

## Supplementary Materials B: Speech Coding Guide

**Essential Steps:** Steps determined *a priori* by consensus of 2 authors that reflect the minimum steps required to successfully complete task

**Optional Steps:** Instructions to do things that are beyond essential steps.

**Semantic Information**

Safety: Additional information pertaining to safety

Rationale clauses “So that you don’t get burnt when you put the lightbulb in”

Warnings: “This is dangerous.” “Don’t drop it.” “Don’t screw it in too tight.”

World knowledge/elaboration: providing additional information about the objects or tasks involved.

About objects: “Most coffee machines have a timer.” “It’ll be red.”

About actions: “It screws in counterclockwise.”

About personal routines: “In my microwave, I use a splatter shield.”

Generalizations: “Most bulbs are 60 watts.”

What not to do’s: “Leave the shade on.” “Don’t unplug it.”

Locations: “It sits on the burner.” “Those are kept in the hallway closet.”

**Management**

Feedback: Direct input to listener

“Do you want it [coffee] to be light or dark?” “That’s the wrong foot.” “Perfect!” “You spilled a little but we’ll clean it up.” “You know what a bunny’s ear looks like.” “Did I tell you about the water?”

Task management: Organizing task, stating assumptions, or metacognitive statements

“We’re going to change the lightbulb in the table lamp.” “It’s already plugged in.” “and then you should probably have a good bow.” “Let’s say we’re making mac and cheese.” “That’s it, I think.” “It’s so much harder when you’re not actually doing it.”

**Repetition**

Repetition: a step that has been repeated (note: doesn’t count as repetition if the same step represents a different stage in the task – e.g., tightening shoe multiple times throughout tying process)

Restarts: incomplete thoughts, abandoned utterances

\*See below for common examples from participant transcripts for each category

**Essential Steps**

<p><b>Coffee</b></p> <ol style="list-style-type: none"> <li>1. Get the coffee</li> <li>2. Put a filter in</li> <li>3. Put the coffee in</li> <li>4. Put water in</li> <li>5. Put a container underneath</li> <li>6. Turn on the machine</li> </ol>	<p><b>Lamp</b></p> <ol style="list-style-type: none"> <li>1. Unplug lamp/make sure it's off</li> <li>2. Unscrew the lightbulb</li> <li>3. Get/find a new lightbulb</li> <li>4. Screw new bulb in</li> <li>5. Turn on light/Check to make sure it works</li> </ol>
<p><b>Microwave</b></p> <ol style="list-style-type: none"> <li>1. Get food from fridge</li> <li>2. Put it in microwave</li> <li>3. Set time</li> <li>4. Hit start</li> </ol>	<p><b>Shoe</b></p> <ol style="list-style-type: none"> <li>1. Pull laces tight</li> <li>2. Cross laces</li> <li>3. Fold one under</li> <li>4. Tighten</li> <li>5. Create a loop</li> <li>6. Wrap a string around the loop</li> <li>7. Poke through space</li> <li>8. Pull to tighten</li> </ol>

**Optional Steps**

<b>Coffee</b>	<b>Lamp</b>
Go into the kitchen Grind the beans Get the coffee pot out Rinse out coffee pot Get chair to stand on Open tray/lid Remove the basket Throw old filter away Get a coffee filter Open coffee filter up Close tray/lid Read instructions Open the lid to the coffee Scoop/measure the coffee Take the pot to the sink Turn on the water Fill coffee pot with water Take it back to the coffee maker Plug in the coffee pot Get sugar/cream or other supplies Drink it	Go over to the lamp Get an adult Check whether bulb is burnt out Unscrew shade/remove screw Remove shade Set shade down Dump out bugs Get a pair of gloves Check wattage on bulb Set old bulb down Throw old bulb away Buy a new bulb Go to the cupboard/closet Put bulb into socket Put shade back on lamp Screw shade back in Plug the lamp back in Turn lamp off again Put supplies away
<b>Microwave</b>	<b>Shoe</b>
Go to the fridge Get out a plate/bowl Put food on plate or in container Read the instructions Loosen lid Carry container to microwave Open the microwave door Put a shield/paper towel on top Shut the microwave door Set the temperature/power Wait for it to heat up Check temperature Stir food Reheat Take it out Set it on table Eat it	Sit down Loosen the laces Put the shoe on Pull out the tongue Pick up the laces Make laces same length Hold lace between fingers Hold knot down with your finger Switch hands Grab the lace with [...] hand Make a loop with the other string Pull finger out of way Adjust size of bow

