The DIM system: WOZ Simulation Results - Phase I

Authors: Jennifer Balentine, Umesh Berry, and Anne Johnstone

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 focused. 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.

... Read complete abstract on page 2.

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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.
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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-remember 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 pronominal 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 pronominal 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

This work was partly supported by Southwestern Bell Technology Resources. We would like to thank George Velius for his design of the WOZ system, and John Tadlock and Jeff Scruggs for all their ideas and comments.
### APPENDIX A.1

#### Pre-experimental phase

#### Data on subjects

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<th>Subject</th>
<th>Age</th>
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<th>Sex</th>
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*HS*: High School, *B*: Bachelor's, *M*: Master's

### APPENDIX A.2

#### First phase

**Data on subjects**

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

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**

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<th>Scenarios</th>
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APPENDIX B.3

Pre-experimental phase

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APPENDIX B.4

First phase

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<td>9, 17</td>
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APPENDIX C.1

Questionnaire A

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

| - - - - | - - - | - - - | - - - | - - - | - - - | - - - | - - - | - - - |
| 1 2 3 4 5 6 7 8 9 |

very difficult difficult okay easy very easy

difficult okay 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 quickly

slowly okay 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 unnatural | fairly natural | very natural |

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

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

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

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

   ☐ too wordy  ☐ confusing  ☐ boring
   ☐ too brief  ☐ clear  ☐ too long
   ☐ didn’t make sense  ☐ to the point  ☐ 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 your 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

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<th>Dialogues 1 to 3</th>
<th>Dialogues 4 to 6</th>
<th>Overall</th>
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<td>3448</td>
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<tr>
<td>No. of exchanges</td>
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<td>239</td>
<td>631</td>
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<td>Avg. no. of exchanges (per user, per dialogue)</td>
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<tr>
<td>Avg. length of utterances</td>
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<td>5.54</td>
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<tr>
<td>No. of utterances with pronouns</td>
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<td>88</td>
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### APPENDIX E.2

**Statistics on dialogues - 2**

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<td>Avg. length of utterances</td>
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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

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am
keith
guess
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going
get
evening
cancelled
but
available
any
an
yeah
which
turn
trying
them
staying
set
same
put
plan
over
mr
make
information
if
features
entries
delete
bye
are
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reach
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question
prompt
previous
possible
placed
person's
parents
other
oops
only
often
obtain
numbers
none
night
neighbor's
named
moving
move
mean
may
many
main
ma
longer
list
jennifer
jack
interrupted
instead
include
idea
hood
him
here
having
happening
friends
frequently
forgot
first
fine
find
feature
feat
far
erase
else
elephant
eight
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
# dial
uhh #
to two
poppelstein #
jane #
correct #
poopsey #
i'd #
change #
thanks #
my mother
hi i

