

# **Signal Messenger Heuristic Evaluation and Cognitive Walkthrough Report**

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By: Ike Conner, Raegan Davis, Emma Ebeling, Sam Poynter

## **Background Information:**

Signal is an encrypted messaging app that is downloadable on IOS and Android devices. It is free and open source, ensuring that the users in each messaging channel are the only ones to have access to whatever is being sent. Signal includes generic communication, including messaging, voice calling, and video chatting. It also includes various other features like stories, voice memos, disappearing messages, and more. With zero interference from the outside world, nothing is tracked, no data is collected, and no ads are ever displayed. Signal itself can't even access the content of users' messages.

Signal was originally developed by the start-up company Open Whisper Systems and is now maintained by the nonprofit Signal Foundation. The app uses the Signal Protocol, which is an encryption standard started by Signal, but is now used by other platforms to keep user data protected. Because the Signal Foundation is a nonprofit organization that uses an open-source model, they are reliant upon community developers and donations to consistently upkeep the platform.

The users of Signal are people looking for end-to-end encrypted communication. Signal users are likely looking for a free platform with easy, free international communication. They also are likely looking for completely private communication, with assurance that there is no data tracking or any sort of interference from external sources. They also might be looking for direct communication with people without risking sharing their phone number. These users likely value privacy and security and are highly conscious of what data they share. Signal aims to provide its users with a well-rounded and private social media experience.

Signal's commitment to user privacy and data security makes it not only appealing to everyday users, but also journalists and activists who need to communicate safely without fear of surveillance or data breaches. Before Signal, there were the apps TextSecure and RedPhone that were focused on helping users under repressive regimes. These apps were eventually absorbed together to make Signal, and as such, it is still a popular option for those impacted by censorship and monitoring of personal data. Additionally, the open-source nature of Signal allows for easy audits of its code, ensuring there are no hidden security vulnerabilities. Unlike other messaging apps that may store metadata and personal information of the users, Signal minimizes data retention by only storing the date a user created their account and the last time they were active. This data is really only kept to ensure that accounts are still in use, as they delete accounts after a certain amount of inactivity.

## Executive Summary:

Our team conducted an evaluation of the mobile application Signal. Through analyzation methods such as Heuristic Evaluation and Cognitive Walkthrough, we found various usability and functionality issues that, if addressed, could significantly improve user experience.

### Major Issues:

1. **Unreliable Notification System:** After a thorough review of the Signal application and its features, we noticed that the app does not push call notifications through to the receiver, unless the receiver is currently using the app, or has the app open on their device, severely impacting the app's core communication functionality. We noticed that although Signal allows users to personalize their text notifications, giving them the ability to toggle the "Play While App is Open" button on and off, there is no button that allows them to personalize their ability to receive calls when the app is open or closed. While we realize the app favors privacy, and this may be a feature that some users appreciate, we recommend adding another toggle that allows them to choose whether or not they would like to receive phone calls while off the app. This solution is ideal, as it maintains the app's commitment to privacy while enhancing its user experience and communication functionality for those who desire more traditional calling capabilities.
2. **Limited User Privacy Controls:** Upon further review of the Signal app and its functions, we found that the app's limited privacy controls pose a significant user experience concern. Upon opening the app, on the sign-up screen, the user presented with a pop-up prompting the user to select their preferred privacy controls. The user is asked "Who Can Find You with Your Number?" and is only offered two choices: everyone or no one. This approach is not considered to be user-friendly, as it does not account for more nuanced privacy needs. For example, a user may want closer friends to be able to find them within the app, but exclude broader contacts, as to eliminate harassment or exposure from unknown individuals. A solution to this issue would be to allow users to select specific contacts they would like to have the ability to find them, or choose contacts they would not like to be able to find, similar to the pop-up that occurs when users attempt to post a story. Offering this more tailored approach enhances both the user's trust in the application and their satisfaction while using the app.
3. **Inconsistencies:** The app also has an issue with a few inconsistencies regarding menu options. For example, depending on which of the 3 main pages the user is on, clicking on the profile icon in the top left corner will present the user with different sub menu options. This can be confusing for most users, as clicking on the profile icon usually does not entail different options depending on the page. A solution for this would be to provide a dropdown menu button on each page, which would be more intuitive for the user than clicking on the profile icon. In addition to this, there are a few inconsistencies regarding adding someone to the contact list. Even after adding someone to the contact list within the app, when sending a new message to someone, the recipient must accept a message request first before being able to receive any messages, despite being in the contact list. A simple fix for this would be to make sure that when someone is in the contact list, there are no additional barriers to sending a message.

## Usability Report:

The Signal Messaging app came with a number of usability issues. When attempting to call another user of the app, the user on the receiving end will not receive notification of the call, unless they already have the app opened on their device. This usability issue makes it difficult to get in contact with someone, which could be dangerous in the case of an emergency. A simple fix for this would be to have the call go through as a push notification, similar to how Discord, Whatsapp, and other messages do, to ensure that the recipient properly receives the call. If the user desires to add a new contact, the user must first navigate to the new message screen, and add the contact from there, and send a message. The application should include a way to add a new contact without having to send a message first. On each individual page of the app, clicking on the profile icon in the top left corner will present a different list of options, depending on the page you are on. While this probably made sense to the developers during testing, it is actually quite confusing to the average user of the product. Clicking the same button usually does not entail different results, especially if the button appears across all pages, and in the same location. Having a 3 dots or 3 lines menu button on each page would most likely solve this confusion, as clicking on the profile icon usually does not mean more options for that specific page in most apps.

In order to find these issues within the Signal app interface, we used both a heuristic evaluation and cognitive walkthroughs. Both of these methods are effective ways to evaluate user interfaces, however they differ in focus and approach. Heuristic evaluations focus on established design principles called heuristics and allow for problems to be evaluated from an expert's point of view. Because of this, we were able to test different parts of the app to see if it matched our understanding of what should and should not be present. On the other hand, cognitive walkthroughs are more focused on how easy it would be for a new user to operate the application. This is done through a focus on specific tasks that a new user would go through, and considering whether the interface effectively supports the user's goals and actions. This allows for us to test for specific tasks, and to evaluate if each step of that task is intuitive, making it more focused on the experience rather than the design. These two methods gave us a few similar insights due to interface errors discovered in the cognitive walkthrough. These were apparent in the walkthrough focused on adding a contact through new messages, as we found there to be a nonworking search bar and lack of feedback when adding a new contact. Outside of these findings, most of the problems we discovered were different as the heuristic evaluations gave us interfacing errors while the cognitive walkthroughs revealed errors in providing intuitive steps to complete a task.

## Appendix A

### Combined Heuristic Evaluation

ID#	Heuristic	Description	Severity
EE1, RD1	Visibility of System	<p>Location: “Get Started” section upon opening the app.</p> <p>How Violated: The “get started” section boxes overlap the “get started” header, making it not fully visible.</p> <p>Possible Fix: Elongate the page and move the boxes down, or move the header up.</p>	1
EE2	Match between system and real world, consistency and standards	<p>Location: “Get Started” section at the bottom of the main messages page after the “Invite Friends” button is clicked.</p> <p>How Violated: Clicking “Invite Friends” opens a list of contacts the user has already allowed access to. “Invite Friends” should open a list of all contacts to invite to the app.</p> <p>Possible Fix: Make a list of all phone contacts pop up rather than the in-app contacts.</p>	3
EE3	Help users recognize, diagnose, and recover from errors.	<p>Location: Upon first startup after the app is downloaded.</p> <p>How Violated: When sending a verification phone to the number the user wants to register, there is no “resend code” option if it doesn’t work initially. To get a new code, you have to click “wrong number” to go back a step.</p> <p>Possible Fix: Add a “resend code” option that rests at the bottom or pops up after a few seconds of inactivity.</p>	3
EE4	User Control and Freedom	<p>Location: Upon first startup after the app is downloaded.</p> <p>How Violated: When the app is first being set up there is no way to move back a page if you decide to change something or if something is wrong.</p> <p>Possible Fix: Add a back button in the upper left.</p>	3

EE5	Recognition rather than recall/efficiency of use	<p>Location: General/ main messaging screen</p> <p>How Violated: There is no clear indication of how or where to add new contacts- a key feature of the app. You have to navigate to the “new message” screen in the upper left where there is a “add new contacts” prompt. This is unclear and not the right spot.</p> <p>Possible Fix: Add a “new contacts” button in the header and another access point in the settings window and call window.</p>	3
EE6	Consistency and standards	<p>Location: Main message, call, and story pages when the profile/account icon in the upper left is clicked.</p> <p>How Violated: Each of the three main pages have different options when the profile/account icon is clicked. This is not a clear or good design choice.</p> <p>Possible Fix: Add a drop down/filter menu in the header or footer that the user can access on each page and make the profile/account link straight to the settings page, or make the options in the dropdown menu under the profile universally applicable to each page.</p>	1
EE7	Consistency and Standards	<p>Location: General Layout</p> <p>How Violated: Typically contact apps like this have the call option to the left of the messaging option.</p> <p>Possible Fix: Move the messaging icon to the middle of the footer and but the call icon to the left.</p>	0
EE8	User Control and Freedom	<p>Location: Upon initial startup after the setup process is complete.</p> <p>How Violated: There is no tutorial or basic walkthrough of the app, just the “get started” section.</p> <p>Possible Fix: add a brief tutorial or walk-through pop-ups that tell new users what each button is for, what buttons lead where, and where key features are located.</p>	3

