

Situation Analyser

**Reducing social anxiety in autistic individuals without
intellectual impairment with the aid of a mobile application**



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Preface

I have Asperger's Disorder and often experience social anxiety. This mobile application is a first start to a solution that makes dealing with this anxiety easier, not just for me, but for everyone with this problem. By developing this app and conducting the corresponding research, I hope to have contributed to this solution.

I want to thank everyone who participated in my research as a test subject, for their effort and suggestions. Without them, I would not have been able to finish this study.

My personal coach, Nadja Lavrijsen, and my friend, Arnout van den Berg, encouraged me to keep on going. My father, Raymond Verhaert, helped me with the structure and writing of this thesis.

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1. Introduction

You are late for a lecture. You arrive at the door and all these questions run through your head. Should you say something like “sorry for the interruption”? Will there be a seat left for you? Will there be people in the way for that seat, so that you have to ask them to move aside? Will the lecturer say something to you? Will he or she make a joke so that everyone laughs? Will they be mad at you? Is the lecture you are about to walk in to, even the right one? What if there was a room re-schedule? Will you immediately spot the person you want to sit next to, or do you have to search for them first? Will the door make a lot of noise? Will everyone look at you?

This is an example of what a person suffering from social anxiety may have to deal with.

Anxiety is one of the co-morbidities of Autism Spectrum Disorders (ASD), especially in Asperger’s Disorder (Tantam, 2000). Gillot et al. (2001), Bellini (2004) and Gillott and Standen (2007) found that individuals with (high-functioning) autism score higher on anxiety scales than neurotypical individuals.

Many people with High-Functioning Autism (HFA) are concerned with how other people perceive them and their skills, which makes them anxious. Social skills training can be a solution to this problem, because of the relation between empathy and social anxiety (Bellini, 2004). However, as described in the Diagnostic and Statistical Manuals for Mental Disorders, DSM-IV (American Psychiatric Association, 2000) and DSM-5 (American Psychiatric Association, 2013), people with autism are likely to have co-morbid disorders and symptoms. Apart from that, there can be an overlap between different groups of ASD, because most subgroups have one or more symptoms in common, but with different intensity (Bruin, 2012). These two problems make generalised treatment and training difficult.

Individuals with autism often do not have the coping skills to manage stress nor the ability to cognitively appraise situations they may find anxiety-provoking (Groden et al., 2006).

This application was developed with the aim to help individuals with HFA to analyse a stressful event that is expected to occur and to determine the main difficulties, so that a more selective and structured approach of the problem is available to them. I choose to research only people with normal to high intelligence, since this target group may benefit more from a mobile application with higher-level questions than people with intellectual impairment or mental retardation.

The research questions I will answer in this thesis are:

Can a mobile application reduce social anxiety in people with High-Functioning Autism (HFA)?

To answer this question, the following three sub-questions should be answered:

- What is the link between HFA and anxiety?
- Can an app help someone to imagine a situation beforehand?
- Is knowing what could provoke social anxiety, enough to prevent it?

I will try to answer the first sub-question by conducting a short literature study (chapter 2). The other two questions will be addressed by developing (chapter 3) and testing an Android application that asks questions about the aspects that are most anxiety provoking. Chapter 4 describes the evaluation study, in chapter 5 I present and try to explain the findings and chapter 6 answers the research questions. The difficulties I faced during this study and possible improvements and follow-up research are presented in chapter 7 and 8.

2. HFA And Anxiety

2.1. Autism

The Diagnostic and Statistical Manual of Mental Disorders (DSM) is an important manual in psychiatric diagnostics. Since autism is described differently in the fourth (American Psychiatric Association, 2000) and fifth edition (American Psychiatric Association, 2013) of the DSM, and terms from both editions are still used, the target group in this project will be described according to these two editions.

The target group is the group of individuals with **High-Functioning Autism** (HFA). In DSM-IV terms, these are people with Autistic Disorder or PDD-NOS with normal to high intelligence ($IQ > 70$), or Asperger's Disorder. When referring to the DSM-5, these are people with Autism Spectrum Disorder without intellectual impairment.

2.1.1. DSM-IV

Autistic Disorder, Asperger's Disorder and PDD-NOS are three pervasive developmental disorders (PDD) that are often grouped together as autism.

The criteria for **Autistic Disorder** (sometimes called Classical Autism or Kanner's Autism) are A) impairments in social interaction and communication and restricted repetitive and stereotyped patterns of behaviour, interests, and activities; B) delays or abnormal functioning with onset prior to age 3 years, of social interaction, language as used in social communication, and/or symbolic or imaginative play. Common associated features and disorders are Mental Retardation, variability of cognitive functioning (often strengths in areas of non-verbal abilities and weakness in verbal areas), behavioural symptoms (hyperactivity, short attention span, impulsivity, aggressiveness, self-injurious behaviours, temper tantrums), oversensitivity to sensory stimuli, and abnormalities in eating, sleeping, mood, affect and fear.

The criteria for **Asperger's Disorder** are similar: A) impairment in social interaction, B) restricted repetitive and stereotyped patterns of behaviour, interests, and activities, C) impairment in social, occupational, or other important areas of functioning, but there is D) no general delay in language, and E) no delay in cognitive development or in the development of age-appropriate self-help skills, adaptive behaviour (other than in social interaction), and curiosity about the environment in childhood. Common associated features and disorders are variability of cognitive functioning (often strengths in areas of verbal abilities and weakness in non-verbal areas), motor clumsiness and awkwardness, anxiety, ADHD and Depressive Disorders

PDD-NOS (Pervasive Developmental Disorder Not Otherwise Specified) is a category relating to an impairment in social interaction, and to an impairment in communication

or to a presence of stereotyped behaviour, interests, and activities, but the criteria for any other PDD are not met.

2.1.2. DSM-5

Autism Spectrum Disorder (also called ASD or autism) is a neurodevelopmental disorder and is referred to as a spectrum because manifestations of the disorder vary mainly depending on the severity of the autistic condition, developmental level, and chronological age. The diagnostic criteria for autism include A) a deficit in social communication and interaction, and B) restricted, repetitive patterns of behaviour, interests or activities. This disorder can be accompanied by intellectual and/or language impairment and has three different severity levels, based on the level of requiring support.

Common co-morbid disorders include ADHD, Developmental Coordination Disorder, anxiety and depression.

2.2. Anxiety

Anxiety is one of the co-morbidities of autism spectrum disorders, especially in Asperger's Disorder (Tantam, 2000). Gillot et al. (2001) found that children with High-Functioning Autism scored high on separation anxiety and obsessive-compulsive disorder, compared to children with specific language impairment and normally developing children. Bellini (2004) found that high-functioning autistic adolescents experience different anxieties, such as physiological arousal, social anxiety and separation anxiety and panic. Gillott and Standen (2007) found that adults with autism and intellectual disabilities score higher than non-autistic participants on the subscales of panic and agoraphobia, separation anxiety, obsessive-compulsive disorder, and generalised anxiety disorder. In other words, anxiety is common in people with autism.

Many individuals with autism are concerned with how other people perceive them and their skills, which makes them anxious. The ability to effectively modify his or her behaviour, based on non-verbal feedback from others, would likely promote more positive social interactions. The relation between empathy and social anxiety (Bellini, 2004) suggest that social skills training could be a solution to this problem. Better empathic skills may be associated with more effective emotional coping skills and an ability to modify behaviour based on feedback from others.

3. Situation Analyser App

About 70% of people with autism have at least one co-morbid mental disorder (American Psychiatric Association, 2013), which makes generalising treatment and training hard or ineffective. Therefore, I developed a tool that can help people with autism and social anxiety to cognitively appraise each individual (social) situation separately, if necessary.

The goal of the Situation Analyser is to become aware of a specific social situation (e.g. a meeting or happening) and to prepare for it by answering a series of questions about it. These questions are who-, where-, when-, how- and what-questions: Bruin (2012) argued that these are the situational aspects that are most important to autistic people, and that the question ‘Why?’ should be avoided.

The application I developed is for Android Honeycomb (version 3.0, API 11) and up. Most Android users (over 97%) have versions 4.0 or higher.

First, the application is described as it is encountered by the user. Next, the series of questions is presented. Finally, the more technical information about the code structure is discussed.

3.1. Walk-Through

Figure 3.1 shows a flow chart of the Situation Analyser app. The main screen (1) contains four buttons: **Resume**, **New**, **How-To** and **About**.

Resume This button takes the user to a list of questions (2.1b), as listed in chapter 3.2. The answers the user entered last time, are still present.

New The same as **Resume**, but the answers are reset (2.1a) after a confirmation (5).

How-To This section explains how to use the app and how to answer the questions (3).
This app is designed to analyse (social) situations by answering a few questions. You can fill in the app when you’re soon going to do something you are nervous about, or when you’re already in that situation.
If you do not know an answer, you’re unsure, or the ‘right’ answer is not listed, choose the answer that fits best. There is never one right answer and you can interpret the questions the way you want. For additional information or examples, tap on the question mark button while answering that question.

About This section describes me and this thesis. Also provides the user with an e-mail address for questions or suggestions (4).

This app was developed by Liza Verhaert as part of her Bachelor thesis. She studies Artificial Intelligence at the Radboud University in Nijmegen.

The answers you provide are private and accessible to no one except you.

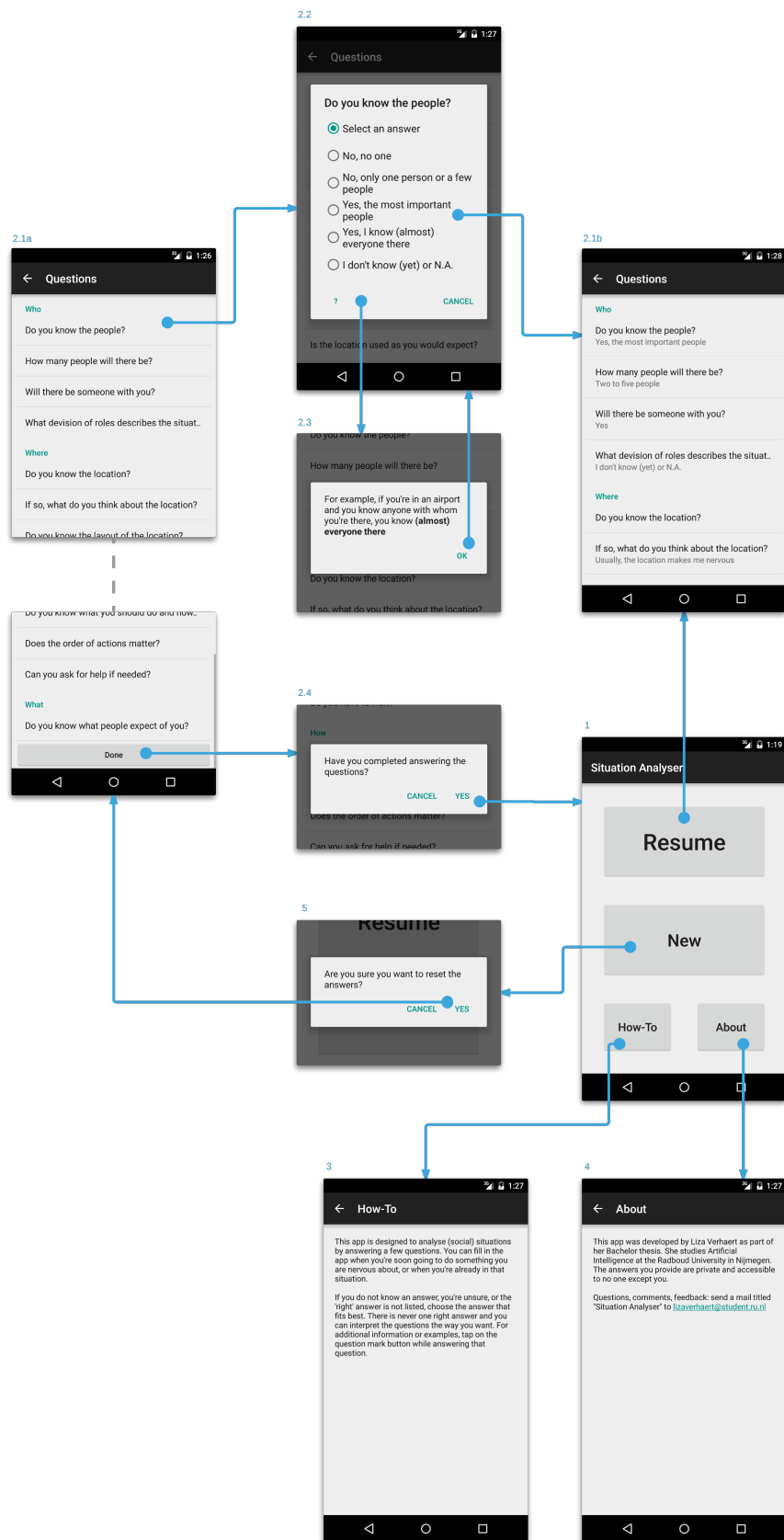


Figure 3.1.: Situation Analyser Flow Chart

Questions, comments, feedback: send a mail titled “Situation Analyser” to lizaverhaert@student.ru.nl

When the app is launched for the first time, the user is asked whether he or she wants to be taken to the **How-To** screen.

If a question is tapped in the questions part (2.1) of the app, a screen (2.2) that enables the user to select an answer pops up. If the help (?) button is selected, a pop-up giving extra information or assistance with answering the question (2.3), appears. **Cancel** takes the user back to the list of questions without changing the given answer. If, however, the user taps an answer, they are taken back to the questions list and the chosen answer is shown beneath the question (2.1b). If *Select an answer* is selected, there is no text beneath the question (see *Do you know the location?* in 2.1b in figure 3.1 as an example). This way, the progress is clearly visible. When the user is done answering the questions, he or she is taken back to the main screen (1), after a confirmation (2.4).

The app will be in Dutch if the phone’s main language is set to Dutch. Otherwise, it will be in English.

3.2. Questions

The questions are divided into five categories: **Who**, **Where**, **When**, **How** and **What**.

- Who** Do you know the people?
 - How many people will there be?
 - Will there be someone with you?
 - What division of roles describes the situation best?
- Where** Do you know the location?
 - If so, what do you think about the location?
 - Do you know the layout of the location?
 - Is the location used as you would expect?
 - Do you know the way to behave that is associated with this location?
- When** When does it start?
 - What happens if you’re late?
 - What happens if you miss it?
 - When will it end?
 - What happens when it ends later?
 - Do you have to wait?
- How** Can something change?
 - Do you know what you should do and how to do it?
 - Does the order of actions matter?
 - Can you ask for help if needed?
- What** Do you know what people expect of you?

Every question has 3 to 9 possible answers. A full overview of these answers and the extra helping info of each question can be found in appendix A.



