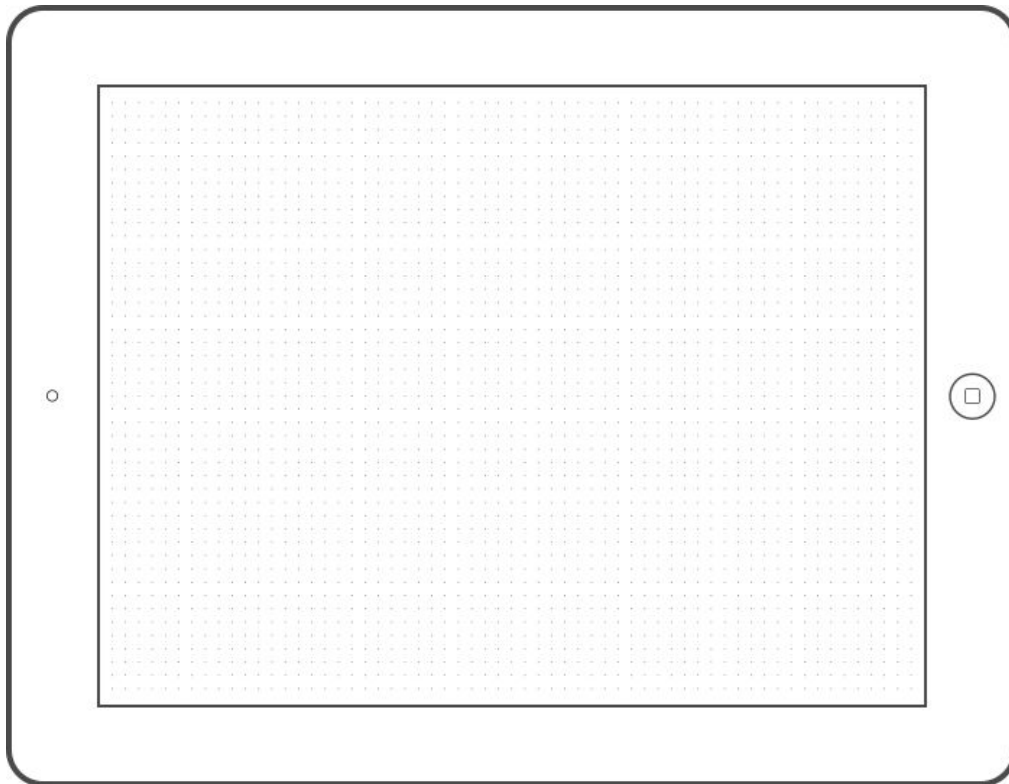# Conversational styles in chatbots

Advisory report Digital Experience Design minor 2018

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Index

Research Question

How can a person gain trust through a warm or competent conversational style through the means of a chat bot?

Introduction

For the past 7 weeks we have conducted a research on how to develop a warm or competent dialogue style to gain trust. We have used the Human Centered Design methodology during the process and engage with end users. With this we came up with the following conclusions and recommendations.

Warm & Competent Clusters

From the above diagram you can see the emotions we wanted to trigger from both conversational styles.
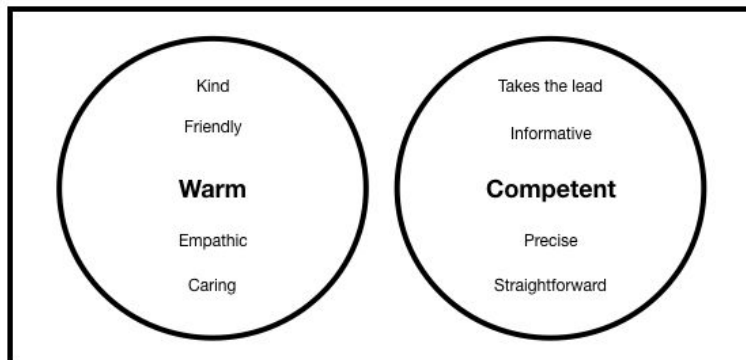
These particular emotional keywords were the main driving force in creating the personality of both the warm and competent chatbots. We, as the research team, found these emotional keywords the best because they are very explicit when being triggered, and there are no other ways to interpret the emotions. To give an example for the explicit expression, we mean that it is easy to convey kind and friendly feelings. As for disparate interpretations, we mean that there is no other way for the user to interpret what is being said by the chatbot.

Trust Metrics

The second significant part of the project was the ways that the chatbot can develop trust with the user. The biggest advice we can give for this part of the project was the rubric and the guidelines that we used to conduct our testing of the chatbot with active users. We constructed a matrix as seen below using the "Yagoda & Gillian".

Person	Reliable	Dependable	Understandable	Accessible	Confidence	Problem Sharing	Warmth	Listening	Trust
User 1									
User 2									
User 3									
User 4									
User 5									
Total									