EE9, SP2	Consistency and Standards, Flexibility and Ease of Use	<p>Location: Main message page.</p> <p>How Violated: Swiping down usually refreshes a page, but pulling down at the top of the page here filters the messages by unread. Clicking the profile icon and pressing the “filter by unread” does the same. There is no indicator to new users this is a feature, but it’s not hard to find.</p> <p>Possible Fix: Add a brief pop-up tooltip that tells new users that this function exists; or remove this function and make it refresh the page like typical applications, and keep the “filter” button elsewhere.</p>	2
EE10	Consistency and standards, user control,	<p>Location: When a new group chat is created.</p> <p>How Violated: Users added to a new group chat are not informed that it exists until the creator sends a message. If the creator is trying to connect two people who do not have each other as contacts on the app, then this will present problems, especially if the other users don’t know that the creator has to send a message first.</p> <p>Possible Fix: Alert all users when they are added to a group.</p>	4
RD 4, IC 5, EE11	Visibility of System Status	<p>Location: When calling or receiving a call.</p> <p>How Violated: Calls don’t go through unless the app is open on both or all recipients phones. It does not ring if the app is not open. There is no indication in the app that this is how this happens or that this is supposed to happen.</p> <p>Possible Fix: Tell users in a pop-up/tutorial that in order to make calls both users must be in the app, or allow the app access to create/manage calls so the app can ring when a call is made, even when both users aren’t on the app.</p>	4
EE12	Visibility of System Status	<p>Location: After uploading a story, on the main story page.</p> <p>How it is violated: After uploading a story, there is little indication of when it is uploading vs when it is uploaded. When uploading it says “sending” in small text below the story title, and then “now” when it is uploaded.</p> <p>Possible Fix: Change “sending” to uploading and “now” to “uploaded.” Tint the story preview to the right and add a loading symbol above it, remove the loading symbol and the tint when it is uploaded.</p>	1

SP1, IC2	User Control and Freedom	<p>Location: “Who can find you with your number?” page</p> <p>How violated: Only gives the user an option to have either everybody or nobody find you with your number without an in-between option.</p> <p>Possible fix: Allow users to select only certain contacts to be able to find the user with their number.</p>	2
SP3	User control and freedom	<p>Location: Message deletion</p> <p>How Violated: Users can delete messages for themselves, but it is unclear whether the message is deleted for both the sender and recipient.</p> <p>Possible Fix: Label deletion options as “Delete for me” and “Delete for everyone” to avoid confusion.</p>	2
SP5	Consistency and standards	<p>Location: Call interface</p> <p>How Violated: The call screen does not match the standards used by WhatsApp and Zoom</p> <p>Possible Fix: Swap the mute and end-call buttons, as well as the audio and video buttons to match other popular calling apps.</p>	1
SP6	Help and documentation	<p>Location: Advanced privacy settings</p> <p>How Violated: Not every advanced privacy feature is explained, there is even a “Censorship Circumnavigation” button that you cannot turn on because “you are already connected to the Signal service” however, it does not explain this in detail.</p> <p>Possible Fix: Have documentation for all of the advanced privacy features, this is only present in the “Sealed Sender” section</p>	2
SP7, IC4	Consistency and standards	<p>Location: Messages screen</p> <p>How Violated: When a user in your contacts sends you a message, it makes you accept the message request despite them being in your contacts already</p> <p>Possible Fix: Allow contacts to message you based on being in your contacts. If you do not want to allow messages from someone you can do this in settings.</p>	1
IC1	Consistency and Standards	<p>Location: Contact List</p> <p>How Violated: Signal contact list is not consistent with actual phone contact list, does not show all contacts.</p> <p>Possible Fix: Make sure that the app is correctly syncing with the phone’s local contact list.</p>	3



IC3	Error Prevention	<p>Location: Chat screen</p> <p>How Violated: When added to a group chat by someone in my contacts, the message said “added to group by Unknown” despite the person being in my contacts.</p> <p>Possible Fix: Make sure that contact names are being displayed correctly to prevent confusion.</p>	2
RD2	Visibility of System Status	<p>Location: Stories Page</p> <p>How Violated: Stories don’t always show up for users, even when they’re shared openly</p> <p>Possible Fix: Fix bugs within system that allow users to see stories they are allowed to watch</p>	3
RD3	Consistency and Standards	<p>Location: General Layout</p> <p>How Violated: Nonexistent “Contacts” page requires users to chat with one another if they’d like to view Verify Numbers or other information</p> <p>Possible Fix: Add a contact page in settings or in another section of the application.</p>	3
RD5	Consistency and Standards	<p>Location: Chats Page</p> <p>How Violated: Users msu click and hold on their avatar/icon in the top left to be allowed to select chats and groups on the home page.</p> <p>Possible Fix: Add a button (such as a check mark or a button that says select) in the top navigation bar</p>	1
RD6	Consistency and Standards	<p>Location: Stories Page</p> <p>How Violated: “skip” function exits story mode completely, instead of skipping ahead</p> <p>Possible Fix: Remove skip function or fix bugs</p>	3

## Appendix B

### Individual Heuristic Reports

**Sam Poynter:**

ID#	Heuristic	Description	Severity
SP1	User control and freedom	<p>Location: "Who can find you with your number?" page</p> <p>How Violated: Only gives the user an option to have either everybody or nobody find you with your number without an in between option.</p> <p>Possible Fix: Allow users to select only certain contacts to be able to find the user with their number.</p>	2
SP2	Recognition rather than recall	<p>Location: "Chats" page</p> <p>How Violated: In order to filter your messages to see which ones are unread, the user has to either click on their profile in the top left corner or swipe up on the existing chats. Neither of these are very intuitive, and I thought the swipe up would simply refresh the page.</p> <p>Possible Fix: Add a filter button that allows for the user to filter through their messages in various ways, not just through filtering by unread.</p>	2
SP3	User control and freedom	<p>Location: Message deletion</p> <p>How Violated: Users can delete messages for themselves, but it is unclear whether the message is deleted for both the sender and recipient.</p> <p>Possible Fix: Label deletion options as "Delete for me" and "Delete for everyone" to avoid confusion.</p>	2
SP4	Error prevention	<p>Location: "Notifications" section of settings</p> <p>How Violated: When a user clicks on "Re-register Push Notifications" it simply just tells the user that they have successfully re-registered for push notifications without providing further explanation.</p> <p>Possible Fix: Have this option use a button to re-register for push notifications and include a description of what exactly this does so the user knows if they want to or not. Also include the option to undo this.</p>	3

SP5	Consistency and standards	<p>Location: Call interface</p> <p>How Violated: The call screen does not match the standards used by WhatsApp and Zoom</p> <p>Possible Fix: Swap the mute and end-call buttons, as well as the audio and video buttons to match other popular calling apps.</p>	1
SP6	Help and documentation	<p>Location: Advanced privacy settings</p> <p>How Violated: Not every advanced privacy feature is explained, there is even a "Censorship Circumnavigation" button that you cannot turn on because "you are already connected to the Signal service" however, it does not explain this in detail.</p> <p>Possible Fix: Have documentation for all of the advanced privacy features, this is only present in the "Sealed Sender" section</p>	2
SP7	Consistency and standards	<p>Location: Messages screen</p> <p>How Violated: When a user in your contacts sends you a message, it makes you accept the message request despite them being in your contacts already</p> <p>Possible Fix: Allow contacts to message you based on being in your contacts. If you do not want to allow messages from someone you can do this in settings.</p>	1

### Ike Conner:

ID#	Heuristic	Description	Severity
IC1	Consistency and Standards	<p>Location: Contact List</p> <p>How Violated: Signal contact list is not consistent with actual phone contact list, does not show all contacts.</p> <p>Possible Fix: Make sure that the app is correctly syncing with the phone's local contact list.</p>	3
IC2	User control and freedom	<p>Location: Signup screen</p> <p>How Violated: In the option to be found by phone number, the only options are "everyone" or "no one," rather than being able to select specific contacts.</p> <p>Possible Fix: Enable the user to pick and choose specific contacts that they want to allow to search them up by phone number.</p>	2

