

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

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

Optional Steps

Coffee	Lamp
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
Microwave	Shoe
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

Coffee	Lamp
<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>
Microwave	Shoe
<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

Coffee	Lamp
<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>
Microwave	Shoe
<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>