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The DIM system: WOZ Simulation Results - Phase I

Jennifer Balentine, Umesh Berry, and Anne Johnstone

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WUCS-92-20

July 1, 1992

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Abstract

Early work in the field of natural language processing was based on the assumption that humans interact with computers in the same way they do with other humans. However, more recent work seems to indicate otherwise. We conducted an experiment to explore human-computer interactions for a limited domain. The results that we obtained are consistent with recent findings. In a limited domain, when communicating with computers, people keep utterances very brief, pronomial references to a minimum and the conversation very focussed. From the data that we have gathered, it is not clear whether it is the conversational partner or the limited domain which influences the speech patterns of people to a greater extent. However, the experimental data strongly suggests that people adapt their style of communication as they get more acquainted with the capabilities of their conversational partner. These findings suggest that to build a natural language system for human-computer dialogue, it is not necessary to model all of human language.

Contents

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1. Introduction

The experiment that we report here was conducted in the summer of 1991 to initiate work on the development of a robust, voice-driven dialogue system which is capable of interacting via naturally spoken English sentences, relevant to a chosen application domain. The limited domain for our research work is the management of custom calling features provided by Southwestern Bell Telephone (SWBT). This domain is task-oriented and information-seeking.

We want to base the research on a clear understanding of user requirements and of the spoken language phenomena that occur in typical task-oriented, information-seeking dialogues with a computer. This work explores users' expectations of a natural language system, and the manner in which they speak to a computer.

Early work in this field assumed that users spoke to computers using the full breadth of human language. In other words, earlier, developers of natural language systems assumed that users would interact with the computer just like the way they would with a human. However, more recent studies seem to indicate otherwise. People treat computers as "intelligent servants" rather than conversational partners in a dialogue. (Baber and Stammers, 1989; Kennedy et al, 1988). They tend to use fewer pronouns, simpler syntax, smaller vocabularies and shorter utterances. Putting it another way, people speak "to" rather than "with" a computer. This implies that it is not necessary to model all of human language to capture the exchanges between humans and computers.

A key role of this experiment was to provide a basis upon which to build the natural language processor (NLP) (Balentine, Johnstone and Mathias, 1992) for the DIalogue Manager (DIM) system. So, instead of using a pre-specified grammar, (as was employed in some natural language processing systems (eg. LUNAR : Woods, 1972; SHRDLU : Winograd, 1976)) we built the NLP empirically from the corpus of inputs obtained from this experiment. Although the NLP is rather task specific, it covers a wide variety of utterances that could be encountered in our domain. In addition, we analyzed the data for many things like the vocabulary used, the number of exchanges it took to accomplish a task etc. These findings are reported here.

2. Methodology

System development requires an understanding of what users say to the system. This is impossible because of the design paradox : it is essential to know how users will communicate with a system in order to build it, yet user interactions with the system cannot be explored until the system is built (Kelley, 1983). This paradox can be avoided by adopting the wizard of Oz (WOZ) simulation technique first proposed by Kelley. He describes the "WOZ" paradigm as one in which experimental participants are given the impression that they are interacting with a program that understands English as well as another human would. The experimenter, acting as the "Wizard", surreptitiously intercepts communication between participant and program, supplying answers and new inputs as needed.

Fraser and Gilbert (1991), who reviewed the WOZ technique, have proposed an iterative process for experimentation. Their proposal includes three experimental phases : pre-experimental phase, first phase and subsequent phases. The driving force behind this methodology is to refine the experimental simulation and the implemented system until they are identical.

Tasks performed in the pre-experimental phase include definition of the application domain (and thus the "Wizard's" domain knowledge), design of subject's training, and set up of realistic situations for interaction with the system. In this phase the constraints are designed only to keep the subject within the bounds of the application domain; but otherwise do not limit expression, that is, the subjects are free to accomplish the task by interacting in a way that is most natural to them. The first phase poses few limitations on the subject or the

"Wizard". This is the phase that is used primarily for gathering data for definition of the system's grammar and lexicon. Subsequent experiments are increasingly constrained, and increasingly automated until the final system is completely specified. We followed this methodology in the design and application of our experiments.

3. System

The system consisted of a human "Wizard" who listened to the subject's requests (performing the speech recognition task), and recognized the meaning of the utterance (performing the natural language processing task). The "Wizard" then selected an appropriate response from a table of less than fifty pre-recorded responses (performing the dialogue management and the natural language generation task). Two sets of responses were used. One set was a pre-recorded voice, while the other was an Orator, a state-of-the-art text-to-speech synthesizer. Each subject heard only the pre-recorded voice or the Orator. Once the "Wizard" chose the response to play, the response was played in its entirety and could not be interrupted. However discernible speech was recognized when spoken over a response. Each response provided help, asked for information, or confirmed the accomplishment of a task. The system returned control to the subject to continue the interaction or to hang up. Subjects granted permission for their interactions with the system to be recorded. The experimenter then transcribed these tapes.

As mentioned before, our domain was the custom calling features provided by SWBT. Call-forwarding, call-waiting, speed-calling, and dialing by name or number were the specific features included. At present, users have to punch in hard-to-remenber codes to accomplish their custom calling feature task. For the experiment, users used speech input and could achieve the same purpose by engaging in a full dialogue with the system. Speech supplemented the speed calling and dialing features by allowing subjects to associate names with a phone number and a speed call code. As a result users dialed by speaking either the phone number, speed dial code or speed dial name. This enhancement added a new dimension of flexibility to the existing services, while reducing the subject's cognitive load. The subjects never actually accomplished any task because the "Wizard" was not connected to the telephone network.

4. Subjects

Eleven of the thirty-five subjects were SWBT employees, most of whom had extensive computer experience (See Appendix A.1). These eleven subjects participated in the pre-experimental phase and were not compensated. The rest, who took part in the first phase of experimentation, were mostly students, housewives etc (See Appendix A.2). These subjects were compensated for their participation.

5. Materials

5.1 Scenarios

Fifteen scenarios depicted situations in which different aspects of all the custom calling features would be used (See Appendix B.1). We developed the scenarios using as little specific vocabulary and syntax as possible. We wanted subjects to use their own vocabulary and speech patterns instead of adopting those found in the scenarios. Each subject completed a set up consisting of a total of six scenarios. The first three scenarios were unique. The next three were repetitions of the first three in a different permutation (See Appendix B.2). We had ten such set ups and we distributed them over all the subjects (See Appendices B.3 and B.4).

5.2 Questionnaires

Subjects answered three types of questionnaires during the experiment. They completed Questionnaire A (See Appendix C.1) after each call to the system and Questionnaire B (See Appendix C.2) after the first three scenarios. The experimenter presented the final questionnaire, which was similar to Questionnaire A, after the experiment was completed.

6. Procedure

We conducted the experiment in two phases. Both phases explored subject's vocabulary and syntax. In addition, the pre-experimental phase explored potential problems with the system and the experimental procedure. We experimented with the type of voice the computer generated to suit user's requirements. After adjusting the system according to preliminary results, the first phase began. This phase continued to explore vocabulary and syntax. In addition, we alternated the opening greetings to test channeling of subject's speech. In both the phases however, the experiment was conducted in a similar manner.

Subjects were placed in a room with a telephone, with the "Wizard" in another room, unknown to the subjects. The experimenter read the instructions (See Appendix D) to each subject and answered any questions. The experimenter instructed the subject to read the first of the six scenarios and "call" the system after they understood the task. They were instructed to start interacting with the system after the greeting and hang up when they felt that the task was done. When the subjects completed all the scenarios, the experimenter asked for their comments on the system.

7. Results

The questions that we were seeking answers to, before the experiment was begun, were :

1. What will the range of vocabulary be for this task?
2. Will there be a uniform, predictable way in which users would accomplish their tasks? Or would they employ many different ways?
3. Will users find the system quick and easy to use? Will they find it habitable?
4. Will users interact via long, verbose sentences with abstract references or will they use short, precise instructions i.e. how much intelligence would they associate with the system?
5. Will users adapt their style of interacting with the system as they get more familiar with the system? If yes, to what degree?
6. What will the nature of interactions be? Will we able to manage with pre-prepared responses? Will the users step out of the task domain?
7. What effect does the opening greeting from the system have on the ensuing dialogue?
8. What is the best level of initiative for the system? (mixed, computer control or human control)

An analysis of the dialogues from the experiment has helped us in answering the above questions. We shall address each question here.

1. Before we analyzed the dialogues for the vocabulary, we adopted a few conventions since we were dealing with speech input. In speech, it is very common for people to mumble or utter sounds like umm, uhh etc. We have considered all such utterances

as one type of word which we call "uhh" word. In our domain users had to say telephone numbers frequently. A telephone number like 345-1551 was considered as seven words ("three", "four", ... "one"). So the vocabulary includes words like "one", "two" and so on. The general rule that we adopted was to consider a combined word as separate spoken words if the components of the combined word were present in the vocabulary. So a word like "call-forwarding" was considered as two words, "call" and "forwarding", since these words were present in the vocabulary. On the other hand a word like "can't" was viewed as one spoken word. The vocabulary that we encountered over all the dialogues is very small. This finding is consistent with similar work done previously for limited domains (Kennedy et. al., 1988; Thompson 1980). The overall vocabulary size is 305 (See Appendix E.1). The vocabulary includes all the feature words that are specific to the domain (eg. "forwarding", "waiting"). A listing of the vocabulary with the frequency of occurrence of words is also given (See Appendix G.1). We have also included a listing of word pairs with their frequency of occurrence (See Appendix G.2). The # sign in the word pairs indicates the beginning or end of a sentence.

2. We found that there was a great deal of uniformity in the ways different users accomplished their tasks. Consider for example the task of turning off call-waiting. In almost all the dialogues, users gave direction to the conversation by saying the service that they desired in the very first utterance. Some users mentioned call-waiting and some (who were not sure of how to proceed) asked for help. In either case, the very first utterance from the user gave the system an idea of what to do next. There were some dialogues that we encountered in which users did not start the conversation for a long time. In such cases the system would ask the user if they needed help and guide them through the task. Utterances ranged from complete ("Stop call-waiting"), which contained all the information required to enable the system to perform the next step, to incomplete ("Call-waiting"), where the system had to query the user to supply the missing information (in this case whether they wanted to turn it off or not). The transcripts for the dialogues are given (See Appendix H).

3. Many subjects remarked about the ease and pleasantness of using a voice system compared to the present system of keyed inputs. Some subjects even expressed a desire to have the service immediately. Perhaps the most amazing result is the high percentage of successful interactions (91.7%) with the system despite limited user training and a small number of "Wizard" responses. Based on the answers to the questionnaires, users rated the system 7.3 on the easy-to-use scale, 7 on the quick-to-use scale and 5.6 on the natural-to-use scale (See Appendix F). All these scales ranged from 1 (low) to 9 (high).

4. Most of the subjects used short command-like constructs but there were a few subjects who interacted via long sentences. For example one of the subjects said the following to cancel call-forwarding : "Yes my calls are being forwarded to a friend's home and I'd like to cancel that so I'm receiving the calls". On the other extreme, commands like "Stop call-forwarding" were given to accomplish the same task. In general, users who were computer literate issued short commands. The average length of utterances was 5.47 (See Appendix E.1), which is quite low for our domain. Perhaps a measure of how much "intelligence" the users associate with the system is the number of utterances they make containing abstract references. There were 262 utterances with pronomial references. These include greetings like "Thank you" and sentences like "I need help" which do not need reference resolution. Excluding these, there remain only 58 utterances with pronomial references (9.1%). This suggests that the users did not associate too much "intelligence" with the

system and avoided abstract references as much as they could. More specifically it's possible that they did not associate a dialogue-model with the system so that previously mentioned objects could be referred back to. However, in this domain there may not be too many objects to refer back to.

5. Perhaps the most striking result of the experiment is that it provides evidence that users adapt their style of interaction when communicating with a computer. In order to get an idea of how well the users adapt to the system ,we analyzed the dialogues separately over the first three and the last three. The number of words went down from 2122 to 1326, the vocabulary from 272 to 198, the number of exchanges from 392 to 239 (an exchange comprising of a pair of interactions between the system and the user) and the number of utterances with pronouns from 174 to 88 (See Appendix E.1). We had expected the average length of utterances to go down too, but the results show otherwise. There is a slight increase from 5.41 to 5.54. Upon re-analysing the dialogues, we observed that in the first three dialogues, users had a tendency to issue incomplete commands. For instance, to forward their calls, they would tell the system what service they desired (in this case, call-forwarding) first and then provide the telephone number in the next utterance. In contrast to this, most of the instructions in the last three dialogues were complete with all the necessary information being provided in one exchange. This suggests that it is important that the automated system be capable of flexible dialogue.

6. As expected, the interactions were brief and to the point. The users never referred to anything outside the application domain. All the interactions could be handled by a set of less than fifty pre-recorded responses.

7. It turns out that the opening greeting has a significant impact on the ensuing dialogue. For greeting 1 ("Hello, this is Southwestern Bell's phone service.") the average number of words per user per dialogue was 19.5 and for greeting 2 ("Hello, this is Southwestern Bell's phone service. Please say what service you want.") it was 12.1 (See Appendix E.2). There is also a significant drop in the average length of utterances from 6.61 for greeting 1 to 3.61 for greeting 2. This is so because greeting 2 gives a direction to the conversation right in the beginning. However since the system has the initiative in greeting 2, the number of exchanges per user per dialogue turns out to be more (3.3) compared to greeting 1 (2.9).

8. When asked to say what they liked most about the system, almost all the users mentioned having the ability to take the initiative in the dialogue. We propose to explore issues of user versus system initiative in future experiments.

8. Conclusions

The results of the experiment indicate that people kept utterances short and to the point, pronominal references to a minimum and the focus of the conversation within the domain. There could be two possible explanations for this phenomena. First, people do not interact with machines in the same way they do with humans. Second, the nature of the task significantly influences the way people communicate regardless of their conversational partner. However, it is not clear from the present body of experimental evidence which of the two contributes more to the phenomena. The most important point to note from our experiment is that people adapt the way they speak to machines as they get more familiar with the machine's capabilities.

What is the best level of initiative for the system? What is the most appropriate level of user training? What capabilities do users associate with the system? How can the intelligence

level of the system be accurately portrayed? What effect does the perceived intelligence of the system have on the users expectations? These are some unanswered questions which we hope to obtain answers to after the second phase of experimentation.