IC3	Error Prevention	<p>Location: Chat screen</p> <p>How Violated: When added to a group chat by someone in my contacts, the message said “added to group by Unknown” despite the person being in my contacts.</p> <p>Possible Fix: Make sure that contact names are being displayed correctly to prevent confusion.</p>	2
IC4	Consistency and Standards	<p>Location: New message screen</p> <p>How Violated: When someone who is already in my contacts sent me a direct message within the app, I had to accept a “message request” first before I could see the messages.</p> <p>Possible Fix: Allow people in your contacts to send messages without having to send a request.</p>	2
IC5	Error Prevention	<p>Location: Incoming Call</p> <p>How Violated: Did not receive notification for incoming call from contact unless I was in the app.</p> <p>Possible Fix: Make sure calls come through as a push notification</p>	2

**Emma Ebeling:**

ID#	Heuristic	Description	Severity
EE1	Visibility	<p>Location: “Get Started” section upon opening the app.</p> <p>How Violated: The “get started” section boxes overlap the “get started” header, making it not fully visible.</p> <p>Possible Fix: Elongate the page and move the boxes down, or move the header up.</p>	1
EE2	Match between system and real world, consistency and standards	<p>Location: “Get Started” section at the bottom of the main messages page after the “Invite Friends” button is clicked.</p> <p>How Violated: Clicking “Invite Friends” opens a list of contacts the user has already allowed access to. “Invite Friends” should open a list of all contacts to invite to the app.</p> <p>Possible Fix: Make a list of all phone contacts pop up rather than the in-app contacts.</p>	3

EE3	Help users recognize, diagnose, and recover from errors.	<p>Location: Upon first startup after the app is downloaded.</p> <p>How Violated: When sending a verification phone to the number the user wants to register, there is no “resend code” option if it doesn’t work initially. To get a new code, you have to click “wrong number” to go back a step.</p> <p>Possible Fix: Add a “resend code” option that rests at the bottom or pops up after a few seconds of inactivity.</p>	3
EE4	User Control and Freedom	<p>Location: Upon first startup after the app is downloaded.</p> <p>How Violated: When the app is first being set up there is no way to move back a page if you decide to change something or if something is wrong.</p> <p>Possible Fix: Add a back button in the upper left.</p>	3
EE5	Recognition rather than recall/efficiency of use	<p>Location: General/ main messaging screen</p> <p>How Violated: There is no clear indication of how or where to add new contacts- a key feature of the app. You have to navigate to the “new message” screen in the upper left where there is a “add new contacts” prompt. This is unclear and not the right spot.</p> <p>Possible Fix: Add a “new contacts” button in the header and another access point in the settings window and call window.</p>	3
EE6	Consistency and standards	<p>Location: Main message, call, and story pages when the profile/account icon in the upper left is clicked.</p> <p>How Violated: Each of the three main pages have different options when the profile/account icon is clicked. This is not a clear or good design choice.</p> <p>Possible Fix: Add a drop down/filter menu in the header or footer that the user can access on each page and make the profile/account link straight to the settings page, or make the options in the dropdown menu under the profile universally applicable to each page.</p>	1
EE7	Consistency and Standards	<p>Location: General Layout</p> <p>How Violated: Typically contact apps like this have the call option to the left of the messaging option.</p> <p>Possible Fix: Move the messaging icon to the middle of the footer and put the call icon to the left.</p>	0

EE8	User Control and Freedom	<p>Location: Upon initial startup after the setup process is complete.</p> <p>How Violated: There is no tutorial or basic walkthrough of the app, just the “get started” section.</p> <p>Possible Fix: add a brief tutorial or walk-through pop-ups that tell new users what each button is for, what buttons lead where, and where key features are located.</p>	3
EE9	Consistency and Standards, Flexibility and Ease of Use	<p>Location: Main message page.</p> <p>How Violated: Swiping down usually refreshes a page, but pulling down at the top of the page here filters the messages by unread. Clicking the profile icon and pressing the “filter by unread” does the same. There is no indicator to new users this is a feature, but it’s not hard to find.</p> <p>Possible Fix: Add a brief pop-up tooltip that tells new users that this function exists; or remove this function and make it refresh the page like typical applications, and keep the “filter” button elsewhere.</p>	2
EE10	Consistency and standards, user control,	<p>Location: When a new group chat is created.</p> <p>How Violated: Users added to a new group chat are not informed that it exists until the creator sends a message. If the creator is trying to connect two people who do not have each other as contacts on the app, then this will present problems, especially if the other users don’t know that the creator has to send a message first.</p> <p>Possible Fix: Alert all users when they are added to a group.</p>	4
EE11	Visibility of System Status	<p>Location: When calling or receiving a call.</p> <p>How Violated: Calls don’t go through unless the app is open on both or all recipients phones. It does not ring if the app is not open. There is no indication in the app that this is how this happens or that this is supposed to happen.</p> <p>Possible Fix: Tell users in a pop-up/tutorial that in order to make calls both users must be in the app, or allow the app access to create/manage calls so the app can ring when a call is made, even when both users aren’t on the app.</p>	4

