Terminology:

**Exposure Phase**: All Critical Items and Filler Items in each experiment

Total: 10 blocks; 8 trials/block

* 1 Critical shifted
* 1 Critical unshifted
* 6 Fillers (counterbalance Word x Ear)

**Critical Stims**

*Critical Item:* Each S/Sh minimal pair

*Critical Materials:* Refers to all Critical Items

*Talker:* 10 unique items *–* 2 sets total (**Talker A** & **Talker B**)

Divided to be assigned a Shift Condition, Voice, and Ear

*Modifiers*

Shift Condition: Shifted or Unshifted (S, U)

Whether the item simulates a typical or atypical S/Sh production

Voice: Male or Female (M, F)

Simulates 2 distinct talkers

Ear: Left or Right (L, R)

Simulates the talkers in different spatial positions

**Filler Stims**

*Filler Item:* Each Word/Nonword pairing

*Filler Set of Materials:* 20 unique items – 3 sets total (A, B, & C)

Divided for list assignment to prevent filler items from playing multiple times per list

*Version of a Set of Materials:* The same Filler Items with every possible Voice x Ear assignment

*Filler Materials:* Refers to all filler items

*Modifiers*

Word: Word or Nonword (W, N)

Whether the attended talker produces a word or a nonword

Voice: Male or Female (M, F)

Simulates 2 distinct talkers

Ear: Left or Right (L, R)

Simulates the talkers in different spatial positions

**Test Phase**: All Test Items in each experiment

Total: 12 blocks; 72 trials

**Test Stims**

*Test Item:*  One step of the 6-step Asi-Ashi continuum

*Test Materials:* Refers to all Test Items

*Test Version (A, B):* Distinguishes which talker gender appears first (Female, Male)

Exposure Phase Design:

**Talker** x **Shift** x **Voice** x **Ear -> 16 Lists**

Which a Talker (A, B) is assigned to which Shift Condition (S, U), which voice (M, F), and which ear (L, R).

The number of critical items is ¼ of the total number of items in each list.

**Critical Items = 20 : Filler Items = 60**

**Total Number of Trials in each Exposure Phase: 80**

In ½ (40) of the trials:

* The attended talker must be Male; The attended talker must be Female
* The attended talker must be in the Left Ear; The attended talker must be in the Right Ear
* Diagram

  Description automatically generated **Create 4 versions of each set -> one version of each Filler Material Set is assigned to each list**

*Version 1*

* The **Male Talker** is in the **Left Ear** and produces a **Word**
  + The **Female Talker** is in the **Right Ear** and produces a **Nonword**

*Version 2*

* The **Female Talker** is in the **Left Ear** and produces a **Word**
  + The **Male Talker** is in the **Right Ear** and produces a **Nonword**

*Version 3*

* The **Male Talker** is in the **Left Ear** and produces a **Nonword**
  + The **Female Talker** is in the **Right Ear** and produces a **Word**

*Version 4*

* The **Female Talker** is in the **Left Ear** and produces a **Nonword**
  + The **Male Talker** is in the **Right Ear** and produces a **Word**

Then we chose the appropriate version of each set to create each of the lists. *Which version was selected is dependent on the Ear and Gender of the Attended Talker in the* ***Critical Trials.***

* For **Set A**, the **Attended Talker** speaks in the **Opposite Ear** as the critical trials and produces a **Word**.
* For **Set B**, the **Attended Talker** speaks in the **Same Ear** as in the critical trials and produces a **Nonword**.
* Graphical user interface

  Description automatically generated For **Set C**, the **Attended Talker** speaks in the **Opposite Ear** as in the critical trials and produces a **Nonword**.

This approach guarantees that no words or nonwords are repeated between or across talkers within a given trial and works within the confines of the original stimuli from Kraljic & Samuel, 2005.

Test Phase List Design: