behavior in that stack position. A -1 is returned if there is no valid match.

See Also

- silvia.brain.getResponse
- silvia.brain.getResponseAbsorberID
- silvia.brain.getResponseWeight

silvia.brain.getResponseAbsorberID

Returns the Absorber id in the given position on the response stack

Description

After invoking the AI run-time to produce a response, a stack of zero-indexed "best possible" behavioral results is available for query. Using these methods, the application developer can determine at runtime exactly which behaviors and Absorbers were considered the top candidate matches for the user input. This particular method returns the integer id of the Absorber in the given position on the stack. Note that this is the same data as shown in the text output window of SILVIA Studio when in debug mode.

Example Usage (Java/C#)

```
int Absorber = _core.ApiBrain().GetResponseAbsorberID(0);
```

Example Usage (LUA)

```
Absorber = silvia.brain.getResponseAbsorberID(0)
```

Parameters

`index`	The integer zero-based index into the "best match" stack

Returns

The integer index of the best matching Absorber in that stack position. A -1 value is returned if there is no valid match.

See Also

- silvia.brain.getResponse
- silvia.brain.getResponseBehaviorID
- silvia.brain.getResponseWeight

silvia.brain.getResponseWeight

Returns the numeric weight of the match in the given position on the response stack

Description

After invoking the AI run-time to produce a response, a stack of zero-indexed "best possible" behavioral results is available for query. Using these methods, the application developer can determine at runtime exactly which behaviors and Absorbers were considered the top candidate matches for the user input. This particular method returns the numeric weight of the match in the given position on the stack. A higher value indicates a better match. Note that this is the same data as shown in the text output window of SILVIA Studio when in debug mode.

Example Usage (Java/C#)

```
float weight = _core.ApiBrain().GetResponseWeight(0);
```

Example Usage (LUA)

```
weight = silvia.brain.getResponseWeight(0)
```

Parameters

`index`	The integer zero-based index into the "best match" stack

Returns

The numeric weight of the best matching behavior in that stack position. A -100.0 is returned if there is no valid match.

See Also

- silvia.brain.getResponse
- silvia.brain.getResponseBehaviorID
- silvia.brain.getResponseAbsorberID

silvia.brain.transformNarrativeMode

Invokes the core SILVIA algorithms to transform the string from second to first-person or first to second person.

Description

This method invokes the AI run-time to explicitely transform a piece of input so that the frame of referrence is correctly switched between speakers. This method invokes algorithms that use statistical language rules and explicit conceptual relationships to correctly identify and perform the proper transformations on the given input. As an English language example, "you" becomes "i", "me" becomes "you", and so forth.

Example Usage (Java/C#)

```
String result = _core.ApiBrain().TransformNarrativeMode("your father");
```

Example Usage (LUA)

```
result = silvia.brain.transformNarrativeMode("your father")
where "your father" is returned as "my father"
```

Parameters

`input`	The string representing the input to be processed.

Returns

The string representing the output produced by SILVIA's transformNarrativeMode function.

silvia.brain.executePostEvents

Invokes the core SILVIA algorithms to execute post-response events and scripts

Description

This function invokes AI run-time to execute any outstanding events or scripts that have been registered by a call to silvia.brain.getResponse.

Example Usage (Java)

```
boolean result = _core.ApiBrain().ExecutePostEvents();
```

Example Usage (C#)

```
bool result = _core.ApiBrain().ExecutePostEvents();
```

Example Usage (LUA)

```
result = silvia.brain.executePostEvents()
```

Parameters

none

Returns

The boolean success or failure of the operation.

See Also

- silvia.brain.getResponse

silvia.brain.setJump

Sets the group and name of the behavior to "jump" to next

Description

This function forces the invocation of a particular behavior. This can be executed immediately in the script, or can be placed in a timed function for later execution.

Example Usage (Java)

```
boolean success = _core.ApiBrain().SetJump("movies", "likes2001", 1.0f);
```

Example Usage (C#)

```
bool success = _core.ApiBrain().SetJump("movies", "likes2001", 1.0f);
```

Example Usage (LUA)

success = silvia.brain.setJump("movies", "likes2001", 1.0)

Parameters

`group`	The string representing the group identifier of the behavior.
`name`	The string representing the name identifier of the behavior.
`probability`	The coefficient between 0.0 and 1.0 representing the probability that the jump will occur.

Returns

The boolean success or failure of the operation.

silvia.brain.setBypassResponse

On the next input, the "GetResponse" function will ignore the input and jump to the given behavior

Description

This method forces the invocation of a particular behavior. However, this invocation does not occur immediately, but on the next input given by the user.

Example Usage (Java)

boolean success = _core.ApiBrain().SetBypassResponse("game", "assume_yes_answer");

Example Usage (C#)

bool success = _core.ApiBrain().SetBypassResponse("game", "assume_yes_answer");

Example Usage (LUA)

success = silvia.brain.setBypassResponse("game", "assume_yes_answer")

Parameters

`group`	The string representing the group identifier of the behavior.
`name`	The string representing the name identifier of the behavior.

Returns

The boolean success or failure of the operation.

silvia.brain.removeStopwords

Takes an input string and removes the stopword concepts, returning the result

Description

Certain conceptual processing may require only the most important "high-level" concepts to be passed in from user input. This utility function automatically produces an output string from an input string of concepts that has the "low-level" stopwords removed. These stopwords are found in the "linguistics" folder of the application.

The stopwords table needs to be loaded from a file when first creating a SILVIA core. Depending on the platform, the parameter will either be a stopwords file name or a pre-read list of Strings passed in to the CreateCore function. If this is left null, there will be no stopwords to consider for removal or other related internal processing.

The second parameter in ApiBrain().RemoveStopwords is a list of concepts in string form that should be left in the returned result, even if they exist in the stopwords table.

For instance, the stopword "when" may be important for this particular utterance, so you may specify this in the second parameter and it will not be removed automatically.

Example Usage (Java/C#)

String concepts = "where is the state of california"; String importantconcepts = _core.ApiBrain().RemoveStopwords(concepts, "where what who why when how");

Example Usage (LUA)

concepts = "where is the state of alabama" importantconcepts = silvia.brain.removeStopwords(concepts, "where what who why when how")

Parameters

`concepts`	The string of space-separated concepts to be stripped of stopwords
`include`	The string of space-separated concepts to be considered important, overriding any status as stopwords

Returns

The string of space-separated concepts, with removed stopwords.

silvia.brain.setDynamicAttraction

Modifies the state of the SILVIA Core algorithms, changing the "attaction" parameter for dynamic output

Description

This method helps control SILVIA's dynamic output generation, and sets the integer multiplier for SILVIA's attraction to key concepts. The higher the attraction, the more SILVIA gravitates toward explicitely defined concepts during output generation.

Example Usage (Java)

```
boolean success = _core.ApiBrain().SetDynamicAttraction(10);
```

Example Usage (C#)

```
bool success = _core.ApiBrain().SetDynamicAttraction(10);
```

Example Usage (LUA)

```
success = silvia.brain.setDynamicAttraction(10)
```

Parameters

The numeric attraction value, greater than 0

Returns

The boolean success or failure of the operation.

See Also

- silvia.brain.setDynamicDepth
- silvia.brain.setDynamicFalloffDepth
- silvia.brain.setDynamicFalloff
- silvia.brain.setDynamicAdaptation
- silvia.brain.generateDynamic
- silvia.brain.generateDynamicLimited

silvia.brain.setDynamicDepth

Modifies the state of the SILVIA Core algorithms, changing the "depth" parameter for dynamic output

Description

This method helps control SILVIA's dynamic output generation, and sets the integer depth of SILVIA's lexical traversal algorithm. The higher the number, the more rigid SILVIA will be in following implicit grammatical rules. In simple terms, higher numbers will produce more rigidly logical output, whereas lower numbers will result in output that is closer to free-association.

Example Usage (Java)

```
boolean success = _core.ApiBrain().SetDynamicDepth(4);
```

Example Usage (C#)

```
bool success = _core.ApiBrain().SetDynamicDepth(4);
```

Example Usage (LUA)

```
success = silvia.brain.setDynamicDepth(4)
```

Parameters

The numeric depth value, greater than 0

Returns

The boolean success or failure of the operation.

See Also

- silvia.brain.setDynamicAttraction
- silvia.brain.setDynamicFalloffDepth
- silvia.brain.setDynamicFalloff
- silvia.brain.setDynamicAdaptation
- silvia.brain.generateDynamic
- silvia.brain.generateDynamicLimited

silvia.brain.setDynamicFalloffDepth

Modifies the state of the SILVIA Core algorithms, changing the "falloff depth" parameter for dynamic output

Description

This method helps control SILVIA's dynamic output generation, and sets the integer falloff depth of SILVIA's lexical traversal algorithm. This number determines the depth at which a statistical falloff begins. A higher number, closer to the set dynamic depth value, will give little or no room for falloff, giving completely rigid output generation within the range. A value that is significantly lower than the basic depth value will give the SILVIA algorithms room to vary within the outside range defined by the basic depth value, with the amount of variation to be determined by a "falloff" multiplier between 0.0 and 1.0

Example Usage (Java)

```
boolean success = _core.ApiBrain().SetDynamicFalloffDepth(2);
```

Example Usage (C#)

```
bool success = _core.ApiBrain().SetDynamicFalloffDepth(2);
```

Example Usage (LUA)

```
success = silvia.brain.setDynamicFalloffDepth(2)
```

Parameters

The numeric falloff depth value, greater than 0, <= dynamic depth

Returns

The boolean success or failure of the operation.

See Also

- silvia.brain.setDynamicAttraction
- silvia.brain.setDynamicDepth
- silvia.brain.setDynamicFalloff
- silvia.brain.setDynamicAdaptation
- silvia.brain.generateDynamic
- silvia.brain.generateDynamicLimited

silvia.brain.setDynamicFalloff

Modifies the state of the SILVIA Core algorithms, changing the "falloff" parameter for dynamic output

Description

This method helps control SILVIA's dynamic output generation, and sets the numeric falloff of SILVIA's lexical traversal algorithm. This number determines how statistical probability will decay between the range of "falloffDepth" and "depth". A value of 1.0 will produce no statistical falloff, whereas a value of 0.5 will multiply the statistical likelihood of a rigid conceptual match by 0.5 for each unit of distance past falloffDepth. In simple terms, this value provides a mechanism for lexical rigidity to decay within the process of output construction, giving finer control over SILVIA's output construction algorithms.

Example Usage (Java)

```
boolean success = _core.ApiBrain().SetDynamicFalloff(0.9f);
```

Example Usage (C#)

```
bool success = _core.ApiBrain().SetDynamicFalloff(0.9f);
```

Example Usage (LUA)

```
success = silvia.brain.setDynamicFalloff(0.9)
```

Parameters

The numeric falloff value, between 0.0 and 1.0

Returns

The boolean success or failure of the operation.

See Also

- silvia.brain.setDynamicAttraction
- silvia.brain.setDynamicDepth
- silvia.brain.setDynamicFalloffDepth
- silvia.brain.setDynamicAdaptation
- silvia.brain.generateDynamic
- silvia.brain.generateDynamicLimited

silvia.brain.setDynamicAdaptation

Modifies the state of the SILVIA Core algorithms, setting the "adaptation" parameter for dynamic output

Description

This method helps control SILVIA's dynamic output generation, and sets the boolean adaptation of SILVIA's lexical traversal algorithm. This boolean determines whether SILVIA automatically and iteratively adapts and reduces rigidity during output construction to insure that all concepts are expressed. In simple terms, when this is enabled, SILVIA is allowed to adaptively become lexically sloppy if necessary to make sure that all key concepts are expressed. If not enabled, SILVIA may not be able to combine all of the required concepts of a particular expression. This inability will be due to a limited knowledge base, but in these cases, SILVIA will still attempt to express something that is both conceptually relevant and lexically correct containing as many of the required concepts as possible. By default, adaptation is disabled.

Example Usage (Java/C#)

```
_core.ApiBrain().SetDynamicAdaptation(true);
```

Example Usage (LUA)

```
silvia.brain.setDynamicAdaptation(true)
```

Parameters

The boolean value enabling or disabling adaptation

Returns

None.

See Also

- silvia.brain.setDynamicAttraction
- silvia.brain.setDynamicDepth

- silvia.brain.setDynamicFalloffDepth
- silvia.brain.setDynamicFalloff
- silvia.brain.generateDynamic
- silvia.brain.generateDynamicLimited

silvia.brain.generateDynamic

Invokes the core SILVIA algorithms to generate a dynamic output

Description

This method invokes SILVIA's dynamic output generation. Two strings are passed to the method, the first containing the space-separated concepts for expression, and the second containing the space-separated concepts for exclusion. For insance, one might call the method with "artificial intelligence" as the first string, and "movies books" as the second. This will force SILVIA to generate something to say about artificial intelligence, but she will not say anything about artificial intelligence in movies or books. When invoked, this method uses the parameters set by the "setDynamic*" functions.

Note that within the SILVIA Training UI, dynamic concept sets are specified within Exuders using "[" and "]" opening and closing brackets, and excluded concepts are specified with the "#" symbol, used to open and close blocks of excluded concepts. For instance, the above example would be specified within the Exuder as: [artificial intelligence #movies books#]

Alternately, if the DYNAMIC check is enabled, the Exuder would not need the "[" and "]" symbols, and would read: artificial intelligence #movies books#

Example Usage (Java/C#)

```
String output = _core.ApiBrain().GenerateDynamic("rock and roll", "keith richards");
```

Example Usage (LUA)

```
output = silvia.brain.generateDynamic("rock and roll", "keith richards")
```

Parameters

`concepts`	the string containing the set of concepts to be expressed in the output
`excluded`	the string containing the set of concepts to exclude from the output

Returns

A string containing the dynamically generated output.

See Also

- silvia.brain.setDynamicAttraction
- silvia.brain.setDynamicDepth

- silvia.brain.setDynamicFalloffDepth
- silvia.brain.setDynamicFalloff
- silvia.brain.setDynamicAdaptation
- silvia.brain.generateDynamicLimited

silvia.brain.generateDynamicLimited

Invokes the core SILVIA algorithms to generate a dynamic output from a limited set of behaviors

Description

This method invokes SILVIA's dynamic output generation. Two strings are passed to the method, the first containing the space-separated concepts for expression, and the second containing the space-separated concepts for exclusion. For insance, one might call the method with "artificial intelligence" as the first string, and "movies books" as the second. This will force SILVIA to generate something to say about artificial intelligence, but she will not say anything about artificial intelligence in movies or books. When invoked, this method uses the parameters set by the "setDynamic*" functions.

