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## People Say the Darnedest Things

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# Overview

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*The Human Element*

*To Speak or not to Speak*

*People are Talking*

*Well ... I never ...*

*Short vs Long Phrases*

# The Human Element

## *Voice User Interface Design Myth:*

- » “I can decide what callers are allowed to say” by
  - Restricting “operator” opt-out
  - Ignoring caller phrasing patterns

## *Voice User Interface Design Reality:*

- » I have significant influence over what callers will say and how the system reacts
  - Hidden menu options
  - Direct and indirect menu prompts
  - Inactive phrase behavior

*Successful VUI Designs must adapt to the Human Element*

# Comparing Caller Reactions

## *Three open prompt systems compared*

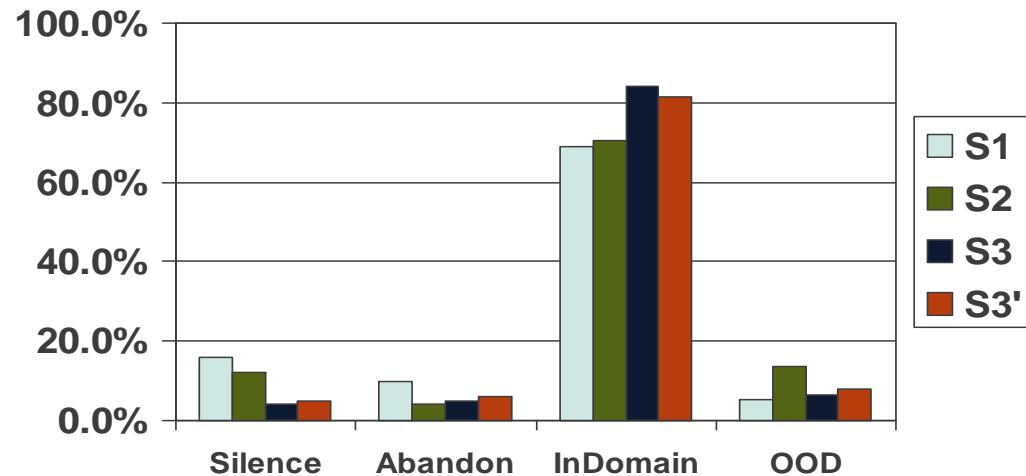
- » S1 – Financial industry, customer self-service
  - Caller must authenticate before main menu
  - Directed dialog lead-in, followed by open prompt
- » S2 – Multimedia content provider, self-service application
  - Caller is greeted with open prompt main menu
  - Single attempt at main menu, directed dialog following
- » S3 – Also a Multimedia provider, self-service application
  - Initial prompt is main menu
  - Multiple dialog states use open prompt grammar
  - Multi-slot implementation recognizes caller intent, product, or both

# To Speak or not to Speak

*“How may I help you today?” A prompt that sometimes strikes fear into callers*

- System 1: “How can I help you today” (examples on reprompt only)
- System 2: “In a few words, tell me what I can help you with today. <pause> you can say anything from ... ” - with 2 examples
- System 3: “How can I help you today. <pause> you can say anything from ... ” - with 3 examples including “operator”

**SLM Response Dispositions**



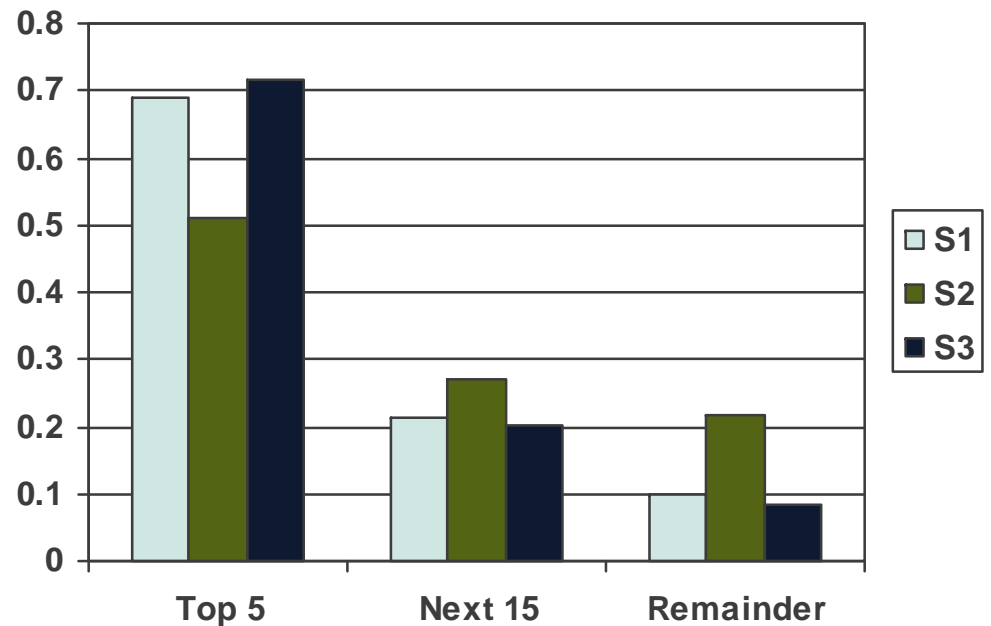
S3': S3 system but excluding operator responses

