

Heuristic Evaluation of Polytone

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(These names will be removed before the document is given to the project team. Use these letter below)

1. Problem

We evaluated Polytone, an application designed to help hearing-impaired people communicate and understand emotion in text.

2. Violations Found

1. **[H2-1 Visibility of System Status] [H2-3 User Control and Freedom] [Severity 4] [Found by A, C].** On the “Caption” screen, it is unclear whether the information being recorded is being autosaved continuously, or whether the user must take some action to manually save the information. If it is the latter, then there is a problem; there is no icon visible that may allow the user to save the content. Selecting the X icon in the upper left corner prompts the user to save their content before exiting, but this interaction is non-intuitive, and the user may be afraid to select the icon, since exiting a screen without saving content usually means that the content will be lost. There should be a “Save” icon prominently displayed on this screen.
2. **[H2-1 Visibility of System Status] [H2-3 User control and freedom] [H2-4 Consistency and Standards] [Severity 3] [Found by A, B, C].** When a user clicks on the “Caption” button, the interface directly transitions a user to the voice recognition portion of the app. This does not seem intuitive; a user would likely expect to click on a “mic” button before being voice recorded. If the user clicked this by a mistake then they will then immediately click the back button but have to go through an extended dialogue to back out. Instead, the app should not start recording until the user specifies. Ask user to click a “mic” button to stop a recording.
3. **[H2-2 Match Between System and Real World] [Severity 2] [Found by A, B].** The Polytone keyboard on the “Plugin” flow looks very heavy weight and unfamiliar. To use it, a user will have to type a word, open polytone, select style, finalize style, then send text. This is not typically how real world humans express emotion, so this input strategy could be difficult for humans to use and understand. Polytone could employ some sort of emotion recognition algorithm to automatically detect and apply styles.
4. **[H2-3 User Control and Freedom] [Severity 2] [Found by B].** In the “Plugin” flow, it is unclear how to update styles or how to see more than four styles. The styles provided do not seem to encompass all styles a user would want, but it also doesn’t seem clear how a user might access new options. Polytone could add arrows to scroll to new styles.
5. **[H2-3 User Control and Freedom] [Severity 2] [Found by A].** In the iMessage extension, it’s unclear how to stop using a style and type in normal text after selecting a style. If the user selects a style by mistake, they have no way of returning to normal text. There should be a way to deselect styles or hide the extension altogether.
6. **[H2-4 Consistency and standards] [Severity 3] [Found by A, C].** On the “Change Style” screen, selecting Style 1 brings up a delete button and selecting Style 2 brings up a new screen where the style itself can be edited. The same interaction (tapping the style) should produce the same results

regardless of which style is tapped. Either tapping means deletion, or tapping means bring up the edit screen. (The same problem exists on the “Saved Sessions” screen.)