However, unlike the ordinary generateDynamic method, this generateDynamicLimited method also takes in an optional group and name string. If a non-nil group value is specified, the dynamic output will ONLY draw from behaviors/Exuders within that group for generating output. If a non-nil namename is specified, then the output generation is further limited to use ONLY that single group/name specified behavior.

Note that within the SILVIA Training UI, dynamic concept sets are specified within Exuders using "[" and "]" opening and closing brackets, and excluded concepts are specified with the "#" symbol, used to open and close blocks of excluded concepts. For instance, the above example would be specified within the Exuder as: [artificial intelligence #movies books#]

Alternately, if the DYNAMIC check is enabled, the Exuder would not need the "[" and "]" symbols, and would read: artificial intelligence #movies books#

Example Usage (Java/C#)

```
String output = _core.ApiBrain().GenerateDynamicLimited("rock and roll", "keith richards", "music", "rock_Exuders");
```

Example Usage (LUA)

```
output = silvia.brain.generateDynamicLimited("rock and roll", "keith richards", "music", "rock_Exuders")
```

Parameters

`concepts`	the string containing the set of concepts to be expressed in the output
`excluded`	the string containing the set of concepts to exclude from the output

`group`	the optional string value specifying the behavior group to be used
`name`	the optional string value specifying the behavior name to be used

Returns

A string containing the dynamically generated output.

See Also

- silvia.brain.setDynamicAttraction
- silvia.brain.setDynamicDepth
- silvia.brain.setDynamicFalloffDepth
- silvia.brain.setDynamicFalloff
- silvia.brain.setDynamicAdaptation
- silvia.brain.generateDynamic

silvia.brain.generateDynamicFromMemory

Invokes the core SILVIA algorithms to generate a dynamic output from the feedback stack

Description

This method invokes SILVIA's dynamic output generation. Two strings are passed to the method, the first containing the space-separated concepts for expression, and the second containing the space-separated concepts for exclusion. For insance, one might call the method with "artificial intelligence" as the first string, and "movies books" as the second. This will force SILVIA to generate something to say about artificial intelligence, but she will not say anything about artificial intelligence in movies or books. When invoked, this method uses the parameters set by the "setDynamic*" functions.

Note that within the SILVIA Training UI, dynamic concept sets are specified within Exuders using "[" and "]" opening and closing brackets, and excluded concepts are specified with the "#" symbol, used to open and close blocks of excluded concepts. For instance, the above example would be specified within the Exuder as: [artificial intelligence #movies books#]

Alternately, if the DYNAMIC check is enabled, the Exuder would not need the "[" and "]" symbols, and would read: artificial intelligence #movies books#

Example Usage (Java/C#)

```
String output = _core.ApiBrain().GenerateDynamicFromMemory("leslie", "rock and roll", "keith richards", true);
```

Example Usage (LUA)

```
output = silvia.brain.generateDynamicFromMemory("leslie", "rock and roll", "keith richards", true)
```

Parameters

`user`	the string specifying the username tag for memory searches
`concepts`	the string containing the set of concepts to be expressed in the output
`excluded`	the string containing the set of concepts to exclude from the output
`invert`	the boolean value to invert the first/second person of the pronouns

Returns

A string containing the dynamically generated output.

See Also

- silvia.brain.setDynamicAttraction
- silvia.brain.setDynamicDepth
- silvia.brain.setDynamicFalloffDepth
- silvia.brain.setDynamicFalloff
- silvia.brain.setDynamicAdaptation

silvia.brain.dynamicHasAllConceptsInOne

Returns a true or false indication of result suitability after a call to generateDynamic

Description

This method is called after invocation of SILVIA's dynamic output generation. The boolean value returned indicates if at least one Exuder considered has all of the important, non-stopword concepts in the string that was passed to the previous call to "generateDynamic". This is particulary useful if the application developer needs to filter dynamically generated results based on accuracy.

For example, if an Exuder exists containing the concepts "my favorite color is blue", and the concepts "favorite color" are passed to the "generateDynamic" function, the result of THIS function will be true.

However, if "favorite" and "color" exist in various Exuders, but never appear together within the same Exuder, the result of THIS function will be false.

Example Usage (Java/C#)

```
bool hasAllConcepts = _core.ApiBrain().DynamicHasAllConceptsInOne();
```

Example Usage (LUA)

```
hasAllConcepts = silvia.brain.dynamicHasAllConceptsInOne()
```

Parameters

none

Returns

A boolean value representing the condition.

See Also

- silvia.brain.generateDynamic

silvia.brain.setAbsorberThreshold

Invokes the core SILVIA algorithms to change the "threshold" for Absorber acceptance

Description

This method helps control SILVIA's ability to reject user input that falls too far outside of the AI's ability to answer. For instance, a threshold of 0.5 means that the input must be match roughly half of the conceptual/linguistic content of an Absorber before that Absorber would be considered at all as possibly relevant. If no relevant Absorbers are found for consideration, then either the behavior named "default" is used to generate a resultant output, or if no behavior named "default" is available, SILVIA will output one of several possible phrases expressing her inability to understand the input. The default threshold value is 0.33

Example Usage (Java)

```
boolean success = _core.ApiBrain().SetAbsorberThreshold(0.25f);
```

Example Usage (C#)

```
bool success = _core.ApiBrain().SetAbsorberThreshold(0.25f);
```

Example Usage (LUA)

```
success = silvia.brain.setAbsorberThreshold(0.25)
```

Parameters

The numeric coefficient value used to limit acceptance/rejection of input

Returns

The boolean success or failure of the operation.

See Also

- silvia.brain.setReusableThreshold

silvia.brain.setReusableThreshold

Invokes the core SILVIA algorithms to change the "threshold" for Exuder matching acceptance

Description

This method is a companion to setAbsorberThreshold because it helps control SILVIA's ability to accept or reject Exuders that conceptially match the user input. If this threshold is set low enough, AND the user creates input that is rejected by the Absorber matching algorithms, alternative responses may be spontaneaously generated by SILVIA using the reusable Exuders that have some concptual and contextual relationship to the user input. Note that only "interesting" topical concepts are considered, so as to provide reasonable triggers and to minimize irrelevant matches.

As with Absorber matching, if no suitable Exuders are found using this line of interpretive defense, SILVIA will either drop to an output using the "default" behavior, or barring such a behavior's existence, will output one of several possible phrases expressing her inability to understand the input. The default threshold value is 100.0, indicating that this feature is basically "off".

Example Usage (Java)

```
boolean success = _core.ApiBrain().SetReusableThreshold(1.5f);
```

Example Usage (C#)

```
bool success = _core.ApiBrain().SetReusableThreshold(1.5f);
```

Example Usage (LUA)

```
success = silvia.brain.setReusableThreshold(1.5)
```

Parameters

The numeric value used to limit acceptance/rejection of input when compared to Exuders

Returns

The boolean success or failure of the operation.

See Also

- silvia.brain.setAbsorberThreshold

silvia.brain.setAddressByName

Enables or disables the SILVIA core's requirement to be addressed by name before responding

Description

A desirable operating mode is one where SILVIA can listen to user's while they speak, but where the application will only accept input if SILVIA is addressed directly by name. This allows users to speak freely, with SILVIA running in the background and NOT responding. To elicit a response, one would have to begin an utterance with the application's name, which defaults to "silvia".

Example Usage (Java/C#)

```
_core.ApiBrain().SetAddressByName(true);
```

Example Usage (LUA)

```
silvia.brain.setAddressByName(true)
```

Parameters

`enabled`	a boolean value to enable or disable this mode in the SILVIA core

Returns

None.

See Also

- silvia.brain.getAddressByName

silvia.brain.getAddressByName

Returns the boolean enabled/disabled status of the SILVIA core's AddressByName mode

Description

A desirable operating mode is one where SILVIA can listen to user's while they speak, but where the application will only accept input if SILVIA is addressed directly by name. This function returns the boolean status of this mode.

Example Usage (Java)

```
boolean addressMe = _core.ApiBrain().GetAddressByName();
```

Example Usage (C#)

```
bool addressMe = _core.ApiBrain().GetAddressByName();
```

Example Usage (LUA)

```
addressMe = silvia.brain.getAddressByName()
```

Parameters

none

Returns

The boolean value of the AddressByName status.

See Also

- silvia.brain.setAddressByName

silvia.brain.setAllEars

Enables or disables the SILVIA core's ability to respond to the next input

Description

A desirable operating mode is one where SILVIA can listen to user's while they speak, but where the application will only accept input if SILVIA is addressed directly by name. This allows users to speak freely, with SILVIA running in the background and NOT responding. To elicit a response, one would have to begin an utterance with the application's name, which defaults to "silvia". This function, used in combination with an enabled "AddressMe", can enable or disable SILVIA's ability to use the next input "as is".

Example Usage (Java/C#)

```
_core.ApiBrain().SetAllEars(true);
```

Example Usage (LUA)

```
silvia.brain.setAllEars(true)
```

Parameters

`enabled`	a boolean value to enable or disable this mode in the SILVIA core

Returns

None.

See Also

- silvia.brain.setAddressByName
- silvia.brain.getAddressByName

- silvia.brain.getAllEars

silvia.brain.getAllEars

Returns the boolean enabled/disabled status of the SILVIA core's AllEars mode

Description

A desirable operating mode is one where SILVIA can listen to user's while they speak, but where the application will only accept input if SILVIA is addressed directly by name. The "AllEars" component determines if SILVIA can currently accept all input, and this function returns the boolean status of this mode.

Example Usage (Java)

```
boolean allEars = _core.ApiBrain().GetAllEars();
```

Example Usage (C#)

```
bool allEars = _core.ApiBrain().GetAllEars();
```

Example Usage (LUA)

```
allEars = silvia.brain.getAllEars()
```

Parameters

none

Returns

The boolean value of the AllEars status.

See Also

- silvia.brain.setAddressByName
- silvia.brain.getAddressByName
- silvia.brain.setAllEars

silvia.brain.loadCommandAssembly

Loads the name command assembly so that the functions are available to SILVIA

Description

Custom functionallity may be created via one or more plugins. This command allows for the scripted loading of such plugins. Usually, this method will be called from a boot behavior's post Exuder script. This is supported on interpreted .NET/Mono enabled platforms only.

Example Usage (C#)

bool loaded = _core.ApiBrain().LoadCommandAssembly("silvia_commands", "silvia_command", "sv_command");

Example Usage (LUA)

loaded = silvia.brain.loadCommandAssembly("silvia_commands", "silvia_command", "sv_command")

Parameters

`assembly`	a string representing the name of the assembly (dll or so) to be loaded
`namespace`	a string specifying the namespace where the class/methods are to be found
`class`	a string specifying the named class that contains the methods to be accessed

Returns

The boolean value representing the success or failure of the assembly's loading.

See Also

none

silvia.data

This class is available as both a C# class and a LUA table, and provides the functions for comprehensive read/write access to SILVIA's behavior and concept data.

Summary

silvia.data	This class is available as both a C# class and a LUA table, and provides the functions for comprehensive read/write access to SILVIA's behavior and concept data.

FUNCTIONS

silvia.data.clear	Clears and initialized the SILVIA data in the active SILVIA Core
silvia.data.setBinding	Creates a conceptual binding between two concepts
silvia.data.setBindingTypeModifier	Alters the numeric weighting modifier for a particular conceptual relationship type

silvia.data.getBindingTypeModifier	Returns the numeric weighting modifier for a particular conceptual relationship type
silvia.data.testBinding	Determines if two concepts are bound, and in what direction
silvia.data.getBoundConcept	Returns the specified bound concept, or nil if none found
silvia.data.getAllBoundConcepts	Returns the all of the bound concepts and binding types for given concept
silvia.data.tuneConcepts	Statistically tunes and balances conceptual data based on a variety of factors
silvia.data.cleanConcepts	Removes unused and ontologically disconnected concepts from memory
silvia.data.getBehaviorID	Gets or creates a behavior with the given group and name
silvia.data.getBehaviorIDFromIndex	Gets a behavior ID from the give 0-base index
silvia.data.getBehaviorCount	Returns the total number of behaviors in the current brain data
silvia.data.getBehaviorGroup	Returns the group of the given behavior
silvia.data.getBehaviorSubGroup	Returns the sub-group of the given behavior
silvia.data.getBehaviorName	Returns the name of the given behavior
silvia.data.removeBehavior	Deletes the behavior with the given ID
silvia.data.addAbsorber	Creates a new Absorber with the given user input pattern
silvia.data.setAbsorberText	Modifies a given Absorber with the given AI input pattern
silvia.data.getAbsorberText	Returns a given Absorber's AI input pattern
silvia.data.removeAbsorber	Deletes the Absorber represented by the given behavior and Absorber ID pair
silvia.data.addExuder	Creates a new Exuder with the given AI output pattern
silvia.data.setExuderText	Modifies a given Exuder with the given AI output pattern
silvia.data.getExuderText	Returns a given Exuder's AI output pattern
silvia.data.removeExuder	Deletes the Exuder represented by the given behavior and Exuder ID pair
silvia.data.setBehaviorScript	Sets the programmatic script content for the behavior.
silvia.data.setExuderscript	Sets the programmatic script content for the given indexed Exuder within the given behavior.
silvia.data.setBehaviorData	Sets the arbitrary, application specific string data content for the behavior.
silvia.data.getBehaviorData	Returns the arbitrary, application specific string data content for the behavior.
silvia.data.setBehaviorSecurityLevel	Sets the numeric integer security level for the given behavior.
silvia.data.getBehaviorSecurityLevel	Returns the integer security level for the given behavior.