9. Acknowledgements

APPENDIX A.1

Pre-experimental phase

Data on subjects

| Subject | Age | Occupation | Edu.† | Sex | Lang* | Easy | | Quick | | Natural |
						1-3	4-6	1-3	4-6	
1	31	Engineer	M	F	E	7	8.3	7	8.3	5
2	31	Secretary	HS	F	E	4.6	6.3	5.6	7	4
3	31	Sr. Tech.	B	M	E	8.3	8.3	5.6	7	5
4	38	Engineer	PhD	M	E,M	9	8	6	5.6	9
5	28	Asst. Mgr.	B	M	E,K	4.3	6	4.3	6	4
6	31	Home maker	B	F	E,G	8.3	9	7.6	7.6	7
7	45	Engineer	B	M	E	6.3	7	5.6	5.6	3
8	43	Engineer	PhD	M	E,C	5.3	--	6	--	5
9	38	Engineer	PhD	M	E,H	6.3	7.3	5.3	7.6	3
10	31	Engineer	B	M	E,G	5.3	6.3	5.3	6.3	3
11	42	Director	M	M	E,S,G	7.6	--	8.3	--	-

† HS : High School, B : Bachelor's, M : Master's

* E : English, F : French, G : German, H : Hindi, J : Japanese, K : Korean, M : Malayalam, S : Spanish

APPENDIX A.2

First phase

Data on subjects

Subject	Age	Occupation	Edu.†	Sex	Lang*	Easy		Quick		Natural
						1-3	4-6	1-3	4-6	
1	17	Student	HS	M	E,S	7	8	2.6	6	7
2	17	Student	HS	M	E,S	7.6	8.3	7	7	4
3	17	Student	HS	F	E	6	6.6	6.3	7.3	7
4	22	Student	B	M	E,F	5	7	6.3	7	6
5	21	Student	B	M	E	8.3	8.3	8.3	8.3	8
6	17	Student	HS	F	E,F	8	8	8.6	8.3	7
7	17	Student	HS	F	E,S	7.6	7.6	7	6.3	5
8	23	Student	B	M	E	7	6.6	7.6	6.6	6
9	21	Student	B	M	E	6.3	8.6	7	8	1
10	35	Housewife	B	F	E	6.3	7	6.3	7	5
11	20	Acc. Asst.	HS	F	E,S,J	8.6	9	8.6	8.6	8
12	21	Student	B	F	E	9	9	9	9	5
13	18	Student	HS	F	E,F	7.6	9	8	8.3	7
14	22	Manager	HS	M	E	5.3	6	4	6	4
15	27	Acad. Advsr	B	F	E	7.6	9	8.3	7	9
16	25	Engineer	B	M	E	7	9	5.6	8.3	6
17	32	Sr. Tech.	M	M	E	7.6	8.6	5.6	9	7
18	38	----	M	F	E	6.3	7.6	7	8.3	7
19	22	Student	B	M	E	6.3	7	6.3	7	1
20	36	Clerk	B	F	E,F,S	5	8	7	8	5
21	20	Student	B	M	E	7	8.6	6	8.3	8
22	38	Postman	HS	M	E,S	6.3	8.3	6.3	8.3	5
23	48	Attorney	JD	F	E,F,G	7	8.3	7	8.3	8
24	--	-----	--	-	--	--	--	--	--	-

† HS : High School, B : Bachelor's, M : Master's

* E : English, F : French, G : German, H : Hindi, J : Japanese, K : Korean, M : Malayalam, S : Spanish

APPENDIX B.1

Scenarios

Call Forwarding (CF)

1. You plan to be at Mike's house (number 224-0099) this evening, and want your calls to reach you there.
2. You plan to spend the week in Hawaii. For security reasons you don't want your phone unanswered. Your neighbor, Mike (number 224-0099), has agreed to accept your calls.
3. You are going on a business trip and want any clients who might phone your office to be able to reach you. The number where you are staying is 224-0099.
4. You are going to a friend's house for dinner, and your son hasn't phoned from camp. Your friend's number is 224-0099.

Remote Call Forwarding (RCF)

1. While visiting your parents (number 224-0099) you realize that your important calls will go unanswered. You want your calls from home (number 334-0561) to reach you at your parents.

Cancel Call Forwarding (CCF)

1. Your calls are being forwarded to a friend's house, but you are now at home.

Call Waiting (CW)

1. You plan to use your computer modem to place an important call. You do not want any calls to interrupt you.
2. You plan to call your daughter long distance. You don't want to waste time and money by answering other calls while you are talking to her.
3. You are going to phone your child's teacher and don't want to be interrupted. The teacher's number is 224-0099.

Dialing by name or number (DNN)

1. You want to call your friend Jane. You call her frequently, and her number is contained in speed call so you can dial her by name.
2. You want to find the feature time for *Robin Hood*. The movie theater's number is 224-0099.
3. You want to call your mother. You have stored her number, but can't remember the code, or the name you used.

Speed Calling (SC)

1. Your neighbor Mike moves to Dallas. You don't plan to call him very often so you no longer want him as a speed call number.
2. You and Mr./Mrs. Popplestein have become better acquainted. You want to change his/her speed dial entry so you can dial "Poopsie".
3. You want to know who is in your speed call directory.

APPENDIX B.2

Set-ups

Set-up	Scenarios
1	CF 1, SC 1, CCF 1
2	CF 2, CCF 1, DNN 1
3	CF 3, DNN 2, CCW 1
4	CF 4, DNN 3, CCW 2
5	DNN 2, CCW 2, SC 1
6	SC 1, CW 1, CF 1
7	SC 2, RCF 1, CF 2
8	SC 3, DNN 1, CF 3
9	CCW 3, SC 2, CF 4
10	RCF 1, CW 3, DNN 3

APPENDIX B.3

Pre-experimental phase

Subject No.	Set-up	Greeting
1	1	1
2	2	1
3	3	1
4	4	1
5	3	1
6	1	1
7	4	1
8	5	1
9	8	1
10	9	1
11	10	1

Set-up	Subject No.
1	1, 6
2	2
3	3, 5
4	4, 7
5	8
6	--
7	--
8	9
9	10
10	11

APPENDIX B.4

First phase

Subject No.	Set-up	Greeting
1	6	1
2	7	2
3	4	1
4	1	1
5	2	2
6	3	2
7	8	1
8	9	2
9	10	1
10	5	1
11	3	2
12	4	2
13	5	2
14	6	1
15	8	2
16	7	1
17	10	2
18	3	2
19	9	1
20	4	1
21	1	1
22	2	2
23	9	2
24	5	1

Set-up	Subject No.
1	4, 21
2	5, 22
3	6, 11, 18
4	3, 12, 20
5	10, 13, 24
6	1, 14
7	2, 16
8	7, 15
9	8, 19, 23
10	9, 17

APPENDIX C.1

Questionnaire A

1. "Overall, this task was ... "

```
|-----|-----|-----|-----|-----|-----|-----|-----|
  1     2     3     4     5     6     7     8     9
very        difficult     okay          easy        very
difficult                                           easy
```

2. What was the hardest part of this task?

3. "The voice phone let me accomplish the task ..."

```
|-----|-----|-----|-----|-----|-----|-----|-----|
  1     2     3     4     5     6     7     8     9
very        slowly        okay         quickly      very
slowly                                              quickly
```

4. What took the most time?

Turn the page and read the next scenario. When you understand your task, dial 7695. After you hang up, turn the page and complete the following questionnaire.

APPENDIX C.2

Questionnaire B

1. "Speaking to the voice phone was ..."

```
|-----|-----|-----|-----|-----|-----|-----|-----|
1     2     3     4     5     6     7     8     9
very              fairly              very
unnatural         natural             natural
```

2. What felt most unnatural about speaking to the voice phone?

3. The responses you heard were : (check all that apply)

o enthusiastic	o clear	o spoke too fast
o friendly	o garbled	o spoke too slow
o neutral	o too quiet	o was boring
o reserved	o too loud	o was pleasant

4. The replies you heard were : (check all that apply)

o too wordy	o confusing	o boring
o too brief	o clear	o too long
o didn't make sense	o to the point	o too short

5. What two things did you like about the voice phone?

   1)

   2)

6. What two things did you dislike about the voice phone?

   1)

   2)

7. Did you feel at any time that the voice phone replied unnaturally quickly or slowly? If so, what was you reaction?

8. Overall, what was your strongest impression of the system?

APPENDIX D

Instructions

Thank you for volunteering to use our new voice phone.

This system will allow you to use selected custom calling features by speaking naturally into the phone. Custom Calling features are enhancements to your telephone service which make receiving and managing your calls easier. The features that are available are :

- Call-forwarding
- Remote call-forwarding
- Call-waiting
- Speed-calling
- Dialing by name or number

If you need more specific information about how to use these services the system can provide help. You will use the system to accomplish tasks related to the custom calling features. When the system answers it will provide a quick greeting, and you are ready to begin. Speak naturally to the system. The system will provide information, acknowledgements and occasionally ask questions to help you accomplish your goal. You may ask the system for help, or correct a statement at any time.

Read the scenario on the next page. When you have decided what action needs to be taken, dial 7695. After you complete the task, turn to the next page and complete questionnaire 1.

APPENDIX E.1

Statistics on dialogues - 1

	Dialogues 1 to 3	Dialogues 4 to 6	Overall
No. of words	2122	1326	3448
Avg. no. of words (per user, per dialogue)	20.2	13.4	16.8
Vocabulary size	272	198	305
No. of exchanges	392	239	631
Avg. no. of exchanges (per user, per dialogue)	3.7	2.4	3.0
Avg. length of utterances	5.41	5.54	5.47
No. of utterances with pronouns	174	88	262

APPENDIX E.2

Statistics on dialogues - 2

	Greeting 1	Greeting 2
No. of words	2579	869
Avg. no. of words (per user, per dialogue)	19.5	12.1
No. of exchanges	390	241
Avg. no. of exchanges (per user, per dialogue)	2.9	3.3
Avg. length of utterances	6.61	3.61

APPENDIX F

Statistics on subjects

Average age (over 34 subjects) : 28.3

Average measure of ease (1 : very difficult, 9 : very easy) for dialogues 1 to 3 (34 subjects) : 6.8
Average measure of ease (1 : very difficult, 9 : very easy) for dialogues 4 to 6 (32 subjects) : 7.8

Average measure of speed (1 : very slow, 9 : very quick) for dialogues 1 to 3 (34 subjects) : 6.5
Average measure of speed (1 : very slow, 9 : very quick) for dialogues 4 to 6 (32 subjects) : 7.6

Average measure of naturalness of system (1 : very unnatural, 9 : very natural) (33 subjects) : 5.6

APPENDIX G.1

Vocabulary

Freq.	Word
177	zero
177	two
174	nine
160	call
147	i
138	to
97	uhh
97	my
94	four
85	yes
73	you
72	forwarding
61	speed
56	thank
54	number
53	waiting
45	please
45	like
44	want
43	calling
40	name
39	the
38	is
32	need
32	by
29	would
28	or
28	calls
28	a
27	dialing
26	that
24	okay
24	dial
24	and
22	directory
22	cancel
21	help
20	i'd
20	hi
20	do
20	change
19	forwarded
18	i'm
17	me
17	jane
17	have
17	correct
16	what
16	poopsey
16	one

```
16    mike
16    in
16    be
16    at
15    on
15    don't
14    this
13    three
13    poppelstein
12    no
12    mother
11    thanks
11    phone
11    for
10    so
10    six
10    of
10    mrs
10    from
10    can
 9    use
 9    remote
 9    know
 9    it
 9    home
 9    five
 9    could
 9    that's
 8    now
 8    code
 7    who
 7    off
 7    forward
 6    let's
 6    well
 6    very
 6    stop
 6    seven
 6    service
 6    remove
 6    mom
 6    modem
 6    friend
 6    entry
 6    all
 6    not
 5    up
 5    there
 5    see
 5    repeat
 5    place
 5    much
 5    how
 5    house
 5    his
 5    her
```

```
5    hello
5    give
5    computer
4    was
4    theatre
4    tell
4    next
4    movie
4    am
4    keith
4    guess
4    good
4    going
4    get
4    evening
4    cancelled
4    but
4    available
4    any
4    an
3    yeah
3    which
3    turn
3    trying
3    them
3    staying
3    set
3    same
3    put
3    plan
3    over
3    mr
3    make
3    information
3    if
3    features
3    entries
3    delete
3    bye
3    are
2    who's
2    confused
2    will
2    where
2    way
2    used
2    trip
2    time
2    through
2    sure
2    stored
2    stopped
2    sorry
2    some
2    right
2    remember
```

2	really
2	planning
2	petty
2	out
2	office
2	neighbor
2	mother's
2	mike's
2	might
2	menu
2	long
2	let
2	just
2	interrupt
2	important
2	hold
2	hey
2	hear
2	hang
2	friend's
2	distance
2	dallas
2	changed
2	care
2	business
2	back
2	after
2	about
2	it's
2	can't
1	you're
1	i've
1	works
1	whose
1	while
1	whatever
1	welcome
1	voice
1	using
1	us
1	understand
1	type
1	try
1	transfer
1	town
1	think
1	thing
1	then
1	than
1	take
1	since
1	simple
1	should
1	shoot
1	services
1	robin

1	rest
1	recommend
1	receiving
1	reached
1	reach
1	quite
1	question
1	prompt
1	previous
1	possible
1	placed
1	person's
1	parents
1	other
1	oops
1	only
1	often
1	obtain
1	numbers
1	none
1	night
1	neighbor's
1	named
1	moving
1	move
1	mean
1	may
1	many
1	main
1	ma
1	longer
1	list
1	jennifer
1	jack
1	interrupted
1	instead
1	include
1	idea
1	hood
1	him
1	here
1	having
1	happening
1	friends
1	frequently
1	forgot
1	first
1	fine
1	find
1	feature
1	feat
1	far
1	erase
1	else
1	elephant
1	eight

```
1    easily
1    during
1    drop
1    does
1    directions
1    didn't
1    determine
1    days
1    couple
1    confirmation
1    coming
1    come
1    clients
1    choice
1    best
1    believe
1    being
1    away
1    aw
1    anymore
1    another
1    alright
1    ahold
1    again
1    add
1    actually
1    able
1    Deithe
1    won't
1    what's
1    he's
```