7. **[H2-4 Consistency and standards] [Severity 2] [Found by A].** On the “Change Style” screen, selecting the plus icon in the top right corner brings up the same screen as tapping on Style 2 to edit the style. A plus icon generally (according to platform standards) refers to creating a new item, not editing an existing one. Either the icon should be changed or its functionality should be to create a new style.
8. **[H2-4 Consistency and Standards] [Severity 2] [Found by C].** On the edit style page the delete button is on the top right whereas on the view past session page the delete button is on the bottom left. For consistencies state the delete button should stay in the top right.
9. **[H2-4 Consistency and Standards] [Severity 3] [Found by B].** It is unclear why the word “good” is bolded, while incredibly is not. Define a clear set of rules for why certain words are bolded, and convey those rules to the user.
10. **[H2-4 Consistency and Standards] [Severity 2] [Found by C].** In order to navigate back the user needs to click an ‘X’ button on the top left. While the location is traditional and intuitive, the more intuitive symbol would be a back arrow to symbolize going back as opposed to exiting or canceling, as an ‘X’ would imply.
11. **[H2-5 Error Prevention] [Severity 3] [Found by B].** In the “Converse” flow, the x button in the middle of the screen is in a location that would suggest central functionality. A user might accidentally click on this button when looking at the other person’s message, or might not understand that this button is actually an exit button due to its location on the screen. Moving this exit button to a corner would deprioritize it in the flow.
12. **[H2-6 Recognition Rather than Recall] [Severity 4] [Found by B].** In the “Converse” flow, if a user is typing, how might that user determine size and font of text? This seems like a potentially complicated flow, but this functionality is suggested in your prototype. It might make sense to remove dynamic sizing from supported functionality in the “Converse” section.
13. **[H2-6 Recognition Rather Than Recall] [H2-4 Consistency and Standards] [Severity 2] [Found by B].** In the “Caption” flow, pause is a strange button to use to end speech recognition. A user might not understand what this button means in a recording context, as it is typically associated with consumable content. The end record button should probably be a “stop” button.
14. **[H2-7 Flexibility and efficiency of use] [Severity 3] [Found by A].** The process for changing which style is currently selected seems complicated and confusing; I couldn’t figure out how to do it. On the “Change Style” screen, the current style should be clearly marked (I see that “Style 2” is in larger font, but it’s unclear whether it’s large because it’s selected or large because the style has a larger font size) and there should be a quick one-tap method of selecting a different style.
15. **[H2-7 Flexibility and efficiency of use] [H2-8 Aesthetic and minimalist design] [Severity 4] [Found by A, C].** The Converse split-screen does not seem to be a very efficient way of conducting a two-way conversation under many circumstances. The only application where this makes sense is if the phone is sitting on a flat surface and the two users are sitting across from each other. Another likely scenario is that the phone is being passed back and forth between people, in which case they would need to constantly rotate the phone 180 degrees between messages. There should be a way to switch between split-screen and one display depending on the user’s current needs.
16. **[H2-7 Flexibility and Efficiency of Use] [Severity 3] [Found by B, C].** In the “Converse” flow, it might be more natural for some users to use audio than typing. It is potentially time consuming for

a user to type, and would be difficult for a user to specify text size and boldness using a keyboard. Could audio be added as a viable input for the “Converse” flow?

17. **[H2-7 Flexibility and Ease of Use] [Severity 3] [Found by B].** In the “Plugin” flow, the box which is used to select style seems too small for many applications. If a user wanted to add styling to a long word like “supercalifragilisticexpialidocious”, it would be impossible to view the word as it would appear in the comment box. It might make sense to expand the box to more realistically reflect text style.
18. **[H2-8 Aesthetic and Minimalist Design] [Severity 4] [Found by A, B].** It is not immediately clear what the “Change Style” functionality accomplishes. Does it change the general appearance of the app? The appearance of text in captions? The appearance of text in conversations? More than that, it is unclear why changing style in any of these areas would be particularly important. It might make sense to remove the “Change Style” button, or to make the functionality of changing text style more central to app purpose.
19. **[H2-8 Aesthetic and Minimalist Design] [Severity 4] [Found by B].** It is unclear what the real functional difference between the “Caption” and “Converse” flows are. It seems that caption is audio-based and one sided, whereas converse is written and two sided. This distinction, though, seems semi-arbitrary--why couldn't converse use audio rather than text?--and it's not immediately clear why both flows are necessary. It might make sense to mesh both flows, or differentiate them more completely.
20. **[H2-8 Aesthetic and minimalist design] [Severity 1] [Found by C].** The button sizing makes the priority of buttons seem a bit skewed. The “change style” button is larger than the “View Saved Sessions”. I would imagine that changing style is not something that would regularly happen while on the other hand viewing saved sessions would be far more popular. Thus the viewing saved sessions option should be prioritized over changing style.
21. **[H2-9 Help Users Recognize, Diagnose, and Recover From Errors] [Severity 4] [Found by B].** In the “Caption” flow, if the app incorrectly parses a users’ audio, it is unclear how the user would delete that audio recording or start over in an easy and accessible way. There should be an easily accessible discard button on the Caption page.
22. **[H2-10 Help and documentation] [Severity 2] [Found by A, C].** The help display includes documentation for the iMessage extension, but it is unclear how to enable this extension and whether it is accessible from the app itself. Either this information should be included in help (“Enable the extension by accessing your device’s settings”) or there should be a clear way to enable the extension from the app’s home screen.
23. **[H2-10 Help and Documentation] [Severity 2] [Found by B].** In the “Caption” flow, it is not clear what exactly different text sizes mean. Are the most emphasized words bigger? Is word size a sliding scale with volume? Are there two, three, four, or infinite possible word sizes? Define a clear set of rules to convey how Is text size completely variable? Are there only 3 possible sizes? Provide a tutorial to a user that briefly describes why bigger words are bigger.