silvia.data.setAbsorberData	Sets the arbitrary, application specific string data content for the given Absorber.
silvia.data.getAbsorberData	Returns the arbitrary, application specific string data content for the given Absorber.
silvia.data.setExuderData	Sets the arbitrary, application specific string data content for the given Exuder.
silvia.data.getExuderData	Returns the arbitrary, application specific string data content for the given Exuder.
silvia.data.setExudersecurityLevel	Sets the numeric integer security level for the given Exuder.
silvia.data.getExudersecurityLevel	Returns the integer security level for the given Exuder
silvia.data.setAbsorberExact	Enables or disables the Absorber's requirement for an exact conceptual match on the user input.
silvia.data.getAbsorberExact	Returns a true or false value of the Absorber's requirement for an exact conceptual match on the user input.
silvia.data.setAbsorberReject	Enables or disables the Absorber's use as a rejection filter
silvia.data.getAbsorberReject	Returns the state of the Absorber's use as a rejection filter
silvia.data.setExuderExact	Enables or disables the AI requirement to express (output) exactly what is contained in the Exuder.
silvia.data.getExuderExact	Returns the boolen state of the AI requirement to express (output) exactly what is contained in the Exuder.
silvia.data.setExuderReuse	Enables or disables the AI's ability to draw on a given Exuder in generating dynamic output.
silvia.data.getExuderReuse	Returns the AI's ability to draw on a given Exuder in generating dynamic output.
silvia.data.setExuderDynamic	Enables or disables the AI's ability to use the concepts in an Exuder to generate new, dynamic output.
silvia.data.getExuderDynamic	Returns the state of the AI's ability to use the concepts in a particular Exuder to generate new, dynamic output.
silvia.data.setExuderContext	Sets the given Exuder's conceptual context field
silvia.data.getExuderContext	Returns the given Exuder's conceptual context field
silvia.data.getBehaviorCreatedYear	Gets the given behavior's creation date "year" value
silvia.data.getBehaviorCreatedMonth	Gets the given behavior's creation date "month" value
silvia.data.getBehaviorCreatedDay	Gets the given behavior's creation date "day" value
silvia.data.getBehaviorCreatedHour	Gets the given behavior's creation date "hour" value
silvia.data.getBehaviorCreatedMinute	Gets the given behavior's creation date "minute" value
silvia.data.getBehaviorLastModifiedYe	Gets the given behavior's last modified date "year" value

ar	
silvia.data.getBehaviorLastModifiedMonth	Gets the given behavior's last modified date "month" value
silvia.data.getBehaviorLastModifiedDay	Gets the given behavior's last modified date "day" value
silvia.data.getBehaviorLastModifiedHour	Gets the given behavior's last modified date "hour" value
silvia.data.getBehaviorLastModifiedMinute	Gets the given behavior's last modified date "minute" value
silvia.data.addResponse	Adds a paired input/output response to the behavior data
silvia.data.setContext	Sets the context for a previously learned response
silvia.data.setReuse	Sets the previously learned response as re-useable or not
silvia.data.setBehaviorName	Sets the name for the most recently learned behavior
silvia.data.setBehaviorGroup	Sets the group for the most recently learned behavior
silvia.data.setBehaviorSubGroup	Sets the sub-group for the most recently learned behavior

Functions

silvia.data.clear

Clears and initialized the SILVIA data in the active SILVIA Core

Description

This function deletes all knowledge from the current SILVIA brain, essentially creating a new "blank slate" in SILVIA's memory.

Example Usage (C#)

```
bool success = _core.ApiData().Clear()
```

Example Usage (LUA)

```
success = silvia.data.clear()
```

Parameters

none

Returns

The boolean success or failure of the operation.

silvia.data.setBinding

Creates a conceptual binding between two concepts

Description

This function adds knowledge to the current SILVIA brain by connecting two concepts with a binding of a specific type.

Example Usage (C#)

```
bool success = _core.ApiData().SetBinding("tokyo", "japan", "location");
```

Example Usage (LUA)

```
success = silvia.data.setBinding("tokyo", "japan", "location")
```

Parameters

`concept`	The string or variable name representing the base concept of the binding.
`bound`	The string or variable name representing the concept to be bound.
`type`	The string representing the binding type.

The current exposed lexical binding types are

- "root"
- "synonym", "synonymSibling"
- "antonym"
- "similar", "similarSibling"
- "different"
- "related", "relatedSibling"
- "unrelated"
- "child", "sibling", "parent"
- "plural", "singular"
- "misspelling", "correction"
- "verbal", "written"

The current exposed conceptual binding types are loosely based on the MIT MediaLab's ConceptNet

- "relatedTo", "thematic", "superThematic"
- "isA", "propertyOf", "partOf", "madeOf", "definedAs"
- "capableOf"

- "prerequisite", "firstEvent", "eventOf", "lastEvent"
- "location"
- "effect", "desirousEffect"
- "usedFor", "action"
- "motivation", "desire"

And finally

- "unknown", "invalid"

Returns

The boolean success or failure of the operation.

See Also

- silvia.data.testBinding
- silvia.data.getBoundConcept
- <silvia.data.getAllBoundConcept>

silvia.data.setBindingTypeModifier

Alters the numeric weighting modifier for a particular conceptual relationship type

Description

This function alters the connection strength between concepts bound by the given type. Note that if the binding type does not exist, it will be created and given the modifier value.

Example Usage (C#)

```
bool success = _core.ApiData().SetBindingTypeModifier("child", 0.65f);
```

Example Usage (LUA)

```
success = silvia.data.setBindingTypeModifier("child", 0.65)
```

Parameters

`type`	The string representing the binding type or a variable containing the name of the type
`modifier`	The number representing a scalar multiplier for the connection type, with a value of 0.0 indicating a halt condition

The current exposed lexical binding types are

- "root"
- "synonym", "synonymSibling"
- "antonym"
- "similar", "similarSibling"
- "different"
- "related", "relatedSibling"
- "unrelated"
- "child", "sibling", "parent"
- "plural", "singular"
- "misspelling", "correction"
- "verbal", "written"

The current exposed conceptual binding types are loosely based on the MIT MediaLab's ConceptNet

- "relatedTo", "thematic", "superThematic"
- "isA", "propertyOf", "partOf", "madeOf", "definedAs"
- "capableOf"
- "prerequisite", "firstEvent", "eventOf", "lastEvent"
- "location"
- "effect", "desirousEffect"
- "usedFor", "action"
- "motivation", "desire"

And finally

- "unknown", "invalid"

Returns

The boolean success or failure of the operation. The method fails if the binding type is nil or zero-length.

See Also

- silvia.data.setBinding
- silvia.data.testBinding
- silvia.data.getBoundConcept
- <silvia.data.getAllBoundConcept>
- silvia.data.getBindingTypeModifier

silvia.data.getBindingTypeModifier

Returns the numeric weighting modifier for a particular conceptual relationship type

Description

This function returns the connection strength between concepts bound by the given type. Note that if the binding type does not exist, it will be created, and given a default modifier of the 0.0 halt condition.

Example Usage (C#)

```
float modifier = _core.ApiData().GetBindingTypeModifier("synonym");
```

Example Usage (LUA)

```
modifier = silvia.data.getBindingTypeModifier("synonym")
```

Parameters

`type`	The string representing the binding type or a variable containing the name of the type

The current exposed lexical binding types are

- "root"
- "synonym", "synonymSibling"
- "antonym"
- "similar", "similarSibling"
- "different"
- "related", "relatedSibling"
- "unrelated"
- "child", "sibling", "parent"
- "plural", "singular"
- "misspelling", "correction"
- "verbal", "written"

The current exposed conceptual binding types are loosely based on the MIT MediaLab's ConceptNet

- "relatedTo", "thematic", "superThematic"
- "isA", "propertyOf", "partOf", "madeOf", "definedAs"
- "capableOf"
- "prerequisite", "firstEvent", "eventOf", "lastEvent"
- "location"
- "effect", "desirousEffect"
- "usedFor", "action"
- "motivation", "desire"

And finally

- "unknown", "invalid"

Returns

`modifier`	The number representing a scalar multiplier for the connection type, with a value of 0.0 indicating a halt condition

See Also

- silvia.data.setBinding
- silvia.data.testBinding
- silvia.data.getBoundConcept
- <silvia.data.getAllBoundConcept>
- silvia.data.setBindingTypeModifier

silvia.data.testBinding

Determines if two concepts are bound, and in what direction

Description

This function tests knowledge within the current SILVIA brain by returning a string representing a valid a binding direction or an "invalid".

Example Usage (C#)

```
String direction = _core.ApiData().TestBinding("tokyo", "japan", "location");
```

Example Usage (LUA)

```
direction = silvia.data.testBinding("tokyo", "japan", "location")
```

Parameters

`concept`	The string or variable name representing the base concept of the potential binding.
`bound`	The string or variable name representing the concept that is potentially bound.
`type`	The string representing the binding type to be tested. "unknown" is used for generic tests.

The current exposed lexical binding types are

- "root"
- "synonym", "synonymSibling"

- "antonym"
- "similar", "similarSibling"
- "different"
- "related", "relatedSibling"
- "unrelated"
- "child", "sibling", "parent"
- "plural", "singular"
- "misspelling", "correction"
- "verbal", "written"

The current exposed conceptual binding types are loosely based on the MIT MediaLab's ConceptNet

- "relatedTo", "thematic", "superThematic"
- "isA", "propertyOf", "partOf", "madeOf", "definedAs"
- "capableOf"
- "prerequisite", "firstEvent", "eventOf", "lastEvent"
- "location"
- "effect", "desirousEffect"
- "usedFor", "action"
- "motivation", "desire"

And finally

- "unknown", "invalid"

Returns

A string representing a binding direction of "forward", "reverse", or "invalid" if no binding was found.

See Also

- silvia.data.setBinding
- silvia.data.getBoundConcept
- silvia.data.getAllBoundConcepts

silvia.data.getBoundConcept

Returns the specified bound concept, or nil if none found

Description

This function tests knowledge within the current SILVIA brain by returning a string representing one of the bound concepts of the specified type. If no valid bound concept is found, the function returns nil.

Example Usage (C#)

```
String boundConcept = _core.ApiData().GetBoundConcept("tokyo", "location");
```

Example Usage (LUA)

```
boundConcept = silvia.data.getBoundConcept("tokyo", "location")
```

Parameters

`concept`	The string or variable name representing the base concept of the potential binding.
`type`	The string representing the binding type to be tested. "unknown" is used for generic tests.

The current exposed lexical binding types are

- "root"
- "synonym", "synonymSibling"
- "antonym"
- "similar", "similarSibling"
- "different"
- "related", "relatedSibling"
- "unrelated"
- "child", "sibling", "parent"
- "plural", "singular"
- "misspelling", "correction"
- "verbal", "written"

The current exposed conceptual binding types are loosely based on the MIT MediaLab's ConceptNet

- "relatedTo", "thematic", "superThematic"
- "isA", "propertyOf", "partOf", "madeOf", "definedAs"
- "capableOf"
- "prerequisite", "firstEvent", "eventOf", "lastEvent"
- "location"
- "effect", "desirousEffect"
- "usedFor", "action"
- "motivation", "desire"

And finally

- "unknown", "invalid"

Returns

A string representing a concept that is bound by the type to the original concept. A nil is returned it no valid match is found. If more than one concept is bound by a binding of type, the bound concept returned is selected randomly.

See Also

- silvia.data.setBinding
- silvia.data.testBinding
- silvia.data.getAllBoundConcepts

silvia.data.getAllBoundConcepts

Returns the all of the bound concepts and binding types for given concept

Description

This function tests knowledge within the current SILVIA brain by returning a string array representing one or more bound concepts attached to the specified root concept type. The return format is in paired strings, with even strings (starting at 0) containing the bound concept names, and the alternating odd strings (starting at 1) containing the binding type as a string. If no valid bound concepts are found, the function returns nil.

Example Usage (C#)

```
String[] bindings = _core.ApiData().GetAllBoundConcepts("dog"); if(bindings != null) { String firstBound = String[0]; String firstType = String[1]; }
```

Example Usage (LUA)

```
bindings = silvia.data.getAllBoundConcepts("dog") return bindings[0], bindings[1]
```

Parameters

`concept`	The string or variable name representing the base concept of the potential bindings.

The current exposed lexical binding types are

- "root"
- "synonym", "synonymSibling"
- "antonym"
- "similar", "similarSibling"
- "different"
- "related", "relatedSibling"
- "unrelated"
- "child", "sibling", "parent"
- "plural", "singular"
- "misspelling", "correction"
- "verbal", "written"

The current exposed conceptual binding types are loosely based on the MIT MediaLab's ConceptNet

- "relatedTo", "thematic", "superThematic"
- "isA", "propertyOf", "partOf", "madeOf", "definedAs"
- "capableOf"
- "prerequisite", "firstEvent", "eventOf", "lastEvent"
- "location"
- "effect", "desirousEffect"
- "usedFor", "action"
- "motivation", "desire"

And finally

- "unknown", "invalid"

Returns

A series of string pairs representing a bound concept, followed by its type A nil is returned it no valid match is found.

See Also

- silvia.data.setBinding
- silvia.data.testBinding
- silvia.data.getBoundConcept

silvia.data.tuneConcepts

Statistically tunes and balances conceptual data based on a variety of factors

Description

This function modifies knowledge in the current SILVIA brain by using statistical analysis, lexical information, and other criteria to produce well-balanced and responsive mathematical values for the current collection of concepts in the SILVIA brain. This function is commonly invoked when finalized brain data needs to be balanced for interactive use, and the tuned conceptual data is saved with trained brain files.

Example Usage (C#)

```
bool success = _core.ApiData().TuneConcepts(true, true, false);
```

Example Usage (LUA)

```
success = silvia.data.tuneConcepts(true, true, false)
```

Parameters

`useAbsorbers`	The boolean flag to determine if Absorber data is considered during the tuning process.
`AbsorberAsDocument`	The boolean flag to separate Absorbers as unique documuments during the tuning process.
`useExuders`	The boolean flag to determine if Exuder data is considered during the tuning process.

Returns

The boolean success or failure of the operation.

silvia.data.cleanConcepts

Removes unused and ontologically disconnected concepts from memory

Description

This function is an optimization proceedure that removes any extraneous coneptual data not pertinent to the currently loaded knowledge base. During the course of development, concepts may be created or loaded by trainers "in-passing", and can potentially end up as useless, disconnected data. Invoking this function "cleans up" the concept data so that only useful and used information is retained.