# The needs of the many ... are few

*Call routing applications tend to have unequal category distributions*

- 60-70 % of utterances in top 5 categories
- Another 20% in next 15 categories
- Remainder split among 40-60 categories
- Data collection requirements:
  - 200 samples @ 0.5%
  - Requires 40000 utterances
  - And 57000 calls

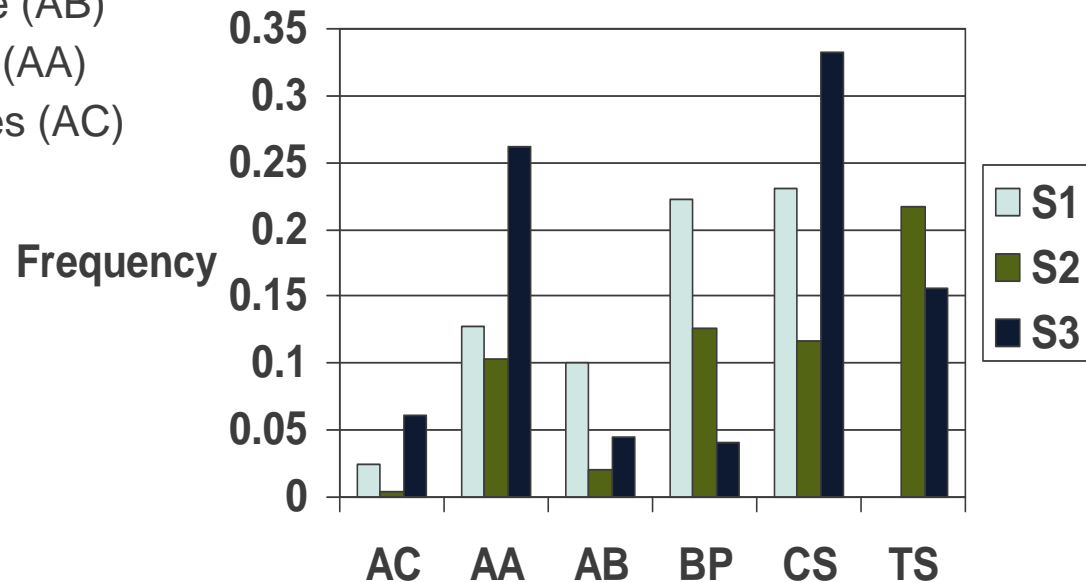
**Category Distributions**



# What people want

- » High runner categories can be common across domains
- » But frequencies of those categories are domain-specific
- » High-runner categories on evaluated systems
  - Technical Support (TS)
  - Customer Service (CS)
  - Bill Payment (BP)
  - Account Balance (AB)
  - Account Activity (AA)
  - Account Changes (AC)

**Common Category Usage**



# Do People Really Say That?

*In some cases callers are simply echoing back pieces of the prompt:*

## » Sample Main Menu Prompt:

- ... Please tell me briefly what you're calling about, for example, you could say: "report a payment" or "billing inquiry." Or ask for whatever you need ...
- Nearly 1% of all responses were variants of “ask for whatever I need”!
- “ask for whatever I need” was one of the top 100 utterances at the main menu prompt

## » Other gems

- “what I am calling about”
- “how can you help me”
- “why am i calling”
- “you called me”



# Suggestions

*Improvements to the prompt can reduce “parroting”:*

## » Design suggestions

- Include phrases like “in your own words”, “tell me briefly ...”
- These phrases should be used near the end of the prompt
- Don’t prefix the question with “or”
- ... Please **tell me briefly** what you're calling about, for example, you could say: "report a payment" or "billing inquiry." **Or ask for** whatever you need ...