The scale for the matrix was devised using a '1 - 4' numerical scale so users can quantitatively say how they felt about the interaction with the chatbot. We recommend this as the best approach because if the user gives 'wordy' analyses of the interaction there will be too much feedback to filter through with conflicting responses, while the numerical matrix format clearly displays what is working for users and what isn't.
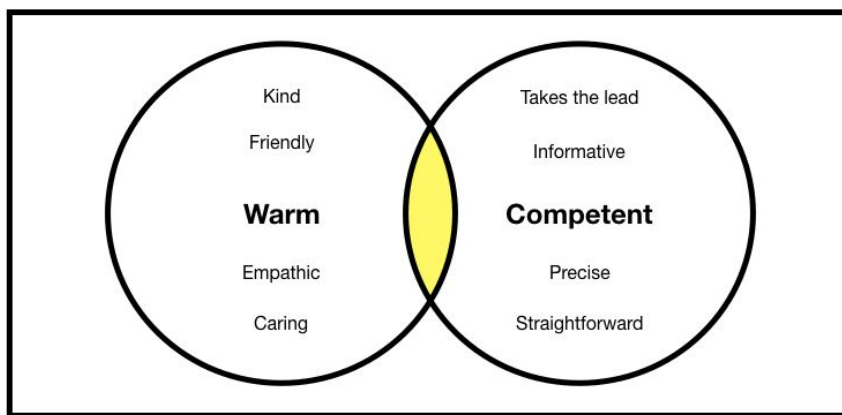
Final Conversational Style

To achieve the final conversation iteration, we conducted two types of tests
Wizard of Oz Testing: We recommend this testing as it involves pretending to be the chatbot and communicating to the user through a social media platform. The main advantages of this technique are its immediate feedback and its low requirement demand. We gathered key insights of what made each type of conversational style work from this test.

Usability Testing

We recommend this testing as it involves the user actively interacting with the chatbot and then documenting the feedback. The main advantages of this technique that we found are:

- Direct feedback from the target audience which can focus the project team
- Key insights on what elements worked and did not work based on the matrix
- Streamlined the testing process making the test process easier and faster

From these tests we learnt that our main focus should be a majority competent dialogue with warm elements included. The yellow area is the fundamental area which we think should be hit from the research we have conducted.

We recommend the chatbot to be approximately 70% competent with 30% of warm elements factored in. This is because we found that users preferred the practicality, and directness of the chatbot because they highly valued medical matters and did not want any roundabout ways of presenting the information. They are interacting with the chatbot in a medical context (waiting room) and thus need to be given accurate information precisely. We also found that when the chatbot is too friendly and tries to establish a warm connection too quickly it is off putting to the user and they find eerie. They preferred it to be kind in short moments rather than having it be throughout the dialogue. This is why we made the dialogue majority competent with a few key warm elements. The venn diagram below shows the result we have achieved.
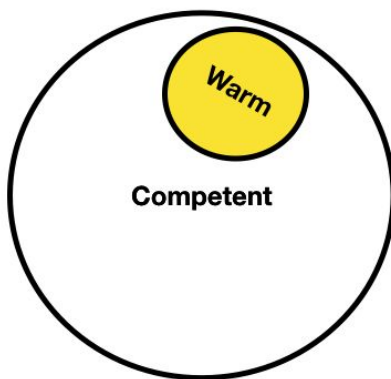
Other recommendations we have include:

Text based interface

Having a text based interface rather than a speaking one because the chatbot is used in a dental surgery context and people might not be able to speak. Secondly, we found in our field research that people prefer to not share their medical matters with others, so having a speaking interaction would enable other people in the waiting room to hear their medical matters which users do not want. This is why a text based interface is better. Lastly, the text based interface can be easily integrated with the hospital's web infrastructure so people can immediately access it.

Identity and name of the chatbot

We recommend to give the chatbot an identity and a name because it makes the interaction with the user more personal and allows the bot's perspective to be understood. This was learnt from field research done with psychological experts.

Structure of information

We recommend to create a informational flow of medical related matters within the chatbot that patients might be curious about. In our chabot we created medical areas such as:

- Pain Reduction
- Dietary Restrictions
- Surgery Information

These are all areas of interest to dental patients that are about to have wisdom tooth removal surgery. The answers that the chatbot gives in relation to this should be about information for the patient to know before going into the surgery.

Use psychological models in dialogue design

We recommend to use the Dilts and Bateson model to be incorporated within the implementation of the chatbot to get the questions and interactions that will be between the user and bot.
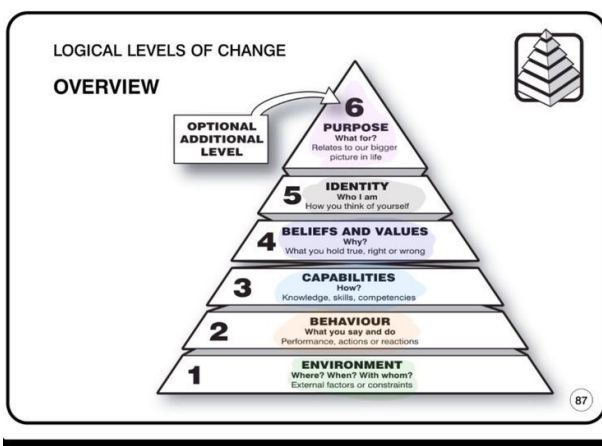
Our penultimate recommendation is to use a play element within the chatbot. This is because a play element allows patients to keep their mind off the surgery if they want to. From our research we learn that there are two types of patients. The first wants to know more about the surgery, which the main conversation flow is about, while the second type prefers to be distracted from the upcoming surgery. This is why we created a small play element within the chatbot to distract users.

Another important factor is that users want a way to express themselves. Users want to be able to tell the bot how they feel, to which the bot should react accordingly. If the bot acts appropriately to the given answers, users will get the feeling that they are being listened to, and will feel understood.

It is also important to give the users some freedom in the conversation. For example, the question "how do you feel?" is something very personal. By only giving the user a way to answer this through multiple choice answers, you end up giving them the feeling that they can't share their full thoughts and feelings with the bot.

Our final recommendation is to use our prototype as inspiration for how to combine warm and competent styles of conversation. Furthermore, you can see how a text based chatbot works with a play element added with a proper dialogue engine like Dialog Flow.