Example Usage (C#)

```
bool success = _core.ApiData().CleanConcepts();
```

Example Usage (LUA)

```
success = silvia.data.cleanConcepts()
```

Parameters

none

Returns

The boolean success or failure of the operation.

silvia.data.getBehaviorID

Gets or creates a behavior with the given group and name

Description

This function either returns an existing ID value if the given behavior exists, or creates a new behavior with the give group and name, modifying the current SILVIA brain to do so. The returned integer ID value may be used to further modify the given behavior.

Example Usage (C#)

```
int id = _core.ApiData().GetBehaviorID("automotive", "greeting");
```

Example Usage (LUA)

```
id = silvia.data.getBehaviorID("automotive", "greeting")
```

Parameters

`group`	The string value representing the behavior's group.
`name`	The string name, that combined with the group, provides a unigue pair identifier for the behavior.

Returns

The integer number value representing the unique ID of the new or existing behavior. The value is -1 if the operation failed.

silvia.data.getBehaviorIDFromIndex

Gets a behavior ID from the give 0-base index

Description

This function returns an existing ID value if the given behavior exists. The returned integer ID value may be used to further modify the given behavior.

Example Usage (C#)

```
int id = _core.ApiData().GetBehaviorIDFromIndex(index);
```

Example Usage (LUA)

```
id = silvia.data.getBehaviorIDFromIndex(index)
```

Parameters

`index`	The integer value representing the 0-based index of the behavior in the data.

Returns

The integer number value representing the unique ID of the existing behavior. The value is -1 if the operation failed.

silvia.data.getBehaviorCount

Returns the total number of behaviors in the current brain data

Description

This method returns the number of behaviors in the brain. One possible use is to employ the returned integer as a limit for programatically iterating through all of the behaviors.

Example Usage (C#)

```
int count = _core.ApiData().GetBehaviorCount();
```

Example Usage (LUA)

```
count = silvia.data.getBehaviorCount()
```

Parameters

none

Returns

The integer number value representing the total number of behaviors. The value is -1 if the operation failed.

silvia.data.getBehaviorGroup

Returns the group of the given behavior

Description

This method returns the group value of the identified behavior.

Example Usage (C#)

```
String group = _core.ApiData().GetBehaviorGroup(144);
```

Example Usage (LUA)

```
group = silvia.data.getBehaviorGroup(144)
```

Parameters

`id`	The integer numeric value or variable representing the unique ID of the behavior to be queried.

Returns

The string value representing the group that the behavior belongs to. A nil value is returned if the operation failed.

silvia.data.getBehaviorSubGroup

Returns the sub-group of the given behavior

Description

This method returns the sub-group value of the identified behavior.

Example Usage (C#)

```
String subGroup = _core.ApiData().GetBehaviorSubGroup(144);
```

Example Usage (LUA)

```
subGroup = silvia.data.getBehaviorSubGroup(144)
```

Parameters

`id`	The integer numeric value or variable representing the unique ID of the behavior to be queried.

Returns

The string value representing the sub-group that the behavior belongs to. A nil value is returned if the operation failed, or if the identified behavior does not belong to a subgroup.

silvia.data.getBehaviorName

Returns the name of the given behavior

Description

This method returns the name value of the identified behavior.

Example Usage (C#)

```
String name = _core.ApiData().GetBehaviorName(144);
```

Example Usage (LUA)

```
name = silvia.data.getBehaviorName(144)
```

Parameters

`id`	The integer numeric value or variable representing the unique ID

of the behavior to be queried.

Returns

The string value representing the name of the behavior. A nil value is returned if the operation failed.

silvia.data.removeBehavior

Deletes the behavior with the given ID

Description

This function deletes an existing behavior with the given ID value, modifying the current SILVIA brain to do so.

Example Usage (C#)

```
bool success = _core.ApiData().RemoveBehavior(144);
```

Example Usage (LUA)

```
success = silvia.data.removeBehavior(147)
```

Parameters

`id`	The integer numeric value or variable representing the unique ID of the behavior to be deleted.

Returns

The boolean success or failure of the operation.

silvia.data.addAbsorber

Creates a new Absorber with the given user input pattern

Description

This function creates a new Absorber in the identified behavior, modifying the current SILVIA brain to do so. The returned integer Absorber ID value may be used to further modify the newly created Absorber.

Example Usage (C#)

```
int absID = _core.ApiData().AddAbsorber(147, "what is your name");
```

Example Usage (LUA)

```
absID = silvia.data.addAbsorber(147, "what is your name")
```

Parameters

`id`	The numeric integer id of the behavior to modify by adding an Absorber.
`pattern`	The string value representing the new Absorber input pattern.

Returns

The integer number value representing the indexed ID for the new Absorber, separate from the behavior ID. The value is -1 if the operation failed.

silvia.data.setAbsorberText

Modifies a given Absorber with the given AI input pattern

Description

This function replaces one of the input patterns in the identified behavior, modifying the current SILVIA brain to do so.

Example Usage (C#)

bool success = _core.ApiData().SetAbsorberText(147, 0, "what is your name, if you don't mind me asking?");

Example Usage (LUA)

success = silvia.data.SetAbsorberText(147, 0, "what is your name, if you don't mind me asking?")

Parameters

`id`	The numeric integer id of the behavior to modify by changing an Absorber
`AbsorberID`	The numeric integer id of the Absorber to modify
`pattern`	The string value representing the updated Absorber output pattern

Returns

The boolean value representing the success or failure of the operation.

silvia.data.getAbsorberText

Returns a given Absorber's AI input pattern

Description

This function returns one of the input patterns in the identified behavior.

Example Usage (C#)

```
String pattern = _core.ApiData().GetAbsorberText(147, 0);
```

Example Usage (LUA)

```
pattern = silvia.data.getAbsorberText(147, 0)
```

Parameters

`id`	The numeric integer id of the behavior from which to read the data
`AbsorberID`	The numeric integer id of the Absorber to read

Returns

The string value representing the returned input pattern, or a nil value if unsuccessful

silvia.data.removeAbsorber

Deletes the Absorber represented by the given behavior and Absorber ID pair

Description

This method deletes an existing Absorber within an existing behavior, modifying the current SILVIA brain to do so.

Example Usage (C#)

```
bool success = _core.ApiData().RemoveAbsorber(147, 0);
```

Example Usage (LUA)

```
success = silvia.data.removeAbsorber(147, 0)
```

Parameters

`id`	The integer numeric value or variable representing the unique ID of the behavior containing the Absorber to be deleted.
`absid`	The integer numeric value or variable representing the indexed ID of the Absorber, separate from the behavior ID.

Returns

The boolean success or failure of the operation.

silvia.data.addExuder

Creates a new Exuder with the given AI output pattern

Description

This function creates a new Exuder in the identified behavior, modifying the current SILVIA brain to do so. The returned integer Exuder ID value may be used to further modify the newly created Exuder.

Example Usage (C#)

```
int exID = _core.ApiData().AddExuder(147, "my name is $_a. it is terrific to meet you.");
```

Example Usage (LUA)

```
exID = silvia.data.addExuder(147, "my name is $_a. it is terrific to meet you.")
```

Parameters

`id`	The numeric integer id of the behavior to modify by adding an Exuder.
`pattern`	The string value representing the new Exuder output pattern.

Returns

The integer number value representing the indexed ID for the new Exuder, separate from the behavior ID. The value is -1 if the operation failed.

silvia.data.setExuderText

Modifies a given Exuder with the given AI output pattern

Description

This function replaces one of the output patterns in the identified behavior, modifying the current SILVIA brain to do so.

Example Usage (C#)

```
bool success = _core.ApiData().SetExuderText(147, 2, "my name is $_a. it is terrific to meet you.");
```

Example Usage (LUA)

success = silvia.data.setExuderText(147, 2, "my name is $_a. it is terrific to meet you.")

Parameters

`id`	The numeric integer id of the behavior to modify by changing an Exuder.
`ExuderID`	The numeric integer id of the Exuder to modify
`pattern`	The string value representing the updated Exuder output pattern.

Returns

The boolean value representing the success or failure of the operation.

silvia.data.getExuderText

Returns a given Exuder's AI output pattern

Description

This function returns one of the output patterns in the identified behavior.

Example Usage (C#)

String pattern = _core.ApiData().GetExuderText(147, 0);

Example Usage (LUA)

pattern = silvia.data.getExuderText(147, 0)

Parameters

`id`	The numeric integer id of the behavior from which to read the data
`ExuderID`	The numeric integer id of the Exuder to read

Returns

The string value representing the returned output pattern, or a nil value if unsuccessful.

silvia.data.removeExuder

Deletes the Exuder represented by the given behavior and Exuder ID pair

Description

This method deletes an existing Exuder within an existing behavior, modifying the current SILVIA brain to do so.

Example Usage (C#)

```
bool success = _core.ApiData().RemoveExuder(147, 0);
```

Example Usage (LUA)

```
success = silvia.data.removeExuder(147, 0)
```

Parameters

`id`	The integer numeric value or variable representing the unique ID of the behavior containing the Exuder to be deleted.
`exid`	The integer numeric value or variable representing the indexed ID of the Exuder, separate from the behavior ID.

Returns

The boolean success or failure of the operation.

silvia.data.setBehaviorScript

Sets the programmatic script content for the behavior.

Description

This function sets the script content for any one of three execution stages in a particular identified behavior, modifying the current SILVIA brain to do so. These stages include "val" (validation), "pre" (pre-behavior), and "post" (post-behavior). Two scripting languages, "LUA" (LUA), and "cs" (C-Sharp), are currently supported, and which one you use will depend on your target runtime platform.

Example Usages (C#)

```
bool success = _core.ApiData().SetBehaviorScript(147, "val", "cs", myValidationScript); success = _core.ApiData().SetBehaviorScript(147, "pre", "cs", myPreScript); success = _core.ApiData().SetBehaviorScript(147, "post", "cs", myPostScript);
```

Example Usages (LUA)

```
success = silvia.data.setBehaviorScript(147, "val", "LUA", "if (myvariable == nil) then return false end") success = silvia.data.setBehaviorScript(147, "pre", "LUA", "myvariable = myvariable + 1") success = silvia.data.setBehaviorScript(147, "post", "LUA", "if (myvariable > 5) then myvariable = nil end")
```

Parameters

`id`	The numeric integer id of the behavior to modify by setting the script.
`stage`	The string value representing one of the three scripting stages, "val", "pre", or "post".
`language`	The string value representing one of the two supported scripting languages, "LUA", or "cs".
`script`	The string value representing the script code to apply to the given behavior.

Returns

The boolean success or failure of the operation.

silvia.data.setExuderscript

Sets the programmatic script content for the given indexed Exuder within the given behavior.

Description

This function sets the script content for any one of three execution stages in a particular identified Exuder, modifying the current SILVIA brain to do so. These stages include "val" (validation), "pre" (pre-behavior), and "post" (post-behavior). Two scripting languages, "LUA" (LUA), and "cs" (C-Sharp), are currently supported, and which one you use will depend on your target runtime platform.

Example Usages (C#)

bool success = _core.ApiData().SetExuderscript(147, "val", "cs", myValidationScript); success = _core.ApiData().SetExuderscript(147, "pre", "cs", myPreScript); success = _core.ApiData().SetExuderscript(147, "post", "cs", myPostScript);

Example Usages (LUA)

success = silvia.data.setExuderscript(147, 1, "val", "LUA", "if (myvariable == nil) then return false end") success = silvia.data.setExuderscript(147, 1, "pre", "LUA", "myvariable = myvariable + 1") success = silvia.data.setExuderscript(147, 1, "post", "LUA", "if (myvariable > 5) then myvariable = nil end")

Parameters

`id`	The numeric integer value or variable id of the behavior to modify by

setting the script.

`exid`	The numeric integer value or variable representing the zero-indexed ID of the Exuder, separate from the behavior ID.
`stage`	The string value representing one of the three scripting stages, "val", "pre", or "post".
`language`	The string value representing one of the two supported scripting languages, "LUA", or "cs".
`script`	The string value representing the script code to apply to the given Exuder withing the behavior.

Returns

The boolean success or failure of the operation.

silvia.data.setBehaviorData

Sets the arbitrary, application specific string data content for the behavior.

Description

This function sets the data content for a particular identified behavior, modifying the current SILVIA brain to do so. This arbitary string data can be fetched programatically, or can also be served up automatically by the SILVIA Server when a particular behavior is invoked.

Example Usage (C#)

```
bool success = _core.ApiData().SetBehaviorData(147, "images/73/54/userImage_423.jpg");
```

Example Usage (LUA)

```
success = silvia.data.setBehaviorData(147, "images/73/54/userImage_423.jpg")
```

Parameters

`id`	The numeric integer id of the behavior to modify by setting the arbitrary data.
`data`	The string value representing the new data to apply to the given behavior.

Returns

The boolean success or failure of the operation.

silvia.data.getBehaviorData

Returns the arbitrary, application specific string data content for the behavior.

Description

This function gets the data content for a particular identified behavior.

Example Usage (C#)

```
String data = _core.ApiData().GetBehaviorData(147);
```

Example Usage (LUA)

```
data = silvia.data.getBehaviorData(147)
```

Parameters

`id`	The numeric integer id of the behavior containing the arbitrary data.

Returns

`data`	The string value representing the data currently attached to the given behavior.

silvia.data.setBehaviorSecurityLevel

Sets the numeric integer security level for the given behavior.

Description

This function sets the security level for a specific behavior, modifying the current SILVIA brain to do so. The security range is 0 - n, where 0 is "open" to anyone, and any value above 0 must be met with a matching or greater user security level for the behavior to be invoked. Note that a higher behavior security level can override a lower Exuder security level.

Example Usage (C#)

```
bool success = _core.ApiData().SetBehaviorSecurityLevel(147, 2);
```

Example Usage (LUA)

```
success = silvia.data.setBehaviorSecurityLevel(147, 2)
```

Parameters

`id`	The numeric integer id of the behavior to modify by setting the security level
`level`	The numeric integer value representing the new security level to apply to the given behavior

Returns

The boolean success or failure of the operation.

silvia.data.getBehaviorSecurityLevel

Returns the integer security level for the given behavior.

Description

This function gets the security level for a particular identified behavior. The range is 0 - n, where 0 is "open" to anyone, and any value above 0 must be met with a matching or greater user security level for the behavior to be invoked. Note that a higher behavior security level can override a lower Exuder security level.

