

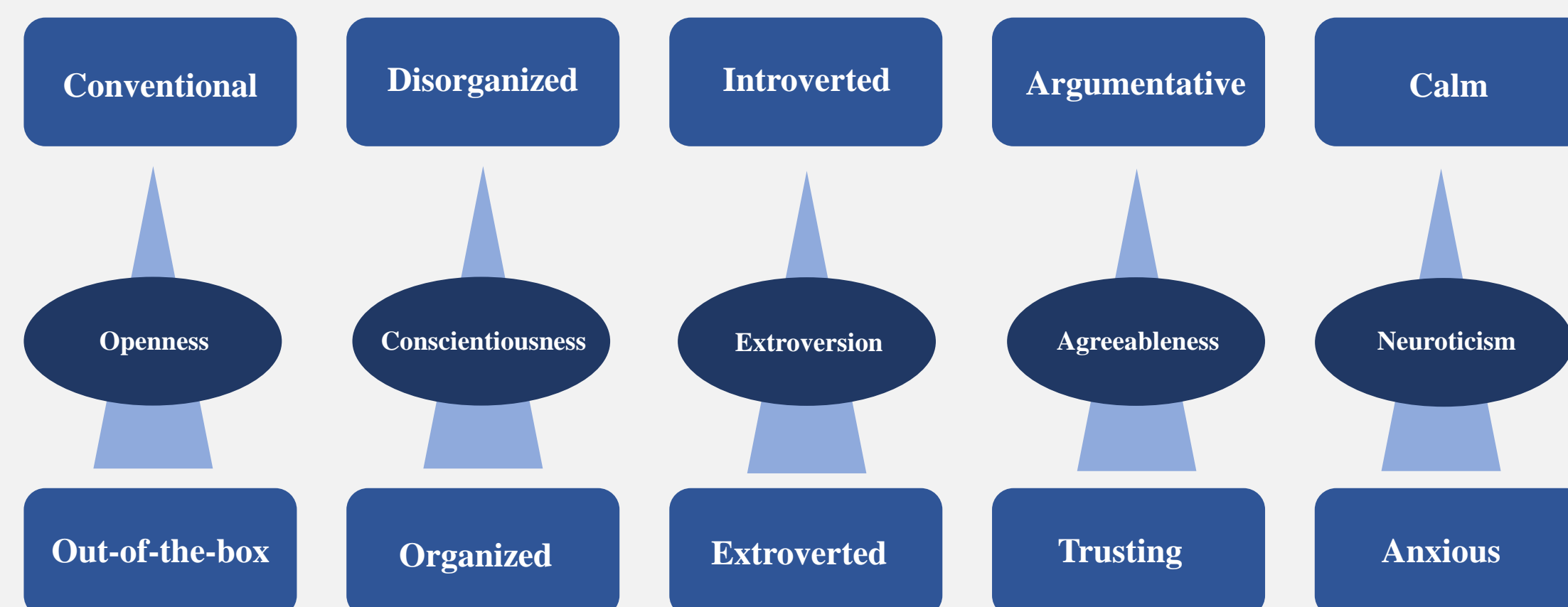
Identity Models for Role-Play Dialogue Characters

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Overview

We have been working towards expanding personality and character attributes in dialogue agents in order to create more natural conversational experiences. To this end, we have been focusing on a concept we refer to as ‘identity models’. These models consider aspects of personality in alignment with the Big 5 personality traits (extraversion, agreeableness, openness to experience, conscientiousness, and neuroticism), as well as defined attributes that reflect concrete/material objects (e.g., a character’s age, whether they live in a house or an apartment, what their careers are, etc.). We use an array of scores for the Big 5 personality traits, and currently handwrite the attribute list. The context of the sample transcripts is a disaster preparedness simulation from a previous study.



In regard to the system itself, we utilize the sequential model via Keras API with 3 layers to rank all possible character responses to user input. Once this list of possibilities has been obtained, we leverage the identity model to select responses that a.) align with the character’s attributes (e.g., characters under the age of 16 would not mention owning a car) and b.) best match their personality scores (e.g., a character with a higher score in neuroticism would likely express more anxiety)

Sample Transcript Excerpts

Resident: I can't leave my condo! I've lived here for 3 years

User: i understand how important your home is to you, but we're worried about this fire. we recoomend you gather all of your most important items and get out of the area until the danger is past

Resident: I hear what you're saying, but...I don't know, leaving my home is so hard

User: I sympathize. We're going to do everything we can to control the fire, but it will help us a lot if we know you're safe

Resident: If you're well-read like me, you don't just give up on the place you love. Surely there's something I can do to keep my home safe

User: Here's what I recommend: take a little bit of time to clear out the yard of any dead plants or debris. Then gather important things, and head out

Resident: Okay, I'll try to gather the most important things

User: Hi Ross, nice to meet you. We're doing a sweep through the town to let people know a fairly large fire is headed in this direction, about a day or two out. we're asking residents to evacuate ahead of time

Resident: Wow. I'd heard about it on the news, but I didn't really think it'd make it this far

User: Yeah, unfortauntely it's looking like it will. So we need you, and anyone with you, to gather up the essential items and head south

Resident: How long do you think we have to get everything together?

User: I would say maybe a day or so, but I wouldn't recommend lingering

Resident: Yeah, okay, I hear you. I'll grab what I need. Shouldn't take too long to go through the apartment

User: That sounds great. Do you need any assistance evacuating?

Resident: I think I'm all set, actually