EE12	Visibility of System Status	<p>Location: After uploading a story, on the main story page.</p> <p>How it is violated: After uploading a story, there is little indication of when it is uploading vs when it is uploaded. When uploading it says “sending” in small text below the story title, and then “now” when it is uploaded.</p> <p>Possible Fix: Change “sending” to uploading and “now” to “uploaded.” Tint the story preview to the right and add a loading symbol above it, remove the loading symbol and the tint when it is uploaded.</p>	1
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### Raegan Davis:

ID#	Heuristic	Description	Severity
RD1	Visibility of System Status	<p>Location: The “Get Started” section of the application's home page</p> <p>How Violated: The boxes that make up the section “Get Started” overlap the title “Get Started”</p> <p>Possible Fix: Move the “Get Started” text up higher on the page.</p>	1
RD2	Visibility of System Status	<p>Location: Stories Page</p> <p>How Violated: Stories don't always show up for users, even when they're shared openly</p> <p>Possible Fix: Fix bugs within system that allow users to see stories they are allowed to watch</p>	3
RD3	Consistency and Standards	<p>Location: General Layout</p> <p>How Violated: Nonexistent “Contacts” page requires users to chat with one another if they'd like to view Verify Numbers or other information</p> <p>Possible Fix: Add a contact page in settings or in another section of the application.</p>	3
RD4	Visibility of System Status	<p>Location: General Usability</p> <p>How Violated: Notifications for calls don't go through unless the user receiving the call has the app open. App contains a “Play While App is Open” option for text notifications.</p> <p>Possible fix: Allow users to get notifications for calls, either by phone vibration or ring. Add a toggle for notifications/ring for calls option.</p>	3

RD5	Consistency and Standards	<p>Location: Chats Page</p> <p>How Violated: Users msu click and hold on their avatar/icon in the top left to be allowed to select chats and groups on the home page.</p> <p>Possible Fix: Add a button (such as a check mark or a button that says select) in the top navigation bar</p>	1
RD6	Consistency and Standards	<p>Location: Stories Page</p> <p>How Violated: "skip" function exits story mode completely, instead of skipping ahead</p> <p>Possible Fix: Remove skip function or fix bugs</p>	3



## Appendix C

### Cognitive Walkthroughs, Severity Ratings, and Action Sequences

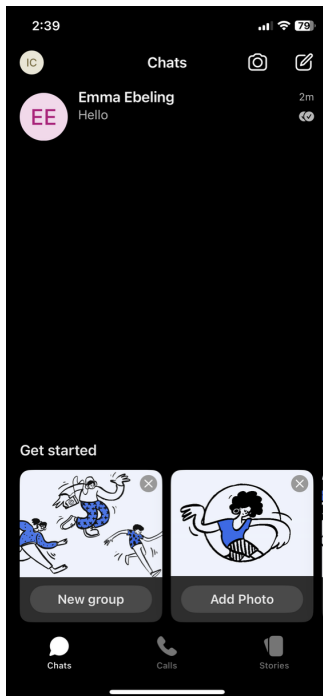
**Task:** Verifying Authenticity of Contacts

Step:	Success/Fail	Severity
Navigate to contact list	<ol style="list-style-type: none"> <li>1. Will the users try to achieve the right effect? Yes, by opening the app the user will be presented with the correct page.</li> <li>2. Will the user notice that the correct action is available? Yes, the contact/messaging page shows users a list of people they've spoken with or called on the app.</li> <li>3. Will the user associate the correct action with the effect they are trying to achieve? Yes, they will see a list of people they can find safety numbers for by navigating to this page.</li> <li>4. If the correct action is performed, will the user see that progress is being made toward the goal of the task? Most likely, aside from having a separate "Contacts" page, the "Chats" page does a good job of showing users the individuals they can find safety numbers for.</li> </ol>	0
Click on a Direct Message	<ol style="list-style-type: none"> <li>1. Will the users try to achieve the right effect? Yes.</li> <li>2. Will the user notice that the correct action is available? Yes, in most messaging apps, clicking on a person's name will open the messages with them, so it is intuitive.</li> <li>3. Will the user associate the correct action with the effect they are trying to achieve? Yes, if the user is attempting to open a direct message, the user will click on the direct message.</li> <li>4. If the correct action is performed, will the user see that progress is being made toward the goal of the task? Yes, if the direct message is clicked on, the chat will expand and show all messages, communicating to the user that the action lead to the desired result.</li> </ol>	0
Find Contact Information	<ol style="list-style-type: none"> <li>1. Will the users try to achieve the right effect? Yes.</li> <li>2. Will the user notice that the correct action is available? No, it is not clear that clicking on the person's name once you are within a direct message will expand more details.</li> <li>3. Will the user associate the correct action with the effect they are trying to achieve? No, they would most likely discover this feature on accident, because there is no icon or button that would imply that more options are available.</li> <li>4. If the correct action is performed, will the user see that</li> </ol>	3