Example Usage (C#)

```
int level = _core.ApiData().GetBehaviorSecurityLevel(147);
```

Example Usage (LUA)

```
level = silvia.data.getBehaviorSecurityLevel(147)
```

Parameters

`id`	The numeric integer id of the behavior being queried for its security level

Returns

`level`	The number value representing the security level of the given behavior.

silvia.data.setAbsorberData

Sets the arbitrary, application specific string data content for the given Absorber.

Description

This function sets the data content for a particular identified Absorber, modifying the current SILVIA brain to do so. This arbitary string data can be fetched programatically, or can also

be served up automatically by the SILVIA Server when a particular Absorber within a behavior is invoked.

Example Usage (C#)

```
bool success = _core.ApiData().SetAbsorberData(147, 2, "images/73/54/userImage_423.jpg");
```

Example Usage (LUA)

```
success = silvia.data.setAbsorberData(147, 2, "images/73/54/userImage_423.jpg")
```

Parameters

`id`	The numeric integer id of the behavior where the Absorber to modify is located
`absID`	The numeric integer id of the Absorber with the behavior to modify by setting the arbitrary data
`data`	The string value representing the new data to apply to the given Absorber within the given behavior.

Returns

The boolean success or failure of the operation.

silvia.data.getAbsorberData

Returns the arbitrary, application specific string data content for the given Absorber.

Description

This function gets the data content for a particular identified Absorber within a specific behavior.

Example Usage (C#)

```
String data = _core.ApiData().GetAbsorberData(147, 2);
```

Example Usage (LUA)

```
data = silvia.data.getAbsorberData(147, 2)
```

Parameters

`id`	The numeric integer id of the behavior where the Absorber is located.
`absID`	The numeric integer id of the Absorber containing the arbitrary data

Returns

`data`	The string value representing the data currently attached to the given Absorber within the given behavior.

silvia.data.setExuderData

Sets the arbitrary, application specific string data content for the given Exuder.

Description

This function sets the data content for a particular identified Exuder, modifying the current SILVIA brain to do so. This arbitary string data can be fetched programatically, or can also be served up automatically by the SILVIA Server when a particular Exuder within a behavior is invoked.

Example Usage (C#)

```
bool success = _core.ApiData().SetExuderData(147, 1, "images/73/54/userImage_423.jpg");
```

Example Usage (LUA)

```
success = silvia.data.setExuderData(147, 1, "images/73/54/userImage_423.jpg")
```

Parameters

`id`	The numeric integer id of the behavior where the Exuder to modify is located
`exID`	The numeric integer id of the Exuder with the behavior to modify by setting the arbitrary data
`data`	The string value representing the new data to apply to the given Exuder within the given behavior.

Returns

The boolean success or failure of the operation.

silvia.data.getExuderData

Returns the arbitrary, application specific string data content for the given Exuder.

Description

This function gets the data content for a particular identified Exuder within a specific behavior.

Example Usage (C#)

```
String data = _core.ApiData().GetExuderData(147, 1);
```

Example Usage (LUA)

```
data = silvia.data.getExuderData(147, 1)
```

Parameters

`id`	The numeric integer id of the behavior where the Exuder is located.
`exID`	The numeric integer id of the Exuder containing the arbitrary data

Returns

`data`	The string value representing the data currently attached to the given Exuder within the given behavior.

silvia.data.setExudersecurityLevel

Sets the numeric integer security level for the given Exuder.

Description

This function sets the security level for a particular identified Exuder within a specific behavior, modifying the current SILVIA brain to do so. The security range is 0 - n, where 0 is "open" to anyone, and any value above 0 must be met with a matching or greater user security level for the Exuder to be invoked. Note that a higher behavior security level can override a lower Exuder security level.

Example Usage (C#)

```
bool success = _core.ApiData().SetExudersecurityLevel(147, 1, 2);
```

Example Usage (LUA)

```
success = silvia.data.setExudersecurityLevel(147, 1, 2)
```

Parameters

`id`	The numeric integer id of the behavior where the Exuder to modify is located
`exID`	The numeric integer id of the Exuder with the behavior to modify by setting the security level
`level`	The numeric integer value representing the new security level to apply to the given Exuder within the given behavior

Returns

The boolean success or failure of the operation.

silvia.data.getExudersecurityLevel

Returns the integer security level for the given Exuder

Description

This function gets the security level for a particular identified Exuder within a specific behavior. The range is 0 - n, where 0 is "open" to anyone, and any value above 0 must be met with a matching or greater user security level for the Exuder to be invoked. Note that a higher behavior security level can override a lower Exuder security level.

Example Usage (C#)

```
int level = _core.ApiData().GetExudersecurityLevel(147, 1);
```

Example Usage (LUA)

```
level = silvia.data.getExudersecurityLevel(147, 1)
```

Parameters

`id`	The numeric integer id of the behavior where the Exuder is located
`exID`	The numeric integer id of the Exuder being queried for its security level

Returns

`level`	The number value representing the security level of the given Exuder within the given behavior.

silvia.data.setAbsorberExact

Enables or disables the Absorber's requirement for an exact conceptual match on the user input.

Description

This method sets the "exact" state of an existing Absorber within an existing behavior, modifying the current SILVIA brain to do so. Normally, when matching Absorbers to user input, SILVIA accepts reasonably close conceptual matches, within a certain threshold (see silvia.brain.setAbsorberThreshold). When the "exact" state is enabled for a particular Absorber, the conceptual input given by the user must COMPLETELY match the given Absorber for that behavior to be considered. This is a useful constraint for mission critical input, where no mistakes on the user's part during input are to be allowed.

Example Usage (C#)

```
bool success = _core.ApiData().SetAbsorberExact(147, 0, true);
```

Example Usage (LUA)

```
success = silvia.data.setAbsorberExact(147, 0, true)
```

Parameters

`id`	The integer numeric value or variable representing the unique ID of the behavior containing the Absorber to be constrained.
`absid`	The integer numeric value or variable representing the indexed ID of the Absorber, separate from the behavior ID.
`exact`	The boolean value, true or false, to enable or disable the "exact" constraint for the given Absorber.

Returns

The boolean success or failure of the operation.

silvia.data.getAbsorberExact

Returns a true or false value of the Absorber's requirement for an exact conceptual match on the user input.

Description

This method gets the "exact" state of an existing Absorber within an existing behavior. Normally, when matching Absorbers to user input, SILVIA accepts reasonably close conceptual matches, within a certain threshold (see silvia.brain.setAbsorberThreshold). When the "exact" state is enabled for a particular Absorber, the conceptual input given by the user must COMPLETELY match the given Absorber for that behavior to be considered. This is a useful constraint for mission critical input, where no mistakes on the user's part during input are to be allowed.

Example Usage (C#)

```
bool exact = _core.ApiData().GetAbsorberExact(147, 0);
```

Example Usage (LUA)

```
exact = silvia.data.getAbsorberExact(147, 0)
```

Parameters

`id`	The integer numeric value or variable representing the unique ID of the behavior.
`absid`	The integer numeric value or variable representing the indexed ID of the Absorber, separate from the behavior ID.

Returns

The boolean value, true or false, representing the state of the "exact" constraint for the given Absorber.

silvia.data.setAbsorberReject

Enables or disables the Absorber's use as a rejection filter

Description

This method sets the "reject" state of an existing Absorber within an existing behavior, modifying the current SILVIA brain to do so. Normally, when matching Absorbers to user input, SILVIA uses these Absorbers as filters to find the closest conceptual matches to user input, within a certain threshold (see silvia.brain.setAbsorberThreshold). However, when the "reject" state is enabled for a particular Absorber, if the conceptual input given by the user most closely matches that Absorber within a behavior, then that entire behavior is rejected from consideration. This is a useful constraint when you want to accept certain input as valid, but reject similar input as invalid, such as the difference between, "i like ice cream", and "i don't like ice cream". By making one of these a rejection filter, you can easily further constrain what is acceptable input for a particular behavior to get invoked.

Example Usage (C#)

```
bool success = _core.ApiData().SetAbsorberReject(147, 1, true);
```

Example Usage (LUA)

```
success = silvia.data.setAbsorberReject(147, 1, true)
```

Parameters

`id`	The integer numeric value or variable representing the unique ID of the behavior containing the Absorber to be constrained.
`absid`	The integer numeric value or variable representing the indexed ID of the Absorber, separate from the behavior ID.
`reject`	The boolean value, true or false, to enable or disable the "reject" constraint for the given Absorber.

Returns

The boolean success or failure of the operation.

silvia.data.getAbsorberReject

Returns the state of the Absorber's use as a rejection filter

Description

This method returns the "reject" state of an existing Absorber within an existing behavior. Normally, when matching Absorbers to user input, SILVIA uses these Absorbers as filters to find the closest conceptual matches to user input, within a certain threshold (see silvia.brain.setAbsorberThreshold). However, when the "reject" state is enabled for a particular Absorber, if the conceptual input given by the user most closely matches that Absorber within a behavior, then that entire behavior is rejected from consideration. This is a useful constraint when you want to accept certain input as valid, but reject similar input as invalid, such as the difference between, "i like ice cream", and "i don't like ice cream". By making one of these a rejection filter, you can easily further constrain what is acceptable input for a particular behavior to get invoked.

Example Usage (C#)

```
bool reject = _core.ApiData().GetAbsorberReject(147, 1);
```

Example Usage (LUA)

```
reject = silvia.data.getAbsorberReject(147, 1)
```

Parameters

`id`	The integer numeric value or variable representing the unique ID of the behavior containing the Absorber.
`absid`	The integer numeric value or variable representing the indexed ID of the Absorber, separate from the behavior ID.

Returns

The boolean value, true or false, representing the state of the "reject" constraint for the given Absorber.

silvia.data.setExuderExact

Enables or disables the AI requirement to express (output) exactly what is contained in the Exuder.

Description

This method sets the "exact" state of an existing Exuder within an existing behavior, modifying the current SILVIA brain to do so. Normally, when generating output, a SILVIA AI can intelligently modify Exuders during the output generation phase, using conceptual substitution, language variations, and other methods to introduce variety. However, when the "exact" state is enabled for a particular Exuder, if that Exuder is invoked during output, it will be used "as-is", without such variation. This is a useful constraint for mission critical output, where the AI's wording and phrasing must be consistent every time.

Example Usage (C#)

```
bool success = _core.ApiData().SetExuderExact(147, 0, true);
```

Example Usage (LUA)

```
success = silvia.data.setExuderExact(147, 0, true)
```

Parameters

`id`	The integer numeric value or variable representing the unique ID of the behavior containing the Exuder to be constrained.
`exid`	The integer numeric value or variable representing the indexed ID of the Exuder, separate from the behavior ID.
`exact`	The boolean value, true or false, to enable or disable the "exact" constraint for the given Exuder.

Returns

The boolean success or failure of the operation.

silvia.data.getExuderExact

Returns the boolen state of the AI requirement to express (output) exactly what is contained in the Exuder.

Description

This method returns the "exact" state of an existing Exuder within an existing behavior. Normally, when generating output, a SILVIA AI can intelligently modify Exuders during the output generation phase, using conceptual substitution, language variations, and other methods to introduce variety. However, when the "exact" state is enabled for a particular Exuder, if that Exuder is invoked during output, it will be used "as-is", without such variation. This is a useful constraint for mission critical output, where the AI's wording and phrasing must be consistent every time.

Example Usage (C#)

```
bool exact = _core.ApiData().GetExuderExact(147, 0);
```

Example Usage (LUA)

```
exact = silvia.data.getExuderExact(147, 0)
```

Parameters

`id`	The integer numeric value or variable representing the unique ID ofthe behavior containing the Exuder.
`exid`	The integer numeric value or variable representing the indexed ID of the Exuder, separate from the behavior ID.

Returns

The boolean value, true or false, representing the state of the "exact" constraint for the given Exuder.

silvia.data.setExuderReuse

Enables or disables the AI's ability to draw on a given Exuder in generating dynamic output.

Description

This method sets the "reuse" state of an existing Exuder within an existing behavior, modifying the current SILVIA brain to do so. The SILVIA AI is cabable of generating "dynamic" output, from a set of concepts. In practice, this means that SILVIA can come up with new and interesting ways of expressing those concepts using existing language data.

By setting the "reuse" state to true for a particular Exuder, you are adding that Exuder to SILVIA's language data, to be drawn from when generating new output.

Example Usage (C#)

```
bool success = _core.ApiData().SetExuderReuse(147, 2, true);
```

Example Usage (LUA)

```
success = silvia.data.setExuderReuse(147, 2, true)
```

Parameters

`id`	The integer numeric value or variable representing the unique ID of the behavior containing the Exuder to be constrained.
`exid`	The integer numeric value or variable representing the indexed ID of the Exuder, separate from the behavior ID.
`reuse`	The boolean value, true or false, to enable or disable the "reuse" constraint for the given Exuder.

Returns

The boolean success or failure of the operation.

silvia.data.getExuderReuse

Returns the AI's ability to draw on a given Exuder in generating dynamic output.

Description

This method returns the "reuse" state of an existing Exuder within an existing behavior. The SILVIA AI is cabable of generating "dynamic" output, from a set of concepts. In practice, this means that SILVIA can come up with new and interesting ways of expressing those concepts using existing language data. By setting the "reuse" state to true for a particular Exuder, you are adding that Exuder to SILVIA's pool of reusable language data, to be drawn from when generating new output.

Example Usage (C#)

```
bool reuse = _core.ApiData().GetExuderReuse(147, 2);
```

Example Usage (LUA)

```
reuse = silvia.data.getExuderReuse(147, 2)
```

Parameters

`id`	The integer numeric value or variable representing the unique ID of the behavior containing the Exuder.
`exid`	The integer numeric value or variable representing the indexed ID of the Exuder, separate from the behavior ID.
`reuse`	The boolean value, true or false, to enable or disable the "reuse" constraint for the given Exuder.

Returns

The boolean value, true or false, representing the state of the "reuse" constraint for the given Exuder.

silvia.data.setExuderDynamic

Enables or disables the AI's ability to use the concepts in an Exuder to generate new, dynamic output.