APPENDIX G.2

Word-pairs

Freq. Word-Pair
----   ---------
  80 two #
  71 # yes
  64 call forwarding
  63 # call
  57 thank you
  57 forwarding #
  56 # two
  55 # uhh
  53 call waiting
  51 you #
  49 yes #
  43 # thank
  42 speed calling
  39 waiting #
  35 i want
  33 like to
  31 calling #
  28 i need
  28 by name
  27 # i
  25 would like
  25 please #
  24 want to
  24 number #
  24 i would
  24 # speed
  23 my calls
  22 or number
  22 name or
  22 dialing by
  21 yes i
  20 i'd like
  19 # hi
  18 need to
  17 my speed
  16 poopsey #
  16 directory #
  15 speed call
  14 to call
  14 i don't
  14 # dialing
  13 in my
  13 # okay
  12 uhh i
  12 to be
  12 mike #
  12 help #
  12 forwarded to
  12 cancel call
  12 call directory

```
12 # dial
11 uhh #
11 to two
11 poppelstein #
11 jane #
11 correct #
11 # poopsey
11 # i'd
11 # change
10 thanks #
10 my mother
10 hi i
10 calls to
10 calls forwarded
10 # thanks
10 # please
10 # help
 9 to have
 9 remote call
 9 mother #
 9 and i
 9 # no
 9 # cancel
 9 #
 8 to use
 8 to do
 8 to cancel
 8 the number
 8 mrs poppelstein
 8 could you
 8 call my
 8 # mike
 8 # correct
 7 want my
 7 no #
 7 name is
 7 my call
 7 i have
 7 do i
 7 calling directory
 7 # ok
 7 # mrs
 6 uhh yes
 6 uhh uhh
 6 to know
 6 like my
 6 do #
 6 change #
 6 # remote
 6 # my
 6 # jane
 6 # hello
 5 yes i'd
 5 who is
 5 waiting for
 5 very much
```

```
5 uhh call
5 to place
5 three #
5 so i
5 number two
5 name #
5 my name
5 much #
5 mom #
5 is two
5 is in
5 hi my
5 give me
5 dial #
5 computer modem
5 change speed
5 call jane
5 call #
5 at home
5 # what
5 # well
5 # that's
5 # that
5 # is
4 you very
4 you tell
4 you repeat
4 what is
4 uhh the
4 uhh please
4 uhh let's
4 to the
4 to my
4 to dial
4 to change
4 to a
4 this evening
4 the code
4 that is
4 tell me
4 repeat that
4 please give
4 please dial
4 please cancel
4 phone call
4 okay #
4 ok thank
4 number is
4 my phone
4 my mom
4 my friend
4 movie theatre
4 modem to
4 me #
4 let's see
4 know who
```

```
4 is keith
4 i guess
4 i am
4 his number
4 forwarding please
4 forward my
4 don't want
4 dial two
4 cancelled #
4 can i
4 available #
4 a number
4 a call
4 # three
4 # remove
4 # i'm
3 yea i
3 would you
3 what service
3 use call
3 up #
3 uhh to
3 uhh mike
3 uhh i'm
3 turn off
3 trying to
3 to turn
3 this call
3 there a
3 them forwarded
3 the same
3 the movie
3 the call
3 that's correct
3 that please
3 that #
3 set up
3 place a
3 phone number
3 okay uhh
3 of my
3 number in
3 number from
3 my uhh
3 me help
3 make a
3 keith uhh
3 it #
3 is there
3 is that
3 is correct
3 i'm going
3 i do
3 i can
3 have my
3 have call
```

```
3 going on
3 from speed
3 for the
3 don't know
3 directory please
3 dialing by
3 dial by
3 delete #
3 code 1
3 code #
3 change my
3 cancel my
3 call please
3 call forward
3 but i
3 at two
3 at my
3 all my
3 # yea
3 # delete
3 # could
3 # can
2 you please
2 you goodbye
2 yes uhh
2 yes please
2 yes i'm
2 yes #
2 will be
2 who's in
2 which is
2 where i
2 want call
2 want any
2 waiting to
2 waiting cancelled
2 use my
2 use a
2 uhh two
2 uhh stop
2 uhh speed
2 uhh my
2 uhh could
2 two this
2 two thank
2 tru tru
2 trip and
2 to uhh
2 to remove
2 to poopsey
2 to make
2 to interrupt
2 to his
2 to get
2 to dallas
2 this time
```

```
2 the next
2 the directory
2 the calls
2 that was
2 that i
2 stop my
2 stop forwarding
2 staying is
2 speed dial
2 sorry i
2 remove mike
2 remove call
2 remove a
2 remember the
2 please forward
2 planning to
2 plan to
2 place an
2 over at
2 one of
2 one #
2 on this
2 on the
2 on my
2 on call
2 on a
2 okay thank
2 off yes
2 off call
2 off #
2 number where
2 number one
2 now at
2 not at
2 next call
2 need some
2 need my
2 need information
2 need help
2 need #
2 name and
2 my office
2 my mother's
2 my home
2 my computer
2 mother's number
2 mike's house
2 mike is
2 mike from
2 long distance
2 like them
2 know #
2 it to
2 is the
2 interrupt me
2 information on
```

```
2 important call
2 i'm trying
2 i'm sorry
2 i'm confused
2 i'm at
2 i used
2 i plan
2 i i
2 i can't
2 house #
2 home and
2 home #
2 hold on
2 hi i'm
2 hi i'd
2 her number
2 help please
2 help on
2 help i
2 help available
2 hello i
2 hello #
2 hear the
2 have help
2 guess i
2 goodbye #
2 from my
2 friend's house
2 friend mike's
2 friend jane
2 forwarding to
2 forwarding on
2 forwarding my
2 forwarded #
2 forward all
2 for my
2 for me
2 entry number
2 entry #
2 entries #
2 do that
2 dial the
2 dial jane
2 dial an
2 correct yes
2 code i
2 change that
2 cancel the
2 cancel that
2 can't remember
2 can you
2 calls #
2 call and
2 by dialing
2 business trip
2 be over
```

```
2 be forwarded
2 at this
2 any calls
2 and would
2 an important
2 an entry
2 am staying
2 all i
2 a long
2 a help
2 a friend's
2 a computer
2 a business
2 # would
2 # to
2 # the
2 # off
2 # mr
2 # mother
2 # hey
2 # from
2 # forwarding
1 you're welcome
1 you take
1 you recommend
1 you have
1 you forward
1 you can
1 you bye
1 yes my
1 yes call
1 would need
1 works the
1 won't be
1 whose numbers
1 who might
1 who are
1 while i
1 which features
1 whatever #
1 what's happening
1 what was
1 what uhh
1 what next
1 what i
1 what else
1 what are
1 what all
1 what about
1 what #
1 well what's
1 well what
1 well okay
1 well i'm
1 well i
1 well dial
```

```
1 welcome #
1 way to
1 way correct
1 was the
1 was my
1 was having
1 was good
1 want this
1 want them
1 want the
1 want speed
1 want if
1 want his
1 want dialing
1 want #
1 waiting while
1 waiting service
1 waiting please
1 waiting during
1 waiting at
1 voice that
1 very often
1 using my
1 used thank
1 used for
1 use the
1 use other
1 up that
1 up by
1 understand the
1 uhh well
1 uhh want
1 uhh three
1 uhh that's
1 uhh speed
1 uhh speed
1 uhh so
1 uhh poopsey
1 uhh phone
1 uhh petty
1 uhh or
1 uhh now
1 uhh mrs
1 uhh main
1 uhh let
1 uhh in
1 uhh i'm
1 uhh i'd
1 uhh for
1 uhh features
1 uhh dialing
1 uhh dial
1 uhh change
1 uhh cancel
1 uhh can
1 uhh a
```

```
1 type of
1 two repeat
1 two i
1 two after
1 try it
1 tru uhh
1 transfer my
1 town and
1 to which
1 to transfer
1 to stop
1 to seven
1 to reach
1 to put
1 to okay
1 to nine
1 to move
1 to me
1 to hear
1 to forward
1 to find
1 to drop
1 to determine
1 to come
1 to another
1 to #
1 time thank
1 time #
1 thuh let's
1 through to
1 through at
1 this stopped
1 this speed
1 this one
1 this for
1 this #
1 think so
1 thing by
1 there please
1 there not
1 then i
1 theatre or
1 theatre number
1 theatre at
1 theatre #
1 the voice
1 the services
1 the rest
1 the phone
1 the only
1 the night
1 the name
1 the first
1 the feat
1 the entry
1 the computer
```

```
1 the best
1 that's what
1 that's simple
1 that's right
1 that's not
1 that's fine
1 that's all
1 that works
1 that will
1 that to
1 that the
1 that so
1 that person's
1 that name
1 that mean
1 that it
1 that could
1 that can
1 that all
1 thanks very
1 than dialing
1 take care
1 sure what
1 sure is
1 stored her
1 stored #
1 stopped i
1 stopped #
1 stop uhh
1 stop call
1 staying do
1 speed no
1 speed dialing
1 some help
1 some directions
1 so you
1 so yes
1 so if
1 so i'm
1 so #
1 since he's
1 simple okay
1 should i
1 shoot #
1 seven uhh
1 seven to
1 seven #
1 services i
1 service would
1 service please
1 service is
1 service i
1 service do
1 service #
1 see what
1 see uhh
```

```
1 see so
1 see hi
1 see call
1 same way
1 same type
1 same thing
1 robin hood
1 right now
1 right #
1 rest of
1 repeat please
1 recommend #
1 receiving the
1 really sure
1 really don't
1 reached this
1 reach me
1 quite frequently
1 question i
1 put through
1 put that
1 put back
1 prompt now
1 previous menu
1 possible could
1 popplestein #
1 poppelstein to
1 please uhh
1 please uhh
1 please thank
1 please stop
1 please please
1 please change
1 plan on
1 placed over
1 phone to
1 phone set
1 phone calls
1 phone at
1 petty uhhm
1 petty i
1 person's phone
1 parents #
1 over there
1 out who
1 out of
1 other than
1 or this
1 or robin
1 or or
1 or is
1 or dialing
1 opps #
1 only name
1 one poppelstein
1 one i
```

```
1 one code
1 one #
1 on using
1 on uhh
1 on remote
1 on how
1 on here
1 okay what
1 okay uhh
1 okay thanks
1 okay one
1 okay now
1 okay i
1 okay give
1 okay and
1 ok uhh
1 ok so
1 ok i
1 often so
1 office right
1 office please
1 off my
1 of two
1 of town
1 of this
1 of the
1 of service
1 of me
1 of days
1 obtain #
1 numbers i
1 number which
1 number set
1 number quite
1 number please
1 number on
1 number of
1 number i
1 number feature
1 number could
1 number but
1 now please
1 now i
1 now does
1 now do
1 now and
1 now #
1 not sure
1 not really
1 not correct
1 none #
1 no that's
1 no number
1 no longer
1 no idea
1 no i
```

```
1 nine to
1 nine #
1 night i
1 next phone
1 next do
1 neighbor's house
1 neighbor mike
1 neighbor and
1 need speed
1 need prompt
1 need confirmation
1 need at
1 named poopsey
1 name please
1 name in
1 name how
1 my service
1 my question
1 my parents
1 my one
1 my next
1 my neighbor
1 my friends
1 my entries
1 my dialing
1 my clients
1 my #
1 mrs popplestein
1 mr poppelstein
1 mr mrs
1 mr and
1 moving to
1 move to
1 mother i've
1 mother for
1 mother but
1 mom what
1 modem unn
1 modem so
1 might want
1 might be
1 menu whatever
1 menu #
1 mean my
1 me whose
1 me who
1 me what
1 me to
1 me the
1 me how
1 me her
1 me do
1 me code
1 me change
1 may i
1 many entries
```

```
1 main menu
1 ma #
1 longer want
1 list it
1 like remote
1 like it
1 like call
1 like all
1 lets see
1 let's try
1 let's change
1 let me
1 know yes
1 know who's
1 know if
1 keith petty
1 just need
1 just list
1 jennifer what
1 jane the
1 jane jane
1 jane in
1 jane for
1 jane could
1 jane by
1 jack #
1 it's the
1 it's possible
1 it the
1 it might
1 it by
1 it again
1 is set
1 is poopsey
1 is planning
1 is moving
1 is jane
1 is it
1 is her
1 is going
1 is dialing
1 is coming
1 is available
1 is at
1 is Deithe
1 interrupted what
1 instead please
1 information #
1 include a
1 in at
1 in and
1 in a
1 if uhh
1 if off
1 if it's
1 idea how
```

```
1 i've stored
1 i'm receiving
1 i'm planning
1 i'm now
1 i'm not
1 i'm calling
1 i won't
1 i will
1 i was
1 i use
1 i uhh
1 i no
1 i make
1 i just
1 i include
1 i hear
1 i hang
1 i forgot
1 i didn't
1 i change
1 i call
1 i believe
1 i #
1 how to
1 how many
1 how do
1 how can
1 how about
1 house so
1 house his
1 house and
1 hood #
1 home you
1 home that
1 home thank
1 home phone
1 home now
1 his to
1 him very
1 hi #
1 hey that
1 hey jennifer
1 here hold
1 her name
1 her code
1 her #
1 help information
1 hello uhh
1 hello hold
1 he's staying
1 having forwarded
1 have uhh
1 have to
1 have this
1 have stored
1 have no
```

```
1 have in
1 have dialing
1 have any
1 have a
1 happening #
1 guess so
1 guess it
1 good that's
1 good #
1 going out
1 get this
1 get that
1 get a
1 get #
1 from uhh
1 from mr
1 from a
1 from 7
1 from 5
1 friend's home
1 friend mike
1 friend #
1 frequently and
1 four and
1 forwareded to
1 forwarding uhh
1 forwarding off
1 forwarding instead
1 forwarding call
1 forwarding and
1 forwarded uhh
1 forwarded to
1 forwarded please
1 forwarded from
1 forward #
1 forgot my
1 for this
1 for speed
1 for mike
1 for call
1 five to
1 five #
1 first name
1 fine #
1 find out
1 features should
1 features call
1 features available
1 feature please
1 feat uhh
1 far away
1 evening at
1 evening and
1 evening after
1 evening #
1 erase it
```

```
1 entry okay
1 entry named
1 entries i
1 else do
1 elephant #
1 during this
1 drop uhh
1 don't understand
1 don't think
1 don't plan
1 don't i
1 don't his
1 don't get
1 don't care
1 don't #
1 does that
1 do you
1 do speed
1 do far
1 do dialing
1 do call
1 distance phone
1 distance call
1 directory changed
1 directory anymore
1 directory and
1 directions on
1 didn't get
1 dialing her
1 dialing #
1 dial number
1 dial mom
1 dial it
1 dial entry
1 dial entries
1 dial code
1 determine uhh
1 days my
1 dallas but
1 dallas and
1 couple of
1 could i
1 correct thank
1 correct or
1 correct i
1 correct do
1 confused i
1 confused #
1 confirmation #
1 coming through
1 come in
1 clients who
1 changed to
1 changed #
1 change the
1 change it
```

```
1 change entry
1 change call
1 care of
1 care #
1 cancel speed
1 cancel previous
1 cancel #
1 can stop
1 can obtain
1 can just
1 can call
1 calls there
1 calls thank
1 calls put
1 calls i'm
1 calls from
1 calls are
1 calling to
1 calling my
1 calling help
1 calling for
1 call which
1 call what
1 call speed
1 call so
1 call him
1 call her
1 call from
1 call forwarding
1 call forwarded
1 call but
1 call a
1 bye #
1 by uhh
1 by number
1 but since
1 best way
1 believe that's
1 being forwarded
1 be stopped
1 be reached
1 be put
1 be placed
1 be interrupted
1 be i
1 be correct
1 be changed
1 be cancelled
1 be canceled
1 be call
1 be able
1 back on
1 back home
1 away i
1 aw shoot
1 at four
```

```
1 at a
1 at #
1 are the
1 are in
1 are being
1 anymore #
1 any of
1 any features
1 another number
1 and want
1 and uhh
1 and then
1 and that
1 and remote
1 and or
1 and not
1 and need
1 and mrs
1 and i'd
1 and and
1 and a
1 am now
1 am back
1 alright let's
1 all what
1 ahold of
1 again #
1 after uhh
1 after seven
1 add #
1 actually i
1 about dialing
1 about call
1 able to
1 a speed
1 a neighbor's
1 a neighbor
1 a name
1 a movie
1 a modem
1 a friend
1 a directory
1 a dialing
1 a couple
1 Deithe i'm
1 # you're
1 # who's
1 # trying
1 # stop
1 # really
1 # poppelstein
1 # phone
1 # oops
1 # now
1 # not
1 # none
```

```
1 # nine
1 # need
1 # mom
1 # may
1 # ma
1 # let's
1 # jack
1 # it's
1 # how
1 # hang
1 # good
1 # friend
1 # five
1 # erase
1 # entry
1 # elephant
1 # do
1 # aw
1 # any
1 # alright
1 # ahold
1 # add
1 # actually
```

