

# Radboud Universiteit



Faculty of Arts

International Business Communication

## **Bachelor Thesis**

Supervisor: Warda Nejjari

Second assessor: Eniola Boluwaduro

## **Bachelor Thesis**

### **Accent Influence in Healthcare: Examining Trust and Competence Perceptions Among Native Dutch Listeners**

Tom Velasco Luna, s1078750

[tom.velascoluna@ru.nl](mailto:tom.velascoluna@ru.nl)

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## Abstract

In an increasingly interconnected world, accented speech plays an important role in intercultural communication, particularly in high-stakes communication settings such as healthcare. Our study investigates the influence of Ukrainian-accented, French-accented, and standard British-accented English on perceptions of trustworthiness, competence, and comprehensibility in patient-doctor communication among native Dutch university students. Furthermore, we explore the impact of listener personality traits, specifically conscientiousness and extraversion. We used audio recordings of male speakers with different accents to speak a standardized medical message. Results revealed a significant correlation between non-native accents and lower ratings of trustworthiness and competence as well as comprehensibility. This supports our hypotheses that accentedness impacts listener perceptions. The findings highlight the importance of understanding accent biases in healthcare and suggests that personality traits do not have a significant effect. This research fills a notable gap in the literature on the perception of Ukrainian and French accents and underscores the need for further investigation into the relationship between accented speech and psychological factors in intercultural communication.

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## Introduction

In today's interconnected world, people from all over the globe work together to solve our most important problems. As globalization continues to blur the boundaries between cultures, languages, and territories, it facilitates intercultural exchanges which lead mostly to acceptance but also distinction and judgment on cultural, as well as linguistic differences (Steger, 2017). As explained by Bouymaj and De Freitas Barbosa Pereira (2022), globalization promotes cultural exchange but can also intensify cultural judgments, as an increased exposure to different cultures fosters both appreciation and criticism. While languages, language acceptance and accents play an important role in today's society, people are confronted with different accents on a daily basis.

Understanding the impact of accentedness and different speech patterns is imperative in many different settings such as in governmental institutions, corporate surroundings, academia, education as well as in healthcare. Although not directly applicable to our study, non-native speech is perceived as less credible due to processing difficulties, as demonstrated by Lev-Ari and Keysar (2010). This effect is still active even if listeners are made aware of their comprehension challenges, in relation to heavier accents in order to highlight their potential biases against non-native speakers that could impact communication across various contexts.

Intercultural communication plays a key role in our society, may it be regional or globally, with most people being subject to it on a daily basis, no matter if it is by speaking in a foreign language or interacting with somebody speaking your native language and adapting to you. English is renowned as the global lingua franca and plays a crucial role in cross-cultural connections on a worldwide scale. Serving as a shared language amongst diverse people, it facilitates the seamless exchange of ideas, knowledge, and experiences across the world. As stated by Pumble (Workplace Communication Statistics in 2024, 2024) around 62% of corporate employees have at least three or more colleagues from other cultures with a striking 89% of employees working in global teams.

Accents are omnipresent in our world, they are a fundamental part of language (Moreno-Torres et al., 2016). Globalization facilitates intercultural exchanges and reduces stereotypes as well as misconceptions about other cultures and languages (Tadmor et al., 2012). The fact that we encounter diverse accents in our daily lives nurtures our acceptance and understanding of these seemingly trivial differences. Based on Allport's intergroup contact theory (Allport, 1954) encounters with different accents in our daily lives can improve acceptance and understanding as there is a potential for friendship formation and positive

intergroup cooperation. Past research by Pettigrew (1998) confirms Allport's hypothesis, indicating that a positive contact effect, can contribute to a reduced prejudice and an increased acceptance of differences, which underlines the significance of interpersonal interactions in intergroup relations.

Considering the aforementioned arguments, it is essential to study and understand the differences and significance of accentedness and speech patterns in various settings in order to be able to draw conclusions and theories on how accentedness influences us, our surroundings and our day to day lives.