Description

This method sets the "dynamic" state of an existing Exuder within an existing behavior, modifying the current SILVIA brain to do so. The SILVIA AI is cabable of generating such "dynamic" output from the set of concepts within the Exuder. In practice, this means that SILVIA can come up with new and interesting ways of expressing those concepts using existing language data. The new output is generated using any Exuders that have the "reuse" flag set as source data for inferred language rules and conceptual linking. For instance, a "dynamic" Exuder might contain the following: "enjoy artificial intelligence robots". If invoked, SILVIA will use her existing "reuse" Exuder data and concept bindings to dynamically create something interesting to say about her enjoyment of artificial intelligence and robots, with the likelihood that each output will be different from the last.

Example Usage (C#)

```
bool success = _core.ApiData().SetExuderDynamic(147, 4, true);
```

Example Usage (LUA)

```
success = silvia.data.setExuderDynamic(147, 4, true)
```

Parameters

`id`	The integer numeric value or variable representing the unique ID of the behavior containing the Exuder to be constrained.

`exid`	The integer numeric value or variable representing the indexed ID of the Exuder, separate from the behavior ID.
`dynamic`	The boolean value, true or false, to enable or disable the "dynamic" constraint for the given Exuder.

Returns

The boolean success or failure of the operation.

silvia.data.getExuderDynamic

Returns the state of the AI's ability to use the concepts in a particular Exuder to generate new, dynamic output.

Description

This method returns the "dynamic" state of an existing Exuder within an existing behavior The SILVIA AI is cabable of generating such "dynamic" output from the set of concepts within the Exuder. In practice, this means that SILVIA can come up with new and interesting ways of expressing those concepts using existing language data. The new output is generated using any Exuders that have the "reuse" flag set as source data for inferred language rules and conceptual linking. For instance, a "dynamic" Exuder might contain the following: "enjoy artificial intelligence robots". If invoked, SILVIA will use her existing "reuse" Exuder data and concept bindings to dynamically create something interesting to say about her enjoyment of artificial intelligence and robots, with the likelihood that each output will be different from the last.

Example Usage (C#)

```
bool dynamic = _core.ApiData().GetExuderDynamic(147, 4);
```

Example Usage (LUA)

```
dynamic = silvia.data.getExuderDynamic(147, 4)
```

Parameters

`id`	The integer numeric value or variable representing the unique ID of the behavior containing the Exuder.
`exid`	The integer numeric value or variable representing the indexed ID of the Exuder, separate from the behavior ID.
`dynamic`	The boolean value, true or false, to enable or disable the "dynamic"

constraint for the given Exuder.

Returns

The boolean value, true or false, representing the state of the "dynamic" constraint for the given Exuder.

silvia.data.setExuderContext

Sets the given Exuder's conceptual context field

Description

This method sets the context field of an existing Exuder within an existing behavior, modifying the current SILVIA brain to do so. Each Exuder may contain an optional context, where certain concepts must be within recent memory as part of the discussion. If the context constraint is NOT met during the course of conversation, then that Exuder is discared from consideration in the output phase.

Example Usage (C#)

```
bool success = _core.ApiData().SetExuderContext(147, 3, "star wars");
```

Example Usage (LUA)

```
success = silvia.data.setExuderContext(147, 3, "star wars")
```

Parameters

`id`	The integer numeric value or variable representing the unique ID of the behavior containing the Exuder to be constrained.
`exid`	The integer numeric value or variable representing the indexed ID of the Exuder, separate from the behavior ID.
`context`	The string value containing the conversational context constraints for the given Exuder.

Returns

The boolean success or failure of the operation.

silvia.data.getExuderContext

Returns the given Exuder's conceptual context field

Description

This method returns the context field of an existing Exuder within an existing behavior. Each Exuder may contain an optional context, where certain concepts must be within recent memory as part of the discussion. If the context constraint is NOT met during the course of conversation, then that Exuder is discared from consideration in the output phase.

Example Usage (C#)

```
String context = _core.ApiData().GetExuderContext(147, 3);
```

Example Usage (LUA)

```
context = silvia.data.getExuderContext(147, 3)
```

Parameters

`id`	The integer numeric value or variable representing the unique ID ofthe behavior containing the Exuder.
`exid`	The integer numeric value or variable representing the indexed ID ofthe Exuder, separate from the behavior ID.

Returns

The string value containing the current conversational context constraints for the given Exuder.

silvia.data.getBehaviorCreatedYear

Gets the given behavior's creation date "year" value

Description

This method returns the year that the given behavior, indicated by the id, was created.

Example Usage (C#)

```
int year = _core.ApiData().GetBehaviorCreatedYear(147);
```

Example Usage (LUA)

```
year = silvia.data.getBehaviorCreatedYear(147)
```

Parameters

`id`	The integer numeric value or variable representing the unique ID of the

behavior

Returns

The integer value (4 decimal) representing the behavior's year of creation.

silvia.data.getBehaviorCreatedMonth

Gets the given behavior's creation date "month" value

Description

This method returns the month that the given behavior, indicated by the id, was created. This value will be between 1 and 12, representing the 12 months between January and December, inclusive.

Example Usage (C#)

```
int month = _core.ApiData().GetBehaviorCreatedMonth(147);
```

Example Usage (LUA)

```
month = silvia.data.getBehaviorCreatedMonth(147)
```

Parameters

`id`	The integer numeric value or variable representing the unique ID of the behavior

Returns

The integer value (1 or 2 decimal) representing the behavior's month of creation.

silvia.data.getBehaviorCreatedDay

Gets the given behavior's creation date "day" value

Description

This method returns the day of the month that the given behavior, indicated by the id, was created. This value will be between 1 and 31.

Example Usage (C#)

```
int day = _core.ApiData().GetBehaviorCreatedDay(147);
```

Example Usage (LUA)

```
day = silvia.data.getBehaviorCreatedDay(147)
```

Parameters

`id`	The integer numeric value or variable representing the unique ID of the behavior

Returns

The integer value (1 or 2 decimal) representing the behavior's day of creation within the month.

silvia.data.getBehaviorCreatedHour

Gets the given behavior's creation date "hour" value

Description

This method returns the hour that the given behavior, indicated by the id, was created. This value will be between 0 and 23, representing the 24 hours in any given day. If the hour value is less than 12, then the behavior was created in the AM, otherwise it was created in the PM.

Example Usage (C#)

```
int hour = _core.ApiData().GetBehaviorCreatedHour(147);
```

Example Usage (LUA)

```
hour = silvia.data.getBehaviorCreatedHour(147)
```

Parameters

`id`	The integer numeric value or variable representing the unique ID of the behavior

Returns

The integer value (1 or 2 decimal) representing the behavior's hour of creation.

silvia.data.getBehaviorCreatedMinute

Gets the given behavior's creation date "minute" value

Description

This method returns the minute that the given behavior, indicated by the id, was created. This value will be between 0 and 59, representing the 60 minutes in any given hour. When combined with the "hour" value, this will give the complete time of day value for the behavior's creation.

Example Usage (C#)

```
int minute = _core.ApiData().GetBehaviorCreatedMinute(147);
```

Example Usage (LUA)

```
minute = silvia.data.getBehaviorCreatedMinute(147)
```

Parameters

`id`	The integer numeric value or variable representing the unique ID of the behavior

Returns

The integer value (1 or 2 decimal) representing the behavior's minute of creation.

silvia.data.getBehaviorLastModifiedYear

Gets the given behavior's last modified date "year" value

Description

This method returns the year that the given behavior, indicated by the id, was last modified.

Example Usage (C#)

```
int year = _core.ApiData().GetBehaviorLastModifiedYear(147);
```

Example Usage (LUA)

```
year = silvia.data.getBehaviorLastModifiedYear(147)
```

Parameters

`id`	The integer numeric value or variable representing the unique ID of the behavior

Returns

The integer value (4 decimal) representing the behavior's year of most recent modification.

silvia.data.getBehaviorLastModifiedMonth

Gets the given behavior's last modified date "month" value

Description

This method returns the month that the given behavior, indicated by the id, was last modified. This value will be between 1 and 12, representing the 12 months between January and December, inclusive.

Example Usage (C#)

```
int month = _core.ApiData().GetBehaviorLastModifiedMonth(147);
```

Example Usage (LUA)

```
month = silvia.data.getBehaviorLastModifiedMonth(147)
```

Parameters

`id`	The integer numeric value or variable representing the unique ID of the behavior

Returns

The integer value (1 or 2 decimal) representing the behavior's month of last modification,

silvia.data.getBehaviorLastModifiedDay

Gets the given behavior's last modified date "day" value

Description

This method returns the day of the month that the given behavior, indicated by the id, was last modified. This value will be between 1 and 31.

Example Usage (C#)

```
int day = _core.ApiData().GetBehaviorLastModifiedDay(147);
```

Example Usage (LUA)

```
day = silvia.data.getBehaviorLastModifiedDay(147)
```

Parameters

`id`	The integer numeric value or variable representing the unique ID of the behavior

Returns

The integer value (1 or 2 decimal) representing the behavior's day of last modification within the month.

silvia.data.getBehaviorLastModifiedHour

Gets the given behavior's last modified date "hour" value

Description

This method returns the hour that the given behavior, indicated by the id, was last modified. This value will be between 0 and 23, representing the 24 hours in any given day. If the hour value is less than 12, then the behavior was last modified in the AM, otherwise it was last modified in the PM.

Example Usage (C#)

```
int hour = _core.ApiData().GetBehaviorLastModifiedHour(147);
```

Example Usage (LUA)

```
hour = silvia.data.getBehaviorLastModifiedHour(147)
```

Parameters

`id`	The integer numeric value or variable representing the unique ID of the behavior

Returns

The integer value (1 or 2 decimal) representing the behavior's hour of last modification.

silvia.data.getBehaviorLastModifiedMinute

Gets the given behavior's last modified date "minute" value

Description

This method returns the minute that the given behavior, indicated by the id, was last modified. This value will be between 0 and 59, representing the 60 minutes in any given hour. When combined with the "hour" value, this will give the complete time of day value for the behavior's most recent modification.

Example Usage (C#)

```
int minute = _core.ApiData().GetBehaviorLastModifiedMinute(147);
```

Example Usage (LUA)

```
minute = silvia.data.getBehaviorLastModifiedMinute(147)
```

Parameters

`id`	The integer numeric value or variable representing the unique ID of the behavior

Returns

The integer value (1 or 2 decimal) representing the behavior's minute of last modification.

silvia.data.addResponse

Adds a paired input/output response to the behavior data

Description

This function adds knowledge to the current SILVIA brain in the form of paired input/response templates. Note that if a matching learned Absorber already exists, the response will be added to the existing behavior instead. A variable name starting with "$" may be used for either input or output, in which case the value contained in the variable will be used instead.

Example Usage

```
success = silvia.data.addResponse("how are you today", "I am doing quite well.")
```

Parameters

`Absorber`	The string or variable name specifying the input template.
`Exuder`	The string or variable name specifying the output template.

Returns

The boolean success or failure of the operation.

See Also

- silvia.data.setContext
- silvia.data.setReuse

silvia.data.setContext

Sets the context for a previously learned response

Description

This function adds knowledge to the current SILVIA brain by setting the conversational context for the most previously learned Exuder. A variable name starting with "$" may be used, in which case the value contained in the variable will be used instead.

Example Usage

```
success = silvia.data.setContext("movies robots gort")
```

Parameters

`context`	The string or variable name specifying the context for the Exuder.

Returns

The boolean success or failure of the operation.

See Also

- silvia.data.addResponse
- silvia.data.setReuse

silvia.data.setReuse

Sets the previously learned response as re-useable or not

Description

This function adds knowledge to the current SILVIA brain by setting the preveiously learned Exuder as re-useable or not. If re-useable, SILVIA is free to draw on the Exuder's knowledge and syntax data from other behaviors for dynamic output construction.

Example Usage

```
success = silvia.data.setReuse(true)
```

Parameters

`reuse`	The boolean value enabling or disabling the re-use of the Exuder.

Returns

The boolean success or failure of the operation.

See Also

- silvia.data.addResponse
- silvia.data.setContext

silvia.data.setBehaviorName

Sets the name for the most recently learned behavior

Description

This function adds knowledge to the current SILVIA brain by setting the name of the behavior most recently modified or learned.

Example Usage

```
success = silvia.data.setBehaviorName("my_behavior")
```

Parameters

`name`	The string representing the new name for the behavior. A nil will clear the name value.

Returns

The boolean success or failure of the operation.

See Also

- silvia.data.setBehaviorGroup
- silvia.data.setBehaviorSubGroup

silvia.data.setBehaviorGroup

Sets the group for the most recently learned behavior

Description

This function adds knowledge to the current SILVIA brain by setting the group of the behavior most recently modified or learned.

Example Usage

```
success = silvia.data.setBehaviorGroup("movies")
```

Parameters

`group`	The string representing the new g62roup for the behavior. A nil will be

ignored.

Returns

The boolean success or failure of the operation.

See Also

- silvia.data.setBehaviorName
- silvia.data.setBehaviorSubGroup

silvia.data.setBehaviorSubGroup

Sets the sub-group for the most recently learned behavior

Description

This function adds knowledge to the current SILVIA brain by setting the sub-groupof the behavior most recently modified or learned. This sub-group has no functional value to the SILVIA algorithms and is only intended as an organizational tool.

Example Usage

```
success = silvia.data.setBehaviorSubGroup("greeting")
```

Parameters

`subgroup`	The string representing the new sub-category for the behavior. A nil will be ignored.

Returns

The boolean success or failure of the operation.

See Also

- silvia.data.setBehaviorName
- silvia.data.setBehaviorGroup

silvia.feedback

This class, implemented as part of the SILVIA C#/LUA API, provides access to SILVIA's cognitive feedback functions. This includes parametric control, data/file access, and invoking SILVIA's feedback functions dynamically.

Summary

silvia.feedback	This class, implemented as part of the SILVIA C#/LUA API, provides access to SILVIA's cognitive feedback functions.