APPENDIX H

Dialogues

Number: 1.1

Call One

S: Hello, this is South Western Bell's phone service.
U: Call Forwarding (pause)
U: Help.
S You want your calls forwarded from 334-0561 to 224-0099?
U: Yes
S: You want your calls forwarded to 224-0099?
U: Yes
S: Calls are being forwarded to 224-0099 (pause)
(hang-up)

Call Two

S: Hello, this is South Western Bell's phone service.
U: Dial Mom.
S Now dialing Mother

Call Three

S: Hello, this is South Western Bell's phone service.
U: Cancel Call-Forwarding
S: Call-Forwarding is off

Call Four

S: Hello, this is South Western Bell's phone service.
U: Stop Call-Forwarding
S: Call-Forwarding is off

Call Five

S: Hello, this is South Western Bell's phone service.
U: Call my mother.
S: Now dialing Mother

Call Six
S: Hello, this is South Western Bell's phone service.
U: Um, lets see. Call forward
S: What number do you want your calls forwarded to?
U: 224-0099
S: Calls are being forwarded to 224-0099

Number: 1.2

Call One

S. Hello, this is South Western Bell's phone service.
U: Yes, I would like my home phone call-forwarded to a neighbor (pause) and i ne
e(some directions on how to do that.

S: What number do you want your calls forwarded to?
U: Um the phone number is 224-0099.
S: Calls are forwarded to 224-0099.
U: That is correct (long pause)
   Do you take care of this for me? Do I need confirmation?
S: No
U: OK Thank you
S: Thank you for participating in this experiment. Please hang up.

Call Two

S: Hello, this is South Western Bell's phone service.
U: Yes my calls are being forwarded to a friend's home and I'd like to
cancel that so I'm receiving the calls.
S: You want call-forwarding off?
U: Correct
S: Call forwarding is off.
U: OK Thank you very much.

Call Three

S: Hello, this is South Western Bell's phone service.
U: Yes, um I call a number quite frequently and need to know if um,
 speed-calling and or dialing by name or number is the same type of service?
S: You can dial by speaking a phone number, a speed dial code, or a
speed dial name.
U: OK I would like to have this speed-call number set up by dialing by name.
How can I do that?
S: With Speed Calling, you can reach important numbers more quickly and easily.
You store a person's name and phone number under a-one or two-digit code. Then y
ou can call using either the person's name or their code instead of their phone
number.
U: OK so I would need to put that person's phone number in and then I can just l
is: it by name, and and that works the same way, correct? Or or is it the same t
hing by ... mmh I'm confused (system talks over user)
U: Can you
S: Please say what service you want.
U: I want dialing by name
S: Whom shall I dial?
U: Mmm I want to dial Jane.
S: You want to dial Jane at 225-0099?
U Correct.
S: Now dialing Jane
U: OK Mmm Now does that mean my service is set up?
S: Yes
U: OK Thank you very much.

Call Four

S: Hello, this is South Western Bell's phone service.
U: Yes, I would like to have um my phone set up that I can call
my friend Jane by dialing her name.
S: You want to dial Jane at 224-0099?
U. Yes I do
S: Now dialing Jane
U OK Thank you

Call Five

S: Hello, this is South Western Bell's phone service.
U: Yes um I need to cancel my call-forwarding um to, which is at a friend's hous
e and I just need to cancel that.
S: Which service do you want off?
U: Call- forwarding
S: Call- forwarding is off
U: Thank you

Call Six

S: Hello, this is South Western Bell's phone service.
U: Yes, I need my calls forwarded to 224-0099
S: Calls are forwarded to 224-0099
U: Thank you very much.

Number: 1.3

Call One

S: Hello, this is Southwestern Bell's phone service.(pause)
S: Do you need help?
U: Yes (pause)
S: Please say what service you want.
U: Call Forwarding
S: Call Forwarding, Your phone automatically forwards all calls to a location of
 your choice.
U: Call Forwarding
S:What number do you want your calls forwarded to?
U: 224-0099
S: Calls are forwarded to 224-0099
S: I'm still listening. So you need more information?
U: no (pause)
S: Thank you for your participation. Please hang-up now.

Call Two

S: Hello, this is Southwestern Bell's phone service.
U: 224-0099
S: Now Dialing 224-0099   (long pause)
(hang-up)

Call Three

S: Hello, this is Southwestern Bell's phone service.
U: Call Waiting (pause)
S: You want Call Waiting off?
U: yes
S: Call Waiting is off.
(hang-up)

Call Four
S: Hello, this is Southwestern Bell's phone service.
U: Call Waiting

\

```
S: Call Waiting is off.
(Hang-up)


Call FIve
S:  Hello, this is Southwestern Bell's phone service.
U: 224-0099
S: You want to dial 224-0099?
U: Yes.
S: Now Dialing 224-0099.   (long pause)
(hang-up)


Call Six

S:  Hello, this is Southwestern Bell's phone service.
U: Call Forwarding
S: What number do you want your calls forwarded to?
U: 224-0099
S: Calls are forwarded to 224-0099.
(hang-up)


Number: 1.4


Call One

S:  Hello, this is Southwestern Bell's phone service.(pause)
U: Hello
S: Do you need help?
U: no       (pause)
S: Please say what service you want.
U: Call Forwarding.
S: What number do you want your calls forwarded to?
U: 224-0099
S: Calls are forwarded to 224-0099
U: Thank you.
S: Thank you.
(hang-up)


Call Two

S:  Hello, this is Southwestern Bell's phone service.
U: Hello (pause) I need to call my mother.
S: Now dialing Mother.   (pause)
U: Thank you.
S: Thank you.
(hang-up)


Call Three

S:  Hello, this is Southwestern Bell's phone service.
U: Hello, uhh, I need to turn off call waiting.
S: You want call waiting off?
U: yes
S: Call Waiting is off.
U: Thank you
S: Thank you.
(hang-up)
```

Call Four

S: Hello, this is Southwestern Bell's phone service.
U: Hi, I need to turn off my call waiting while I make a long distance call.
S: What service do you want off?
U: Call Waiting.
S: Call Waiting is off.
U: Thank you.
S: Thank you.
(hang-up)

Call Five

S: Hello, this is Southwestern Bell's phone service.
U: Hi , I forgot my mother's number. I would like to call her.
S: Please rephrase the command.
U: Hi, I want to call my mother.
S: Now dialing mother.
U: Thank you.
(hang-up)

Call Six

S: Hello, this is Southwestern Bell's phone service.
U: Hi, I want to forward all my calls to another number.
S: What number do you want your calls forwarded to?
U: 224-0099.
S: Calls are forwarded to 224-0099.
U: Thank you.
(hang-up)

Number: 2.3

Call One

S: Hello, this is Southwestern Bell's phone service.
U: Hello, hold on . The number where I am staying is 224, I don't care.
S: Do you need help?
U: Yes (pause)
U: Hey, Jennifer What is going on here, hold on... mumble
S: Please say what service you want.
U: mumble
U: Call Forwarding please
S: What number do you want your calls forwarded to?
U: 224-0099
S: Calls are forwarded to 224-0099   (pause)
U: Thank you   (pause)
(Hang-up)

Call Two

S: Hello, this is Southwestern Bell's phone service.
U: Thu, let's see... Hi, I would like to get a movie theatre number please.mumble, I don't get this one.
S: Please say what service you want. (pause)

```
U:  mumble ... dialing by name or number.
S:  Whom shall I dial?
U: mumbleU: I'm confused. I need help please.
S: You can dial by speaking a phone number, a speed dial code, or a speed dial n
ame.
U:  Please dial 224-0099.
S: Now dialing 224-0099.   (pause)
S: Thank you
U: Okay, now do I hang-up (pause)
(hang-up)
```

Call Three

```
S:  Hello, this is Southwestern Bell's phone service.
U: I would like to, uhh, let's see, uhh, mumble...I'm trying to use a modem.  Un
n, let's see what service do I need.
S: Please say what service you want.
U: Tru, tru, tru, uhh mumble
U: Dial by name or number
S: Whom shall I dial?
U: Is there a help available?
S: yes
U: Please give me help information.
S: You can dial by speaking a phone number, a speed dial code, or a speed dial n
ame.
U: I'm trying to use a computer modem to place a call. What service would you re
commend?
S: Please rephrase the command.
U: Would you repeat that please?
S: Please rephrase the command.
U: Uhh, I would like to use the computer modem to place a call. Which features s
hould I use other than dialing by name.(long pause)
S: I'm sorry. Let me get someone who can help you. Please wait.
U: Hey, that was good.
S: Thank you for participating in this experiment. Please hang-up now.
U: Please ..mumble
(hang-up)
```

Call Four

```
S:  Hello, this is Southwestern Bell's phone service.
U: Umm, I would like to make a call from a computer modem. So you have any featu
res available?
U  mumble
S: Please say what service you want.
U: I don't know.I'm not really sure. Is there a help available?
U: Please give me help.
S· Call Forwarding, Your phone automatically forwards all calls to a location of
 your choice.Speed Calling, You can reach important numbers more quickly and eas
ily. You store a person's name and phone number under a one digit code. Then you
 can call using either the person's name or their code instead of their phone nu
mber.You can find out what speed codes you have available, or whose number you h
ave stored.Cancel Call Waiting stops important calls from being interrupted.
Before you dial ask for call waiting to be cancelled.You can dial by speaking a
phone number, a speed dial code, or a speed dial name.(pause)
U· Umm, I would like to have call waiting service, please.
```

```
S: You want call forwarding off?
U: yes
S: Call forwarding is off.
U: What about call waiting?
S: You want call waiting off?
U: yes
S: call waiting is off.
U: Now, please,uhh, umm, dial the number. (pause)
S: Whom shall I dial?      (pause)
U: No number is available.
(hang-up)
```

Call Five

```
S:  Hello, this is Southwestern Bell's phone service.
U: mumble
U: I would like to have a dialing by name or number feature please.
S: Whom shall I dial?
U: Umm, please dial 224-0099.
S: Now dialing 224-0099.   (pause)
S: Thank you.
(hang-up)
```

Call Six

```
S:  Hello, this is Southwestern Bell's phone service.
U: Umm, Please give me help.
S: Please say what service you want.
U: May I have help on the feat, uhh, features call forwarding and remote call fo
rwarding, please?
S: Call Forwarding, your phone automatically forwards all calls to a location of
 your choice.
U: Help on remote call forwarding, please.
S: Call Forwarding, your phone automatically forwards all calls to a location of
 your choice.
```

Number: 2.1

Call One

```
S:  Hello, this is Southwestern Bell's phone service.(long pause)
U: I want to be reached this evening at 224-0099. Thank you.
(hang-up)
```

Call Two

```
S:  Hello, this is Southwestern Bell's phone service.
U: Hi, I want to call my mother but I can't remember the code I used. Thank you.
(hang-up)
Note:  The subject  did not appear to understand the interactive ability of the
system.  She was retrained and began the task over again.
```

Call One

```
S:  Hello, this is Southwestern Bell's phone service.
U: Yes, I want my calls forwarded from 5 to 7, uhh, to the number of 224-0099. T
```

hank you.
S: Calls are forwarded to 224-0099.
U: Thank you, goodbye
(Hang-up)

Call Two

S: Hello, this is Southwestern Bell's phone service.
U: Yes, I want to call my mother. I've stored her number, but I can't remember t
he code.
S: Whom shall I call?
U: My mom.
S: Now dialing mother.
U: Thank you.
S: Thank you.
(hang-up)

Call Three

S: Hello, this is Southwestern Bell's phone service.
U: Yes, please stop forwarding my calls. I'm now at home. Thank you.
S: You want call forwarding off?
U: Yes, please. Thank You.
S: Call forwarding is off.
U: Thank you, goodbye
S: Thank you
(hang-up)

Call Four

S: Hello, this is Southwestern Bell's phone service.
U: Hi, I'm at home. You can stop forwarding my calls. Thank you.
S: Call forwarding is off.
U: Thank you
S: Call forwarding is off.
(hang-up)

Call Five

S: Hello, this is Southwestern Bell's phone service.
U: Hi, I want to call my mom. What is her code? (pause)
U: What is the code..(system interrupts)
S: Stored names are mother at 224-0099 under speed calling code 1.
U: okay, thank you.
(hang-up)

Call Six

S: Hello, this is Southwestern Bell's phone service.
U: Please forward my calls from 7 to 9 to 224-0099. Repeat please.
S: Calls are forwarded to 224-0099.
U: Thank you.
(Pang-up)

Number: 2.4

Call One

S: Hello, this is Southwestern Bell's phone service.Please say what service you
 want.
U: Remote, I'm sorry, cancel call forwarding.
S: To what number do you want your calls forwarded?
U: 224-0099.
S: Calls are forwarded to 224-0099.
(hang-up)

Call Two

S: Hello, this is Southwestern Bell's phone service.
U: I'd like to access my speed calling dial by name.
S: Whom shall I dial?
U: Mother
S: Now dialing mother. (pause)
(hang-up)

Call Three

S: Hello, this is Southwestern Bell's phone service.
U: I'd like to access cancel call waiting and dial by name.
S: You want call waiting off?
U: Yes.
S: Call waiting is off.
U: I'd like to access dial by name.
S: Whom shall I dial?
U:My daughter.
S:Now dialing Jane. (pause)
(hang-up)

Call Four

S: Hello, this is Southwestern Bell's phone service.
U: I'd like to, uhh, cancel call waiting and dial by name.
S: Call waiting is off
U: I'd like to dial by name.
S: Whom shall I dial?
U: Uhh, my daughter Christine. (long pause)
S: I'm sorry. Let me get someone who can help you.Thank you for participating in
 this experiement. Please hang-up now.