Figure 3.2.: Situation Analyser Launcher Icon

3.3. Technical

This section contains information for people with some experience with programming an Android application.

3.3.1. Java

The application Situation Analyser is made with Android Studio. It is built up from 4 Activities (`AppCompatActivity` to be precise): `MainActivity` (1), `QuestionsActivity` (2), `HowToActivity` (3) and `AboutActivity` (4). Each Activity has a corresponding `.xml` file stating the layout. The content of `QuestionsActivity` is somewhat different, since this is actually a `PreferenceFragment`.

The `MainActivity` contains 4 buttons: two leading to the `QuestionsActivity` and the other two bring the user to the `AboutActivity` and `HowToActivity`. The latter two activities only contain text.

When the `MainActivity` is created (upon tapping the app launching icon), the application checks whether this is the first time it is launched. If so - or if the user selected *Later* the previous time - an `AlertDialog` appears, taking the user to the **How-To** section if accepted. Upon clicking *OK* or *Cancel*, the boolean "`first`" is set to `false`. If the user selects *Later*, the message will appear again the next time the application is launched.

Using a `PreferenceFragment` for the questions part makes it easy to save the chosen answers to the questions, since they can be saved as `SharedPreferences` to be updated and loaded easily. On resume of the `PreferenceFragment`, the summaries of all questions are updated. The same happens whenever an answer (or, in other words, a `SharedPreferences`) is changed. Upon selecting **New** in the `MainActivity`, all answers are reset to *Select an answer*.

Each category of questions in the `PreferenceFragment` is a `PreferenceGroup` containing one or more `ListPreferenceWithHelpButtons` (2.1 and 2.2), which, in its turn, is a subclass of `ListPreference`. Each of those instances represents one question. If the user taps the special help (?) button (a second button that makes this subclass different from its parent), an `AlertDialog` (2.3) appears.

The `Dialogs` that appear when clicking **New** on the main screen (5) or **Done** in the questions section (2.4), are `DialogFragments`.

All (documented) Java code is included in appendix C.2.

3.3.2. Resources

The `res` folder contains all resources needed for running the application. The launcher icon, strings and layout files can be found here. All `.xml` files in the `res` folder are included in appendix C.3.

The layout files of the Situation Analyser app are straightforward. Their code can be found in appendix C.3.1.

The values files of the app contain three parts: the `arrays`, `questions` and `strings`. The `arrays.xml` file combine all of the question keys (which are needed for updating and saving the answers or `SharedPreferences`), all questions, all explanations and the answers per questions into several arrays, to make it possible to loop through them. The `questions.xml` section contains an English and a Dutch version of all question strings, and strings with explanations and answers to each question. The section called `strings.xml` contains all other strings, Dutch and English, that can be found in the app. An example is the text in the **How-To** and **About** screens, but also most of the button's strings are located here.

The `questions.xml` file in the `xml` folder is significantly different from `questions.xml` in the values folder. It defines the contents of the `QuestionsActivity`, grouped together in the categories **Who**, **Where**, **When**, **How** and **What**.

Each `ListPreferenceWithHelpButton` has the question, a default answer, all possible answers, a key, a summary that is the same as the current value, and the title of the `Dialog` that appears upon selecting it (which is the question again). At the very bottom of the list, there is the **Done** button.

4. Methodology

Two rounds of tests were run. The response for the first test was very low ($N = 2$), response for the second was better ($N = 12$).

The subjects were provided with the APK file of the Situation Analyser app and instructions on how to install it. They were given the task to use the application every time they were going to experience a social situation which made them nervous. After set periods of time, they were asked to answer some questions about the use of the app.

The goal of these test is to find out whether the app can help someone to imagine a situation beforehand and to discover whether knowing what could provoke social anxiety is enough to prevent it.

4.1. First Test

4.1.1. Data Collection

The subjects were asked to answer questions I sent periodically via e-mail. After confirming their participation, the subjects received an e-mail with the APK file. I sent the questions one-and-a-half, three and four months after providing the subjects with the app.

The first set of questions was as follows.

1. How many days after you were sent the app, did you install it?
2. Did you use the app already?
No, go to question 3
Yes, go to question 4
3. Why not? (After answering this, go to question 6)
4. How many times?
5. Do you think it helped?
6. Do you miss any questions or answers you would like to see in the app?

The second set was comparable to the first.

1. Did you use the app since answering the previous e-mail with questions?
No, go to question 2
Yes, go to question 3
2. Why not (After answering this, go to question 5)
3. How many times since the previous questionnaire?
4. Do you think it helped?

5. Do you miss any questions or answers you would like to see in the app?

The last set was the same as the second, but with one extra question:

6. Would you install Situation Analyser if it were available in the Play Store? Why (not)?

The answers the subjects gave to these questions will be discussed in chapter 5.1. The improvements they suggested can be found in chapter 8.1.1.

4.1.2. Subjects

The app is first tested on two brothers with HFA. Subject 1 is 28 years old and diagnosed with HFA. Subject 2 is 24 years old and diagnosed with PDD-NOS. Both subjects are friends.

In total, eight subjects participated in the research, but only these two responded to the e-mailed questionnaires. The other six participants were acquired by contacting a housing initiative for university or university of applied sciences students with ASD, called Stumass.

This test started around September 2015.

4.2. Second Test

4.2.1. Data Collection

The subjects were asked to answer a questionnaire I sent via e-mail, every two weeks over a period of approximately two months. After confirming their participation, the subjects received an e-mail with the APK file.

The participants were instructed to answer the questionnaire each time within two days. If there was no response, I kept reminding them.

The first set of questions was as follows.

1. When did you install the app?
2. Did you use the app already? If yes, how many times? If no, why not?
3. Answer, for every time you used the app, the following questions with a value between 1 and 5:
 - a) How easy was it to answer the questions? (1 = “very hard” to 5 = “very easy”)
 - b) Did the questions fit the situation? (1 = “not at all” to 5 = “very well”)
 - c) Did you get a better idea of the situation? (1 = “not at all” to 5 = “absolutely”)
 - d) How much did your stress level go up or down after filling in the app? (1 = “certainly up” to 5 = “certainly down”)
4. Did you gain any new ideas on how to lower your stress level? If yes, which?

5. Do you miss any questions, answers or functions you would like to see in the app?
If yes, which?

The second and third set of questions were similar.

1. Did you use the app since last time? If yes, how many times? If no, why not?
2. Answer, for every time you used the app (since last time you answered a set of questions), the following questions with a value between 1 and 5:
 - a) How easy was it to answer the questions? (1 = “very hard” to 5 = “very easy”)
 - b) Did the questions fit the situation? (1 = “not at all” to 5 = “very well”)
 - c) Did you get a better idea of the situation? (1 = “certainly not” to 5 = “certainly”)
 - d) How much did you stress level go up or down after filling in the app? (1 = “certainly up” to 5 = “certainly down”)
3. Did you gain any new ideas on how to lower your stress level? If yes, which?
4. Do you miss any questions, answers or functions you would like to see in the app?
If yes, which?

The last list of questions was the same as the previous two, with the addition of some questions.

5. Would you continue using this app?
6. Do you have the idea that you’d look differently at a situation than without use of the app? If yes, explain.
7. If you wouldn’t use the app anymore, would you look differently at a situation than you did before?
8. Do you have any other suggestions/remarks/feedback?

Questions 1, 2 and 3 (2, 3 and 4 in the first set of questions) and 5 and their answers are discussed in chapter 5.2. The suggestions subjects made to improve the app (the answers to questions 4 (question 3 in the first set) and 8) can be found in chapter 8.1.2. The installation dates of the app and answers to the questions 6 and 7 are in appendix B.

4.2.2. Subjects

In the second run, the app was tested on four subjects with HFA and eight neurotypical people. The autistic subjects are a 15 year-old and a 24 year-old female, and a 25 and a 30 year-old male. Table 4.1 lists gender, age and HFA diagnosis of all participants.

After the low response of the first test, I decided to ask friends and family and keep asking for response after two days had passed. All twelve participants answered the questionnaires.

This test started around February 2016.

Table 4.1.: Gender and age of participants

Subject	Gender	Age	HFA
1	female	15	yes
2	female	24	yes
3	male	25	yes
4	male	30	yes
5	female	21	no
6	female	23	no
7	female	53	no
8	male	24	no
9	male	25	no
10	male	25	no
11	male	25	no
12	male	27	no

5. Results

5.1. First Test

Both subjects installed the app within a day of being sent the APK file.

Subject 1

Subject 1 used the app twice in the first 45 days, afterwards not any more. He indicated that the reasons not to use the app were that he didn't encounter any applicable situations or didn't use it significantly regular to remember it when he did. He also indicated that when he is stressed about an upcoming situation, he often already knows the details of it, so he doesn't benefit from using the app.

He will not be using the app any more after the testing period ends, but advises it to anyone who has trouble overseeing a situation.

Subject 2

Subject 2 used the app about eight times, evenly distributed over the testing period of four months. At first, he stated that he found the app useful for preparing for the situation to come, but that his stress level didn't go down. Later on, however, he even gained some new ideas for making the situation easier (for example, finding out more about the situation or trying to find someone to go with him for support), and found that filling in the app lowered his stress and offered a birds eye view of the situation. He finds the organisation of the application and the fact that the same questions can be answered every time, very practical.

Although he probably wouldn't be interested in the app if encountering it in the Play Store, subject 2 will use the application now that he knows that it works for him.

Table 5.1.: Gradings

Subject																		
1	Period	1	4															
	Ease	5	4															
	Fitting	4	3															
	Clarity	4	5															
	Stress	5	3															
2	Period	1	1	1	1	2	3	3										
	Ease	4	4	5	5	4	5	4										
	Fitting	4	5	4	5	3	4	4										
	Clarity	3	4	4	5	5	4	5										
	Stress	3	4	4	4	5	5	5										
3	Period	1																
	Ease	4																
	Fitting	2																
	Clarity	1																
	Stress	3																
4	Period	1	2															
	Ease	5	5															
	Fitting	4	5															
	Clarity	4	4															
	Stress	4	4															
5	Period	1	3															
	Ease	4	2															
	Fitting	3	3															
	Clarity	3	3															
	Stress	4	3															
6	Period	1	2															
	Ease	4	4															
	Fitting	3	4															
	Clarity	3	3															
	Stress	3	3															
7	Period	1	1	1	2	4												
	Ease	5	5	5	5	5												
	Fitting	5	5	3	3	3												
	Clarity	3	3	3	4	2												
	Stress	4	4	4	4	3												
8	Period	1	2															
	Ease	5	5															
	Fitting	4	3															
	Clarity	3	4															
	Stress	3	3															
9	Period	1	1	1	2	2	2	2	2	2	2	2	2	3	4	4	4	4
	Ease	2	4	3	4	5	4	5	5	4	4	4	3	2	4	2	4	5
	Fitting	5	2	3	5	2	4	3	3	3	5	5	5	3	5	5	4	1
	Clarity	4	3	2	4	3	3	4	5	5	4	3	4	2	1	3	4	1
	Stress	2	3	4	3	5	4	3	5	5	2	2	5	2	2	3	5	5
10	Period	1	1	2	4													
	Ease	4	4	4	5													
	Fitting	4	4	3	4													
	Clarity	5	5	5	4													
	Stress	4	4	3	3													
11	Period	1	3	3	4													
	Ease	5	5	5	4													
	Fitting	2	3	4	3													
	Clarity	1	3	3	3													
	Stress	3	3	3	3													
12	Period	1	1	1	1	2	3	3	4	4								
	Ease	5	5	5	5	4	5	5	5	5								
	Fitting	4	4	4	3	5	4	3	3	3								
	Clarity	5	4	3	5	2	3	3	4	4								
	Stress	3	3	4	5	2	2	4	2	3								

5.2. Second Test

5.2.1. Results Of Grading The App

All grades the subjects gave with respect to their experience with using the app, can be found in table 5.1. The main observations are:

- The stress level of subject 2 lowered increasingly over the seven times she used the application. (Please note: a grade of 4 or 5 means a lowering of the stress level.)
- Six out of twelve subjects used the app only once or twice. Subject 9 used the app significantly more than the other subjects, twenty-five times in total. Only three out of ten uses in the first two-week period are shown here, because he didn't know yet that all uses should be graded and couldn't remember the other seven.
- Subjects 3, 6, 8 and 11 didn't experience any stress-lowering effects from using the application.

5.2.2. Frequency

Figure 5.1 summarises the results in a combination of tables and histograms. Figure 5.1c shows that the application helped the subjects in 50% of all cases to form a better idea of how the situation-to-come would be, but in 13.8% (8 out of 58), filling out the app decreased the insight on the situation.

Figure 5.1d shows that in 27 of all 58 app uses (46.6%), subjects experienced a stress reducing effect from using the app, only in 8 of 58 cases (13.8%), the user experienced a slight increase in anxiety.

5.2.3. Correlation

Tables 5.2 and 5.3 show the correlation and significance levels of combinations of questions.

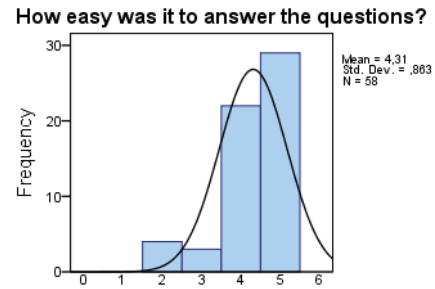
The answers to the questions *How easy was it to answer the questions?* and *How much did your stress level go up or down?* are significantly and positively correlated, just like the questions *Did the questions fit the situation?* and *Did you get a better idea of the situation?*. The questions *Did you get a better idea of the situation?* and *How much did your stress level go up or down?* are very strongly ($p < .01$) correlated.

Table 5.2.: Correlation and significance: Questions

		Did the questions fit the situation?	Did you get a better idea of the situation?	How much did your stress level go up or down?
How easy was it to answer the questions?	Pearson Correlation	-.171	.117	.248
	Significance (1-tailed)	.099	.191	.030
Did the questions fit the situation?	Pearson Correlation		.236	-.174
	Significance (1-tailed)		.037	.095
Did you get a better idea of the situation?	Pearson Correlation			.342
	Significance (1-tailed)			.004

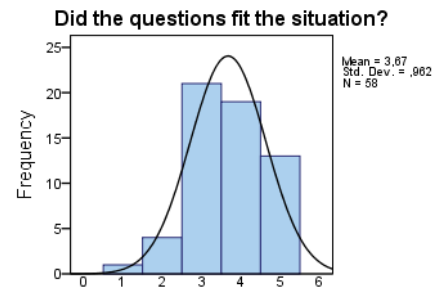
(a) How easy was it to answer the questions?