FUNCTIONS

silvia.feedback.setActive	Enables or disables SILVIA's cognitive feedback output
silvia.feedback.isActive	Returns the boolean enabled/disabled status of the SILVIA cognitive feedback system
silvia.feedback.clarify	Forces the SILVIA cognitive feedback to generate a set number of outputs
silvia.feedback.addFeedback	Adds conceptual data to the feedback memory.
silvia.feedback.suggestFeedback	Adds conceptual data to the feedback memory as a suggestion.
silvia.feedback.setInterval	Sets the range in seconds of time between cognitive feedback generated outputs
silvia.feedback.setThreshold	Sets the conceptual trigger values for feedback utterance
silvia.feedback.setProbability	Sets the overall that a feedback output will be uttered
silvia.feedback.pause	Pauses the output of SILVIA's cognitive feedback
silvia.feedback.resume	Resumes the output of SILVIA's cognitive feedback
silvia.feedback.search	Initiates a time-based search of conversational (feedback) data for a particular user
silvia.feedback.searchRemoveFromStack	Removes the current utterance in the search results from the general feedback memory
silvia.feedback.searchGetString	Returns the current utterance in the search results
silvia.feedback.searchGetTime	Returns the time-stamp of the current utterance in the search results
silvia.feedback.searchNext	Increments to the next search result in the array Returns the time-stamp of the current utterance in the search results
silvia.feedback.write	Exports conversational (feedback) data of a particular user
silvia.feedback.read	Imports conversational (feedback) data from a file

Functions

silvia.feedback.setActive

Enables or disables SILVIA's cognitive feedback output

Description

A desirable operating mode is one where SILVIA can dynamically generate contextually relevant output, independent of direct user input. This function sets the active/inactive state of this mode. Note that as SILVIA interacts with users and uses this cognitive feedback mode, a body of feedback data, or "conversational memory" is built up over the course of these interactions. The boolean "clear" flag allows this feedback data to be reset.

Example Usage (C#)

```
_core.ApiFeedback().SetActive(true, false);
```

Example Usage (LUA)

```
silvia.feedback.setActive(true, false)
```

Parameters

`enable`	The boolean value that turns feedback output on or off.
`clear`	The boolean value that if true, clears the current feedback memory.

Returns

None.

See Also

- silvia.feedback.isActive

silvia.feedback.isActive

Returns the boolean enabled/disabled status of the SILVIA cognitive feedback system

Description

A desirable operating mode is one where SILVIA can dynamically generate contextually relevant output, independent of direct user input. This function returns the boolean status of this mode.

Example Usage (C#)

```
bool isActive = _core.ApiFeedback().IsActive();
```

Example Usage (LUA)

```
isActive = silvia.feedback.isActive()
```

Parameters

none

Returns

The boolean value of the cognitive feedback's enabled/disabled status.

See Also

- silvia.feedback.setActive

silvia.feedback.clarify

Forces the SILVIA cognitive feedback to generate a set number of outputs

Description

This function forces the invocation of the cognitive feedback system, but only for a set number of times. This is typically used to force SILVIA to follow up on a particular line of thought. For instance, a user might ask SILVIA "what do you mean?" as a generic request for more information. The script associated with the resultant Exuder could contain a call to this "clarify" function, with a count of "1", to force a single follow-up to SILVIA's last utterance. The default "response" time is a range between 1.5 and 2.5 seconds. To change this range, you can immediately follow up a call to this function with a call to "silvia.feedback.setInterval". Note that for this function, and for feedback in general, it is best to have as many "reusable" Exuders in the brain data as possible.

Example Usage (C#)

```
_core.ApiFeedback().Clarify(1);
```

Example Usage (LUA)

```
silvia.feedback.clarify(1)
```

Parameters

`count`	The number representing the count of additional "feedback" outputs to be generated

Returns

None.

See Also

- silvia.feedback.setInterval

silvia.feedback.addFeedback

Adds conceptual data to the feedback memory.

Description

This function converts the input string parameter to conceptual data and places it in the immediate feedback memory for consideration. During the course of normal interactions with SILVIA, this memory is automatically manipulated and updated internally by the

SILVIA core. However, this exposed LUA function allows a trainer to more explicitely force the conversational direction of the SILVIA feedback, based on behaviors specific to the training and the application. This function might typically be followed by a call to "silvia.feedback.clarify".

Example Usage (C#)

```
bool success = _core.ApiFeedback().AddFeedback("acting broadway");
_core.ApiFeedback().Clarify(1);
```

Example Usage (LUA)

```
success = silvia.feedback.addFeedback("acting broadway") silvia.feedback.clarify(1)
```

Parameters

`feedback`	The string containing the concepts to be placed in immediate cognitive "memory".

Returns

The boolean success or failure of the operation.

See Also

- silvia.feedback.suggestFeedback
- silvia.feedback.clarify

silvia.feedback.suggestFeedback

Adds conceptual data to the feedback memory as a suggestion.

Description

This function converts the input string parameter to conceptual data and places it in the immediate feedback memory for consideration. However, unlike the "addFeedback" function, the conceptual data is only used as suggestive guidance for the course of the feedback, not as a more direct forcing of the conversation. But like "addFeedback", this exposed LUA function does give a trainer more explicite control over the conversational direction of SILVIA's feedback. Such control can be based on behaviors specific to the functions of the AI brain's training, and of the application. This function might typically be followed by a call to "silvia.feedback.clarify".

Example Usage (C#)

```
bool success = _core.ApiFeedback().SuggestFeedback("robots");
_core.ApiFeedback().Clarify(1);
```

Example Usage (LUA)

success = silvia.feedback.suggestFeedback("robots") silvia.feedback.clarify(1)

Parameters

`feedback`	The string containing the concepts to be placed in immediate cognitive "memory".

Returns

The boolean success or failure of the operation.

See Also

- silvia.feedback.addFeedback
- silvia.feedback.clarify

silvia.feedback.setInterval

Sets the range in seconds of time between cognitive feedback generated outputs

Description

This function controls SILVIA's overall "chattiness", when feedback is enabled. The range is specified as a minimum and maximum. When enabled, each feedback utterance is generated n seconds after the previous feedback utterance, where n is a random value between the minimum and maximum Note that this function applies to both the "setActive" and "clarify" forms of feedback enablement. For obvious reasons, "minimum" should be <= "maximum".

Example Usage (C#)

_core.ApiFeedback().SetInterval(5.0f, 10.0f);

Example Usage (LUA)

silvia.feedback.setInterval(5.0, 10.0)

Parameters

`minimum`	a number value specifying the lower range of possible feedback intervals
`maximum`	a number value specifying the upper range of possible feedback intervals

Returns

The boolean success or failure of the operation.

See Also

- silvia.feedback.setActive
- silvia.feedback.clarify
- silvia.feedback.setThreshold
- silvia.feedback.setProbability

silvia.feedback.setThreshold

Sets the conceptual trigger values for feedback utterance

Description

When feedback is enabled, this function controls SILVIA's conceptual threshold. In other words, the values serve as a limiter on the expression of conceptually unimportant or uninteresting thoughts. The first value is a weight, or conceptual "importance". The second value is the minimum number of concepts needed to meet or exceed the given weight. Therefore, if a particular internal thought, generated by SILVIA, has >= the given number of concepts that are >= the given weight, then that thought is considered "important" enough to be considered for outward expression.

Example Usage (C#)

```
_core.ApiFeedback().SetThreshold(0.35f, 2);
```

Example Usage (LUA)

```
silvia.feedback.setThreshold(0.35, 2)
```

Parameters

`threshold`	a number value specifying the minimum weight required for a concept's consideration
`count`	a number value specifying the minimum number of concepts that must meet the weight requirement

Returns

The boolean success or failure of the operation.

See Also

- silvia.feedback.setActive

- silvia.feedback.clarify
- silvia.feedback.setInterval
- silvia.feedback.setProbability

silvia.feedback.setProbability

Sets the overall that a feedback output will be uttered

Description

When feedback is enabled, this function serves as a final gate for limiting SILVIA's feedback output. The parameter, a coefficient between 0.0 and 1.0, serves a means to control how probable it is at any given time for SILVIA to generate feedback output. For instance, one could set the feedback interval to between 2.0 and 3.0 seconds, and set 0.5 as the probability. The result would be an attempt at a feedback-generated output every two or three seconds, but an actual output generated only half of the time.

Example Usage (C#)

```
_core.ApiFeedback().SetProbability(0.75f);
```

Example Usage (LUA)

```
silvia.feedback.setProbability(0.75)
```

Parameters

`probability`	a coefficient specifying the overall chance that a given feedback result will be uttered.

Returns

The boolean success or failure of the operation.

See Also

- silvia.feedback.setActive
- silvia.feedback.clarify
- silvia.feedback.setInterval
- silvia.feedback.setThreshold

silvia.feedback.pause

Pauses the output of SILVIA's cognitive feedback

Description

When feedback is enabled, this function temporarily pauses the generation of SILVIA's feedback output. This is different than calling "setActive" with a false value because in this

case, a subsequent call to "silvia.feedback.resume" will allow SILVIA to continue with the feedback process where it was last left off.

Example Usage (C#)

```
_core.ApiFeedback().Pause();
```

Example Usage (LUA)

```
silvia.feedback.pause()
```

Parameters

none

Returns

None.

See Also

- silvia.feedback.resume
- silvia.feedback.setActive
- silvia.feedback.clarify

silvia.feedback.resume

Resumes the output of SILVIA's cognitive feedback

Description

When feedback is enabled, and feedback has been temporarily paused, this function re-engages SILVIA's feedback output from the point of the last call to "silvia.feedback.pause". This is different than calling "setActive" with a true value because in this case, it is resuming the existing feedback state.

Example Usage (C#)

```
_core.ApiFeedback().Resume();
```

Example Usage (LUA)

```
silvia.feedback.resume()
```

Parameters

none

Returns

None.

See Also

- silvia.feedback.pause
- silvia.feedback.setActive
- silvia.feedback.clarify

silvia.feedback.search

Initiates a time-based search of conversational (feedback) data for a particular user

Description

If there is some conversational data for the named user, it is searched for concepts, within the given time range, and a structure is set up containing the data for sequential reference. A nil values for concepts will cause the method to return all of the given user's utterances within the given time range. A nil value for startTime causes the search to have no beginning time boundaray, and a nil value for endTime causes the search to have an ending boundary of the current data and time.

Note that the "strip" parameter allows you to remove selected concepts from consideration in the search. For instance, you can easily discard "a", "an", "the", or other unimportant concepts from being required by the internal search.

Example Usages (C#)

bool success = _core.ApiFeedback().Search("robert", "rock music", "rolling stones", true, "3/8/2010 12:15:12", "3/10/2010 12:15:12"); bool success = _core.ApiFeedback().Search("lisa", "construction", null, true, nil, nil);

Example Usages (LUA)

success = silvia.feedback.search("robert", "rock music", "rolling stones", true, "3/8/2010 12:15:12", "3/10/2010 12:15:12") success = silvia.feedback.search("lisa", "construction", null, true, nil, nil)

Parameters

`username`	a string value naming the user whose conversational data will be searched
`concepts`	a string value containing one or more concepts that are expected in the data
`strip`	a string value containing one or more concepts that should not be considered
`exclude`	a string value containing one or more concepts that will cause a particular utterance to be excluded from the search

`startTime`	a string containing a formatted date/time
`endTime`	a string containing a formatted date/time
`requireAll`	a boolean value indicating whether all concepts are required for an an utterance is included
`related`	a boolean value indicating whether closely related concepts will be accepted as valid

Returns

A boolean success or failure of the operation.

See Also

- silvia.feedback.searchRemoveFromStack
- silvia.feedback.searchGetString
- silvia.feedback.searchGetTime
- silvia.feedback.searchNext

silvia.feedback.searchRemoveFromStack

Removes the current utterance in the search results from the general feedback memory

Description

After a call to silvia.feedback.search, the results are placed in an array structure that may be referenced iteratively. This method removes the current indexed utterance from the general memory pool that was returned as result of that previous search.

Example Usage (C#)

```
bool success = _core.ApiFeedback().SearchRemoveFromStack();
```

Example Usage (LUA)

```
success = silvia.feedback.searchRemoveFromStack()
```

Parameters

none

Returns

A boolean success or failure of the operation.

See Also

- silvia.feedback.search
- silvia.feedback.searchGetString
- silvia.feedback.searchGetTime
- silvia.feedback.searchNext

silvia.feedback.searchGetString

Returns the current utterance in the search results

Description

After a call to silvia.feedback.search, the results are placed in an array structure that may be referenced iteratively. This method returns the current indexed utterance that was a result of that previous search.

Example Usage (C#)

```
String result = _core.ApiFeedback().SearchGetString(true);
```

Example Usage (LUA)

```
result = silvia.feedback.searchGetString(true)
```

Parameters

`punctuated`	a boolean value indicating whether the result should include punctuation

Returns

A string value containing the utterance.

See Also

- silvia.feedback.search
- silvia.feedback.searchRemoveFromStack
- silvia.feedback.searchGetTime
- silvia.feedback.searchNext

silvia.feedback.searchGetTime

Returns the time-stamp of the current utterance in the search results

Description

After a call to silvia.feedback.search, the results are placed in an array structure that may be referenced iteratively. This method returns the date/time of the current indexed utterance that was a result of that previous search.

Example Usage (C#)

```
String result = _core.ApiFeedback().SearchGetTime();
```

Example Usage (LUA)

```
result = silvia.feedback.searchGetTime()
```

Parameters

none

Returns

A string value containing the formatted date/time of the utterance.

See Also

- silvia.feedback.search
- silvia.feedback.searchRemoveFromStack
- silvia.feedback.searchGetString
- silvia.feedback.searchNext

silvia.feedback.searchNext

Increments to the next search result in the array Returns the time-stamp of the current utterance in the search results

Description

After a call to silvia.feedback.search, the results are placed in an array structure that may be referenced iteratively. This method moves the index along to the next result in the array. When called in a loop along with silvia.feedback.searchGetString, silvia.feedback.searchGetTime, or silvia.feedback.searchRemoveFromStack, the developer can get or remove the searched results, one after another, and results may be to be placed in a table or processed as they are received. A false value is returned when there are no more search results in the array.

Example Usage (C#)

```
bool success = _core.ApiFeedback().SearchNext();
```

Example Usage (LUA)

```
success = silvia.feedback.searchNext()
```

Parameters

none

Returns

A boolean value containing the success or failure of the operation.

See Also

- silvia.feedback.search
- silvia.feedback.searchRemoveFromStack
- silvia.feedback.searchGetString
- silvia.feedback.searchGetTime

silvia.feedback.write

Exports conversational (feedback) data of a particular user

Description

If there is some conversational data for the named user, it is saved to the named file. This can then be loaded and referenced for future sessions.

