IA for Conversational Interfaces

World IA Day 2020

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Conversational Interfaces
What they are and how we got here
Any non-human interface that intentionally mimics human conversation using text or audio
A Non-Exhaustive History

- Eliza
- Clippy
- SmarterChild
Modern Conversational Interfaces
100M
Smart speakers deployed in the U.S.

31%
of U.S. households

60%
of owners use once or more per day

85%
Estimated customer interactions without human intervention by Q4 2020
Not Just the Kids
New Alexa Skills Introduced Per Year

- 2017: 18,731
- 2018: 31,009
- 2019: 13,936

Source: Voicebot.ai
More Complex Bots
The Challenge

What’s the problem?
Conversations must respect the rules of good conversation and the limits of human performance.
Rules of Conversation

Oh yeah, there are rules
Grice’s Maxims

**Quantity**
Give as much information as is needed, and no more

**Quality**
Be truthful; give only information supported by evidence

**Relation**
Give information that is pertinent to the conversation; be relevant

**Manner**
Be as clear, brief, and orderly as possible
Turn Taking

• Generally speakers take turns
• But sometimes it’s ok to overlap or cut in
  • Interrupting vs. interjecting
• Cultural differences
• “Repairing” a conversation that has gone awry
Standard Maximum Silence

- Conversation partners are unwilling to let one full second of silence go by

Jefferson, Gail. 1989
“They create **rights to rebuke** when people don’t do what they’ve effectively signed up to do by virtue of the simple fact that they are engaged in a conversation.”

—N.J. Enfield, *How We Talk*
I Don’t Date Men Who Yell at Alexa

How you treat your digital assistant says a lot about you.

By RACHEL WITHERS  APRIL 30, 2018 • 4:26 PM
Limits of Human Ability

Nobody’s perfect
Weak placemaking signals
Working Memory

- Miller’s Law
- Baddeley’s Model
Solutions

"For every complex problem, there is a solution that is simple, neat, and wrong."
– H.L. Mencken or Mark Twain
Conversations must respect the **rules of good conversation** and the **limits of human performance**.
1. Map it out
2. Be careful about turns
3. Keep lists short
4. Shape the path
5. Act it out
Map it out

IMAGE REMOVED
Be careful about turns

- Simple questions get simple answers
  - Maxim of Quantity
- Stay on topic
  - Maxim of Relation
- Don’t presume the user’s response
  - Maxim of Manner
Keep Lists Short

• Applies to choices/options and responses/results
• Remember the phonological loop
• Paradox of choice/decision paralysis
planning your event today by telling you about the many unique and flexible spaces available at Monona Terrace.

Today at 5:23 PM

For now, I can only recommend spaces based on the size of your group. If you choose to host your event at Monona Terrace, we’ll assign you a dedicated staff member who will work with you to manage every detail of your event from start to finish, including answering questions about food, A/V, and cost.

Today at 5:23 PM

First, please tell me which of the following best describes the type of event you’re planning.

- Wedding
- Banquet
- Conference
- Meeting
- Trade Show

Type your message...
Shape the Path

- Start broad, let the user narrow
- Helps the user know what’s possible, what’s expected of them
- Lower memory burden
  - Remember the “local” options, not the whole tree
Act it out

• Gives a sense of:
  • Rule following
  • Memory load
  • Timing
  • Structure/flow
Resources

Books
• How We Talk by N.J. Enfield
• Building Bots by Amir Shevat
• Designing Voice User Interfaces by Cathy Pearl

Podcasts
• Voicebot.ai (+ website + weekly newsletter)
• V.U.X. World
Thank you!
Any questions?

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