Traditionally accentedness research focuses mainly on the impact that an accent has on the listener in relation to factors such as comprehension and intelligibility (Nejjari et al., 2021). Teló et al. (2022) demonstrated clear connections between accent type and perceptions of competence. Furthermore, an article by Roessel et al. (2017) revealed that native German listeners evaluated speakers with a strong nonnative accent worse, which would suggest that there is a link between accented speech and societal perception. Adding to this, research by Nelson et al. (2016) revealed an accent bias in listeners, rating Spanish-accented English worse than standard accents such as British English, American English, or Australian English. This would suggest that listeners prefer native speakers over nonnative speakers. Nonetheless, it needs to be considered that accentedness research is mostly focused on demographic aspects such as comparing the reaction of a native versus a non-native listener to the accented speech, ignoring psychological factors such as belongingness to different societal groups (Beinhoff, 2014) or personality (Gaffney & Côté, 2019) completely. In this study, monolingual English speakers completed the Big Five personality test and rated foreign accents for both non-native English speakers and native control speakers. The results revealed significant correlations between two personality traits, conscientiousness and extraversion, and the foreign accent ratings given by listeners. Adding to this, according to McDonough et al. (2022) research, Canadian university students had distinct perceptions of the speech patterns, status features, and solidarity traits of international students from South Asia, Europe, and China. Students from China and South Asia had lower scores in terms of status (competence and intelligence), solidarity, and academic involvement than students from Europe because they are thought to be more accented and less understandable. It is therefore essential to comprehend the possible connection between accented speech and psychological factors in order to be able to accurately address the challenges of intercultural communication in high stakes situations such as healthcare.

Taking into consideration all these factors it is evident that research on accentedness has some research gaps which can be exploited such as the role that the listener's personality might play on the perception of accented speech. Personality is an important part of ourselves and our society, meaning that it could play a major role in perception of accentedness. Based on the research conducted for this paper however little to no relevant research could be found for that specific field. Therefore, we propose to take a look at that apparent research gap and create a meaningful and relevant study to seek to understand how speaker accent and listener personality can affect the listeners perception of trustworthiness and competence of the speaker. As discussed by Baquiran & Nicoladis (2019) when confronted with a bad news situation, participants favoured doctors and accents familiar to their own, while Chinese-accented doctors were judged as less competent than the standard Canadian-accented doctors. Interestingly when giving bad news both doctors were equally bad perceived on competence which could be a queue to an innate response in our mind to be more skeptical when receiving unfortunate information. As the healthcare sector is very important and accented speech does play a significant role in that profession, it is of importance to analyse and examine the relation and effect that differently accented doctors can have on a patient, may that be in critical situations aswell as routine inspections. In a study by Rubin et al. (1997), the influence of accent and ethnicity on patient perceptions of physicians delivering an AIDS prevention message was investigated. Participants were exposed to the message delivered in three accents, highly marked South Asian, moderately marked South Asian, and standard American. The findings of this study did not reveal any significant effects of perceived accent and ethnicity on participants' evaluations. Only small effects of accent were registered on the physicians' professional competence, message recall, and intention to comply. Rubin et al. (1997) encourages other research to replicate his in other medical fields, using other participants and materials.

In consideration of the presented academic research , there is a notable gap in the existing literature concerning the perception of Ukrainian and French accents, despite their increasing significance in the contemporary global landscape. This gap in the existing literature about the perception of Ukrainian and French accents, despite their increasing significance, might be due to the historical focus on other major global languages, linguistic stereotyping, or political and economic factors. Generally, research is focused on comparing traditional English accents between each other or to Asian and Hispanic accents (Baquiran & Nicoladis, 2019; Rakić, 2019). The Ukrainian accent, particularly, holds significance given its relevance to current geopolitical dynamics and its potential impact on intercultural communication. According to Szpyra-Kozłowska and Radomski (2014) who examined 11 samples of foreign-

accented Polish including Ukrainian accented Polish, nationality does not significantly impact evaluations of accent features. However, it does affect the attribution of personal characteristics to foreign speakers, highlighting the role of cultural prejudices in shaping perceptions. Due to the lack of further research on this topic, it is suggested to study the effects of this accent further.