Example Usage (C#)

```
bool success = _core.ApiFeedback().Write("robert", "feedback/robert.fbk");
```

Example Usage (LUA)

```
success = silvia.feedback.write("robert", "feedback/robert.fbk")
```

Parameters

`username`	a string value naming the user whose conversational data will be saved
`filename`	a string value containing the filepath/filename in which to save the data

Returns

A boolean success or failure of the operation.

See Also

- silvia.feedback.read

silvia.feedback.read

Imports conversational (feedback) data from a file

Description

If the named file of conversational data exists, it is read and added to the conversational feedback stack, with it's proper timestamp and username. This allows for the saving and loading of sessions for a particular user. Particularly useful for persistent memory between sessions.

Example Usage (C#)

```
bool success = _core.ApiFeedback().Read("feedback/robert.fbk");
```

Example Usage (LUA)

```
success = silvia.feedback.read("feedback/robert.fbk")
```

Parameters

`filename`	a string value containing the filepath/filename from which to load the data

Returns

A boolean success or failure of the operation.

See Also

- silvia.feedback.write

silvia.mem

This class, implemented as part of the SILVIA C#/LUA API, provides access to memory functions that can dynamically remember, forget, or delete blocks of SILVIA knowledge. This also includes file manipulation, since loading, merging, and saving files are operations that can change SILVIA memory as well.

Summary

silvia.mem	This class, implemented as part of the SILVIA C#/LUA API, provides access to memory functions that can dynamically remember, forget, or delete blocks of SILVIA knowledge.

FUNCTIONS

silvia.mem.load	Loads or merges one or more SILVIA brain files into memory
silvia.mem.save	Saves a SILVIA brain (concepts, bindings, behaviors) to a file.
silvia.mem.mergeText	Merges plain-text expert data into the SILVIA brain

silvia.mem.mergeAIML	Merges AIML (AI Markup Language) data into the SILVIA brain
silvia.mem.getAllGroups	Returns a string containing all of the groups in memory, separated by the "|" character.
silvia.mem.getActiveGroups	Returns a string containing only the groups in memory that are currently active.
silvia.mem.groupEnable	Enables one or more groups in memory.
silvia.mem.groupEnableOnly	Exclusively enables one or more groups in memory.
silvia.mem.groupDisable	Disables one or more groups in memory.
silvia.mem.groupIsEnabled	Tests the enabled/disabled state of a group in memory.
silvia.mem.groupDelete	Deletes one or more groups from memory.
silvia.mem.groupDeleteExcept	Deletes any groups from memory not specified.

Functions

silvia.mem.load

Loads or merges one or more SILVIA brain files into memory

Description

SILVIA is able to dynamically load and merge external brain files. Merging means that data loaded is additive, so one could dynamically merge-load a brain file that "knows" all about cars in response to a query about the subject. Merging also allows the specification of more than one file, using the "|" separator. Note that if there is a behavior with the name "boot" in a brain file, and if this function's boot flag is set to true, that behavior's Exuder(s) and associated events will be invoked immediately after the file has been loaded. This allows trainers to create "startup" behaviors for their trained AI brains.

Example Usages (C#)

bool success = _core.ApiMem().Load("latestBrain.slv", false, true); success = _core.ApiMem().Load("cars.slv|pets.slv|books.slv", true, false);

Example Usages (LUA)

success = silvia.mem.load("latestBrain.slv", false, true) success = silvia.mem.load("cars.slv|pets.slv|books.slv", true, false)

Parameters

`filename`	A string containing the name(s) of the SILVIA brain file(s) to be loaded.
`merge`	A boolean flag to determine if the file is loaded to a fresh brain, or merged with existing data.

`boot`	A boolean flag that, when true, causes the behavior named "boot" to be invoked after file-load.

Returns

The boolean success or failure of the operation.

See Also

- silvia.mem.save
- silvia.mem.mergeText
- silvia.mem.mergeAIML

silvia.mem.save

Saves a SILVIA brain (concepts, bindings, behaviors) to a file.

Description

SILVIA is able to dynamically save to external brain files. This method saves the either the entire "static" brain to a file, with all concepts, bindings, and groups, or given an optional non-nil list of groups, separated by the "|" character, this method can selectively save those specific groups only. Note that the dynamic "feedback" memory is not saved, nor are any variables or table states, with the exception of the system variable for the AI name: silvia.var.sys.a

Example Usage (C#)

bool success = _core.ApiMem().Save("ai_brains/myEntireBrain.slv", nil); success = _core.ApiMem().Save("ai_brains/myLearned.slv", "learned|personal");

Example Usage (LUA)

success = silvia.mem.save("ai_brains/myEntireBrain.slv", nil) success = silvia.mem.save("ai_brains/myLearned.slv", "learned|personal")

Parameters

`filename`	A string containing the name of the SILVIA brain file(s) to save
`groups`	A string containg the name(s) of the group(s) to save, separated by a "|" character

Returns

The boolean success or failure of the operation.

See Also

- silvia.mem.load
- silvia.mem.mergeText
- silvia.mem.mergeAIML

silvia.mem.mergeText

Merges plain-text expert data into the SILVIA brain

Description

This is a simple way to get a body of text in the SILVIA brain as a collection of Exuders. There is the option to do simple annotation of the text file for organizational purposes, but this is not strictly necessary. For instance, by default, each sentence in the text is placed into a new Exuder, but if one adds an underscore ("_") character between the punctuation ending one sentence and the beginning of the next, then both sentences will be grouped into a single Exuder. As with merging SILVIA data, more than one file may be specified using the "|" character as a separator.

Example Usage (C#)

```
bool success =
_core.ApiMem().MergeText("experts/psychology.txt|experts/bf_skinner.txt");
```

Example Usage (LUA)

```
success = silvia.mem.mergeText("experts/psychology.txt|experts/bf_skinner.txt")
```

Parameters

`filename`	A string containing the name(s) of the plain-text expert file(s) to be merge-loaded.

Returns

The boolean success or failure of the operation.

See Also

- silvia.mem.load
- silvia.mem.save
- silvia.mem.mergeAIML

silvia.mem.mergeAIML

Merges AIML (AI Markup Language) data into the SILVIA brain

Description

Although SILVIA is not a chatbot, the SILVIA platform is capable of using chatbot-like data to create and use simple input/response collections. This sort of low-level behavior is useful for conversational applications because of the need to "catch" user input that may not fall into the net of the more complex behaviors implemented specifically for the application. The large, pre-existing body of AIML data was determined to be useful for this purpose, and an import filter was written to accomodate this need. This function invokes that filter to load AIML data into SILVIA's brain in a way that the SILVIA core can then use in a direct manner. As with merging SILVIA data, more than one file may be specified using the "|" character as a separator.

Example Usage (C#)

```
bool success = _core.ApiMem().MergeAIML("AIML/general.xml");
```

Example Usage (LUA)

```
success = silvia.mem.mergeAIML("AIML/general.xml")
```

Parameters

`filename`	A string containing the name(s) of the AIML file(s) to be merge-loaded.

Returns

The boolean success or failure of the operation.

See Also

- silvia.mem.load
- silvia.mem.save
- silvia.mem.mergeText

silvia.mem.getAllGroups

Returns a string containing all of the groups in memory, separated by the "|" character.

Example Usage (C#)

```
String groups = _core.ApiMem().GetAllGroups();
```

Example Usage (LUA)

```
groups = silvia.mem.getAllGroups()
```

Parameters

none

Returns

The string containing the "|" separated list of all groups in memory.

See Also

- silvia.mem.getActiveGroups

silvia.mem.getActiveGroups

Returns a string containing only the groups in memory that are currently active.

Description

SILVIA is able to dynamically enable and disable groups of behaviors. This function returns the names of those groups in memory that are currently active, separated by the "|" character. These active groups are those that can currently be used (invoked) by the SILVIA runtime engine. Active groups can be specified using wildcards, so the boolean "expand" parameter, when true, will cause the expansion of such wildcard groups into the full, non-wildcard list.

Example Usage (C#)

```
String active = _core.ApiMem().GetActiveGroups(true);
```

Example Usage (LUA)

```
active = silvia.mem.getActiveGroups(true)
```

Parameters

`expand`	The boolean flag to expand wildcards into a full listing.

Returns

The string containing the "| separated list of all active groups in memory.

See Also

- silvia.mem.getAllGroups

silvia.mem.groupEnable

Enables one or more groups in memory.

Description

SILVIA is able to dynamically enable and disable groups of behaviors. This function additively enables one or more named groups in memory. If passing in more than one group via the "groups" parameter, the names must be separated by the "|" character. Once

enabled, these groups can then be used (invoked) by the SILVIA runtime engine. Groups to be enabled can be specified using using wildcards. For instance, by passing "**movies**" to the function, all groups containing the substring "movies" will be enabled. This would include "movies", "movies_scifi", or "oldmovies".

Example Usage (C#)

```
bool success = _core.ApiMem().GroupEnable("browsing|files");
```

Example Usage (LUA)

```
success = silvia.mem.groupEnable("browsing|files")
```

Parameters

`groups`	The string containing the "| separated list of all groups to be enabled.

Returns

The boolean success or failure of the operation.

See Also

- silvia.mem.groupEnableOnly
- silvia.mem.groupDisable
- silvia.mem.groupIsEnabled

silvia.mem.groupEnableOnly

Exclusively enables one or more groups in memory.

Description

SILVIA is able to dynamically enable and disable groups of behaviors. This function enables only the one or more named groups. In effect, all unnamed groups are disabled as a result. If passing in more than one group via the "groups" parameter, the names must be separated by the "|" character. Once enabled, these can then be used (invoked) by the SILVIA runtime engine. Groups to be enabled can be specified using using wildcards. For instance, by passing "**movies**" to the function, all groups containing the substring "movies" will be enabled. This would include "movies", "movies_scifi", or "oldmovies". However, unlike the groupEnable function, this function would also effectively disable any group NOT containing the substring "movies".

Example Usage (C#)

```
bool success = _core.ApiMem().GroupEnableOnly("os|basic");
```

Example Usage (LUA)

```
success = silvia.mem.groupEnableOnly("os|basic")
```

Parameters

`groups`	The string containing the "| separated list of all groups to be exclusively enabled.

Returns

The boolean success or failure of the operation.

See Also

- silvia.mem.groupEnable
- silvia.mem.groupDisable
- silvia.mem.groupIsEnabled

silvia.mem.groupDisable

Disables one or more groups in memory.

Description

SILVIA is able to dynamically enable and disable groups of behaviors. This function additively disables one or more named groups in memory. If passing in more than one group via the "groups" parameter, the names must be separated by the "|" character. Once disabled, these groups can NOT then be used (invoked) by the SILVIA runtime engine until re-enabled. Groups to be disabled can be specified using using wildcards. For instance, by passing "**movies**" to the function, all groups containing the substring "movies" will be disabled. This would include "movies", "movies_scifi", or "oldmovies".

Example Usage (C#)

```
bool success = _core.ApiMem().GroupDisable("browsing|files");
```

Example Usage (LUA)

```
success = silvia.mem.groupDisable("browsing|files")
```

Parameters

`groups`	The string containing the "| separated list of all groups to be disabled.

Returns

The boolean success or failure of the operation.

See Also

- silvia.mem.groupEnable
- silvia.mem.groupEnableOnly
- silvia.mem.groupIsEnabled

silvia.mem.groupIsEnabled

Tests the enabled/disabled state of a group in memory.

Description

SILVIA is able to dynamically enable and disable groups of behaviors. This function returns a boolean true/false value as the result of a test to determine if a particular group is indeed enabled or disabled in memory. Note that if the group does not exist, a "false" value is returned by default.

Example Usage (C#)

```
bool enabled = _core.ApiMem().GroupIsEnabled("browsing");
```

Example Usage (LUA)

```
enabled = silvia.mem.groupIsEnabled("browsing")
```

Parameters

`group`	The string containing the name of the group to test.

Returns

The boolean result of the operation, determining whether the specified group is enabled.

See Also

- silvia.mem.groupEnable
- silvia.mem.groupEnableOnly
- silvia.mem.groupDisable

silvia.mem.groupDelete

Deletes one or more groups from memory.

Description

SILVIA is able to dynamically remove entire named groups of behaviors from memory. This function provides direct access to that capability. As with the "groupDisable" function, if passing in more than one group via the "groups" parameter, the names must be separated by the "|" character. Once deleted, these groups have been removed from memory, and can NOT then be used (invoked) by the SILVIA runtime engine unless they are re-loaded from a

file, or re-created via some other method. Groups to be deleted can be specified using using wildcards. For instance, by passing "**movies**" to the function, all groups containing the substring "movies" will be removed from memory. This would include "movies", "movies_scifi", or "oldmovies".

Example Usage (C#)

```
bool success = _core.ApiMem().GroupDelete("carexpert");
```

Example Usage (LUA)

```
success = silvia.mem.groupDelete("carexpert")
```

Parameters

`groups`	The string containing the "| separated list of all groups to be deleted.

Returns

The boolean success or failure of the operation.

See Also

- silvia.mem.groupDeleteExcept

silvia.mem.groupDeleteExcept

Deletes any groups from memory not specified.

Description

SILVIA is able to dynamically remove entire named groups of behaviors from memory. This function provides direct access to that capability. As with the "groupDelete" function, if passing in more than one group via the "groups" parameter, the names must be separated by the "|" character. Howver, unlike the "groupDelete" function, this function performs an inverted deletion. Any named group NOT specified by the input to this function is removed from memory, and once deleted, can NOT then be used (invoked) by the SILVIA runtime engine unless they are re-loaded from a file, or are re-created via some other method. Groups to be pretected from deletion can be specified using using wildcards. For instance, by passing "**movies**" to the function, all groups containing the substring "movies" will remain in memory while all other groups will be removed from memory. The protected groups would include "movies", "movies_scifi", or "oldmovies".

Example Usage (C#)

```
bool success = _core.ApiMem().GroupDeleteExcept("os|basic|silvia");
```

Example Usage (LUA)

success = silvia.mem.groupDeleteExcept("os|basic|silvia")

Parameters

`groups`	The string containing the "| separated list of all groups to be protected from deletion.

Returns

The boolean success or failure of the operation.

See Also

- silvia.mem.groupDelete