## » Better prompt sample

- “You can say anything from “pay my bill” to “technical support for widgets”. So in a few words, tell me what I can help you with today.”
- Parroting effect was greatly reduced (all three systems less than 0.01%)

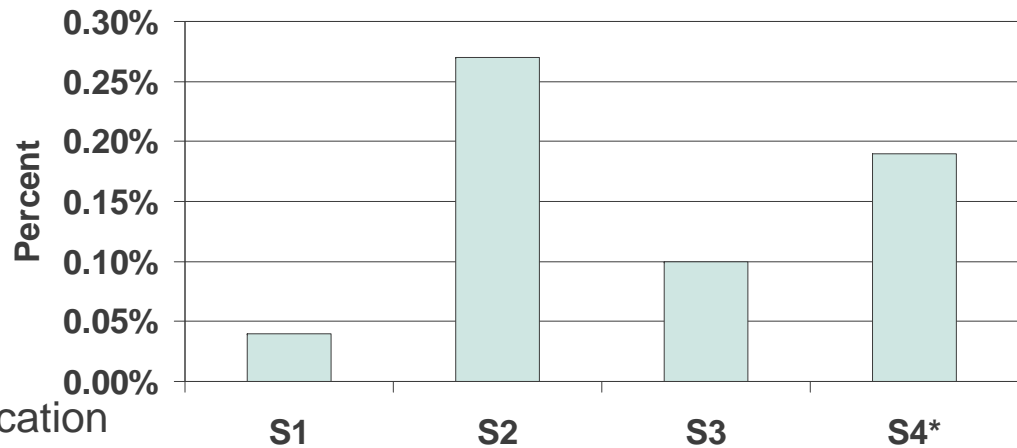
@#!@#%%

*Sometimes responses are not for the faint of heart*

» Frustration triggers

- Apology prompts: “I’m sorry I didn’t hear you”, “I’m sorry, I didn’t understand you”
- Long sequences of navigation or caller input
- Some choice selections:
  - you can't hear me you must be deaf ...
  - I wanna talk to a @\$@!! operator
  - I want a real live person you moron
  - Oh ... here we go again

**Frustration Rates by System**



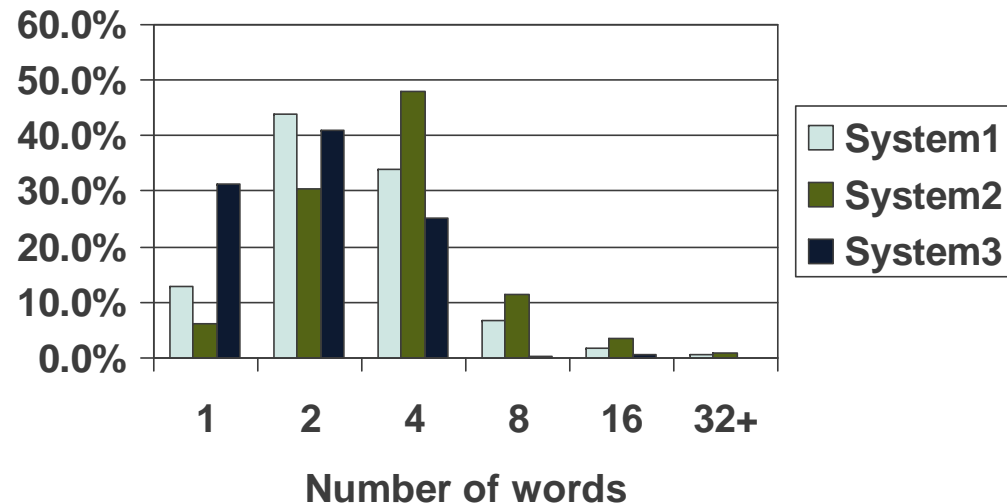
\*S4 original S3 application

# The long and short of it

*What should you expect in terms of response length*

- » Most responses are between 2 and 4 words
- » Some systems have key phrases that are one word
  - Billing
  - Sales
  - Representative

**Phrase Length Distribution**



## Top ten (or so) favorites

*You just never know:*

- It's ... our tv went kooky
- My dog ate my remote control
- My dog stepped on the programmer and it went pssh and now I can't ...
- you don't understand nothing because you are not a human being ...
- You called me, you tell me
- Mommy's gonna put in Shrek for you
- Are you some kind of a tape or something



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