	Frequency	Percent	Cumulative Percent
very hard	0	0.0	0.0
2	4	6.9	6.9
3	3	5.2	12.1
4	22	37.9	50.0
very easy	29	50.0	100.0
Total	58	100.0	



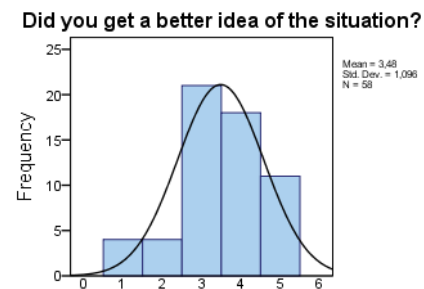
(b) Did the questions fit the situation?

	Frequency	Percent	Cumulative Percent
not at all	1	1.7	1.7
2	4	6.9	8.6
3	21	36.2	44.8
4	19	32.8	77.6
very well	13	22.4	100.0
Total	58	100.0	



(c) Did you get a better idea of the situation?

	Frequency	Percent	Cumulative Percent
certainly not	4	6.9	6.9
2	4	6.9	13.8
3	21	36.2	50.0
4	18	31.0	81.0
certainly	11	19.0	100.0
Total	58	100.0	



(d) How much did your stress level go up or down?

	Frequency	Percent	Cumulative Percent
certainly up	0	0.0	0.0
2	8	13.8	13.8
3	23	39.7	53.4
4	16	27.6	81.0
certainly down	11	19.0	100.0
Total	58	100.0	

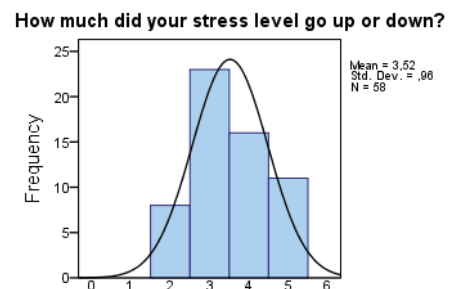


Figure 5.1.: Frequencies

Table 5.3 shows that the first two questions (*How easy was it to answer the questions?* and *Did the questions fit the situation?*) have no significant connection with whether or not the subject suffers from HFA. The questions *Did you get a better idea of the situation?* and *How much did your stress level go up or down?* however, are significantly correlated to this condition.

This means that if the person is diagnosed with High-Functioning Autism, they will benefit even more from using the application than neurotypical people with respect to gaining a better idea of the upcoming situation and lowering their anxiety.

Table 5.3.: Correlation and significance: HFA

		How easy was it to answer the questions?	Did the questions fit the situation?	Did you get a better idea of the situation?	How much did your stress level go up or down?
HFA	Pearson Correlation	.113	.131	.234	.304
	Significance (1-tailed)	.199	.164	.033	.010

5.2.4. Newly Gained Ideas

The following are the most interesting ideas the subjects got from using the app. All ideas can be found in appendix B.2.

- “Calmly rethinking everything or putting myself into someone else’s position and looking at the situation from a different point of view.”
- “Taking a moment and walk around to let the stress/pressure/situation settle”
- “I can worry a lot, but it’s outside my control to change something about it. However, if it’s really necessary, I even have a solution for it.”
- “I have accepted that it will not be possible to make everyone happy.”
- “Shorten the activity.”
- “The app itself allows for distraction from the situation. I can use it for that.”
- “Making sure I don’t have a choice but to perform well, then I will succeed.”

5.2.5. Reasons For Not Using The App

Half of all subjects used the application more than twice over a period of two months. In case they used it less, mainly, the subjects didn’t encounter any situations in which the app would be applicable.

Table 5.4 shows the reasons the subjects gave for not using the app. They were either too busy, forgot about the app, didn’t experience any positive effect by filling in the application or didn’t encounter any (social) situations that they were nervous about.

Subject 9 and 12 used the application in every of the four two-week periods. Therefore, they didn’t provide any reason not to use the application.

The last column of table 5.4 shows the subject’s prediction of whether they will use the app after the testing period. Four of the twelve participants will continue to make use of the application, although they predict they will not use it as often as during the

Table 5.4.: Reasons for not using the app

Subject	Reason				Future use
	Too busy	Forgot	No gain	No situations	
1		x		x	yes
2				x	maybe
3		x	x	x	no
4				x	maybe
5	x	x			maybe
6			x	x	no
7	x				yes
8		x		x	maybe
9	-	-	-	-	yes
10				x	yes
11				x	no
12	-	-	-	-	no

trial. Four subjects will definitely not use the application any more, the other four were not sure yet.

6. Conclusions

What is the link between HFA and anxiety?

Chapter 2 learns that anxiety is commonly experienced by people with autism. The DSMs (American Psychiatric Association (2000) and American Psychiatric Association (2013)) and Tantam (2000), Gillot et al. (2001), Bellini (2004), Groden et al. (2006), and Gillott and Standen (2007) report this.

Can an app help someone to imagine a situation beforehand?

Possibly, in 50% of all app uses, people gain better insight in the upcoming situation, as described in chapter 5.2.2. However, the mean is only 3.48, which actually means that the situation doesn't get more unclear.

Is knowing what could provoke social anxiety, enough to prevent it?

This seems to be the case, since stress levels go down significantly if a better idea of the situation is gained. See chapter 5.2.3 for more information.

Can a mobile application reduce social anxiety in people with High-Functioning Autism (HFA)?

Yes, chapter 5.2.3 shows that people with HFA especially benefit from the application. They gain better insight in the upcoming situation and their stress levels go even further down than those of neurotypical people.

7. Discussion

It is very difficult to find subjects with HFA for this test. Luckily, I found people via Stumass. Six of the approximately thirty-five people indicated to participate in this study, but only one answered the first questionnaire. She didn't understand how to install the application, but after I explained it to her, I didn't hear from her again. Using e-mail as a medium for a questionnaire when working with people with HFA might not have been the best idea. It would have been more effective to use a more personal interaction, such as taking the questionnaires face-to-face.

Not every autistic person has social anxiety and not every neurotypical person has no social anxiety. In my study, I assumed people with HFA always have more to gain from using the application, because the app is designed to help people suffering from social anxiety.

Most subjects are aged 23 to 25. Many belong to the same social group. This allowed easy discussion about the application. The low variation in age and the possibility to influence each other may have influenced the results.

N (the number of app uses) is small (58), N for people with HFA is very small (12) and only distributed over four people. A larger amount of data is required for more extensive analysis and higher reliability. Therefore, rerunning this evaluation study on a larger amount of subjects or a longer period of time is expected to yield more reliable results.

7.1. Future Research

Little attention was paid to the possibility of a learning effect. It is possible that the subjects analyse a situation differently now that they have encountered a way to do so. The running time of the second evaluation study was too small to notice any changes in the way subjects analyse, but one of the subjects in the first evaluation study didn't notice any stress lowering effect until later on. Therefore, I suggest the same or a similar study is run over a longer period of time.

Another possibility for follow-up research is to measure whether there is any change in anxiety levels when subjects have used the app for a certain amount of time and subsequently aren't using the app for another period of time.

8. Improvements To The App

8.1. Suggestions By The Subjects

The subjects were asked for any improvements, missing questions or functionalities that they would like to see in the app.

8.1.1. First Test

Subject 1

It took subject 1 some time to discover that the application is built to help organize thoughts and not to research what situations make people anxious and why. Improvement of the clarity of this in the application could be necessary.

Subject 2

Subject 2 suggested adding some questions about how the situation makes someone feel. Also, he suggested asking the user afterwards whether the application had helped. This way, someone will evaluate the usefulness of the app for them.

8.1.2. Second Test

Subject 2 suggested adding the question *Can you leave the situation at any time you like or need?*. Subject 5 suggested *How important is the situation to you?*. Subject 7 want to be able to answer *That has negative effects on other people* to the question *What happens when it ends later?*. Also, she suggested *Do you feel comfortable with your interlocutor?* and *Will the conversation be positive or negative?*. Subject 9 proposed *Is it mandatory?*. Subject 10 suggested *Will something depend on another person?*. Subject 12 misses *Gathering of friends* and *Business meeting* to the question *What division of roles describes the situation best?*. He suggested the question *Should you bring anything with you?* in the **What** category.

Subject 3 wanted to see an algorithm that uses the answers to the questions to give some advice about how to handle the situation. He and subject 11 also suggested making specific questions influenced by what kind of situation (for instance: party, business meeting, new sports club, first lesson) the user picks. Subject 8 proposed a summary of the answers to the questions after the user is done answering, since he thinks the ending of the app is quite abrupt and thinks it can help the user gaining clarity and confidence. Subject 9 misses some kind of outcome too. Also, he wants the possibility to save the answers to be able to review a situation he was anxious about and see whether it can be

improved. Subject 12 suggested something similar, for example the possibility to convert the answers to a PDF file. Subject 10 suggested some distraction function, like a link to a web page with funny images, since he uses the app itself as distraction.

Subjects 4, 10 and 12 want to see an improved layout, maybe some more colour.

8.2. Other Improvements

Other than the ideas the participants suggested, are the following extensions and improvements.

The app is not very large (5.49 MB), but also not movable to an SD card. Being able to move the application, could benefit some users with phones with small internal memory.

Currently, only Android users can use the application. To address a wider audience, developing an iOS version is advised.

Giving the user the opportunity to compare the predictions about a situation with the actual situation, could provide more insight in the capability of the user to assess a situation beforehand.

It might be beneficial to track the answering process. This way, the time it takes to answer a question can be measured, or whether the user revises a question or set of questions. Analysing the answering process may provide some interesting insight with respect to improvements to the application itself, or information about how the individual questions are associated with stress levels going up or down.

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A. Situation Analyser Questions

These are all the questions and their answers as presented in the app. The bold sentence is the question, the part in italics is the text that can be found under the ? button. Every answer also has *Select an answer* (in Dutch: *Kies een antwoord*) and *I don't know (yet)* or *N.A.* (in Dutch: *Weet ik (nog) niet of n.v.t.*) as possible answers.

A.1. English

A.1.1. Who

Do you know the people?

For example, if you're in an airport and you know anyone with whom you're there, you know (almost) everyone there

- No, no one
- No, only one person or a few people
- Yes, the most important people
- Yes, I know (almost) everyone there

How many people will there be?

Don't count yourself

- Only me
- One person
- Only one person at a time
- Two to five people
- Four to ten people
- Eight to thirty people
- Twenty to one hundred people
- More than eighty people

Will there be someone with you?

Someone who helps you relax, can do so consciously or unconsciously

- Yes, someone who helps me relax
- Yes
- No

What division of roles describes the situation best?

Interview: order, question, discussion, meeting

Group: party, introduction week

Audience: follow lesson, visit concert, cinema

In front of an audience: perform, teach, speech

- Interview
- Group
- Audience
- In front of an audience

A.1.2. Where

Do you know the location?

For example, if you've already been to several cinemas, but not this one, you know a similar location

- Yes
- Yes, but not well
- No, but a similar location
- No

If so, what do you think about the location?

*If not, select **not applicable***

- Usually, I feel at ease
- Neutral
- Usually, the location makes me nervous

Do you know the layout of the location?

Yes: you know where to go, where you can find what you want, where you have to sit and wait

Kind of: a little, or you know how to find out where to go

No: you don't know where to go, you don't know whether locations are clearly marked

- Yes
- Kind of
- No

Is the location used as you would expect?

Yes: a church is used as a church

No: a church is used as a museum

*If you've been at this church before and it is always used as a museum, select **yes***

- Yes
- No

Do you know the way to behave that is associated with this location?

Do you know whether to be quiet, whether you are allowed to walk away at any moment, when you're allowed to go to the toilet, who you are allowed/must talk to?

- Yes
- No, but it will be explained to me well
- No, but someone will probably explain it to me
- No

A.1.3. When

When does it start?

***As a reaction to something:** someone calls you, someone comes to pick you up, there is a signal*

- I know the exact starting time
- I approximately know the starting time
- I can decide when it starts
- It starts as a reaction to something

What happens if you're late?

***No problem:** If you go to a flea market and there is enough time to see everything, it doesn't matter if you're running a bit late*

***Everything is postponed:** If you have to collect stuff to sell on a flea market and you start later, you'll also finish later*

***You miss a part:** If there is just enough time to watch the whole market and you want to see everything, you have to miss a part if you're late*

***You miss everything:** If there is only one bus per hour to go to the flea market and the flea market is only for an hour, you miss the whole event if you miss that bus*

***Burden to others:** If you have agreed with someone to sell stuff together at the flea market and you are late, the other will (probably) be disappointed*

- No problem
- Everything is postponed
- I'll miss a part
- I'll miss everything
- I'll be a burden to others

What happens if you miss it?

*An example of **negative consequences**: You want to renew your passport at the last minute before you go on a holiday, but you miss that chance*

- It doesn't matter
- I would pity that
- That has negative consequences
- I'll be a burden to others

When will it end?

*If you visit an open day with three rounds, you can usually decide to leave after the second round. Then you can **determine the ending time approximately yourself**.*

- The ending time is fixed
- The ending time is not clear (yet)
- I can determine the ending time
- I can approximately determine the ending time
- The ending time is not important

What happens when it ends later?

***Something serious**: You miss the last train home*

- Nothing (serious)
- Everything after gets postponed
- Something serious

Do you have to wait?

Do you have to sit in a waiting room first, do you have to wait for the train to arrive, between to rounds, etc.

- No
- A very short time
- Yes

A.1.4. How

Can something change?

*If one train is late, but you can take another train so that you'll still be in time, there is a change, **but it's OK***

- No
- Yes, but it's OK

- Yes

Do you know what you should do and how to do it?

*If someone will explain it to you, choose **kind of***

- No
- Kind of
- Yes, very clearly

Does the order of actions matter?

If you go somewhere by plane, it's important to take your passport out of your luggage before you deliver your luggage, or finish your drink before you go through customs. It is not important whether you get some food before or after you deliver your luggage

- No, or there is only one action
- For some actions, it does
- Yes

Can you ask for help if needed?

The moment you are in the situation

- No, not at all
- No, I don't know where or to whom
- Probably
- Yes, I know exactly where or to whom

A.1.5. What

Do you know what people expect of you?

Do people have a certain idea of what you should do or how well you should do it?

- Yes, and I'm sure I can live up to that
- Yes, but I'm not sure if I can live up to that
- Yes, but I can't live up to that
- No
- Nothing is expected of me

A.2. Dutch

A.2.1. Wie

Ken je de mensen?

Als je bijvoorbeeld op een vliegveld bent, maar je kent iedereen met wie jij daar bent, ken je er (bijna) iedereen

- Nee, niemand
- Nee, maar n iemand of een paar mensen
- Ja, de belangrijkste mensen
- Ja, ik ken er (bijna) iedereen

Hoeveel mensen zijn er ongeveer?