3. Summary of Violations

Category	# Viol. (sev 0)	# Viol. (sev 1)	# Viol. (sev 2)	# Viol. (sev 3)	# Viol. (sev 4)	# Viol. (total)
[H2-1: Visibility of Status]	0	0	0	1	1	2

[H2-2: Match Sys & World]	0	0	1	0	0	1
[H2-3: User Control]	0	0	2	0	0	2
[H2-4: Consistency]	0	0	3	2	0	5
[H2-5: Error Prevention]	0	0	0	1	0	1
[H2-6: Recognition not Recall]	0	0	1	0	1	2
[H2-7: Efficiency of Use]	0	0	0	3	1	4
[H2-8: Minimalist Design]	0	1	0	0	2	3
[H2-9: Help Users with Errors]	0	0	0	0	1	1
[H2-10: Documentation]	0	0	2	0	0	2
Total Violations by Severity	0	1	9	7	6	23
Note: check your answer for the green box by making sure the sum of the last column is equal to the sum of the last row (not including the green box)						

4. Evaluation Statistics

Severity / Evaluator	Evaluator A	Evaluator B	Evaluator C
sev. 0	0	0	0
sev. 1	0	0	1
sev. 2	4	4	3
sev. 3	3	6	3
sev. 4	3	4	2
total (sev. 3 & 4)	6	10	5
total (all severity levels)	10	14	9

5. Summary Recommendations

Overall, Polytone provides an easy to use interface for users who want to infuse their text with emotional undertones. We all loved the aesthetics and simplicity of the app; for the most part, the controls were intuitive and the design was visually pleasing. Nearly everything the user wants to do is one click away which makes things simple and intuitive. We found most aspects of the app easy to use--it was easy to load the “Converse” and “Caption” flows, buttons in all flows were large, and it was generally easy to navigate from one flow to the next. The functionality of the app was easy to grasp without relying on help messages and documentation. The app also provided users with a wide range of functionality. The ability to style voice and audio in one and two-way interactive modes gives users a large amount of flexibility.

One of the biggest pain points with this app was the 1-on-1 Converse feature. To our understanding, the phone would be used by both users simultaneously to talk to one another. We think this could potentially be unwieldy and slow down conversation instead of making it easier. The functionality for this feature

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should be reworked or provide more customization, so that it can be used in a wider variety of scenarios than the single case of two people sitting across a table from each other.

The Polytone app could be improved by making the user interface more intuitive and in enhancing the utility of each flow. Currently, the Polytone app often uses UI flows which do not conform with general design standards. The “X” button in the “Converse” flow, for example, is in the middle of the screen. Additionally, the save functionality in the “Caption” flow is only accessible via the “X” button. These unusual UI flows create avoidable confusion for the user. The Polytone app also does not make full use of the potential of its three tasks. The “Converse” flow does not, for example, currently allow audio input. Additionally, the style box in the “Plugin” flow seems too small to be useful for all situations.