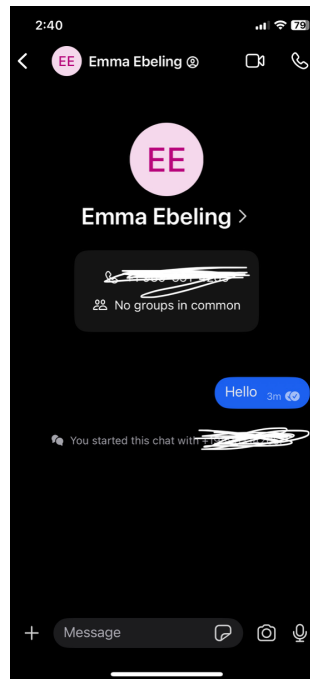
	<p>progress is being made toward the goal of the task? Yes, if the user clicks on the name in the direct message, they will notice that another page will open up, with more options available.</p>	
Navigate to Safety Number	<ol style="list-style-type: none"> <li>1. Will the users try to achieve the right effect? Yes, the user will be able to skim through the options available and see that "View Safety Number" is one of the features included on the new page.</li> <li>2. Will the user notice that the correct action is available? Yes, from the list of details, the user can see "View Safety Number" among the list.</li> <li>3. Will the user associate the correct action with the effect they are trying to achieve? Yes, once the user clicks on the name (at the top) of the individual they've chosen to view, the screen opens a list of settings and features the user can click, "View Safety Number" being one of them.</li> <li>4. If the correct action is performed, will the user see that progress is being made toward the goal of the task? Yes, because the screen changes to the new list of features, with the option "View Safety Number", the user will be able to see that they are making progress toward their goal.</li> </ol>	0