(hang-up)

Call Five

S: Hello, this is Southwestern Bell's phone service.
U: Dial by name, please
S: Whom shall I dial?
U Mother
S: Now dialing mother.
(hang-up)

Call Six

```
S:  Hello, this is Southwestern Bell's phone service.
U: Call forwarding
S: To what number do you want your calls forwarded?
U: 224-0099.
S: Calls are forwarded to 224-0099.
(hang-up)
```

Number: 1.5

Call One

```
S:  Hello, this is Southwestern Bell's phone service.(pause)
S: Do you need help?
U: Uhh, yes (throat clearing)
S: These features are available: call forwarding, speed calling, call waiting, a
nd dial by name or number.
U: Dialing by name or number
S: Whom shall I dial?
U: Uhh, the movie theatre, or Robin Hood. (pause)
S: Whom shall I dial?
U: Umm, 224-0099.
S: Now dialing 224-0099.       (Pause)
U: Well, okay (throat clearing)
S: Thank you.(long pause)
U: Well., what's happening
S: Thank you for participating in this experiment. Please hang-up now.
U: Hang-Up?
S: yes
U: What?
S: yes
(hang-up)
```

Call Two

```
S.  Hello, this is Southwestern Bell's phone service.(pause)
S: Please say what service you want.
U: Uhh, uhh stop, uhh, call waiting
S: You want call waiting off?
U: yes
S. Call Waiting is off.
U  okay
S: Thank you
U: Well, what next do I need to do?
(hang-up)
```

Call Three

```
S:  Hello, this is Southwestern Bell's phone service.
U: Well, I want my uhh speed calling directory changed.
S: What do you want to change it to?
U: I want to drop, uhh, Mike.
S  You want to delete Mike's number?
U: Correct.
S: Now deleting Mike's number.      (pause)
S· Thank you.
U. Okay, what else do I need to do?
```

```
S: Please say what service you want.   (pause)
S:  Whom shall I dial?
U: I'm confused. I need help please.
S: You can dial by speaking a phone number, a speed dial code, or a speed dial n
ame.
U:  Please dial 224-0099.
S: Now dialing 224-0099.(pause)
S: Thank you
U: Okay, now do I hang-up
```

Number: 1.6

Call One

```
S:  Hello, this is Southwestern Bell's phone service.(pause)
S: Please say what service you want.
U: Speed Calling
S: What is the person's name?
U: Uhh, Mike (long pause)
U: Mike(pause)
S: I'm sorry. Let me get someone who can help you. Please wait.Thank you for par
ticipating in this experiment. Please hang-up now.
(hang-up)
Note: Subject ones attempts to correct call one, and accomplish his goal.
```

Call One

```
S:Hello, this is Southwestern Bell's phone service.(long pause)
S:Please say what service you want.
U: Speed Calling    (pause)
S: Whom shall I dial?
U: Mike (pause)
S: Now dialing 224-0099
S: Thank you (pause)
S  Thank you for participating in this experiment.  Please hang-up now.
```

Call Two

```
S:  Hello, this is Southwestern Bell's phone service.(long pause)
S: Do you need help?
U: Yes
S: These features are available: Call Forwarding, Call Waiting, Speed Calling, a
nd Dial by name or number.
S  Which calling feature do you want help with?
U: Call Waiting
S: Cancel Call Waiting stops important calls being interrupted. Before you dial,
 you can ask for call waiting to be cancelled.(pause)
S: Please say what service you want.
U: Cancel Call Waiting
```

Call Three

```
S:  Hello, this is Southwestern Bell's phone service.(long pause)
S:  Hello, this is Southwestern Bell's phone service.
U  Call Forwarding
S: What number do you want your calls forwarded to?
```

```
U: 224-0099
S: Calls are forwarded to 224-0099
S: Thank you
(hang-up)
```

Call Four

```
S:  Hello, this is Southwestern Bell's phone service.
U: Call forwarding
S: What number do you want your calls forwarded to?
U: 224-0099
S: Calls are forwarded to 224-0099  (pause)
S: Thank you
(hang-up)
```

Call Five

```
S:  Hello, this is Southwestern Bell's phone service.
U: Cancel call waiting
S: Call waiting is off      (pause)
S: Thank you
(hang-up)
Note: It seems that this subject did not make call six.
```

Number: 1.7

Call One

```
S:  Hello, this is Southwestern Bell's phone service.
U: help
S: Which calling feature do you want help with?
U: Speed Calling
S: Speed Calling. You can reach important numbers more quickly and easily. You s
tore a person's name and phone number under a one digit code. Then you can call
using either the person's name or their code instead of their phone number.
U: (pause) Cancel speed calling for Mike
S: Which service do you want off?
U: Speed Calling  (pause)
S: Which entry do you want to change it to?
U: Mike
S: What do you want to change it to?
U: Erase it
S: You want to delete Mike's number?
U: Yes
S: Now deleting Mike's number. (pause)
S: Thank you
(hang-up)
```

Call Two

```
S:  Hello, this is Southwestern Bell's phone service.
Please say what service you want.
U: Speed Dialing
S: What is the person's name?
U: Mrs. Poppelstein  (long pause)
(hang-up)
```

Note: Subject attempts to correct his last call and accomplish his task.

Call Two

S: Hello, this is Southwestern Bell's phone service.Please say what service you
 want
U: Help
S: Which calling feature do you want help with?
U: Speed Calling
S: Call Forwarding, your phone automatically forwards all calls to a location of
 your choice.
S: Speed Calling, you can reach important numbers more quickly and easily.You st
ore a person's name and phone number under a one digit code.Then you can call us
ing either the person's name or their code instead of their number.
U: (pause) Change Speed Calling
S: Which entry do you want to change?
U: Mrs. Poppelstein
S: What do you want to change it to?
U: Poopsey (laughter)
S: You want to change Poppelstein at 224-0099 to Poopsey?
U: Correct
S: Thank you (pause)
(hang-up)

Call Three

S: Hello, this is Southwestern Bell's phone service.
Please say what service you want
U: Call forwarding
S: What number do you want your calls forwarded to?
U: 224-0099
S: Calls are forwarded to 224-0099
S: Thank you
(hang-up)
Note: The subject seems to realize that he should have used remote call forwardi
ng and repeats the call.

Call Three

S: Hello, this is Southwestern Bell's phone service.
U: Remote Call forwarding
S: What number do you want your calls forwarded to?
U: 224-0099
S: What number do you want your calls forwarded from?
U: 334-0561
S: You want your calls forwarded from 334-0561 to 224-0099?
U: Yes
S: Thank you
(hang-up)

Call Five

S   Hello, this is Southwestern Bell's phone service.
U. Call Forwarding
S: What number do you want your calls forwarded to?
U: 224-0099

S: Calls are forwarded to 224-0099
(Hang-up)

Call Six

S: Hello, this is Southwestern Bell's phone service.
Please say what service you want
U: Change (pause) speed calling
S: Which entry do you want to change?
U: Mrs. Poppelstein
S: What do you want me to change it to?
U: Poopsey
S: You want to change Popplestein to Poopsey?
U: Correct
S: thank you
(hang-up)

Number: 1.8

Call One

S: Hello, this is Southwestern Bell's phone service.
U: Could you tell me who is in my speed call directory, please?
S: Stored names are Poppelstein at 224-0099 under speed calling code 1.
U: I'm sorry. I didn't get that. Could you repeat that please?
S: Stored names are Poopsey at 224-0099 under speed calling code 2.
U: Umm, I'm sorry I need some help. I ... I need to find out whoare in my speed
  calling directory, and uhh I... I don't understand the voice that is coming th
rough to me.
S:You can reach important numbers more quickly and easily. You store a person's
name and phone number under a one digit code. Then you can call using either the
 person's name or their code instead of their phone number.
U: Could you repeat that please?
S:You can reach important numbers more quickly and easily. You store a person's
name and phone number under a one digit code. Then you can call using either the
 person's name or their code instead of their phone number.
U: Uhh, could you tell me whose numbers I have stored.
S: Stored names are Poppelstein at 224-0099 under speed calling code 1.
U: Uhh, could you repeat that name please?
S: Stored names are Poppelstein at 224-0099 under speed calling code 1.
U: Is that the only name in my speed calling directory?
S: Yes
(hang-up)

Call Two

S: Hello, this is Southwestern Bell's phone service.
U: I'd like to call Jane could you please give me her number?
S: Whom shall I dial?
U: Jane. The first name is Jane, J-A-N-E.
S: Now dialing Jane. (pause)
S: thank you (pause)
(hang-up)

Call Three

```
S:  Hello, this is Southwestern Bell's phone service.
U: I'd like to my calls forwarded please
S: To what number do you want your calls forwarded?
U: 224-0099
S: Calls are forwarded to 224-0099
(hang-up)
```

Call Four

```
S:  Hello, this is Southwestern Bell's phone service.
U: I'd like to my calls forwarded to 224-0099
S: Calls are forwarded to 224-0099
(hang-up)
```

Call FIve

```
S:  Hello, this is Southwestern Bell's phone service.
U: Umm, please, please dial Jane for me.
S: Now dialing jane
(hang-up)
```

Call Six

```
S:  Hello, this is Southwestern Bell's phone service.
U: can you tell me, what all, what are the serivces I can obtain?
S: These featured are available: Call Forwarding, Call Waiting,
Speed Calling and Dialing by name or number.
U: How do I include a name and a number in my speed call directory?
S: Do you want to delete, add, change, or dial an entry?
U: Would you tell me how many entries I have in my speed calling directory?
```

Number: 3.4

Call One

```
U: I want to use call forwarding to 224-0099.
S: Calls are forwarded to 224-0099
(Hang-up)
```

Call Two

```
S: Hello, This is Southwestern Bell's phone service.
U· Umm, I'm calling my mother.
S  Whom shall I dial?      (pause)
(hang-up)
```

Call Three

```
S. Hello, This is Southwestern Bell's phone service.
U: Umm, cancel my call waiting for my next phone call please.
S: You want call waiting off?
U  Yes
S  Call waiting is off.
(hang-up)
```

Call Four

S: Hello, This is Southwestern Bell's phone service.
U: What was the code I used for my mother for speed calling?
S: Stored name is mother at 224-0099 under speed calling code 1.
(hang-up)

Call Five

S: Hello, This is Southwestern Bell's phone service.
U: Please cancel the call waiting.
S: Call waiting is off.
(hang-up)

Number: 1.10

Call One

S: Hello, This is Southwestern Bell's phone service.
U: Okay, umm, I guess I need to determine, uhh the best way to transfer my calls
S: To what number do you want your call forwarded?
U: To 224-0099.
S: Calls are forwarded to 224-0099
U: Thank you
S: Thank you
(hang-up)

Call Two

S: Hello, This is Southwestern Bell's phone service.
U: Yes, I need to place a call, but I don't want to be interrupted what,umm, so
I need to do?
S: Do you need help?   (pause)
U: Yes   (pause)
S: Which calling feature do you want help with?
U: That was my question. I guess, I guess it might be Call waiting.
S: Cancel Call Waiting, stops important calls from being interrupted. Before you
 dial, ask for call waiting to be canceled.
U: Good, that's what I need. (pause)
U: I want to have call waiting cancelled.
S: Call waiting is off
U thank you
S: Thank you
(hang-up)

Call Three

S: Hello, This is Southwestern Bell's phone service.
U: I need speed calling help.
S Speed calling, You can reach important numbers more quickly and easily. You s
tore a person's name and phone number under a one digit code. Then you can call
using either the person's name or their code instead of their phone number.
U· I need my mother's number. Could you please dial it?
S Whom shall I dial?
U: My Mother
S: Now dialing 224-0099.
U Thank you

```
S: Thank you
(hang-up)
```

Number: 1.9

Call One

```
S: Hello, This is Southwestern Bell's phone service. (pause)
S: Please say what service you want.        (pause)
U: Call Forwarding
S: To what number do you want your calls forwarded?
U: cancel
S: Which service do you want off?                  (pause)
U: opps
U: cancel, previous menu, whatever
S: Do you need help?
U: Yes
S: Which calling feature do you want help with?
U: Call waiting
S: Cancel call waiting stops important calls from being interrupted. Before you
dial, you can ask for call waiting to be cancelled.
U: okay, uhh, main menu
S: These features are available: call waiting, call forwarding, speed calling, a
nd dialing by name or number
U: call waiting
S: you want call forwarding off?
U: no (cough)
S: Which service do you want off?
U: none       (pause)
U: help
S: Which calling feature do you want help with?
U: call waiting
S: Cancel call waiting stops important calls from being interrupted. Before you
dial, you can ask for call waiting to be cancelled.
U: Alright, let's try it again
(hang-up)
```

Call One

```
S: Hello, This is Southwestern Bell's phone service. (pause)
U: call waiting
S: You want call waiting off?
U: yes
S  call waiting is off.
S: thank you (pause)
(hang-up)
```

Call Two

```
S: Hello, This is Southwestern Bell's phone service. (pause)
U: help
S: Which calling feature do you want help with?
U: Dialing by name or number.
S: You can dial by speaking a phone number, a speed dial code,
```

(crator cuts off this help message)

```
U: Change
S: Which entry do you want to change?
U: Mr. and Mrs. Poppelstein
S: What do you want to change it to?
U: The name is Poopsey.
S: You want to change Poppelstein at 224-0099 to Poopsey?
U: Yes
S: Thank you (pause)
(hang-up)
```

Call Three

```
S: Hello, This is Southwestern Bell's phone service.
U: (cough) Call forwarding
S: To what number do you want your calls forwarded?
U: 224-0099
S: Calls are forwarded to 224-0099
(hang-up)
```

Call Four

```
S: Hello, This is Southwestern Bell's phone service.
U: Call forwarding
S: To what number do you want your calls forwarded?
U: 224-0099 (cough)
S: Calls are forwarded to 224-0099           (pause)
(hang-up)
```

Call Five

```
S: Hello, This is Southwestern Bell's phone service.
U: Dial by name or number
S: Whom shall I dial?
U: Change
S: Which entry do you want to change?
U: Poppelstein
S:  What do you want to change it to?
U: Poopsey.
S: You want to change Poppelstein at 224-0099 to Poopsey?
U: Change
S: Thank you
(hang-up)
```

