

Week 07

Conversational UIs: Strategies

HCI 이론 및 실습 2019 Spring

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Personality

Personality

- ✦ **Big-Five Factors** (Costa & McCrae, 1992)
 - ✦ openness to experience
 - ✦ conscientiousness
 - ✦ extraversion
 - ✦ agreeableness
 - ✦ neuroticism

Personality

- ✦ Openness to experience
 - ✦ very creative
 - ✦ open to trying new things
 - ✦ focused on tackling new challenges
 - ✦ happy to think about abstract concepts

Personality

- ✦ **Conscientiousness**
 - ✦ spend time preparing
 - ✦ finish important tasks right away
 - ✦ pay attention to details
 - ✦ enjoy having a set schedule

Personality

- ✦ Extraversion
 - ✦ enjoy being the center of attention
 - ✦ like to start conversations
 - ✦ enjoy meeting new people
 - ✦ have a wide social circle of friends and acquaintances
 - ✦ find it easy to make new friends
 - ✦ feel energized when they are around other people
 - ✦ say things before they think about them

Personality

- ✦ Agreeableness
 - ✦ have a great deal of interest in other people
 - ✦ care about others
 - ✦ feel empathy and concern for other people
 - ✦ enjoy helping and contributing to the happiness of other people

Personality

- ✦ Neuroticism
 - ✦ experience a lot of stress
 - ✦ worry about many different things
 - ✦ get upset easily
 - ✦ experience dramatic shifts in mood
 - ✦ feel anxious

Consistency-attraction

- ✦ Consistency-attraction (Nass & Lee, 2001)
 - ✦ When voice personality and text personality matched, participants very clearly preferred the voice compared to voicetext mismatch participant
 - ✦ People prefer when the tendency of **computer voice** and that of **computer-generated text** are consistent

Similarity-attraction

- ✦ **Similarity-attraction** (Nass & Lee, 2000, 2001)
 - ✦ People prefer a system when the tendency of computer voice match to that of user's
 - ✦ attractiveness
 - ✦ trust / credibility
 - ✦ liking
 - ✦ quality

Complementary-attraction

- ✦ **Complementary-attraction** (Isbister & Nass, 2000; Lee, Peng, Jin, & Yan, 2006)
 - ✦ In fact, when interacting with an embodied computer agent, user prefer when the computer voice tendency opposite to (complementary to) his/her.
 - ✦ It might be the **effect of character of an agent**



Sony AIBO

Different Task Needs Different Personality

- ✦ Extraversion showed the most significant differences depending on the task type.
 - ✦ Most preferred for social task
 - ✦ Least preferred for office/ physical task
- ✦ Conscientiousness
 - ✦ Most preferred for Service task
 - ✦ Least preferred for Social task
- ✦ Neuroticism least preferred for all tasks
- ✦ Openness
 - ✦ Most preferred for Social task
 - ✦ Least preferred for Physical task

Lee, S. Y., Kim, S., Lee, G., & Lee, J. (2018, March). Robots in Diverse Contexts: Effects of Robots Tasks on Expected Personality. In Companion of the 2018 ACM/IEEE International Conference on Human-Robot Interaction (pp. 169-170). ACM.

Emotion

Emotion

- ♦ Six basic emotions
 - ♦ anger, disgust, fear, happiness, sadness, surprise
(Ekman, 1972)
- ♦ Mood (valence) x Energy (arousal) (Watson & Tellegen, 1985)
 - ♦ Mood (positive-negative)
 - ♦ e.g., sad <-> happy
 - ♦ Energy (arousal-sleepiness)
 - ♦ e.g., sad < angry

Beyond Cognitive Intelligence

- ✦ Robot companion in the home (Dautenhahn, 2007)
 - ✦ humans, in particular, are the most expressive, emotionally complex, and socially sophisticated of all intelligent creatures (Darwin, 1892)
 - ✦ emotion-based mechanisms allow systems/robots to interact more “appropriately” with others
 - remember the CASA framework!
 - ✦ perspective-taking → empathy, building trust

Beyond Cognitive Intelligence

- ✦ **Appropriateness** (Krauss, Apple, Morency, Wenzel, & Winton, 1981)
 - ✦ understand the context first
 - ✦ while some people communicate emotions more effectively through nonverbal cues (e.g. facial expressions), others may prefer paraverbal expressions
 - ✦ emotions may be expressed in different ways
 - ✦ happiness & anger: more accurately communicated via nonverbal cues (e.g. facial expressions)
 - ✦ fear: more accurately communicated via paraverbal cues

Beyond Cognitive Intelligence

- ✦ Importance of small talk & casual conversation
(Bickmore & Cassell, 2001)
 - ✦ small talk is often used to establish trusting relationships
 - ✦ allows them to establish common ground and increase their familiarity
 - ✦ iteratively “test the water” to determine if they want to continue deepening the relationship

Emotional Cues

- ♦ Verbal cues - **Vocatives** (Eggins & Slade, 1997)
 - ♦ Using naming (呼稱), slang, or taboo words might increase intimacy and affiliation
 - ♦ Redundant vocative: even though it will be helpful in 1:1 situation
 - ♦ to indicate an attempt by the addresser to establish a closer relationship with the addressee

Emotional Cues

- ✦ Verbal cues - **Linguistic Markers** (Torrey, Fussell, Kiesler, 2013)
 - ✦ hedging: based on politeness to protect the other side
 - ✦ e.g., “I guess,” “maybe,” “probably,” “I think,” and “sort of,” “kind of” etc.
 - ✦ backchannel:
 - ✦ e.g., “Mmm,” “Uh-huh” etc.
 - ✦ discourse markers: derived not exclusively from their literal definition but from their use in context
 - ✦ e.g., “like you know,” “I mean,” “well,” “just,” “like,” “yeah” etc.