## Task 1 - Steps and Images:

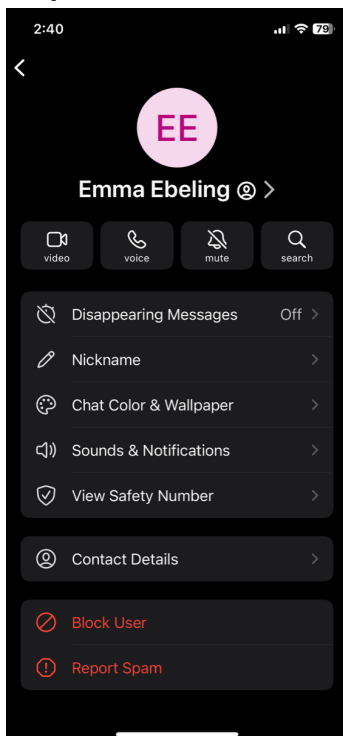
### Step 1: Navigate to contact list



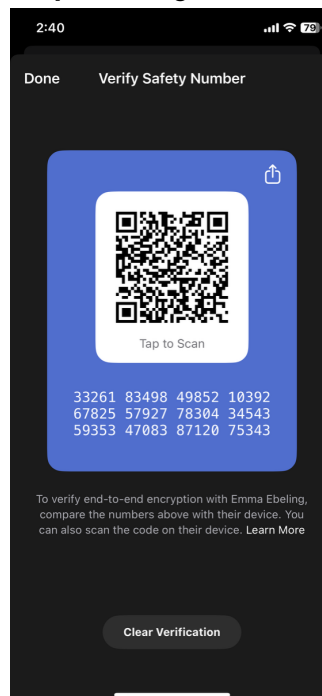
### Step 2: Click on direct message



### Step 3: Click on contact information



### Step 4: Navigate to safety number

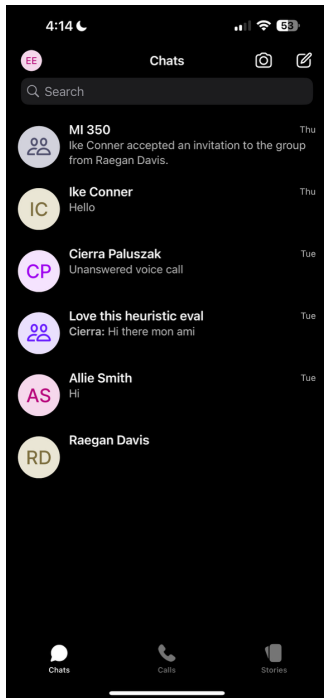


**Task:** Add a new contact through “New Messages.”

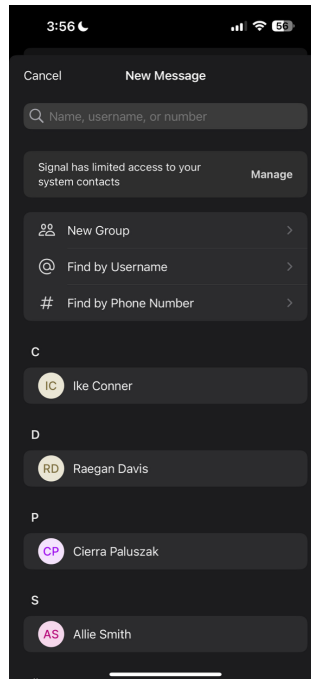
Step:	Success/Fail	Severity
Navigate to “New Messages”	<ol style="list-style-type: none"> <li>1. Will the users try to achieve the right effect? Yes, the symbol used to open the “new message” prompt is generally used across platforms to create a draft.</li> <li>2. Will the user notice that the correct action is available? Yes, it is visible and clear.</li> <li>3. Will the user associate the correct action with the effect they are trying to achieve? Yes, the page is titled correctly and</li> <li>4. If the correct action is performed, will the user see that progress is being made toward the goal of the task?</li> </ol>	0
Find contacts from the “New Messages” window.	<ol style="list-style-type: none"> <li>1. Will the users try to achieve the right effect? Yes, it is immediately visible at the top of the “new message” window in a text box related to “contacts.”</li> <li>2. Will the user notice that the correct action is available? Yes, it is properly titled and clearly interactable.</li> <li>3. Will the user associate the correct action with the effect they are trying to achieve? No, it is not generally surmisable that this will relocate to a window to add new contacts in the app.</li> <li>4. If the correct action is performed, will the user see that progress is being made toward the goal of the task? Yes, a new page is opened that directs them to the next step.</li> </ol>	2
Find desired contact using the search bar.	<ol style="list-style-type: none"> <li>1. Will the users try to achieve the right effect? No, the search bar freezes when in use.</li> <li>2. Will the user notice that the correct action is available?</li> <li>3. Will the user associate the correct action with the effect they are trying to achieve?</li> <li>4. If the correct action is performed, will the user see that progress is being made toward the goal of the task?</li> </ol>	4
Select and add the new contact.	<ol style="list-style-type: none"> <li>1. Will the users try to achieve the right effect? Yes, if not using the search bar. The list is clear and interactable.</li> <li>2. Will the user notice that the correct action is available? Yes, the buttons are observably interactable.</li> <li>3. Will the user associate the correct action with the effect they are trying to achieve?</li> <li>4. If the correct action is performed, will the user see that progress is being made toward the goal of the task? No, once clicking done there is no indication that the user’s action did anything or confirmation that the contacts were added. The window just closes.</li> </ol>	3

## Task 2 - Steps and Images:

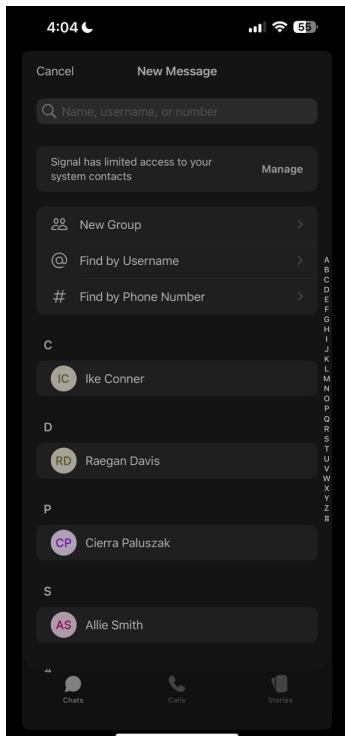
### Step 1: Navigate to “New Messages”



### Step 2: Find contacts from the “New Messages” window.



### Step 3: Find desired contact using the search bar.



### Step 4: Select and add the new contact.



**Group Photo**