Call Six

```
S: Hello, This is Southwestern Bell's phone service.
U: Change call waiting
S: You want call waiting off?
U: yes
S: call waiting is off.
   (hang-up)
```

Number: 3.1

Call One

```
S:  Hello, this is Southwestern Bell's phone service.
U: Hi (pause)
U: I'd like to have my calls forwarded to 224-0099.
S: Calls are forwarded to 224-0099.
U: Thank you
S: Thank you
(hang-up)
```

Call Two

```
S:  Hello, this is Southwestern Bell's phone service.
U: Hi, I'd like to know who's in my speed calling directory.
S: Stored name is Dad at 224-0099 under code 1.        (pause)
S: Thank you
(hang-up)
```

Call Three

```
S:  Hello, this is Southwestern Bell's phone service.
U: Yea. I no longer want my calls forwarded.              (Pause)
S: Which service do you want off?
U: Call forwarding
S: Call forwarding is off.
U: Thanks
S: Thank you
(hang-up)
```

Call Four

```
S:  Hello, this is Southwestern Bell's phone service.
U: Hi, I'd like to turn call forwarding off.
S: Call forwarding is off.
U: thanks
S: Thank you
(hang-up)
```

Call Five

```
S:  Hello, this is Southwestern Bell's phone service.
U: Who's in my speed calling directory?
S: Stored name is Dad at 224-0099 under code 1.
S: Thank you
U: Thanks
(hang-up)
```

Call Six

```
S:  Hello, this is Southwestern Bell's phone service.
U: Yea, I want my calls forwarded (pause) to 224-0099.
S: Calls are forwarded to 224-0099.
U: Thanks
S: Thank you
(hang-up)
```

Number: 2.2

Call One

S: Hello, this is Southwestern Bell's phone service. Please say what service yo
u want.
U: Forwarding, Call forwarding
S: What number do you want your calls forwarded to?
U: 224-0099
S: Calls are forwarded to 224-0099.
(hang-up)

Call Two

S: Hello, this is Southwestern Bell's phone service.
Please say what service you want.
U: Remove Call forwarding   (pause)
S: You want call forwarding off?
U: yes
S: call forwarding is off
(hang-up)

Call Three

S: Hello, this is Southwestern Bell's phone service.
Please say what service you want.
U: Call Jane
S: Now dialing Jane.   (pause)
S: Thank you
(hang-up)

Call Four

S: Hello, this is Southwestern Bell's phone service. Please say what service yo
u want.
U: Call Jane
S: Now dialing Jane.   (pause)
S: Thank you
(hang-up)

Call Five

S: Hello, this is Southwestern Bell's phone service. Please say what service yo
u want.
U: Remove Call forwarding
S: call forwarding is off
(hang-up)

Call Six

S: Hello, this is Southwestern Bell's phone service. Please say what service you
 want.
U: Call forwarding
S: What number do you want your calls forwarded to?
U: 224-0099
S: Calls are forwarded to 224-0099
(hang-up)

Number: 3.3

Call One

S: Hello, this is Southwestern Bell's phone service. Please say what service yo
u want.
U: Call forwarding
S: What number do you want your calls forwarded to?
U: 224-0099.
S: Calls are forwarded to 224-0099.
U: Thank you.
(hang-up)

Call Two

S: Hello, this is Southwestern Bell's phone service. Please say what service yo
u want.
U: Dialing by name or number
S: Whom shall I dial?
U: The movie theatre at 224-0099.
S: Now dialing 224-0099.
U: Thank you
(hang-up)

Call Three

S: Hello, this is Southwestern Bell's phone service. Please say what service yo
u want.
U: I'd like to cancel call waiting for the next call please.
S: call waiting is off.
U: Thank you
(hang-up)

Call Four

S: Hello, this is Southwestern Bell's phone service. Please say what service yo
u want.
U: I'd like to cancel call waiting for the next call.
S: Call waiting is off.
U: Thank you
(hang-up)

Call Five

S: Hello, this is Southwestern Bell's phone service. Please say what service yo
u want.
U: Dialing by name or number.
S: Whom shall I dial?
U: 224-0099
S: Now dialing 224-0099
U: thank you
(hang-up)

Call Six

S: Hello, this is Southwestern Bell's phone service. Please say what service yo
u want.
U: remote call forwarding (pause)
S: What number do you want your calls forwarded to?
U: 224-0099
S: What number do you want your calls forwarded from?
U: From my office, please
S: What number do you want your calls forwarded from?
U: Could I have help, please?
S: Call Forwarding, your phone automatically forwards all calls to a location o
f your choice.
U: I'd like to use call forwrding instead please
S: What number do you want your calls forwarded to?
U: 224-0099
S: Callls are forwarded to 224-0099.
U: Thank you
(hang-up)

Call Four

S: Hello, This is Southwestern Bell's phone service.
U: Call forwarding
S: To what number do you want your calls forwarded?
U: 224-0099 (cough)
S: Calls

Number: 2.8

Call One

S: Hello, this is Southwestern Bell's phone service.
U: Umm, yes I'd like to know who is in my speed call directory.
S· Stored name is Dad at 224-0099 under code 1.
(hang-up)

Call Two

S: Hello, this is Southwestern Bell's phone service.
U: Yes, I'd like to call Jane.
S: Now dialing Jane.
(hang-up)

Call Three

S: Hello, this is Southwestern Bell's phone service.
U: Umm, I'm going on a business trip, and want any of my clients who might want
to get ahold of me to be able to reach me. The number where I am staying is 224
-0099.
S: Please say what service you want.
U: Call forwarding
S: What number do you want your calls forwarded to?
U: 224-0099
S Calls are forwarded to 224-0099
(hang-up)

Call Four

S: Hello, this is Southwestern Bell's phone service.
U: Umm, yes, I'm going on a business trip, and would like all my phone calls for
warded to the number 224-0099.
S: Calls are forwarded to 224-0099
(hang-up)

Call Five

S: Hello, this is Southwestern Bell's phone service.
U: umm, yes, I'd like to use my speed calling to call Jane.
S: Please rephrase the command.
U: I'd like to call my friend Jane in my speed calling directory.
S: Whom shall I dial?
U: Jane
S: Now dialing Jane.
(hang-up)

Call Six

S: Hello, this is Southwestern Bell's phone service.
U: yes I'd like to know who is in my speed call directory.
S: Stored name is Dad at 224-0099 under code 1.
(hang-up)

Number: 2.9

Call One

S: Hello, this is Southwestern Bell's phone service. Please say what service yo
u want.
U: Uhh, call waiting
S: You want call waiting off?
U: yes
S: call waiting is off
U: okay, thank you
S: thank you
(hang-up)

Call Two

S: Hello, this is Southwestern Bell's phone service. Please say what service yo
u want.
U: Speed Calling
U Speed Calling
S: Whom shall I dial?
U: umm, Mrs. Poppelstein (pause)
S: Do you need help?
U: I guess so, yes
S: Which calling feature so you want help with?
U: Speed Calling
S: Speed Calling, you can reach important numbers more quickly and easily. You s
tore a person's name and phone number under a one digit code. Then you can call
using either the person's name or their code instead of their phone number. (pau
se)
U hello

```
S: Please say what service you want?
U: Speed Calling
S:  Do you want to delete, add, change, or dial an entry?
U: Change
S: Which entry do you want to change?
U: Mrs. Poppelstein
S: What do you want to change it to?
U: Poopsey
S: You want to change Poppelstein at 224-0099 to Poopsey?
U: Correct, yes
S: Thank you
U: Thank you
(hang-up)
```

Call Three

```
S:  Hello, this is Southwestern Bell's phone service. Please say what service yo
u want.
U: Call forwarding
S: What number do you want to forward your calls to?
U: 224-0099
S: Calls are forwarded to 224-0099.
U: Correct, yes
S: Thank you
U: Umm-huh
(hang-up)
```

Call Four

```
S:  Hello, this is Southwestern Bell's phone service. Please say what service yo
u want.
U: Remote call forwarding
S: What number do you want to forward your calls to?
U: 224-0099
S:  What number do you want to forward your calls from?
U:  from, uhh (long pause)  mutter
S:  Do you need help?
U: yes
S: Which calling feature do you want help with?
U: Call forwarding
S:  Call forwarding. Your phone automatically forwards all calls to a location o
f your choice. (pause)
S: Please say what service you want.
U: call forwarding
S: What number do you want your calls forwarded to?
224-0099.
S: Calls are forwarded to 224-0099.
U: Thank you
(hang-up)
```

Call Five

```
S:  Hello, this is Southwestern Bell's phone service. Please say what service yo
u want.
U: Speed Calling
S: Whom shall I dial? (pause)
```

U: Mrs. Poppelstein (pause)
U: help
S: Do you need help?
U: yes
S: Which calling feature do you need help with?
U: Speed calling
S: Speed Calling, you can reach important numbers more quickly and easily. You s
tcre a person's name and phone number under a one digit code. Then you can call
using either the person's name or their code instead of their phone number. (pause)
S: Please say what service you want?
U: Speed Calling
S: Do you want to delete, add, change, or dial an entry?
U: change
S: Which entry do you want to change?
U: Mrs. Poppelstein
S: What do you want to change it to?
U: Poopsey (breath)
S: You want to change Poppelstein at 224-0099 to Poopsey?
U: Yes
S: Thank you
U: thank you
(hang-up)

Call Six

S: Hello, this is Southwestern Bell's phone service. Please say what service you want.
U: Uhh, call waiting
S: You want call waiting off?
U: off, yes
S: call waiting is off
U: thank you
(hang-up)

Number: 2.10

Call One

S: Hello, this is Southwestern Bell's phone service. (pause)
S: Please say what service you want.
U: Call forwarding
S: What number do you want your calls forwarded to?
U: 224-0099
S: Calls are forwarded to 224-0099
U: Correct (pause)
S: Thank you (pause)
S: If you are finished, you may hang-up
(hang-up)

Call Two

S: Hello, this is Southwestern Bell's phone service.
U Hello, uhh, call waiting
S. You want call waiting off?
U. Yes, I do
S: call waiting is off.
U: Thank you, bye (pause)

(hang-up)

Call Three

S: Hello, this is Southwestern Bell's phone service.
U: Dialing by name or number.
S: Whom shall I dial?
U: Mother
S: Now dialing Mother. (pause)
U: Thank you
(hang-up)

Call Four

S: Hello, this is Southwestern Bell's phone service.
U: Dialing by name or number.
S: Whom shall I dial?
U: Mother
S: Now dialing Mother.
(hang-up)

Call Three

S: Hello, this is Southwestern Bell's phone service.
U: call waiting
S: You want call waiting off?
U: Yes
S: call waiting is off.
(hang-up)

Call Six

S: Hello, this is Southwestern Bell's phone service.
U: Remote Call forwarding
S: What number do you want your calls forwarded to?
U: 224-0099
S: What number do you want your calls forwarded from?
U: mumble 334-0561
S: You want your calls forwarded from 334-0561 to 224-0099?
U: Yes
S: Calls are forwarded to 224-0099
(hang-up)

Call One

S: Hello, this is Southwestern Bell's phone service. (pause)
U: Uhh, (pause), mumble
S: Do you need help?
U: Do I need help?, (laughter) I don't know Yes
S' Which calling feature do you want help with? (pause)
U: I have no idea, how about dialing by number?
S: You can dial by speaking a phone number, a speed dial code, or a speed dial name.
U· Umm, well dial the number 224-0099.
S Now dialing 224-0099
S: Thank you (pause)
S: If you are finished, you may hang-up

(hang-up)

Call Two

S: Hello, this is Southwestern Bell's phone service.
U: uhh, yes, I need information on call waiting.
S: Cancel call waiting stops important calls from being interrupted. Before you
dial, you can ask for call waiting to be cancelled.
U: That's simple, okayUmm, let's see so I want to make a long distance phone cal
l, and I want to cancel call waiting
S: Call waiting is off.
U: Thank you
S: Thank you (pause)
(hang-up)

Call Three

S: Hello, this is Southwestern Bell's phone service.
U: Hello, I need to remove a number from speed call directory.
S: What name do you want to delete?
U: Mike
S: Now deleting Mike's number
U: I believe that's all I need at this time, thank you
S: Thank you
(hang-up)

Call Four

S: Hello, this is Southwestern Bell's phone service.
U: Yes, I need to remove a number from my speed call directory.
S: What name do you want to delete?
U: Mike
S: Now deleting Mike's number
S: Thank you
U: Okay thanks very much
(hang-up)

Call Five

S: Hello, this is Southwestern Bell's phone service.
U: yes, I need information on call waiting.
S Cancel call waiting stops important calls from being interrupted. Before you
dial, you can ask for call waiting to be cancelled.
U: Uhh, please cancel my call waiting at this time
S· Call waiting is off.
U. Thank you
S Thank you (pause)
(hang-up)

Call Six

S   Hello, this is Southwestern Bell's phone service.
U: Yes, I need to dial number 224-0099.
S Now dialing 224-0099 (pause)
S: Thank you (pause)
(hang-up)

Number: 3.3

Call One

S: Hello, this is Southwestern Bell's phone service. Please say what service you want.
U: Call forwarding, please
S: What number do you want to forward your calls to?
U: 224-0099
S: Calls are forwarded to 224-0099.
(Hang-up)

Call Two

S: Hello, this is Southwestern Bell's phone service. Please say what service you want.
U: Dialing by name or number.
S: Whom shall I dial?
U: 224-0099
S: Now dialing 224-0099
(hang-up)

Call Three

S: Hello, this is Southwestern Bell's phone service. Please say what service you want.
U: To cancel call waiting.
S: Call waiting is off.
(hang-up)

Call Four

S: Hello, this is Southwestern Bell's phone service. Please say what service you want.
U: cancel call waiting.
S: Call waiting is off.
(hang-up)

Call Five

S: Hello, this is Southwestern Bell's phone service. Please say what service you want.
U: Dialing by name or number.
S: Whom shall I dial?
U: 224-0099
S: Now dialing 224-0099
(hang-up)

Call Six

S: Hello, this is Southwestern Bell's phone service. Please say what service you want.
U: Call forwarding
S: What number do you want to forward your calls to?
U: 224-0099
S: Calls are forwarded to 224-0099.
(Hang-up)

Number: 4.4

Call One

S: Hello, this is Southwestern Bell's phone service. Please say what service you want.
U: Call forwarding
S: What number do you want your calls forwarded to?
U: 224-0099
S: Calls are forwarded to 224-0099
U: Is that all I need to do? (pause)
(hang-up)

Call Two

S: Hello, this is Southwestern Bell's phone service. Please say what service you want.
U: Dialing by name or number.
S: Whom shall I dial?
U: My Mother
S: Now dialing Mother
(hang-up)

Call Three

S: Hello, this is Southwestern Bell's phone service. Please say what service you want.
U: Call waiting
S: You want call waiting off?
U: yes, I want if off.
S: Call waiting is off.
(hang-up)

Call Four

S: Hello, this is Southwestern Bell's phone service. Please say what service you want.
U: Call waiting
S: You want call waiting off?
U: yes
S: Call waiting is off.
(hang-up)

Call Five

S: Hello, this is Southwestern Bell's phone service. Please say what service you want.
U: Dialing by name or number.
S: Whom shall I dial?
U: My Mother
S: Now dialing Mother
(hang-up)

Call Six

S. Hello, this is Southwestern Bell's phone service. Please say what service you want.
U: Call forwarding
S: What number do you want your calls forwarded to?
U: 224-0099
S: Calls are forwarded to 224-0099
(hang-up)

Number: 2.5

Call One

S: Hello, this is Southwestern Bell's phone service. Please say what service you want.
U: Aww, shoot
(hang-up)
Note: Subject reattempts first call.