**Semantic Information**

<b>Coffee</b>	<b>Lamp</b>
<p>The coffee pot is in the kitchen  It might be unplugged  Don't touch the metal prongs  There's a tray that pulls out  Inside there's a basket  The basket holds the filter  It will probably have an old filter in it  That's where the coffee goes  The coffee is kept [...]  It's already ground up  There's a scoop inside  Use one tbsp per cup  More coffee makes it stronger  It is a glass pot  There are measurement readings on the side  There's a lid that goes on top  It's on the back  There's a button that turns it on  It's red  Most coffee machines have a timer  The coffee will drip down  The coffee is ready when the timer goes off  It takes about [...] minutes</p>	<p>The lightbulb might be hot  I always unplug it  Don't electrocute yourself  You light should be turned off  I leave the light shade on  There might be bugs  You can use gloves/pliers  It screws out by rotating  You turn it [...] direction to (un)screw it  The lightbulbs are glass  You have to be careful  Don't break the bulb/drop it  Lightbulbs come in different wattages/kinds  It's usually [...] watts  There is a number on the top  You have to get the right one  They are in the cupboard/drawer  It will tighten up  Don't force it  Be careful  Don't look directly at it</p>
<b>Microwave</b>	<b>Shoe</b>
<p>Not every container can go in the microwave  Don't put metal in the microwave  I usually use a paper plate  I use a spatter shield  There's a button that pops the door open  There's a rotating table  The food might come with instructions  For (insert food), heat [...] seconds  Make sure you don't do minutes  There is a number pad  There's a button that says [...]  The microwave will ding when it's done  Cook longer for big items  It might make a mess  There's a viewing window  When it's hot, you eat it  There might be steam  Don't burn your mouth</p>	<p>You don't have to put the shoe on  It should be comfortable on your foot  There are two laces  The laces are about a foot long  It's a two-part knot  The first part is an overhand knot/slip knot  It will look like an [...]  It should be a circle  They look like bunny ears  There will be an opening in the loop  It's like tying a package  The loops might be uneven  You can untie it by pulling</p>

**Management**

<b>Coffee</b>	<b>Lamp</b>
<p>We're going to make coffee  The first step is...  Can I do an automatic?  I use a [...] coffee maker  I'm assuming the coffee pot is clean  It's already plugged in  Did I tell you about the water?  Let's pretend...  I think you need water  I don't know about [...]  I forgot a step  I'll move the chair  Very good  You spilled a little  There you go  You don't have to worry about that  And then it will come through  And then you've made coffee</p>	<p>I would tell an 8-yo...  We're going to change a lightbulb  The lightbulb burnt out last night  I'm assuming I have the right lightbulb  I'm assuming the lamp has a shade  I'm assuming the bulb is no longer working  I don't know [...]  We're going to make it easy  Do you see that [...]?  You have the bulb in your hand  What size is it?  I left a step out  I've got a lightbulb here  Good job  There you go  And then you should be done</p>
<b>Microwave</b>	<b>Shoe</b>
<p>We're going to make lunch  I'm assuming it's in a microwave container  Let's say you're making [...] food  I'm going to show you what buttons to push  The time is already set  Does it seem hot?  We might need a little more time  It's not so easy  Hopefully no smoke will come out  And then the food is heated/you're done  And there you go  Let's eat</p>	<p>We're going to tie a shoe  I'm assuming the shoe is laced  So you've got your shoe on your foot  That's the wrong foot  Let's start with [...] foot  He's right-handed  I do it the easy way  We're going to do the bunny ears method  You know what a bunny's ear looks like  He's in cub scouts  Now we're going to [...]  Now for the main part  So you have your loop  Very good  I skipped a step  This is much harder when you're not doing it  Then you'll have a bow/shoe is tied/ That's it.</p>