Tel jezelf niet mee

- Alleen ik
- En iemand
- Maar n iemand tegelijk
- Twee tot vijf mensen
- Vier tot tien mensen
- Acht tot dertig mensen
- Twintig tot honderd mensen
- Meer dan tachtig mensen

Ga je samen met iemand?

Iemand die je helpt ontspannen, kan dat bewust of onbewust doen

- Ja, met iemand die me helpt ontspannen
- Ja
- Nee

Welke rolverdeling omschrijft de situatie het best?

Gesprek: bestelling, vraag, bespreking, vergadering

Groep: feestje, introductiekamp

Publiek: les volgen, concert bezoeken, bioscoop

Voor een publiek: optreden, lesgeven, speech

- Gesprek
- Groep
- Publiek
- Voor een publiek

A.2.2. Waar

Ken je de locatie?

*Als je bijvoorbeeld al in een aantal verschillende bioscopen bent geweest, maar nog niet in deze, ken je een **soortgelijke locatie***

- Ja
- Ja, maar niet goed
- Nee, maar wel een soortgelijke locatie
- Nee

Zo ja, wat vind je van de locatie?

*Zo nee, vul **niet van toepassing** in*

- Ik voel me er (normaal gesproken) op mijn gemak
- Neutraal
- De locatie maakt me (meestal) nerveus

Ken je de indeling van de locatie?

***Ja:** je weet waar je heen moet, waar je kan vinden wat je zoekt, waar je moet gaan zitten of wachten*

***Ongeveer:** ongeveer of je weet hoe je erachter komt waar je heen moet*

***Nee:** je niet weet waar je heen moet, je weet niet of deellocaties duidelijk aangegeven zijn*

- Ja
- Ongeveer
- Nee

Wordt de locatie gebruikt zoals je zou verwachten?

***Ja:** een kerk wordt gebruikt als kerk*

***Nee:** een kerk wordt gebruikt als museum*

*Als je vaker naar deze kerk gaat en deze kerk wordt altijd gebruikt als museum, vul dan **ja** in*

- Ja
- Nee

Ken je de gedragsregels die bij deze locatie horen?

Weet je of je stil moet zijn hier, of je op elk moment kan weglopen, wanneer je naar de wc kunt/mag, tegen wie je mag/moet praten?

- Ja

- Nee, maar dat wordt me goed uitgelegd
- Nee, maar dat wordt me waarschijnlijk wel ongeveer uitgelegd
- Nee

A.2.3. Wanneer

Wanneer begint het?

Als reactie op iets: iemand belt je op, iemand komt je halen, er gaat een bel

- Ik weet de precieze begintijd
- Ik weet wanneer het ongeveer begint
- Ik kan zelf bepalen wanneer het begint
- Het begint als reactie op iets

Wat gebeurt er als je te laat bent?

Geen probleem: Als je naar een rommelmarkt gaat en er is genoeg tijd om alles te bekijken, maakt het niet uit als je wat later bent

Alles schuift op: Als je spullen gaat verzamelen voor een rommelmarkt en je bent later, ben je ook later klaar

Je mist een gedeelte: Als precies genoeg tijd is om de hele rommelmarkt te bekijken en je wil alles gezien hebben, mis je een gedeelte als je wat later bent

Je mist alles: Als er maar n bus per uur gaat naar de rommelmarkt en de rommelmarkt duurt maar een uur, mis je de hele rommelmarkt als je die bus mist

Anderen tot last: Als je hebt afgesproken samen met iemand je spullen te verkopen op de rommelmarkt en je bent later, baalt diegene (waarschijnlijk) als je te laat bent

- Geen probleem
- Alles schuift op
- Dan mis ik een gedeelte
- Dan mis ik alles
- Dan ben ik anderen tot last

Wat gebeurt er als je het mist?

Een voorbeeld van negatieve gevolgen: Je wil je paspoort op het laatste moment voor je op vakantie gaat, verlengen, maar je mist die kans

- Dat is niet erg
- Dat zou ik jammer vinden
- Dat heeft negatieve gevolgen
- Dan ben ik anderen tot last

Wanneer eindigt het?

*Als je een open dag bezoekt met drie rondes, kun je meestal besluiten na de tweede ronde weg te gaan. Dan kun je de **eindtijd ongeveer zelf bepalen**.*

- De eindtijd staat vast
- Er is (nog) geen duidelijke eindtijd
- Ik kan de eindtijd zelf bepalen
- Ik kan de eindtijd ongeveer zelf bepalen
- De eindtijd is niet belangrijk

Wat gebeurt er als het uitloopt?

*Iets **ernstigs**: Je mist de laatste trein naar huis*

- Niets (ernstigs)
- De dingen erna lopen ook uit
- Iets ernstigs

Moet je wachten?

Moet je eerst in een wachtkamer zitten, op de trein wachten, na een ronde op een andere ronde wachten

- Nee
- Heel kort
- Ja

A.2.4. Hoe

Kan er iets wijzigen?

*Als de ene trein te laat is, maar je kunt een andere trein nemen waardoor je er nog steeds op tijd bent, verandert er wel iets, **maar dat is niet erg***

- Nee
- Ja, maar dat is niet erg
- Ja

Weet je wat je moet doen en hoe?

*Als er uitgelegd wordt wat je moet doen, kies dan **ongeveer***

- Nee
- Ongeveer
- Ja, heel goed

Maakt de volgorde van acties uit?

Als je met het vliegtuig ergens heen gaat, is het belangrijk om je paspoort uit je bagage te halen vr je je bagage aflevert, of je drinken op te maken vr je door de douane gaat. Het is niet belangrijk of je voor of na het afleveren van je bagage ergens iets te eten haalt.

- Nee of het gaat maar om n actie
- Van sommige acties wel
- Ja

Kun je hulp vragen als dat nodig is?

Op het moment dat je je in de situatie bevindt

- Nee, helemaal niet
- Nee, ik weet niet waar of aan wie
- Waarschijnlijk wel
- Ja, ik weet precies waar of aan wie

A.2.5. Wat

Weet je wat mensen van je verwachten?

Hebben mensen een bepaald beeld in hun hoofd van wat je zou moeten doen of hoe goed je iets moet doen?

- Ja, en ik kan daar makkelijk aan voldoen
- Ja, maar ik weet niet zeker of ik daar aan kan voldoen
- Ja, maar ik kan daar niet aan voldoen
- Nee
- Er wordt niks van me verwacht

B. Answers To Questionnaires

These are the answers to some questions in chapter 4.2.1 that were not (fully) discussed in chapter 5.

B.1. Installation Dates

Table B.1.: Installation dates

Subject	Date of installation
1	25/02/2016
2	02/03/2016
3	24/03/2016
4	07/03/2016
5	25/02/2016
6	25/02/2016
7	10/03/2016
8	14/03/2016
9	24/02/2016
10	17/02/2016
11	27/02/2016
12	26/02/2016

B.2. New Ideas

These are the answers subjects gave to the question *Did you gain any new ideas on how to lower your stress level? If yes, which?*.

Subject 2

- This app certainly helped me by learning to take a step back from the situation.
- The app also helps as some kind of distraction.
- Calmly rethinking everything or putting myself into someone else's position and looking at the situation from a different point of view.

Subject 3

- Taking a moment and walk around to let the stress/pressure/situation settle.

Subject 4

- It [the application] shows in a few steps why I experience stress and that those aspects might be outside my control and that it's easier to relativise them.
- I can worry a lot, but it's outside my control to change something about it, however, if it's really necessary, I even have a solution for it.

Subject 7

- It yields peace and overview to go through the situation beforehand.
- I have accepted that it will not be possible to make everyone happy.
- Applying mindfulness.

Subject 9

- It depends on the situation. In some situations taking someone with me can lower stress. In other situations I would like to, but the environment or situation itself makes it impossible, which makes me realise that I'm all alone in this.
- Don't whine, don't think about it, just do it.
- Shorten the activity.
- If it's not mandatory than don't do it and go do something more fun.

Subject 10

- The app itself allows for distraction from the situation. I can use it for that.

Subject 12

- Having fun with someone else during the activity.
- Making sure I don't have a choice but to perform well, then I will succeed.
- Researching who will be there. Thinking about the questions I should ask and what to pay attention to w.r.t. someone's behaviour.

B.3. With Or Without The App

These are the answers to the questions *Do you have the idea that you'd look differently at a situation than without use of the app? If yes, explain.* and *If you wouldn't use the app any more, would you look differently at a situation than you did before?*

Subject 1

I can imagine a situation better [with the app].

Subject 2

Thanks to the app, I put things into perspective again and that certainly helped me.

Subject 3

By answering the questions, I split up the situation to be able to analyse it better.

Subject 4

The app helps analysing the situation, which makes it possible to relativise or put into perspective. Because of the questions asked, you can look at the situation very thoroughly and break it into bits. Who, where, how many, but also whether or not you can influence it.

If I could remember the questions, [I would look differently at a situation than I did before], but I think that [without the app], I would forget to analyse the situation in that way.

Subject 5

No, I don't think I would [look at a situation differently than I did before], but it's good to have a distraction.

Subject 6

No, for me the situation itself is stressful, not the indistinctness around it.

Subject 7

By thinking it through, I gain ideas for solutions.

Subject 8

Using the app made me consider aspects of situations I normally don't pay attention to, like the layout or behavioural rules of a location. I probably wouldn't [look differently at a situation than I did before].

Subject 9

No, stress is something emotional. If you're strong and you get stressed, you ask yourself "Is it necessary?" and depending on that answer, your stress increases or decreases instantly. If it increases, it could help to use the app to relativise the situation. I think [I would look at a situation differently than without the app] unconsciously, I would ask myself more questions to see where the possibilities are to lower my stress.

Subject 10

[I look at situations] less chaotically, more focussed. The question "Can you change anything about the situation" pops up every time and that comforts.

Subject 12

It helps to be better prepared for what's about to come, but not enough to lower stress completely. The questions asked don't cover what I should prepare for a situation enough. I notice I go into meetings more calmly and I better remember what to discuss. Social interaction didn't improve much.

C. Situation Analyser Code

C.1. AndroidManifest.xml

```
<?xml version="1.0" encoding="utf-8"?>
<manifest
    xmlns:android="http://schemas.android.com/apk/res/android"
    package="liza.research.situationanalyser" >

    <application
        android:allowBackup="true"
        android:icon="@drawable/icon_launcher"
        android:label="@string/app_name"
        android:theme="@style/Theme.AppCompat.Light.DarkActionBar" >

        <!-- Main screen -->
        <activity
            android:name=".activities.MainActivity"
            android:label="@string/app_name"
            android:screenOrientation="portrait" >
            <intent-filter>
                <action android:name="android.intent.action.MAIN" />
                <category android:name="android.intent.category.LAUNCHER" />
            </intent-filter>
        </activity>

        <!-- Questions screen -->
        <activity
            android:name=".activities.QuestionsActivity"
            android:label="@string/screen_questions"
            android:screenOrientation="portrait" >
            <!-- go to Main screen when going back -->
            <meta-data
                android:name="android.support.PARENT_ACTIVITY"
                android:value=".activities.MainActivity" />
        </activity>

        <!-- How-To screen -->
        <activity
            android:name=".activities.HowToActivity"
            android:label="@string/screen_howto"
            android:screenOrientation="portrait" >
            <!-- go to Main screen when going back -->
            <meta-data
                android:name="android.support.PARENT_ACTIVITY"
                android:value=".activities.MainActivity" />
        </activity>
    </application>
</manifest>
```

```

        </activity>

        <!-- About screen -->
        <activity
            android:name=".activities.AboutActivity"
            android:label="@string/screen_about"
            android:screenOrientation="portrait" >
            <!-- go to Main screen when going back -->
            <meta-data
                android:name="android.support.PARENT_ACTIVITY"
                android:value=".activities.MainActivity" />
            </activity>
        </application>

</manifest>

```

C.2. Java

C.2.1. Activities

AboutActivity.java

```

package liza.research.situationanalyser.activities;

import android.os.Bundle;
import android.support.v7.app.AppCompatActivity;

import liza.research.situationanalyser.R;

/**
 * By Liza Verhaert, 2015.
 * This is the about activity, it provides information about the
 * development of this app.
 */
public class AboutActivity extends AppCompatActivity {

    /**
     * Sets the contents of this activity as specified in
     * activity_about.xml.
     * @param savedInstanceState most recently supplied data, used if
     * the activity is being re-initialized
     * after previously being shut down
     */
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_about);
    }
}

```

HowToActivity.java

```

package liza.research.situationanalyser.activities;

import android.os.Bundle;
import android.support.v7.app.AppCompatActivity;

import liza.research.situationanalyser.R;

/**
 * By Liza Verhaert, 2015.
 * This is the how-to activity, it provides information about how to
 * use this app. */
public class HowToActivity extends AppCompatActivity {

    /**
     * Sets the contents of this activity as specified in
     * activity_howto.xml.
     * @param savedInstanceState most recently supplied data, used if
     * the activity is being re-initialized
     * after previously being shut down
     */
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_howto);
    }
}

```

MainActivity.java

```

package liza.research.situationanalyser.activities;

import android.app.AlertDialog;
import android.app.DialogFragment;
import android.content.DialogInterface;
import android.content.Intent;
import android.content.SharedPreferences;
import android.content.res.Resources;
import android.os.Bundle;
import android.preference.PreferenceManager;
import android.support.v7.app.AppCompatActivity;
import android.view.View;

import liza.research.situationanalyser.MyDialogFragment;
import liza.research.situationanalyser.R;

/**
 * By Liza Verhaert, 2015.
 * This is the main activity, it provides access to the questions,
 * the how-to section and the information about this app.
 */
public class MainActivity extends AppCompatActivity implements
    MyDialogFragment.NoticeDialogListener {

```

```

/** SharedPreferences that contain the entered answers */
private SharedPreferences mPrefs;

/**
    Sets the contents of this activity as specified in
    activity_main.xml. Also shows a dialog if this is the first time
    the user opens the app, and finds the SharedPreferences.
    @param savedInstanceState most recently supplied data, used if
                                the activity is being re-initialized
                                after previously being shut down
 */
@Override
protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_main);
    mPrefs = PreferenceManager.getDefaultSharedPreferences(
        getApplicationContext());
    firstUse();
}

/**
    If it is the first time the user opens this app, a dialog is
    shown asking the user if they would like an explanation on
    how to use the app. If clicked OK, the user is taken to the
    how-to section. If clicked Cancel, the dialog disappears. If
    clicked Later, the dialog is shown the next time the app is
    started.
 */
private void firstUse() {
    boolean firstTime = mPrefs.getBoolean("first", true);
    if (firstTime) {
        AlertDialog.Builder alert = new AlertDialog.Builder(this);
        alert.setTitle(R.string.welcome_title).setMessage(R
            .string.welcome_text);
        alert.setPositiveButton(R.string.answer_ok, new
            DialogInterface.OnClickListener() {
                @Override
                public void onClick(DialogInterface dialog, int
                    whichButton) {
                    mPrefs.edit().putBoolean("first", false).apply();
                    toHowTo();
                }
            });
        alert.setNeutralButton(R.string.answer_later, new
            DialogInterface.OnClickListener() {
                @Override
                public void onClick(DialogInterface dialog, int
                    which) {
                }
            });
        alert.setNegativeButton(R.string.answer_cancel, new
            DialogInterface.OnClickListener() {
                @Override