Call One

S: Hello, this is Southwestern Bell's phone service. Please say what service you want.
U: Dialing by name or number.
S: Whom shall I dial? (pause)
U: I don't know
S: Do you need help?
U: Yes
S: Which calling feature do you want help with?
U: Dialing by name or number.
S: You can dial by speaking a phone number, a speed dial code, or a speed dial name.
U: 224-0099
S: Now dialing 224-0099
S: Thank you (pause)
(hang-up)

Call Two

S: Hello, this is Southwestern Bell's phone service. Please say what service you want.
U: call waiting
S: You want call waiting off?
U: off, yes
S: Call waiting is off
U: Thank you
(hang-up)

Call Three

S: Hello, this is Southwestern Bell's phone service. Please say what service you want.
U: Speed calling
S: Do you want to delete, add, change, or dial an entry?
U: delete
S: What name do you want to delete?
U: Mike
S: Now deleting Mike's number (pause)
S: Thank you
(hang-up)

Call Four

S: Hello, this is Southwestern Bell's phone service. Please say what service you want.
U: Speed calling
S   Do you want to delete, add, change, or dial an entry?
U: delete
S: What name do you want to delete?
U· Mike
S. Now deleting Mike's number
S: Thank you

(hang-up)

Call Five

S: Hello, this is Southwestern Bell's phone service. Please say what service you want.
U: call waiting
S: You want call waiting off?
U: yes
S: Call waiting is off (pause)
(hang-up)

Call Six

S: Hello, this is Southwestern Bell's phone service. Please say what service you want.
U: Dialing by name or number.
S: Whom shall I dial?
U: 224-0099
S: Now dialing 224-0099. (pause)
(hang-up)

Call Four

S: Hello, this is Southwestern Bell's phone service. Please say what service you want.
U: cancel call waiting.
S: Call waiting is off.
(hang-up)

Number: 2.6

Call One

S: Hello, this is Southwestern Bell's phone service.
U: Hi, My name is Keith. Uhh, my neighbor Mike is planning to move to Dallas, an
d I really don't plan to call him very often, so I don't want his number on my s
peed call directory.
S: Do you want to change, delete, add, or dial an entry?
U: Delete
S: What name do you want to delete?
U: Mike
S: Now deleting Mike's number. (pause)
S: Thank you
(hang-up)

Call Two

S: Hello, this is Southwestern Bell's phone service.
U. Hi, I'm planning to use my computer modem to place an important call, and I d
on't want to be disturbed.
S: Please say what service you want.
U: Can I have dialing by name or number?
S: Whom shall I dial?
U: Jack
S Do you need help?
U: Yes
S: Which calling feature do you need help with?
U: Well, I'm trying to, okay, uhh, let me change that. Can I change that to cal

l waiting, please?
S: Cancel call waiting stops important calls from being interrupted. Before you
dial, you can ask for call waiting to be cancelled.
U: That's fine.
S: Please say what service you want.
U: Call waiting.
S: You want call waiting off?
U: Yes
S: call waiting is off
U: thank you
(hang-up)

Call Three

S: Hello, this is Southwestern Bell's phone service.
U: Hi, My name is Keith, uhh, Petty. I plan to be over at my friend Mike's house
. His number is 224-0099 this evening and I want my calls to be placed over ther
e please.
S: What number do you want your calls forwarded to?
U: 224-0099
S: Calls are forwarded to 224-0099
U: Yes
S: Thank you
U: Thank you
(hang-up)

Call Four

S: Hello, this is Southwestern Bell's phone service.
U: Hi, my name is Keith Petty, uhhm for the (mumble) rest of the night I will be
 over at my friend, Mike's house. So if it's possible could you forward all my c
alls to his to his number which is 224-0099?
S: Calls are forwarded to 224-0099.
U: Thanks
(hang-up)

Call Five

S: Hello, this is Southwestern Bell's phone service.
U: Hi my name is deithe. I'm at my office right now. I plan on using my computer
 modem to place an important call so I don't want any calls to interrupt me.
S: Please say what service you want.
U: I'd like to have call waiting.
S: You want call waiting off?
U: Yes
S: Call waiting is off.
U: thank you
(hang-up)

Call Six

S: Hello, this is Southwestern Bell's phone service.
U: Hi, my name is Keith, uhh, in a couple of days my friend Mike is moving to Da
llas, but since he's staying do far away I won't be, I don't his number in my sp
eed call directory anymore.

```
S:  Do you want to delete, add, change, or dial an entry? (pause)
U: Dial
S: Whom shall I dial?
U: Uhh, MIke
S: Now dialing 224-0099 (pause)
S:thank you
U: thank you
(hang-up)
```

Number: 3.8

Call One

```
S:  Hello, this is Southwestern Bell's phone service. Please say what service you want.
U: Speed Call (pause) Speed Calling
S: Do you want to delete, add, change, or dial an entry?
U: Umm, change
S: Which entry do you want to change?
U: Is there a directory?
S: Yes
U: Umm, can I hear the directory, please?
S: Stored name is Dad at 224-0099 under code 1. (pause)
U: Okay, give me code 1, code 1. I have to dial code 1 ( presses a phone key)
S: thank you (pause)
S: If you are finished you may hang-up.
(hang-up)
```

Call Two

```
S:  Hello, this is Southwestern Bell's phone service. Please say what service you want.
U: Speed Call
S: Do you want to delete, change, add, or dial an entry?
U: dial an entry
S: Whom shall I dial?
U: Jane
S: Now dialing Jane (pause)
S: thank you
(hang-up)
```

Call Three

```
S:  Hello, this is Southwestern Bell's phone service. Please say what service you want.
U: Call Forwarding
S: What number do you want to forward your calls to?
U. 224-0099
S: Calls are forwarded to 224-0099
(hang-up)
```

Call Four

```
S:  Hello, this is Southwestern Bell's phone service. Please say what service you want.
U: Remote Call Forwarding
S: What number do you want your calls forwarded to?
U: 224-0099
S: What number do you want your calls forwarded from?
U: 529-7695
```

```
S: Do you need help?
U: I don't  think so?
S: Please say what service you want.
(hang-up)
```

Call Five

```
S:  Hello, this is Southwestern Bell's phone service. Please say what service you want.
U: Speed Calling
S: Do you want to delete, change, add, or dial an entry?
U: dial an entry
S: Whom shall I dial?
U: Jane
S: Now dialing Jane
(hang-up)
```

Call Six

```
S:  Hello, this is Southwestern Bell's phone service. Please say what service you want.
U: Speed Call directory
S: Do you want to delete, add, change, or dial an entry?
U: I want to hear the directory.
S: Stored name is Dad at 224-0099 under code 1.
U: Thank you very much.
(hang-up)
```

Number: 2.7

Call One

```
S:  Hello, this is Southwestern Bell's phone service.
U: Yes, I would like to change my, uhh, a speed dial entry (pause) okay, one of
my entries (interrupted)
S: Which entry do you wan to change?
U: Okay, I want to changethe entry named Poopsey.
S: What do you want to change it to?
U: Actually I want to change it to Poopsey.
S: Which entry do you want to change?
U: Let's change entry number 1.
S: What do you want to change it to?
U: Poopsey.
S:  You want to change Poppelstein at 224-0099 to Poopsey?
U: That is correct.
S: Thank you
U: Okay
(hang-up)
```

Call Two

```
S:  Hello, this is Southwestern Bell's phone service.
U· Yes, I would like to call  forward my phone number.
S  What number do you want to forward your calls to?
U: 224-0099
S: Calls are forwarded to 224-0099.
U· That will be correct, thank you. (pause)
(hang-up)
```

Call Three

S: Hello, this is Southwestern Bell's phone service.
U: Yes, call forwarding
S: What number do you want to forward your calls to?
U: 224-0099
S: Calls are forwarded to 224-0099.
(hang-up)

Call Four

S: Hello, this is Southwestern Bell's phone service.
U: Yes, I would like to call forward my, uhh, phone to a friend.
S: What number do you want to forward your calls to?
U: I would like them forwarded to the number 224-0099
S: Calls are forwarded to 224-0099.
(hang-up)

Call Five

S: Hello, this is Southwestern Bell's phone service.
U: Yes, I'm going out of town and I would like to have my phone call forwarded to my
parents.
S: What number do you want to forward your calls to?
U: I would like them forwarded to the number 224-0099
S: Calls are forwarded to 224-0099.
(hang-up)

Call Six

S: Hello, this is Southwestern Bell's phone service.
U: Yea, I would like to change my one of my speed dial entries.
S: Which entry do you want to change?
U: entry number 1, Poppelstein
S: What do you want to change it to?
U: I'd like it to be changed to Poopsey.
S: You want to change Poppelstein at 224-0099 to Poopsey?
U: Uhh, That's correct.
(hang-up)

Number: 3.10

Call One

S: Hello, this is Southwestern Bell's phone service. Please say what service you want.
U. Call forwarding
S: What number do you want your calls forwarded to?
U: 334-0561 (pause)
U: 224-0099
S· Thank you for participating in this experiment, please hang-up now. (pause)
(hang-up)
Note: subject reattempts call one

Call One

S: Hello, this is Southwestern Bell's phone service. Please say what service you want.
U: Call forwarding
S: What number do you want your calls forwarded to?
U: 224-0099
S: Calls are forwarded to 224-0099. (pause)
S: thank you (pause)
S: I'm still listening. Do you need more information?
U: Yes
S: Please say what service you want.
U: Call forwarding
S: What number do you want your calls forwarded to?
U: 334-0561
S: You want your calls forwarded from 334-0561 to 224-0099?
U: No
S: What number do you want your calls forwarded to?
U: 334-0561 (pause)
S: Thank you for participating in this experiment. Please hang-up now.
(hang-up)

Call Two

S: Hello, this is Southwestern Bell's phone service. Please say what service you want.
U: Call waiting
S: You want call waiting off?
U: Yes
S: Call waiting is off
U: Thank you (pause)
S: If you are finished you may hang-up (pause)
S: Do you need help?
U: Yes
S: Which calling feature do you need help with?
U: call waiting
S: Cancel call waiting stops important calls from being interrupted. Before you
dial, you can ask for call waiting to be cancelled. (pause)
S: I'm still listening. Do you need more information?
U: elephant (pause)
S: If you are finished, you may hang-up (pause)
(hang-up)

Call Three

S: Hello, this is Southwestern Bell's phone service. Please say what service you want.
U: help
S: Which calling feature do you want help with?
U: Uhh, speed calling
S: Speed Calling, you can reach important numbers more quickly and easily. You s
tore a person's name and phone number under a one digit code. Then you can call
using either the person's name or their code instead of their phone number. (pause)
U: Need prompt now
S: Please rephrase the command
U (laughter) Speed Calling
S. Do you want to delete, add, change, or dial an entry?
U: dial
S: Whom shall I dial?
U. Mom
S Now dialing Mother (pause)

S: Thank you (pause)
(hang-up)

Call Four

S: Hello, this is Southwestern Bell's phone service. Please say what service you want.
U: Speed calling
S: Do you want to delete, add, change, or dial an entry?
U: dial
S: Whom shall I dial?
U: Ma
S: Now dialing Mother
S: Thank you
(hang-up)

Call Five

S: Hello, this is Southwestern Bell's phone service. Please say what service you want.
U: Call waiting
S: You want call waiting off?
U: no
S: Which service do you want off?
U: Call waiting
S: You want call waiting off?
U: yes
S: Call waiting is off
S: Thank you
(hang-up)

Call Six

S: Hello, this is Southwestern Bell's phone service. Please say what service you want.
U: Call forwarding
S: What number do you want your calls forwarded to? (pause)
(hang-up)
Note: Subject reattempts call six

Call Six

S: Hello, this is Southwestern Bell's phone service. Please say what service you want.
U: Forwarding
S: What number do you want you calls forwarded to?
U: 224-0099
S: Calls are forwarded to 224-0099
S: Thank you
(Hang-up)

Number: 4.3

Call One

S: Hello, this is Southwestern Bell's phone service. Please say what service you want.
U: Call forwarding
S: What number do you want your calls forwarded to?
U: 224-0099
S. Calls are forwarded to 224-0099

(hang-up)

Call Two

S: Hello, this is Southwestern Bell's phone service. Please say what service you want.
U: Speed Calling
S: Do you want to delete, add, change, or dial an entry?
U: Add
S: What is the person's name?
U: It's the movie theatre. (pause)
S: What is the person's number?
U: 224-0099
S: What code between one and nine do you want to use?
U: 9
S: Thank you (pause)
(hang-up)

Call Three

S: Hello, this is Southwestern Bell's phone service. Please say what service you want.
U: I'm not sure what service I want. (pause)
S: Do you need help?
U: Yes
S: These features are available: call waiting, call forwarding, speed calling, a
nd dialing by name or number.
S: Which calling feature do you need help with?
U: Call Waiting
S: Cancel call waiting stops important calls being interrupted. Before you dial,
 you can ask for call waiting to be cancelled. (pause)
(hang-up)

Call Three

S: Hello, this is Southwestern Bell's phone service. Please say what service you want.
U: I want call waiting to be cancelled.
S: Call waiting is off
S: Thank you
(hang-up)

Call Four

S: Hello, this is Southwestern Bell's phone service. Please say what service you want.
U Call forwarding
S: What number do you want your calls forwarded to?
U: 224-0099
S: Calls are forwarded to 224-0099
(hang-up)

Call Five

S: Hello, this is Southwestern Bell's phone service. Please say what service you want.
U. I want call waiting cancelled
S: call waiting is off
(hang-up)