Emotional Cues

TABLE I. EXAMPLES OF HELP MESSAGES COMMUNICATED IN EACH COMMUNICATION CONDITION, USING THE STEP “CREAM BUTTER AND SUGAR.”

	No Discourse Markers	Discourse Markers
No hedge	“The mixture should be smooth and fluffy. The color will get lighter too.”	“ <u>Basically</u> <u>just</u> keep going until it’s <u>like</u> a smooth mixture. Lighter color and fluffier.”
Hedge	“Until the batter looks smooth. It’ll get <u>kind of</u> fluffier and the color will lighten up.”	“And <u>kind of</u> mix it, until it’s <u>just like</u> fluffy. <u>Basically</u> , a nice smooth consistency, a little bit lighter color.”

Torrey et al., 2013

Emotional Cues

- ♦ **Nonverbal cues** (Walther, Loh, Granka, 2006)
 - ♦ Related to affinity/immediacy
 - ♦ direct body
 - ♦ orientation
 - ♦ facial orientation, pleasantness, animation, concern
 - ♦ gaze
 - ♦ smiling
 - ♦ nodding
 - ♦ laughing
 - ♦ postural openness

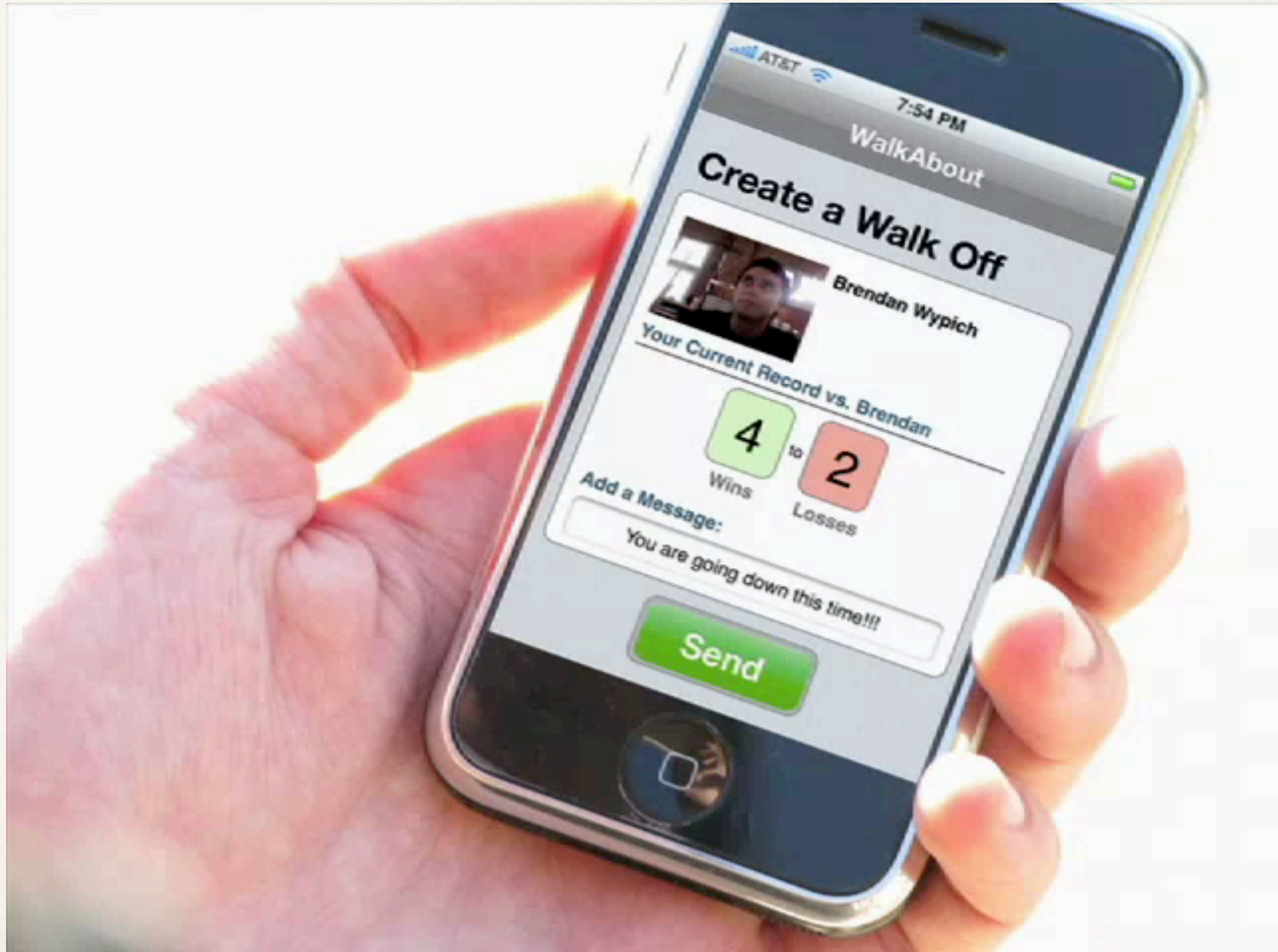
Workshop: Scenario

Workshop Process

- ✦ Step1: By applying the strategies introduced in this slide, finalize the dialogs we have developed.
 - ✦ Consider how to apply personality and emotion.
 - ✦ Discuss which emotional cue will be suitable for your service.
- ✦ Step 2: Using the personas we made in the first workshop, create a service scenario.
 - ✦ Your service agent's character might be different based on the attributes of persona.
- ✦ Step 3: We will make a video prototype. Refer to example slide from appendix.

Video Prototyping

Walkabout



<http://www.snowflyzone.com/walkabout/walkabout.html>

My Derma

My Derma

Prototype

Questions...?