```

```

        public void onClick(DialogInterface dialog, int
            whichButton) {
            mPrefs.edit().putBoolean("first", false).apply();
        }
    });
    alert.show();
}

/**
 * Takes the user to the how-to section.
 */
private void toHowTo() {
    Intent intent = new Intent(this, HowToActivity.class);
    startActivity(intent);
}

/**
 * Linked to the "New" button. If any answers differ from the
 * default answer (i.o.w. if the user previously entered an
 * answer), this opens a dialog that asks the user whether they
 * wish to reset previous answers to the questions. If the
 * answers are already reset, this takes the user directly to the
 * list of questions.
 * @param view the widget that was clicked
 */
public void toQuestionsNewAsk(View view) {
    String[] keys = getResources().getStringArray(R.array
        .keys_questions);
    String defaultAnswer = getResources().getString(R.string
        .answer_default);
    for (String key : keys) {
        if (!defaultAnswer.equals(mPrefs.getString(key,
            defaultAnswer))) {
            MyDialogFragment dialog = new MyDialogFragment();
            dialog.setQuestion(R.string.confirm_reset_questions);
            dialog.show(getFragmentManager(), "MyDialogFragment");
            break;
        } else if (key.equals(keys[keys.length - 1])) {
            toQuestionsResume(view);
        }
    }
}

/**
 * Linked to the "Resume" button, takes the user to the list of
 * questions.
 * @param view the widget that was clicked
 */
public void toQuestionsResume(View view) {
    Intent intent = new Intent(this, QuestionsActivity.class);
    startActivity(intent);
}

```

```

/**
 * Resets the previous answers to the questions and takes the
 * user to the questions.
 * @param dialog the dialog that contains the button that was
 * clicked
 */
public void onDialogPositiveClick(DialogFragment dialog) {
    toQuestionsNew();
}

/**
 * Resets the previous answers to the questions and takes the
 * user to the questions.
 */
private void toQuestionsNew() {
    resetMainQuestions();
    Intent intent = new Intent(this, QuestionsActivity.class);
    startActivity(intent);
}

/**
 * Resets the answers to all questions.
 */
private void resetMainQuestions() {
    String[] keys = getResources().getStringArray(R.array
        .keys_questions);
    for (String key : keys) {
        mPrefs.edit().remove(key).apply();
    }
}

/**
 * Closes the dialog and takes the user back to the main screen
 * @param dialog the dialog that contains the button that was
 * clicked
 */
public void onDialogNegativeClick(DialogFragment dialog) {}

/**
 * Linked to the "How-To" button, takes the user to the how-to
 * section.
 * @param view the widget that was clicked
 */
public void toHowTo(View view) {
    toHowTo();
}

/**
 * Linked to the "About" button, takes the user to the information
 * about this app.
 * @param view the widget that was clicked
 */
public void toAbout(View view) {
    Intent intent = new Intent(this, AboutActivity.class);

```

```

        startActivity(intent);
    }
}

```

QuestionsActivity.java

```

package liza.research.situationanalyser.activities;

import android.app.DialogFragment;
import android.app.FragmentTransaction;
import android.content.Intent;
import android.os.Bundle;
import android.support.v7.app.AppCompatActivity;
import android.view.View;

import liza.research.situationanalyser.MyDialogFragment;
import liza.research.situationanalyser.QuestionsFragment;
import liza.research.situationanalyser.R;

/**
 * By Liza Verhaert, 2015.
 * This is the questions activity, it contains the questions fragment
 * and handles the events associated with the button at the bottom of
 * the questions list. */
public class QuestionsActivity extends AppCompatActivity implements
    MyDialogFragment.NoticeDialogListener {

    /**
     * Adds the QuestionsFragment to this activity.
     * @param savedInstanceState most recently supplied data, used if
     * the activity is being re-initialized
     * after previously being shut down
     */
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        FragmentTransaction fragmentTransaction =
            getFragmentManager().beginTransaction();
        fragmentTransaction.replace(android.R.id.content, new
            QuestionsFragment()).commit();
    }

    /**
     * Linked to the "Done" button, opens a dialog that asks the user
     * whether they have finished answering the questions.
     * @param view the widget that was clicked
     */
    public void done(View view) {
        MyDialogFragment dialog = new MyDialogFragment();
        dialog.setQuestion(R.string.confirm_completed_questions);
        dialog.show(getFragmentManager(), "MyDialogFragment");
    }
}

```

```

    /**
     * Takes the user back to the main screen.
     * @param dialog the dialog that contains the button that was
     *             clicked
     */
    public void onDialogPositiveClick(DialogFragment dialog) {
        Intent intent = new Intent(this, MainActivity.class);
        startActivity(intent);
    }

    /**
     * Closes the dialog and takes the user back to the questions
     * @param dialog the dialog that contains the button that was
     *             clicked
     */
    public void onDialogNegativeClick(DialogFragment dialog) {}
}

```

C.2.2. Other

ListPreferenceWithHelpButton.java

```

package liza.research.situationanalyser;

import android.app.AlertDialog;
import android.app.AlertDialog.Builder;
import android.content.Context;
import android.content.DialogInterface;
import android.content.res.Resources;
import android.preference.ListPreference;
import android.text.Html;
import android.util.AttributeSet;

/**
 * By Liza Verhaert, 2015.
 * This adapted version of ListPreference adds an extra button to the
 * dialog that shows the list of available settings per preference
 * (or, in this case, the available answers to a question).
 */
public class ListPreferenceWithHelpButton extends ListPreference
    implements DialogInterface.OnClickListener {

    /** dialog shown when user clicks the ? button */
    private AlertDialog helpDialog;
    /** the asked question */
    private String question;
    /** Resources that contain all strings and arrays for this app */
    private Resources mRes;

    /**
     * Standard constructor, also initialises the question and the
     * resources.
     * @param context the Context this is associated with, through

```

```

        which it can access the current theme,
        resources, SharedPreferences, etc.
    @param attrs    the attributes of the XML tag that is inflating
                    the preference
    */
    public ListPreferenceWithHelpButton(Context context,
                                       AttributeSet attrs) {
        super(context, attrs);
        question = getTitle().toString();
        mRes = context.getResources();
    }

    /**
     Standard constructor, also initialises the question and the
     resources.
     @param context the Context this is associated with, through
                    which it can access the current theme,
                    resources, SharedPreferences, etc.
    */
    public ListPreferenceWithHelpButton(Context context) {
        super(context);
        question = getTitle().toString();
        mRes = context.getResources();
    }

    /**
     Makes the help dialog.
     @param builder the builder that builds this dialog
    */
    @Override
    protected void onPrepareDialogBuilder(Builder builder) {
        super.onPrepareDialogBuilder(builder);
        builder.setNeutralButton(R.string.answer_help, this);
        makeHelpDialog();
    }

    /**
     Constructs the dialog with extra information about the question,
     that appears when the user clicks the ? button.
    */
    private void makeHelpDialog() {
        helpDialog = new AlertDialog.Builder(getContext()).create();
        helpDialog.setMessage(getHelpMessage());
        helpDialog.setCancelable(false);
        helpDialog.setButton(DialogInterface.BUTTON_POSITIVE,
            getPositiveButtonText(), new DialogInterface
                .OnClickListener() {
                    @Override
                    public void onClick(DialogInterface dialog, int
                        which) {
                        ListPreferenceWithHelpButton.this.onClick();
                    }
                }
        ));
    }
}

```

```

    /**
     Finds the help message that matches the selected question
     @return the extra info about this question
     */
    private CharSequence getHelpMessage() {
        String[] questions = mRes.getStringArray(R.array.questions);
        String[] explanations = mRes.getStringArray(R.array
            .explanations);
        for (int i = 0; i < questions.length; i++) {
            if (question.equals(questions[i])) {
                return Html.fromHtml(explanations[i]);
            }
        }
        return "";
    }

    /**
     If the ? button (aka the neutral button) is clicked, the
     helpDialog is shown. Otherwise, this behaves just like a default
     ListPreference.
     @param dialog the dialog that received the click
     @param which the button that was clicked or the position of
     the item clicked
     */
    @Override
    public void onClick(DialogInterface dialog, int which) {
        switch (which) {
            case DialogInterface.BUTTON_NEUTRAL:
                dialog.dismiss();
                helpDialog.show();
                break;
            default:
                super.onClick(dialog, which);
        }
    }
}

```

MyDialogFragment.java

```

package liza.research.situationanalyser;

import android.app.Activity;
import android.app.AlertDialog;
import android.app.Dialog;
import android.app.DialogFragment;
import android.content.DialogInterface;
import android.os.Bundle;

/**
 By Liza Verhaert, 2015.
 This adapted version of DialogFragment shows a question set by
 setQuestion.

```

```

*/
public class MyDialogFragment extends DialogFragment {

    /** ID of the question-to-show */
    private int question;
    /** listener of this dialog */
    private NoticeDialogListener mListener;

    /**
     Throws an exception if QuestionsActivity or MainActivity doesn't
     implement NoticeDialogListener.
     @param activity the activity this fragment is attached to
     */
    @Override
    public void onAttach(Activity activity) {
        super.onAttach(activity);
        try {
            mListener = (NoticeDialogListener) activity;
        } catch (ClassCastException e) {
            throw new ClassCastException(activity.toString() + "␣" +
                "must␣implement␣NoticeDialogListener");
        }
    }

    /**
     Creates a dialog with a positive and a negative button, and
     question* as the message.
     @param savedInstanceState most recently supplied data, used if
                                the dialog is being re-initialized
                                after previously being shut down
     @return the created dialog
     */
    @Override
    public Dialog onCreateDialog(Bundle savedInstanceState) {
        AlertDialog.Builder builder = new AlertDialog.Builder
            (getActivity());
        builder.setMessage(question);
        builder.setPositiveButton(R.string.answer_yes, new
            DialogInterface.OnClickListener() {
                @Override
                public void onClick(DialogInterface dialog, int which) {
                    mListener.onDialogPositiveClick(MyDialogFragment
                        .this);
                }
            });
        builder.setNegativeButton(R.string.answer_cancel, new
            DialogInterface.OnClickListener() {
                @Override
                public void onClick(DialogInterface dialog, int which) {
                    mListener.onDialogNegativeClick(MyDialogFragment
                        .this);
                }
            });
        return builder.create();
    }
}

```

```

    }

    /**
     * Sets the question that is displayed by the dialog. Needs to be
     * set before the NoticeDialog is opened.
     * @param questionId the ID of the question-to-show
     */
    public void setQuestion(int questionId) {
        question = questionId;
    }

    /**
     * Must be implemented by the activity that calls this dialog, so it
     * can determine what happens when the positive or negative
     * button is clicked.
     */
    public interface NoticeDialogListener {
        void onDialogPositiveClick(DialogFragment dialog);
        void onDialogNegativeClick(DialogFragment dialog);
    }
}

```

QuestionsFragment.java

```

package liza.research.situationanalyser;

import android.content.SharedPreferences;
import android.content.res.Resources;
import android.os.Bundle;
import android.preference.ListPreference;
import android.preference.Preference;
import android.preference.PreferenceFragment;
import android.preference.PreferenceGroup;
import android.preference.PreferenceScreen;

/**
 * By Liza Verhaert, 2015.
 * This fragment shows a list of questions and their answers, enables
 * the user to change the answer, and saves the selected answers to
 * the SharedPreferences.
 */
public class QuestionsFragment extends PreferenceFragment
    implements SharedPreferences
        .OnSharedPreferenceChangeListener {

    /** Resources that contain all strings and arrays for this app */
    private Resources mRes;

    /**
     * Sets the contents of this fragment as specified in questions.xml.
     * Also registers a listener for when the preferences (in this case,
     * the answers to the questions) change, and finds the resources.
     * @param savedInstanceState most recently supplied data, used if

```

```

the fragment is being re-initialized
after previously being shut down

*/
@Override
public void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    addPreferencesFromResource(R.xml.questions);
    getPreferenceScreen().getSharedPreferences()
        .registerOnSharedPreferenceChangeListener(this);
    mRes = getResources();
}

/**
    Updates the summary of each question so that it matches the
    chosen answer.
*/
@Override
public void onResume() {
    super.onResume();
    PreferenceScreen preferenceScreen = getPreferenceScreen();
    for (int i = 0; i < preferenceScreen.getPreferenceCount();
        i++) {
        Preference preference = preferenceScreen.getPreference(i);
        if (preference instanceof PreferenceGroup) {
            PreferenceGroup preferenceGroup = (PreferenceGroup)
                preference;
            for (int j = 0; j < preferenceGroup
                .getPreferenceCount(); j++) {
                if (preferenceGroup.getPreference(j) instanceof
                    ListPreference) {
                    updateSummary((ListPreference)
                        preferenceGroup.getPreference(j));
                }
            }
        } else if (preference instanceof ListPreference) {
            updateSummary((ListPreference) preference);
        }
    }
}

/**
    Updates the summary of the ListPreference.
    @param listPreference the ListPreference to update
*/
private void updateSummary(ListPreference listPreference) {
    CharSequence summary = listPreference.getEntry();
    if (mRes.getString(R.string.answer_default).equals(summary)) {
        summary = "";
    }
    listPreference.setSummary(summary);
}

/**
    Whenever an answer to a question was changed, its summary should

```

```

        be updated.
        @param sharedPreferences where the preferences (or in this
                                case answers) are saved
        @param key                key of the question of which the
                                answer was changed
    */
    public void onSharedPreferencesChanged(
        SharedPreferences sharedPreferences, String key) {
        updateSummary((ListPreference) findPreference(key));
    }
}

```

C.3. Resources

C.3.1. Layout

activity_about.xml

```

<?xml version="1.0" encoding="utf-8"?>
<!-- Layout of the About screen -->
<LinearLayout
    xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:orientation="vertical"
    tools:context=".AboutActivity">

    <TextView
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_margin="20dp"
        android:autoLink="email"
        android:linksClickable="true"
        android:scrollbars="vertical"
        android:text="@string/about_content"/>

</LinearLayout>