Call Six

S: Hello, this is Southwestern Bell's phone service. Please say what service you want.
U: What is dialing by name or number?
S: You can dial by speaking a phone number, a speed dial code, or a speed dial name.
U: I want speed calling
S: Whom shall I dial?
U: 224-0099
S: Now dialing 224-0099
S: Thank you
(hang-up)

Number: 3.9

Call One

S: Hello, this is Southwestern Bell's phone service. (pause)
U: Call forwarding
S: What number do you want to forward your calls to?
U: I don't want them forwarded.
S: Please say what service you want. (pause)
U: Help
S: Which calling feature do you want help with?
U: Call forwarding
S: Call forwarding, Your phone automatically forwards all calls to a location of
 your choice.
U: Call Waiting
S: Cancel call waiting stops important calls being interrupted. Before you dial,
 you can ask for call waiting to be cancelled.
U: cancel call waiting
S: You want call waiting off?
U: Yes
S: Call waiting is off.
(hang-up)

Call Two

 S: Hello, this is Southwestern Bell's phone service. (pause)
U Change speed calling
S: Which entry do you want to change?
U: Poopsey
S: What do you want to change it to?
U: Uhh, Poopsey
U: Change speed calling
S: Which entry do you want to change?
U: Mrs. Poppelstein
S: What do you want to change it to?
U: Poopsey
S: You want to change Poppelstein at 224-0099 to Poopsey?
U: yes
S: Thank you
(hang-up)

Call Three

S: Hello, this is Southwestern Bell's phone service.
U: call forwarding

```
S: What number do you want your calls forwarded to?
U: 224-0099
S: Calls are forwarded to 224-0099
(hang-up)
```

Call Four

```
S:  Hello, this is Southwestern Bell's phone service.
U: Call forwarding
S: What number do you want your calls forwarded to?
U: 224-0099
S: Calls are forwarded to 224-0099
(hang-up)
```

Call Five

```
S:  Hello, this is Southwestern Bell's phone service.
U: Change speed calling
S: Which entry do you want to change?
U: Mr. Poppelstein
S: What do you want to change it to?
U: Poopsey
S: You want to change Poppelstein 224-0099 to 334-0561?
U: No
S: Which entry do you want to change?
(hang-up)
Note: No sixth call.
```

```
S: Whom shall I dial?
U: Mom
S: Now dialing Mother (pause)
S: Thank you (pause)
(hang-up)
```

Call Four

```
S:  Hello, this is Southwestern Bell's phone service. Please say what service you want.
U: Speed calling
S: Do you want to delete, add, change, or dial an entry?
U: dial
S: Whom shall I dial
```

Number: 5.4

Call One

```
S:  Hello, this is Southwestern Bell's phone service.
U: Hi (pause) I want to do call forwarding
S: What number do you want your calls forwarded to?
U: 224-0099
S: Calls are forwarded to 224-0099
U  Thanks
S: Thank you (pause)
S: If you are finished, you may hang-up
(hang-up)
```

Call Two

S: Hello, this is Southwestern Bell's phone service.
U: Hi, I want to do speed (pause) no I want to do dialing by name.
S: Whom shall I dial?
U: My Mom
S: Now dialing Mother
S: Thank you
U: You're welcome
(hang-up)

Call Three

S: Hello, this is Southwestern Bell's phone service.
U: Umm, I want to, uhh, stop my call waiting
S: You want call waiting off?
U: Un-huh, yes
S: call waiting is off
U: Thanks
(hang-up)

Call Four

S: Hello, this is Southwestern Bell's phone service.
U: Hi, I want to stop my call waiting
S: Call waiting is off
U: thanks
(hang-up)

Call Five

S: Hello, this is Southwestern Bell's phone service.
U: I need to dial by name
S: Whom shall I dial?
U: My mom
S: Now dialing mother
U: thanks
(hang-up)

Call Six

S: Hello, this is Southwestern Bell's phone service.
U: I want to use call forwarding
S: What number do you want your calls forwarded to?
U: 224-0099
S: Calls are forwarded to 224-0099
U: thanks
(hang-up)

Number: 4.1

Call One

S: Hello, this is Southwestern Bell's phone service.
U: Yes, I would like my calls forwarded to 224-0099 this evening after 7.
S: Calls are forwarded to 224-0099

```
U: That's right
S: Thank you
(hang-up)
```

Call Two

```
S:  Hello, this is Southwestern Bell's phone service.
U: Yes, I'd like to know who is in my speed call directory.
S: Stored name is Dad at 224-0099 under code 1.
U: Is that it?
S: Yes
U: thank you
S: Thank you
(hang-up)
```

Call Three

```
S:  Hello, this is Southwestern Bell's phone service.
U: Yes, I, uhh, want my calls to be put through at home now and not at my friend
s house.
S: Please rephrase the command.
U: Okay, uhh, I am now at 458-3111 and would like to have my calls there not at
224-0099.
S: Please say what service you want.
U: Umm, I'd like my calls to be forwarded, uhh, to my home.
S: Do you need help?
U: Yes
S: Which calling feature do you want help with?
U: Umm, the call forwarding
S: Call forwarding, Your phone automatically forwards all calls to a location of
 your choice.
U: Okay, and I don't , I want this stopped. I want the calls to caome in at home.
S: You want call forwarding off?
U: yes
S: call forwarding is off
U: thank you
S: Thank you
  (hang-up)
```

Call Four

```
S·  Hello, this is Southwestern Bell's phone service.
U: Yes, I would like my call forwarding to be stopped.
S: call forwarding is off
U: Thank you
(hang-up)
```

Call Five

```
S:  Hello, this is Southwestern Bell's phone service.
U: I'd like to know who is in my speed call directory
S. Stored name is Dad at 224-0099 under code 1. (pause)
S:thank you
(hang-up)
```

Call Six

S: Hello, this is Southwestern Bell's phone service.
U: I would like my calls to be forwarded to 224-0099 after uhh or this evening.
S: Calls are forwarded to 224-0099
U: That's correct.
S: Thank you
(hang-up)

Number: 4.1

Call One

S: Hello, this is Southwestern Bell's phone service. Please say what service you want.
U: Yes, I would like call forwarding
S: What number do you want your calls forwarded to?
U: 224-0099
S: Calls are forwarded to 224-0099
U: Yes
S: Thank you
(hang-up)

Call Two

 S: Hello, this is Southwestern Bell's phone service. Please say what service you want.
U: Yes, I would like remote call forwarding
S: What number do you want your calls forwarded to?
U: 227-3064
S: What number do you want your calls forwarded from?
U: Uhh, (pause) 224-0099
S: You want your calls forwarded from 334-0561 to 224-0099?
U: No, that's not correct (pause) I am back home and I want my calls put back on
 my phone at home that I was having forwarded to a neighbor's house. (pause)
S: Please say what service you want. (pause)
U: Remote call forwarding (pause)
S: Thank you for participating in this experiment. Please hang-up now.
(hang-up)

Call Three

S: Hello, this is Southwestern Bell's phone service. Please say what service you want.
U: Speed calling
S: Do you want to delete, add, change, or dial an entry?
U: dial
S: Whom shall I dial?
U: Jane
S: Now dialing Jane
S: Thank you
(hang-up)

Call Four

S: Hello, this is Southwestern Bell's phone service. Please say what service you want.
U: Speed calling
S Do you want to delete, add, change, or dial an entry?
U. dial
S. Whom shall I dial?

```
U: Jane
S: Now dialing Jane
S: Thank you
(hang-up)
```

Call Five

```
S:  Hello, this is Southwestern Bell's phone service.  Please say what service you want.
U: Call forwarding
S: What number do you want to forward your calls to?
U: 227-3064 (pause)
S: Thank you for participating
(hang-up)
```

Call Six

```
S:  Hello, this is Southwestern Bell's phone service.  Please say what service you want.
U: Uhh,  call forwarding
S: What number do you want your calls forwarded to?
U: 224-0099
S: Calls are forwarded to 224-0099
U: That's correct
S: Thank you
(hang-up)
```

Number: 4.9

Call One

```
S:  Hello, this is Southwestern Bell's phone service.  Please say what service you want.
U: I want to cancel call waiting for this call.
S: Call waiting is off
U: Thank you
(hang-up)
```

Call Two

```
S:  Hello, this is Southwestern Bell's phone service.  Please say what service you want.
U: Dialing by name or number
S: Whom shall I dial?
U: Poopsey (pause)
S: Do you need help?
U: No
(hang-up)
```

Call Three

```
S:  Hello, this is Southwestern Bell's phone service.  Please say what service you want.
U: Call forwarding
S: What number do you want your calls forwarded to?
U: 224-0099
S: Calls are forwarded to 224-0099
(hang-up)
```

Call Four

```
S:  Hello, this is Southwestern Bell's phone service.  Please say what service you want.
U: Please forward my calls to 224-0099
S: Calls are forwarded to 224-0099
```

Call Five

```
S:  Hello, this is Southwestern Bell's phone service.  Please say what service you want.
U: (breath) Please change my dialing by name or number from Mr/Mrs. Poppelstein
tc Poopsey.
S: You want to change Poppelstein at 224-0099 to Poopsey?
U: That is correct
S: Thank you
(hang-up)
```

Call Six

```
S:  Hello, this is Southwestern Bell's phone service.  Please say what service you want.
U: Please cancel the call forwarding on this call.
S: Call waiting is off
(hang-up)
```

Number: 3.5

Call One

```
S:  Hello, this is Southwestern Bell's phone service.
U: Dial 224-0099.
(hang-up)
```

Call Two

```
S:  Hello, this is Southwestern Bell's phone service.
U: Cancel call forwarding on this call please
(hang-up)
```

Call Three

```
S:  Hello, this is Southwestern Bell's phone service.
U: Remove Mike from speed calling
(hang-up)
Note:  The subject realized by filling out quesstionnaire B that some interactio
n with the computer's voice was expected.
```

Call Four

```
S:  Hello, this is Southwestern Bell's phone service.
U: Remove Mike from speed call directory please
S: Now deleting Mike's number.
(hang-up)
```

Call Five

```
S:  Hello, this is Southwestern Bell's phone service.
U: Please cancel call waiting during this (mumble)
S: Call Waiting is off
(hang-up)
```

Call Six

S: Hello, this is Southwestern Bell's phone service.
U: Dial 224-0099.
S: Now dialing 224-0099.
(hang-up)

Call Four

S: Hello, this is Southwestern Bell's phone service.
U: Yes, I would like my call forwarding to be stopped.
S: call forwarding is off
U: Thank you
(hang-up)

Call Five

S: Hello, this is Southwestern Bell's phone service.
U: I'd like to know who is in my speed call directory
S: Stored name is Dad at 224-0099 under code 1. (pause)
S:thaell's phone service.
U: I need to dial by name
S: Whom shall I dial?
U: My mom
S: Now dialing mother
U: thanks
(hang-up)

Call Six

S: Hello, this is Southwestern Bell's phone service.
U: I want to use call forwarding
S: What number do you want your calls forwarded to?
U: 224-0099
S: Calls are forwarded to 224-0099
U: thanks
(hang-up)

Number: 4.1

Call One

S: Hello, this is Southwestern Bell's phone service.
U: Yes, I would like my calls forwarded to 224-0099 this evening after 7.
S: Calls are forwarded to 224-0099
U: That's right
S: Thank you
(hang-up)

Call Two

S: Hello, this is Southwestern Bell's phone service.
U: Yes, I'd like to know who is in my speed call directory.
S: Stored name is Dad at 224-0099 under code 1.
U: Is that it?

S: Yes
U: thank you
S: Thank you
(hang-up)

Call Three

S: Hello, this is Southwestern Bell's phone service.
U: Yes, I, uhh, want my calls to be put through at home now and not at my friends house.
S: Please rephrase the command.
U: Okay, uhh, I am now at 458-3111 and would like to have my calls there not at 224-0099.
S: Please say what service you want.
U: Umm, I'd like my calls to be forwarded, uhh, to my home.
S: Do you need help?
U: Yes
S: Which calling feature do you want help with?
U: Umm, the call forwarding
S: Call forwarding, Your phone automatically forwards all calls to a location of your choice.
U: Okay, and I don't , I want this stopped. I want the calls to caome in at home.
S: You want call forwarding off?
U: yes
S: call forwarding is off
U: thank you
S: Thank you
 (hang-up)

Call Four

S: Hello, this is Southwestern Bell's phone service.
U: Yes, I would like my call forwarding to be stopped.
S: call forwarding is off
U: Thank you
(hang-up)

Call Five

S: Hello, this is Southwestern Bell's phone service.
U: I'd like to know who is in my speed call directory
S: Stored name is Dad at 224-0099 under code 1. (pause)
S:thank you
(hang-up)

Call Six

S: Hello, this is Southwestern Bell's phone service.
U: I would like my calls to be forwarded to 224-0099 after uhh or this evening.
S: Calls are forwarded to 224-0099
U: That's correct.
S: Thank you
(hang-up)

Number: 4.1

Call One

```
S:  Hello, this is Southwestern Bell's phone service.  Please say what service you want.
U: Yes, I would like call forwarding
S: What number do you want your calls forwarded to?
U: 224-0099
S: Calls are forwarded to 224-0099
U: Yes
S: Thank you
(hang-up)
```

Call Two

```
 S:  Hello, this is Southwestern Bell's phone service.  Please say what service you want.
U: Yes, I would like remote call forwarding
S: What number do you want your calls forwarded to?
U: 227-3064
S: What number do you want your calls forwarded from?
U: Uhh, (pause) 224-0099
S: You want your calls forwarded from 334-0561 to 224-0099?
U: No, that's not correct (pause) I am back home and I want my calls put back on
 my phone at home that I was having forwarded to a neighbor's house. (pause)
S: Please say what service you want. (pause)
U: Remote call forwarding (pause)
S: Thank you for participating in this experiment. Please hang-up now.
(Hang-up)
```

Call Three

```
S:  Hello, this is Southwestern Bell's phone service.  Please say what service you want.
U: Speed calling
S: Do you want to delete, add, change, or dial an entry?
U: dial
S: Whom shall I dial?
U: Jane
S: Now dialing Jane
S: Thank you
(hang-up)
```

Call Four

```
S:  Hello, this is Southwestern Bell's phone service.  Please say what service you want.
U: Speed calling
S: Do you want to delete, add, change, or dial an entry?
U: dial
S: Whom shall I dial?
U: Jane
S: Now dialing Jane
S: Thank you
(hang-up)
```

Call Five

```
S:  Hello, this is Southwestern Bell's phone service.  Please say what service you want.
U: Call forwarding
S: What number do you want to forward your calls to?
U: 227-3064 (pause)
```

S: Thank you for participating
(hang-up)

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