calls to
calls forwarded
# thanks
# please
# help
to have
remote call
mother #
and i
# no
# cancel
#
to use
to do
to cancel
the number
mrs poppelstein
could you
call my
# mike
# correct
want my
no #
name is
my call
i have
do i
calling directory
# ok
# mrs
uhh yes
uhh uhh
to know
like my
do #
change #
# remote
# my
# jane
# hello
yes i'd
who is
waiting for
very much
uuh call
to place
three #
so i
number two
name #
my name
much #
mom #
is two
is in
hi my
give me
dial #
computer modem
change speed
call jane
call #
at home
# what
# well
# that’s
# that
# is
you very
you tell
you repeat
what is
uhh the
uhh please
uhh let’s
to the
to my
to dial
to change
to a
this evening
the code
that is
tell me
repeat that
please give
please dial
please cancel
phone call
okay #
ok thank
number is
my phone
my mom
my friend
movie theatre
modem to
me #
let’s see
know who
is keith
i guess
i am
his number
forwarding please
forward my
don’t want
dial two
cancelled #
can i
available #
a number
a call
# three
# remove
# i’m
yea i
would you
what service
use call
up #
uhh to
uhh mike
uhh i’m
turn off
trying to
to turn
this call
there a
them forwarded
the same
the movie
the call
that’s correct
that please
that #
set up
place a
phone number
okay uhh
of my
number in
number from
my uhh
me help
make a
keith uhh
it #
is there
is that
is correct
i’m going
i do
i can
have my
have call
going on from speed for the don’t know directory please dialing by dial by delete # code 1 code # change my cancel my call please call forward but i at two at my all my # yea # delete # could # can you please you goodbye yes uhh yes please yes i’m yes # will be who’s in which is where i want call want any waiting to waiting cancelled use my use a uhh two uhh stop uhh speed uhh my uhh could two this two thank tru tru trip and to uhh to remove to poopsey to make to interrupt to his to get to dallas this time
important call
i'm trying
i'm sorry
i'm confused
i'm at
i used
i plan
i i
i can't
house #
home and
home #
hold on
hi i'm
hi i'd
her number
help please
help on
help i
help available
hello i
hello #
hear the
have help
guess i
goodbye #
from my
friend's house
friend mike's
friend jane
forwarding to
forwarding on
forwarding my
forwarded #
forward all
for my
for me
entry number
entry #
entries #
do that
dial the
dial jane
dial an
correct yes
code i
change that
cancel the
cancel that
can't remember
can you
calls #
call and
by dialing
business trip
be over
be forwarded
at this
any calls
and would
an important
an entry
am staying
all i
a long
a help
a friend’s
a computer
a business
# would
# to
# the
# off
# mr
# mother
# hey
# from
# forwarding
you’re welcome
you take
you recommend
you have
you forward
you can
you bye
yes my
yes call
would need
works the
won’t be
whose numbers
who might
who are
while i
which features
whatever #
what’s happening
what was
what uhh
what next
what i
what else
what are
what all
what about
what #
well what’s
well what
well okay
well i’m
well i
well dial
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
the best
that's what
that's simple
that's right
that's not
that's fine
that's all
that works
that will
that to
that the
that so
that person's
that name
that mean
that it
that could
that can
that all
tanks very
than dialing
take care
sure what
sure is
stored her
stored #
stopped i
stopped #
stop uhh
stop call
staying do
speed no
speed dialing
some help
some directions
so you
so yes
so if
so i'm
so #
since he's
simple okay
should i
shoot #
seven uhh
seven to
seven #
services i
service would
service please
service is
service i
service do
service #
see what
see uhh
see so
see hi
see call
same way
same type
same thing
robin hood
right now
right #
rest of
repeat please
recommend #
receiving the
really sure
really don’t
reached this
reach me
quite frequently
question i
put through
put that
put back
prompt now
previous menu
possible could
popplestein #
popplestein to
please uhh
please uhuh
please thank
please stop
please please
please change
plan on
placed over
phone to
phone set
phone calls
phone at
petty uhhm
petty i
person’s phone
parents #
over there
out who
out of
other than
or this
or robin
or or
or is
or dialing
opps #
only name
one popplestein
one 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 popplestein
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
i’ve stored
i’m receiving
i’m planning
i’m now
i’m not
i’m calling
i won’t
i will
i was
i use
i uhh
i no
i make
i just
i include
i hear
i hang
i forgot
i didn’t
i change
i call
i believe
i #
how to
how many
how do
how can
how about
house so
house his
house and
hood #
home you
home that
home thank
home phone
home now
his to
him very
hi #
hey that
hey jennifer
here hold
her name
her code
her #
help information
hello uhh
hello hold
he’s staying
having forwarded
have uhh
have to
have this
have stored
have no
change entry
change call
care of
care #
cancel speed
cancel previous
cancel #
can stop
can obtain
can just
can call
calls there
calls thank
calls put
calls i’m
calls from
calls are
calling to
calling my
calling help
calling for
call which
call what
call speed
call so
call him
call her
call from
call forwarding
call forwarded
call but
call a
bye #
by uhh
by number
but since
best way
believe that’s
being forwarded
be stopped
be reached
be put
be placed
be interrupted
be i
be correct
be changed
be cancelled
be canceled
be call
be able
back on
back home
away i
aw shoot
at four
at a
at #
are the
are in
are being
anymore #
any of
any features
another number
and want
and uhh
and then
and that
and remote
and or
and not
and need
and mrs
and i’d
and and
and a
am now
am back
alright let’s
all what
a hold of
again #
after uhh
after seven
add #
actually i
about dialing
about call
able to
a speed
a neighbor’s
a neighbor
a name
a movie
a modem
a friend
a directory
a dialing
a couple
Deithe i’m
# you’re
# who’s
# trying
# stop
# really
# poppelstein
# phone
# oops
# now
# not
# none
# nine
# need
# mom
# may
# ma
# let’s
# jack
# it’s
# how
# hang
# good
# friend
# five
# erase
# entry
# elephant
# do
# aw
# any
# alright
# ahold
# add
# 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)
(kang-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 need 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 you
    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 look it up by name, and
    and that works the same way, correct? Or or is it the same thing by ... mmm 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

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

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)
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. Um, let’s see what service do I need.
S: Please say what service you want.
U: Tru, tru, tru, uhh mumble
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 name.
U: I’m trying to use a computer modem to place a call. What service would you recommend?
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 should 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 features available?
S: mumble
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 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. You can find out what speed codes you have available, or whose number you have 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 forwarding, 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 the 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.
(hang-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 experiment. 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
no 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 name.
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 participating 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, and 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 can 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: (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 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 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 forwarding 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 Poppelstein 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 who are in my speed calling directory, and uhh I... I don’t understand the voice that is coming through 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 Poopstein 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 services 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 ns 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,

('rator 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 you 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
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.
S: Thank you
(hang-up)

Call Four

S: Hello, this is Southwestern Bell’s phone service. Please say what service you want.
U: Call 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: 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 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.
(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: 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 you 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 you 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 you 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 you 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 of your choice.
U: I’d like to use call forwarding instead please
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 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 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.
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 you 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 of your choice. (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
(hang-up)

Call Five

S: Hello, this is Southwesterr. Bell’s phone service. Please say what service you 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 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. (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: Uh, (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
Call Two

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 Three

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 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, I want it off.
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, and I really don’t plan to call him very often, so I don’t want his number on my speed 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 don'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
1 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 delthe. 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
lлас, 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 want to change?
U: Okay, I want to change the 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: Uh, 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 your 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, and 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 dialing
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 dialing
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 come 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: Poopey (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 to 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 questionnaire B that some interaction 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: the 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 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 come 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 224-0699 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)
REFERENCES