```

activity_howto.xml

```

<?xml version="1.0" encoding="utf-8"?>
<!-- Layout of the How-To screen -->
<LinearLayout
    xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:orientation="vertical"
    tools:context=".HelpActivity">

    <TextView
        android:layout_width="match_parent"

```

```

        android:layout_height="wrap_content"
        android:layout_margin="20dp"
        android:scrollbars="vertical"
        android:text="@string/howto_content"/>

```

```
</LinearLayout>
```

activity_main.xml

```

<?xml version="1.0" encoding="utf-8"?>
<!-- Layout of the Main screen -->
<LinearLayout
    xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:orientation="vertical"
    android:padding="16dp"
    tools:context=".MainActivity">

    <include layout="@layout/button_main_resume"/>

    <include layout="@layout/button_main_new"/>

    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="0dp"
        android:layout_weight="1"
        android:orientation="horizontal">

        <include layout="@layout/button_main_howto"/>

        <include layout="@layout/button_main_about"/>

    </LinearLayout>

</LinearLayout>

```

button_finish.xml

```

<?xml version="1.0" encoding="utf-8"?>
<!-- Button at the bottom of the Questions screen -->
<Button
    android:id="@+id/button_finish"
    xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:onClick="done"
    android:text="@string/action_done"
    android:textAllCaps="false"/>

```

button_main_about.xml

```

<?xml version="1.0" encoding="utf-8"?>

```

```

<!-- Button that leads to the About screen -->
<Button
    android:id="@+id/about_button"
    xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="0dp"
    android:layout_height="match_parent"
    android:layout_margin="20dp"
    android:layout_weight="1"
    android:onClick="toAbout"
    android:text="@string/screen_about"
    android:textAllCaps="false"
    android:textSize="20sp"/>

```

button_main_howto.xml

```

<?xml version="1.0" encoding="utf-8"?>
<!-- Button that leads to the How-To screen -->
<Button
    android:id="@+id/howto_button"
    xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="0dp"
    android:layout_height="match_parent"
    android:layout_margin="20dp"
    android:layout_weight="1"
    android:onClick="toHowTo"
    android:text="@string/screen_howto"
    android:textAllCaps="false"
    android:textSize="20sp"/>

```

button_main_new.xml

```

<?xml version="1.0" encoding="utf-8"?>
<!-- Button that leads to an empty Questions screen -->
<Button
    android:id="@+id/new_button"
    xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="0dp"
    android:layout_margin="20dp"
    android:layout_weight="1"
    android:onClick="toQuestionsNewAsk"
    android:text="@string/action_new"
    android:textAllCaps="false"
    android:textSize="30sp"/>

```

button_main_resume.xml

```

<?xml version="1.0" encoding="utf-8"?>
<!-- Button that leads to the Questions screen -->
<Button
    android:id="@+id/resume_button"
    xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="0dp"

```

```

    android:layout_margin="20dp"
    android:layout_weight="1"
    android:onClick="toQuestionsResume"
    android:text="@string/action_resume"
    android:textAllCaps="false"
    android:textSize="40sp"/>

```

questions.xml

```

<?xml version="1.0" encoding="utf-8"?>
<!-- List of questions and possible answers -->
<PreferenceScreen
    xmlns:android="http://schemas.android.com/apk/res/android"
    android:key="key_questions">

    <PreferenceCategory
        android:title="@string/who">
        <liza.research.situationanalyser.ListPreferenceWithHelpButton
            android:defaultValue="@string/answer_default"
            android:dialogTitle="@string/who_question1"
            android:entries="@array/who_answers1"
            android:entryValues="@array/who_answers1"
            android:key="key_who1"
            android:summary="%s"
            android:title="@string/who_question1"/>
        <liza.research.situationanalyser.ListPreferenceWithHelpButton
            android:defaultValue="@string/answer_default"
            android:dialogTitle="@string/who_question2"
            android:entries="@array/who_answers2"
            android:entryValues="@array/who_answers2"
            android:key="key_who2"
            android:summary="%s"
            android:title="@string/who_question2"/>
        <liza.research.situationanalyser.ListPreferenceWithHelpButton
            android:defaultValue="@string/answer_default"
            android:dialogTitle="@string/who_question3"
            android:entries="@array/who_answers3"
            android:entryValues="@array/who_answers3"
            android:key="key_who3"
            android:summary="%s"
            android:title="@string/who_question3"/>
        <liza.research.situationanalyser.ListPreferenceWithHelpButton
            android:defaultValue="@string/answer_default"
            android:dialogTitle="@string/who_question4"
            android:entries="@array/who_answers4"
            android:entryValues="@array/who_answers4"
            android:key="key_who4"
            android:summary="%s"
            android:title="@string/who_question4"/>
    </PreferenceCategory>

    <PreferenceCategory
        android:title="@string/where">
        <liza.research.situationanalyser.ListPreferenceWithHelpButton

```

```

        android:defaultValue="@string/answer_default"
        android:dialogTitle="@string/where_question1"
        android:entries="@array/where_answers1"
        android:entryValues="@array/where_answers1"
        android:key="key_where1"
        android:summary="%s"
        android:title="@string/where_question1"/>
<liza.research.situationanalyser.ListPreferenceWithHelpButton
    android:defaultValue="@string/answer_default"
    android:dialogTitle="@string/where_question2"
    android:entries="@array/where_answers2"
    android:entryValues="@array/where_answers2"
    android:key="key_where2"
    android:summary="%s"
    android:title="@string/where_question2"/>
<liza.research.situationanalyser.ListPreferenceWithHelpButton
    android:defaultValue="@string/answer_default"
    android:dialogTitle="@string/where_question3"
    android:entries="@array/where_answers3"
    android:entryValues="@array/where_answers3"
    android:key="key_where3"
    android:summary="%s"
    android:title="@string/where_question3"/>
<liza.research.situationanalyser.ListPreferenceWithHelpButton
    android:defaultValue="@string/answer_default"
    android:dialogTitle="@string/where_question4"
    android:entries="@array/where_answers4"
    android:entryValues="@array/where_answers4"
    android:key="key_where4"
    android:summary="%s"
    android:title="@string/where_question4"/>
<liza.research.situationanalyser.ListPreferenceWithHelpButton
    android:defaultValue="@string/answer_default"
    android:dialogTitle="@string/where_question5"
    android:entries="@array/where_answers5"
    android:entryValues="@array/where_answers5"
    android:key="key_where5"
    android:summary="%s"
    android:title="@string/where_question5"/>
</PreferenceCategory>

<PreferenceCategory
    android:title="@string/when">
    <liza.research.situationanalyser.ListPreferenceWithHelpButton
        android:defaultValue="@string/answer_default"
        android:dialogTitle="@string/when_question1"
        android:entries="@array/when_answers1"
        android:entryValues="@array/when_answers1"
        android:key="key_when1"
        android:summary="%s"
        android:title="@string/when_question1"/>
    <liza.research.situationanalyser.ListPreferenceWithHelpButton
        android:defaultValue="@string/answer_default"
        android:dialogTitle="@string/when_question2"

```

```

        android:entries="@array/when_answers2"
        android:entryValues="@array/when_answers2"
        android:key="key_when2"
        android:summary="%s"
        android:title="@string/when_question2"/>
<liza.research.situationanalyser.ListPreferenceWithHelpButton
    android:defaultValue="@string/answer_default"
    android:dialogTitle="@string/when_question3"
    android:entries="@array/when_answers3"
    android:entryValues="@array/when_answers3"
    android:key="key_when3"
    android:summary="%s"
    android:title="@string/when_question3"/>
<liza.research.situationanalyser.ListPreferenceWithHelpButton
    android:defaultValue="@string/answer_default"
    android:dialogTitle="@string/when_question4"
    android:entries="@array/when_answers4"
    android:entryValues="@array/when_answers4"
    android:key="key_when4"
    android:summary="%s"
    android:title="@string/when_question4"/>
<liza.research.situationanalyser.ListPreferenceWithHelpButton
    android:defaultValue="@string/answer_default"
    android:dialogTitle="@string/when_question5"
    android:entries="@array/when_answers5"
    android:entryValues="@array/when_answers5"
    android:key="key_when5"
    android:summary="%s"
    android:title="@string/when_question5"/>
<liza.research.situationanalyser.ListPreferenceWithHelpButton
    android:defaultValue="@string/answer_default"
    android:dialogTitle="@string/when_question6"
    android:entries="@array/when_answers6"
    android:entryValues="@array/when_answers6"
    android:key="key_when6"
    android:summary="%s"
    android:title="@string/when_question6"/>
</PreferenceCategory>

<PreferenceCategory
    android:title="@string/how">
    <liza.research.situationanalyser.ListPreferenceWithHelpButton
        android:defaultValue="@string/answer_default"
        android:dialogTitle="@string/how_question1"
        android:entries="@array/how_answers1"
        android:entryValues="@array/how_answers1"
        android:key="key_how1"
        android:summary="%s"
        android:title="@string/how_question1"/>
    <liza.research.situationanalyser.ListPreferenceWithHelpButton
        android:defaultValue="@string/answer_default"
        android:dialogTitle="@string/how_question2"
        android:entries="@array/how_answers2"
        android:entryValues="@array/how_answers2"

```

```

        android:key="key_how2"
        android:summary="%s"
        android:title="@string/how_question2"/>
<liza.research.situationanalyser.ListPreferenceWithHelpButton
    android:defaultValue="@string/answer_default"
    android:dialogTitle="@string/how_question3"
    android:entries="@array/how_answers3"
    android:entryValues="@array/how_answers3"
    android:key="key_how3"
    android:summary="%s"
    android:title="@string/how_question3"/>
<liza.research.situationanalyser.ListPreferenceWithHelpButton
    android:defaultValue="@string/answer_default"
    android:dialogTitle="@string/how_question4"
    android:entries="@array/how_answers4"
    android:entryValues="@array/how_answers4"
    android:key="key_how4"
    android:summary="%s"
    android:title="@string/how_question4"/>
</PreferenceCategory>

<PreferenceCategory
    android:title="@string/what">
    <liza.research.situationanalyser.ListPreferenceWithHelpButton
        android:defaultValue="@string/answer_default"
        android:dialogTitle="@string/what_question"
        android:entries="@array/what_answers"
        android:entryValues="@array/what_answers"
        android:key="key_what1"
        android:summary="%s"
        android:title="@string/what_question"/>
    </PreferenceCategory>

<!-- Done button -->
<Preference
    android:layout="@layout/button_finish"
    android:title="@string/action_done">
</Preference>

</PreferenceScreen>

```

C.3.2. Values

arrays.xml

```

<?xml version="1.0" encoding="utf-8"?>
<resources>
    <!-- Set of answers to each question -->
    <string-array name="who_answers1">
        <item>@string/answer_default</item>
        <item>@string/who_answer11</item>
        <item>@string/who_answer12</item>
        <item>@string/who_answer13</item>
        <item>@string/who_answer14</item>
    </string-array>

```

```

        <item>@string/answer_unknown</item>
</string-array>

<string-array name="who_answers2">
    <item>@string/answer_default</item>
    <item>@string/who_answer21</item>
    <item>@string/who_answer22</item>
    <item>@string/who_answer23</item>
    <item>@string/who_answer24</item>
    <item>@string/who_answer25</item>
    <item>@string/who_answer26</item>
    <item>@string/who_answer27</item>
    <item>@string/who_answer28</item>
    <item>@string/answer_unknown</item>
</string-array>

<string-array name="who_answers3">
    <item>@string/answer_default</item>
    <item>@string/who_answer31</item>
    <item>@string/answer_yes</item>
    <item>@string/answer_no</item>
    <item>@string/answer_unknown</item>
</string-array>

<string-array name="who_answers4">
    <item>@string/answer_default</item>
    <item>@string/who_answer41</item>
    <item>@string/who_answer42</item>
    <item>@string/who_answer43</item>
    <item>@string/who_answer44</item>
    <item>@string/answer_unknown</item>
</string-array>

<string-array name="where_answers1">
    <item>@string/answer_default</item>
    <item>@string/answer_yes</item>
    <item>@string/where_answer12</item>
    <item>@string/where_answer13</item>
    <item>@string/answer_no</item>
    <item>@string/answer_unknown</item>
</string-array>

<string-array name="where_answers2">
    <item>@string/answer_default</item>
    <item>@string/where_answer21</item>
    <item>@string/where_answer22</item>
    <item>@string/where_answer23</item>
    <item>@string/answer_unknown</item>
</string-array>

<string-array name="where_answers3">
    <item>@string/answer_default</item>
    <item>@string/answer_yes</item>
    <item>@string/where_answer32</item>

```

```

        <item>@string/answer_no</item>
        <item>@string/answer_unknown</item>
    </string-array>

    <string-array name="where_answers4">
        <item>@string/answer_default</item>
        <item>@string/answer_yes</item>
        <item>@string/answer_no</item>
        <item>@string/answer_unknown</item>
    </string-array>

    <string-array name="where_answers5">
        <item>@string/answer_default</item>
        <item>@string/answer_yes</item>
        <item>@string/where_answer52</item>
        <item>@string/where_answer53</item>
        <item>@string/answer_no</item>
        <item>@string/answer_unknown</item>
    </string-array>

    <string-array name="when_answers1">
        <item>@string/answer_default</item>
        <item>@string/when_answer11</item>
        <item>@string/when_answer12</item>
        <item>@string/when_answer13</item>
        <item>@string/when_answer14</item>
        <item>@string/answer_unknown</item>
    </string-array>

    <string-array name="when_answers2">
        <item>@string/answer_default</item>
        <item>@string/when_answer21</item>
        <item>@string/when_answer22</item>
        <item>@string/when_answer23</item>
        <item>@string/when_answer24</item>
        <item>@string/when_answer25</item>
        <item>@string/answer_unknown</item>
    </string-array>

    <string-array name="when_answers3">
        <item>@string/answer_default</item>
        <item>@string/when_answer31</item>
        <item>@string/when_answer32</item>
        <item>@string/when_answer33</item>
        <item>@string/when_answer34</item>
        <item>@string/answer_unknown</item>
    </string-array>

    <string-array name="when_answers4">
        <item>@string/answer_default</item>
        <item>@string/when_answer41</item>
        <item>@string/when_answer42</item>
        <item>@string/when_answer43</item>
        <item>@string/when_answer44</item>
    </string-array>

```

```

        <item>@string/when_answer45</item>
        <item>@string/answer_unknown</item>
    </string-array>

    <string-array name="when_answers5">
        <item>@string/answer_default</item>
        <item>@string/when_answer51</item>
        <item>@string/when_answer52</item>
        <item>@string/when_answer53</item>
        <item>@string/answer_unknown</item>
    </string-array>

    <string-array name="when_answers6">
        <item>@string/answer_default</item>
        <item>@string/answer_no</item>
        <item>@string/when_answer62</item>
        <item>@string/answer_yes</item>
        <item>@string/answer_unknown</item>
    </string-array>

    <string-array name="how_answers1">
        <item>@string/answer_default</item>
        <item>@string/answer_no</item>
        <item>@string/how_answer12</item>
        <item>@string/answer_yes</item>
        <item>@string/answer_unknown</item>
    </string-array>

    <string-array name="how_answers2">
        <item>@string/answer_default</item>
        <item>@string/answer_no</item>
        <item>@string/how_answer22</item>
        <item>@string/how_answer23</item>
        <item>@string/answer_unknown</item>
    </string-array>

    <string-array name="how_answers3">
        <item>@string/answer_default</item>
        <item>@string/how_answer31</item>
        <item>@string/how_answer32</item>
        <item>@string/answer_yes</item>
        <item>@string/answer_unknown</item>
    </string-array>

    <string-array name="how_answers4">
        <item>@string/answer_default</item>
        <item>@string/how_answer41</item>
        <item>@string/how_answer42</item>
        <item>@string/how_answer43</item>
        <item>@string/how_answer44</item>
        <item>@string/answer_unknown</item>
    </string-array>

    <string-array name="what_answers">

```

```

        <item>@string/answer_default</item>
        <item>@string/what_answer1</item>
        <item>@string/what_answer2</item>
        <item>@string/what_answer3</item>
        <item>@string/answer_no</item>
        <item>@string/what_answer5</item>
        <item>@string/answer_unknown</item>
    </string-array>

    <!-- All questions -->
    <string-array name="questions">
        <item>@string/who_question1</item>
        <item>@string/who_question2</item>
        <item>@string/who_question3</item>
        <item>@string/who_question4</item>
        <item>@string/where_question1</item>
        <item>@string/where_question2</item>
        <item>@string/where_question3</item>
        <item>@string/where_question4</item>
        <item>@string/where_question5</item>
        <item>@string/when_question1</item>
        <item>@string/when_question2</item>
        <item>@string/when_question3</item>
        <item>@string/when_question4</item>
        <item>@string/when_question5</item>
        <item>@string/when_question6</item>
        <item>@string/how_question1</item>
        <item>@string/how_question2</item>
        <item>@string/how_question3</item>
        <item>@string/how_question4</item>
        <item>@string/what_question</item>
    </string-array>

    <!-- All help-messages -->
    <string-array name="explanations">
        <item>@string/explanation_who1</item>
        <item>@string/explanation_who2</item>
        <item>@string/explanation_who3</item>
        <item>@string/explanation_who4</item>
        <item>@string/explanation_where1</item>
        <item>@string/explanation_where2</item>
        <item>@string/explanation_where3</item>
        <item>@string/explanation_where4</item>
        <item>@string/explanation_where5</item>
        <item>@string/explanation_when1</item>
        <item>@string/explanation_when2</item>
        <item>@string/explanation_when3</item>
        <item>@string/explanation_when4</item>
        <item>@string/explanation_when5</item>
        <item>@string/explanation_when6</item>
        <item>@string/explanation_how1</item>
        <item>@string/explanation_how2</item>
        <item>@string/explanation_how3</item>
        <item>@string/explanation_how4</item>
    </string-array>

```

```

        <item>@string/explanation_what</item>
    </string-array>

    <!-- Keys to the questions -->
    <string-array name="keys_questions"
        translatable="false">
        <item>key_who1</item>
        <item>key_who2</item>
        <item>key_who3</item>
        <item>key_who4</item>
        <item>key_where1</item>
        <item>key_where2</item>
        <item>key_where3</item>
        <item>key_where4</item>
        <item>key_where5</item>
        <item>key_when1</item>
        <item>key_when2</item>
        <item>key_when3</item>
        <item>key_when4</item>
        <item>key_when5</item>
        <item>key_when6</item>
        <item>key_how1</item>
        <item>key_how2</item>
        <item>key_how3</item>
        <item>key_how4</item>
        <item>key_what1</item>
    </string-array>

</resources>

```

questions.xml (English)

```

<?xml version="1.0" encoding="utf-8"?>
<!-- Questions and their answers -->
<resources>

    <string name="who">Who</string>

    <string name="who_question1">Do you know the people?</string>
    <string name="explanation_who1"><![CDATA[For example, if you're in an
        airport and you know anyone with whom you're there, you know
        <b>(almost) everyone there</b>]]></string>
    <string name="who_answer11">No, no one</string>
    <string name="who_answer12">No, only one person or a few people</string>
    <string name="who_answer13">Yes, the most important people</string>
    <string name="who_answer14">Yes, I know (almost) everyone there</string>

    <string name="who_question2">How many people will there be?</string>
    <string name="explanation_who2"><![CDATA[Don't count yourself]]></string>
    <string name="who_answer21">Only me</string>
    <string name="who_answer22">One person</string>
    <string name="who_answer23">Only one person at a time</string>
    <string name="who_answer24">Two to five people</string>
    <string name="who_answer25">Four to ten people</string>

```

```

<string name="who_answer26">Eight to thirty people</string>
<string name="who_answer27">Twenty to one hundred people</string>
<string name="who_answer28">More than eighty people</string>

<string name="who_question3">Will there be someone with you?</string>
<string name="explanation_who3"><![CDATA[Someone who helps you relax,
    can do so consciously or unconsciously]]></string>
<string name="who_answer31">Yes, someone who helps me relax</string>
<string name="who_answer32">Yes</string>
<string name="who_answer33">No</string>

<string name="who_question4">What devision of roles describes the
    situation best?</string>
<string name="explanation_who4"><![CDATA[<b>Interview</b>: order,
    question, discussion, meeting
    <br><b>Group</b>: party, introduction week
    <br><b>Audience</b>: follow lesson, visit concert, cinema
    <br><b>In front of an audience</b>: perform, teach, speech]]></string>
<string name="who_answer41">Interview</string>
<string name="who_answer42">Group</string>
<string name="who_answer43">Audience</string>
<string name="who_answer44">In front of an audience</string>

<string name="where">Where</string>

<string name="where_question1">Do you know the location?</string>
<string name="explanation_where1"><![CDATA[For example, if you've already
    been to several cinemas, but not this one, you know a <b>similar
    location</b>]]></string>
<string name="where_answer11">Yes</string>
<string name="where_answer12">Yes, but not well</string>
<string name="where_answer13">No, but a similar location</string>
<string name="where_answer14">No</string>

<string name="where_question2">If so, what do you think about the location?
</string>
<string name="explanation_where2"><![CDATA[If not, select <b>not
    applicable</b>]]></string>
<string name="where_answer21">Usually, I feel at ease</string>
<string name="where_answer22">Neutral</string>
<string name="where_answer23">Usually, the location makes me nervous</string>

<string name="where_question3">Do you know the layout of the location?
</string>
<string name="explanation_where3"><![CDATA[<b>Yes</b>: you know where to
    go, where you can find what you want, where you have to sit and wait
    <br><b>Kind of</b>: a little, or you know how to find out where to go
    <br><b>No</b>: you don't know where to go, you don't know whether
    locations are clearly marked]]></string>
<string name="where_answer31">Yes</string>
<string name="where_answer32">Kind of</string>
<string name="where_answer33">No</string>

```

```

<string name="where_question4">Is the location used as you would expect?
</string>
<string name="explanation_where4"><![CDATA[<b>Yes</b>: a church is used as
a church
<br>No</b>: a church is used as a museum
<br>If you\'ve been at this church before and it is always used as a
museum, select <b>yes</b>]]></string>
<string name="where_answer41">Yes</string>
<string name="where_answer42">No</string>

<string name="where_question5">Do you know the way to behave that is
associated with this location?</string>
<string name="explanation_where5"><![CDATA[Do you know whether to be
quiet, whether you are allowed to walk away at any moment, when
you\'re allowed to go to the toilet, who you are allowed/must talk
to?]]></string>
<string name="where_answer51">Yes</string>
<string name="where_answer52">No, but it will be explained to me well</string>
<string name="where_answer53">No, but someone will probably explain it to me
</string>
<string name="where_answer54">No</string>

<string name="when">When</string>

<string name="when_question1">When does it start?</string>
<string name="explanation_when1"><![CDATA[<b>As a reaction to
something</b>: someone calls you, someone comes to pick you up, there
is a signal]]></string>
<string name="when_answer11">I know the exact starting time</string>
<string name="when_answer12">I approximately know the starting time</string>
<string name="when_answer13">I can decide when it starts</string>
<string name="when_answer14">It starts as a reaction to something</string>

<string name="when_question2">What happens if you\'re late?</string>
<string name="explanation_when2"><![CDATA[<b>No problem</b>: If you go to
a flea market and there is enough time to see everything, it doesn\'t
matter if you\'re running a bit late
<br><b>Everything is postponed</b>: If you have to collect stuff to
sell on a flea market and you start later, you\'ll also finish later
<br><b>You miss a part</b>: If there is just enough time to watch the
whole market and you want to see everything, you have to miss a part
if you\'re late
<br><b>You miss everything</b>: If there is only one bus per hour to
go to the flea market and the flea market is only for an hour, you
miss the whole event if you miss that bus
<br><b>Burden to others</b>: If you have agreed with someone to sell
stuff together at the flea market and you are late, the other will
(probably) be disappointed]]></string>
<string name="when_answer21">No problem</string>
<string name="when_answer22">Everything is postponed</string>
<string name="when_answer23">I\'ll miss a part</string>
<string name="when_answer24">I\'ll miss everything</string>
<string name="when_answer25">I\'ll be a burden to others</string>

```

```

<string name="when_question3">What happens if you miss it?</string>
<string name="explanation_when3"><![CDATA[An example of <b>negative
consequences</b>: You want to renew your passport at the last minute
before you go on a holiday, but you miss that chance]]></string>
<string name="when_answer31">It doesn't matter</string>
<string name="when_answer32">I would pity that</string>
<string name="when_answer33">That has negative consequences</string>
<string name="when_answer34">I'll be a burden to others</string>

<string name="when_question4">When will it end?</string>
<string name="explanation_when4"><![CDATA[If you visit an open day with
three rounds, you can usually decide to leave after the second round.
Then you can <b>determine the ending time approximately yourself</b>.]></string>
<string name="when_answer41">The ending time is fixed</string>
<string name="when_answer42">The ending time is not clear (yet)</string>
<string name="when_answer43">I can determine the ending time</string>
<string name="when_answer44">I can approximately determine the ending
time</string>
<string name="when_answer45">The ending time is not important</string>

<string name="when_question5">What happens when it ends later?</string>
<string name="explanation_when5"><![CDATA[<b>Something serious</b>: You
miss the last train home]]></string>
<string name="when_answer51">Nothing (serious)</string>
<string name="when_answer52">Everything after gets postponed</string>
<string name="when_answer53">Something serious</string>

<string name="when_question6">Do you have to wait?</string>
<string name="explanation_when6"><![CDATA[Do you have to sit in a waiting
room first, do you have to wait for the train to arrive, between to
rounds, etc.]]></string>
<string name="when_answer61">No</string>
<string name="when_answer62">A very short time</string>
<string name="when_answer63">Yes</string>

<string name="how">How</string>

<string name="how_question1">Can something change?</string>
<string name="explanation_how1"><![CDATA[If one train is late, but you can
take another train so that you'll still be in time, there is a
change, <b>but it's OK</b>]]></string>
<string name="how_answer11">No</string>
<string name="how_answer12">Yes, but it's OK</string>
<string name="how_answer13">Yes</string>

<string name="how_question2">Do you know what you should do and how to do
it?</string>
<string name="explanation_how2"><![CDATA[If someone will explain it to
you, choose <b>kind of</b>]]></string>
<string name="how_answer21">No</string>
<string name="how_answer22">Kind of</string>

```

```

<string name="how_answer23">Yes, very clearly</string>

<string name="how_question3">Does the order of actions matter?</string>
<string name="explanation_how3"><![CDATA[If you go somewhere by plane,
it\'s important to take your passport out of your luggage before
you deliver your luggage, or finish your drink before you go
through customs. It is not important whether you get some food
before or after you deliver your luggage]]></string>
<string name="how_answer31">No, or there is only one action</string>
<string name="how_answer32">For some actions, it does</string>
<string name="how_answer33">Yes</string>

<string name="how_question4">Can you ask for help if needed?</string>
<string name="explanation_how4"><![CDATA[The moment you are in the
situation]]></string>
<string name="how_answer41">No, not at all</string>
<string name="how_answer42">No, I don\'t know where or to whom</string>
<string name="how_answer43">Probably</string>
<string name="how_answer44">Yes, I know exactly where or to whom</string>

<string name="what">What</string>

<string name="what_question">Do you know what people expect of you?
</string>
<string name="explanation_what"><![CDATA[Do people have a certain idea of
what you should do or how well you should do it?]]></string>
<string name="what_answer1">Yes, and I\'m sure I can live up to that
</string>
<string name="what_answer2">Yes, but I\'m not sure if I can live up to
that</string>
<string name="what_answer3">Yes, but I can\'t live up to that</string>
<string name="what_answer4">No</string>
<string name="what_answer5">Nothing is expected of me</string>

</resources>

```

questions.xml (Dutch)

```

<?xml version="1.0" encoding="utf-8"?>
<!-- Questions and their answers -->
<resources>

  <string name="who">Wie</string>

  <string name="who_question1">Ken je de mensen?</string>
  <string name="explanation_who1"><![CDATA[Als je bijvoorbeeld op een
vliegveld bent, maar je kent iedereen met wie jij daar bent, ken
je er <b>(bijna) iedereen</b>]]></string>
  <string name="who_answer11">Nee, niemand</string>
  <string name="who_answer12">Nee, maar één iemand of een paar mensen
  </string>
  <string name="who_answer13">Ja, de belangrijkste mensen</string>
  <string name="who_answer14">Ja, ik ken er (bijna) iedereen</string>

```

```

<string name="who_question2">Hoeveel mensen zijn er ongeveer?</string>
<string name="explanation_who2"><![CDATA[Tel jezelf niet mee]]></string>
<string name="who_answer21">Alleen ik</string>
<string name="who_answer22">Eén iemand</string>
<string name="who_answer23">Maar één iemand tegelijk</string>
<string name="who_answer24">Twee tot vijf mensen</string>
<string name="who_answer25">Vier tot tien mensen</string>
<string name="who_answer26">Acht tot dertig mensen</string>
<string name="who_answer27">Twintig tot honderd mensen</string>
<string name="who_answer28">Meer dan tachtig mensen</string>

<string name="who_question3">Ga je samen met iemand?</string>
<string name="explanation_who3"><![CDATA[Iemand die je helpt ontspannen,
kan dat bewust of onbewust doen]]></string>
<string name="who_answer31">Ja, met iemand die me helpt ontspannen</string>
<string name="who_answer32">Ja</string>
<string name="who_answer33">Nee</string>

<string name="who_question4">Welke rolverdeling omschrijft de situatie het
best?</string>
<string name="explanation_who4"><![CDATA[<b>Gesprek</b>: bestelling,
vraag, bespreking, vergadering
<br><b>Groep</b>: feestje, introductiekamp
<br><b>Publiek</b>: les volgen, concert bezoeken, bioscoop
<br><b>Voor een publiek</b>: optreden, lesgeven, speech]]></string>
<string name="who_answer41">Gesprek</string>
<string name="who_answer42">Groep</string>
<string name="who_answer43">Publiek</string>
<string name="who_answer44">Voor een publiek</string>

<string name="where">Waar</string>

<string name="where_question1">Ken je de locatie?</string>
<string name="explanation_where1"><![CDATA[Als je bijvoorbeeld al in een
aantal verschillende bioscopen bent geweest, maar nog niet in deze,
ken je een <b>soortgelijke locatie</b>]]></string>
<string name="where_answer11">Ja</string>
<string name="where_answer12">Ja, maar niet goed</string>
<string name="where_answer13">Nee, maar wel een soortgelijke locatie
</string>
<string name="where_answer14">Nee</string>

<string name="where_question2">Zo ja, wat vind je van de locatie?</string>
<string name="explanation_where2"><![CDATA[Zo nee, vul <b>niet van
toepassing</b> in]]></string>
<string name="where_answer21">Ik voel me er (normaal gesproken) op mijn
gemak</string>
<string name="where_answer22">Neutraal</string>
<string name="where_answer23">De locatie maakt me (meestal) nerveus
</string>

<string name="where_question3">Ken je de indeling van de locatie?</string>

```

```

<string name="explanation_where3"><![CDATA[<b>Ja</b>: je weet waar je heen
moet, waar je kan vinden wat je zoekt, waar je moet gaan zitten of
wachten
<br><b>Ongeveer</b>: ongeveer of je weet hoe je erachter komt waar je
heen moet
<br><b>Nee</b>: je niet weet waar je heen moet, je weet niet of
deellocaties duidelijk aangegeven zijn]]></string>
<string name="where_answer31">Ja</string>
<string name="where_answer32">Ongeveer</string>
<string name="where_answer33">Nee</string>

<string name="where_question4">Wordt de locatie gebruikt zoals je zou
verwachten?</string>
<string name="explanation_where4"><![CDATA[<b>Ja</b>: een kerk wordt
gebruikt als kerk
<br><b>Nee</b>: een kerk wordt gebruikt als museum
<br>Als je vaker naar deze kerk gaat en deze kerk wordt altijd
gebruikt als museum, vul dan <b>ja</b> in]]></string>
<string name="where_answer41">Ja</string>
<string name="where_answer42">Nee</string>

<string name="where_question5">Ken je de gedragsregels die bij deze
locatie horen?</string>
<string name="explanation_where5"><![CDATA[Weet je of je stil moet zijn
hier, of je op elk moment kan weglopen, wanneer je naar de wc
kunt/mag, tegen wie je mag/moet praten?]]></string>
<string name="where_answer51">Ja</string>
<string name="where_answer52">Nee, maar dat wordt me goed uitgelegd
</string>
<string name="where_answer53">Nee, maar dat wordt me waarschijnlijk wel
ongeveer uitgelegd</string>
<string name="where_answer54">Nee</string>

<string name="when">Wanneer</string>

<string name="when_question1">Wanneer begint het?</string>
<string name="explanation_when1"><![CDATA[<b>Als reactie op iets</b>:
iemand belt je op, iemand komt je halen, er gaat een bel]]></string>
<string name="when_answer11">Ik weet de precieze begintijd</string>
<string name="when_answer12">Ik weet wanneer het ongeveer begint</string>
<string name="when_answer13">Ik kan zelf bepalen wanneer het begint
</string>
<string name="when_answer14">Het begint als reactie op iets</string>

<string name="when_question2">Wat gebeurt er als je te laat bent?</string>
<string name="explanation_when2"><![CDATA[<b>Geen probleem</b>: Als je
naar een rommelmarkt gaat en er is genoeg tijd om alles te bekijken,
maakt het niet uit als je wat later bent
<br><b>Alles schuift op</b>: Als je spullen gaat verzamelen voor een
rommelmarkt en je bent later, ben je ook later klaar
<br><b>Je mist een gedeelte</b>: Als precies genoeg tijd is om de hele
rommelmarkt te bekijken en je wil alles gezien hebben, mis je een
gedeelte als je wat later bent

```

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    <br><b>Je mist alles</b>: Als er maar één bus per uur gaat naar de
    rommelmarkt en de rommelmarkt duurt maar een uur, mis je de hele
    rommelmarkt als je die bus mist
    <br><b>Anderen tot last</b>: Als je hebt afgesproken samen met iemand
    je spullen te verkopen op de rommelmarkt en je bent later, baalt
    diegene (waarschijnlijk) als je te laat bent]]></string>
<string name="when_answer21">Geen probleem</string>
<string name="when_answer22">Alles schuift op</string>
<string name="when_answer23">Dan mis ik een gedeelte</string>
<string name="when_answer24">Dan mis ik alles</string>
<string name="when_answer25">Dan ben ik anderen tot last</string>

<string name="when_question3">Wat gebeurt er als je het mist?</string>
<string name="explanation_when3"><![CDATA[Een voorbeeld van <b>negatieve
gevolgen</b>: Je wil je paspoort op het laatste moment voor je op
vakantie gaat, verlengen, maar je mist die kans]]></string>
<string name="when_answer31">Dat is niet erg</string>
<string name="when_answer32">Dat zou ik jammer vinden</string>
<string name="when_answer33">Dat heeft negatieve gevolgen</string>
<string name="when_answer34">Dan ben ik anderen tot last</string>

<string name="when_question4">Wanneer eindigt het?</string>
<string name="explanation_when4"><![CDATA[Als je een open dag bezoekt met
drie rondes, kun je meestal besluiten na de tweede ronde weg te gaan.
Dan kun je de <b>eindtijd ongeveer zelf bepalen</b>.]></string>
<string name="when_answer41">De eindtijd staat vast</string>
<string name="when_answer42">Er is (nog) geen duidelijke eindtijd</string>
<string name="when_answer43">Ik kan de eindtijd zelf bepalen</string>
<string name="when_answer44">Ik kan de eindtijd ongeveer zelf bepalen
</string>
<string name="when_answer45">De eindtijd is niet belangrijk</string>

<string name="when_question5">Wat gebeurt er als het uitloopt?</string>
<string name="explanation_when5"><![CDATA[<b>Iets ernstigs</b>: Je mist de
laatste trein naar huis]]></string>
<string name="when_answer51">Niets (ernstigs)</string>
<string name="when_answer52">De dingen erna lopen ook uit</string>
<string name="when_answer53">Iets ernstigs</string>

<string name="when_question6">Moet je wachten?</string>
<string name="explanation_when6"><![CDATA[Moet je eerst in een wachtkamer
zitten, op de trein wachten, na een ronde op een andere ronde
wachten]]></string>
<string name="when_answer61">Nee</string>
<string name="when_answer62">Heel kort</string>
<string name="when_answer63">Ja</string>

<string name="how">Hoe</string>

<string name="how_question1">Kan er iets wijzigen?</string>
<string name="explanation_how1"><![CDATA[Als de ene trein te laat is, maar
je kunt een andere trein nemen waardoor je er nog steeds op tijd bent,
verandert er wel iets, <b>maar dat is niet erg</b>]]></string>

```

```

<string name="how_answer11">Nee</string>
<string name="how_answer12">Ja, maar dat is niet erg</string>
<string name="how_answer13">Ja</string>

<string name="how_question2">Weet je wat je moet doen en hoe?</string>
<string name="explanation_how2"><![CDATA[Als er uitgelegd wordt wat je
moet doen, kies dan <b>ongeveer</b>]]></string>
<string name="how_answer21">Nee</string>
<string name="how_answer22">Ongeveer</string>
<string name="how_answer23">Ja, heel goed</string>

<string name="how_question3">Maakt de volgorde van acties uit?</string>
<string name="explanation_how3"><![CDATA[Als je met het vliegtuig ergens
heen gaat, is het belangrijk om je paspoort uit je bagage te halen
vóór je je bagage aflevert, of je drinken op te maken vóór je door
de douane gaat. Het is niet belangrijk of je voor of na het
afleveren van je bagage ergens iets te eten haalt.]]></string>
<string name="how_answer31">Nee of het gaat maar om één actie</string>
<string name="how_answer32">Van sommige acties wel</string>
<string name="how_answer33">Ja</string>

<string name="how_question4">Kun je hulp vragen als dat nodig is?</string>
<string name="explanation_how4"><![CDATA[Op het moment dat je je in de
situatie bevindt]]></string>
<string name="how_answer41">Nee, helemaal niet</string>
<string name="how_answer42">Nee, ik weet niet waar of aan wie</string>
<string name="how_answer43">Waarschijnlijk wel</string>
<string name="how_answer44">Ja, ik weet precies waar of aan wie</string>

<string name="what">Wat</string>

<string name="what_question">Weet je wat mensen van je verwachten?</string>
<string name="explanation_what"><![CDATA[Hebben mensen een bepaald beeld
in hun hoofd van wat je zou moeten doen of hoe goed je iets moet
doen?]]></string>
<string name="what_answer1">Ja, en ik kan daar makkelijk aan voldoen
</string>
<string name="what_answer2">Ja, maar ik weet niet zeker of ik daar aan kan
voldoen</string>
<string name="what_answer3">Ja, maar ik kan daar niet aan voldoen</string>
<string name="what_answer4">Nee</string>
<string name="what_answer5">Er wordt niks van me verwacht</string>

</resources>

```

strings.xml (English)

```

<?xml version="1.0" encoding="utf-8"?>
<resources>
    <string name="app_name"
        translatable="false">Situation Analyser</string>

    <!-- Buttons -->

```

```

<string name="action_resume">Resume</string>
<string name="action_new">New</string>
<string name="action_done">Done</string>
<!-- Screen names (and some button names) -->
<string name="screen_questions">Questions</string>
<string name="screen_howto">How-To</string>
<string name="screen_about">About</string>
<!-- First use message -->
<string name="welcome_title">Welcome!</string>
<string name="welcome_text">Would you like an explanation about how to use
    this app?</string>

<!-- Help button -->
<string name="answer_help"
    translatable="false">\?</string>
<!-- Some standard answers -->
<string name="answer_ok"
    translatable="false">OK</string>
<string name="answer_cancel">Cancel</string>
<string name="answer_yes">Yes</string>
<string name="answer_no">No</string>
<string name="answer_new">New</string>
<string name="answer_later">Later</string>
<string name="answer_default">Select an answer</string>
<string name="answer_unknown">I don\'t know (yet) or N.A.</string>

<!-- Confirmation messages -->
<string name="confirm_reset_questions">Are you sure you want to reset the
    answers?</string>
<string name="confirm_completed_questions">Have you completed answering
    the questions?</string>

<!-- Content of How-To and About screens -->
<string name="howto_content">
    This app is designed to analyse (social) situations by answering a few
    questions. You can fill in the app when you\'re soon going to do
    something you are nervous about, or when you\'re already in that
    situation.
    \n\nIf you do not know an answer, you\'re unsure, or the \'right\'
    answer is not listed, choose the answer that fits best. There is never
    one right answer and you can interpret the questions the way you want.
    For additional information or examples, tap on the question mark
    button while answering that question.
</string>
<string name="about_content">
    This app was developed by Liza Verhaert as part of her Bachelor
    thesis. She studies Artificial Intelligence at the Radboud University
    in Nijmegen.
    \nThe answers you provide are private and accessible to no one except
    you.
    \n\nQuestions, comments, feedback: send a mail titled \'Situation
    Analyser\' to lizaverhaert@student.ru.nl
</string>

```

</resources>

strings.xml (Dutch)

```
<?xml version="1.0" encoding="utf-8"?>
```

```
<resources>
```

```
    <!-- Buttons -->
```

```
    <string name="action_resume">Doorgaan</string>
```

```
    <string name="action_new">Nieuw</string>
```

```
    <string name="action_done">Klaar</string>
```

```
    <!-- Screen names (and some button names) -->
```

```
    <string name="screen_questions">Vragen</string>
```

```
    <string name="screen_howto">Uitleg</string>
```

```
    <string name="screen_about">Over</string>
```

```
    <!-- First use message -->
```

```
    <string name="welcome_title">Welkom!</string>
```

```
    <string name="welcome_text">Wil je uitleg over hoe deze app werkt?</string>
```

```
    <!-- Some standard answers -->
```

```
    <string name="answer_cancel">Annuleren</string>
```

```
    <string name="answer_yes">Ja</string>
```

```
    <string name="answer_no">Nee</string>
```

```
    <string name="answer_new">Nieuw</string>
```

```
    <string name="answer_later">Later</string>
```

```
    <string name="answer_default">Kies een antwoord</string>
```

```
    <string name="answer_unknown">Weet ik (nog) niet of n.v.t.</string>
```

```
    <!-- Confirmation messages -->
```

```
    <string name="confirm_completed_questions">Ben je klaar met het invullen  
    van de vragen?</string>
```

```
    <string name="confirm_reset_questions">Weet je zeker dat je de antwoorden  
    wil resetten?</string>
```

```
    <!-- Content of How-To and About screens -->
```

```
    <string name="howto_content">
```

```
        Deze app is bedoeld om (sociale) situaties te analyseren met behulp  
        van een paar vragen. Je kunt de app invullen wanneer je binnenkort  
        iets gaat doen waar je zenuwachtig voor bent, of pas wanneer je je in  
        de situatie bevindt.
```

```
        \n\nAls je een antwoord niet weet, je twijfelt, of het "juiste"  
        antwoord staat er niet tussen, kies dan het antwoord dat het meest in  
        de buurt komt. Er is nooit één goed antwoord en je kunt de vragen  
        interpreteren zoals je zelf wil. Voor extra informatie of voorbeelden  
        kun je op de knop met het vraagtekentje tikken wanneer je de vraag  
        beantwoordt.
```

```
    </string>
```

```
    <string name="about_content">
```

```
        Deze app is ontwikkeld door Liza Verhaert als onderdeel van haar  
        Bachelorscriptie. Ze studeert Kunstmatige Intelligentie aan de Radboud  
        Universiteit te Nijmegen.
```

```
        \nDe antwoorden die je geeft, zijn privé en voor niemand behalve jou  
        toegankelijk.
```

```
        \n\nVragen, opmerkingen, feedback: stuur een mail met de titel
```

```
        "Situation Analyser" naar lizaverhaert@student.ru.nl
    </string>

</resources>
```