In the context of stereotypical perceptions, Ukrainians often find themselves influenced by the geopolitical landscape, particularly due to the ongoing conflict within the region. The prevailing stereotypes might tend to associate Ukrainians not only with their accent or identity but also with the turmoil of war, potentially leading to a re-evaluation of the standard biases. This shift in perception highlights the dynamic nature of prejudice which suggests that factors, such as armed conflict, can significantly influence and reshape societal stereotypes. Literature exploring the stereotypical associations of Ukrainians amidst geopolitical tensions may offer valuable insights into the evolving nature of bias, unfortunately as of the time of writing this report, no such literature was published or could be found.

Furthermore, with the growing interconnectedness and cultural exchange between nations, the role of doctor-patient communication becomes increasingly vital. Dutch respondents were chosen for their convenience in identification and their relevance to the study context; this selection allows for a broad implication as the study is pertinent to entire Dutch society while exploring perceptions of accented speech in a second language, in this case English. The reason why English is used is that the Netherlands is the most proficient English-speaking country in the world outside of the Anglosphere (Wittenborg, 2016). For this reason, it was decided that it would be interesting focus on Dutch international students who need to go to a doctor abroad in this case in the United Kingdom. The incorporation of personality as a variable comes from the lack of conclusive research in this area (Gaffney & Côté, 2019), aiming to reveal its potential influence on perception of competence, trustworthiness and comprehensibility. Trustworthiness and competence as well as comprehensibility were chosen as dependent variables due to their importance in patient-doctor communication, with extensive existing research exploring the impact of accented speech on these variables (Rakić, 2019; Rubin et al., 1997). By examining the interplay between accent factors, personality traits, and perception of trustworthiness and competence as well as comprehensibility, this study seeks to contribute valuable insights to both theoretical frameworks and practical applications in intercultural communication and healthcare settings. The following research question and hypotheses were developed for this study:

RQ: How does Ukrainian-accented, French-accented, and standard British-accented English, as well as personality traits of the listener, influence trustworthiness, competence and perceived comprehension in patient-doctor communication among native Dutch student listeners?

According to Jiang et al. (2019), research among English Canadian listeners indicates that voice confidence and in-group status significantly impact how trustworthy a speaker is perceived. They found that a speaker's voice confidence and their fit into the listener's in-group influence trust judgments. This would suggest lower trustworthiness ratings for nonnative accents. Furthermore, in Rakić's (2019) study, doctors were perceived as more competent when speaking with standard British English and warmer when using a regional accent. This suggests a potential challenge for doctors who need to convey both competence and warmth in their interactions. Based on this literature, the following hypotheses were formulated:

Hypothesis 1: Nonnative accents will significantly influence perceptions of trustworthiness in high-stakes communication contexts, leading to lower ratings compared to a standard British accent.

Hypothesis 2: Nonnative accents will significantly influence perceptions of competence in high-stakes communication contexts, leading to lower ratings compared to a standard British accent.

Hypothesis 3: Nonnative accents will significantly influence comprehensibility in high-stakes communication contexts, leading to lower ratings compared to a standard British accent.

Hypothesis 4: Low ratings of Extraversion and Conscientiousness on personality traits will influence the relationship between accents and perceptions of trustworthiness and competence as well as comprehensibility in patient-doctor communication.

## Methodology

### Materials

The materials used in our study were the following: Consent form, audio recordings, questionnaire, and the text prompt used for the audio recordings.

In order to get the audio recordings that we needed to play to our participants the following decisions had been taken. First of all, for our experiment, we used the verbal-guise technique. For each level of the independent variable accent, 2 male speakers of the same age range with said accent expressed a neutral message in a doctor-patient setting. For the Ukrainian audios, one participant, describes attending an English school and is currently in the first year of a three-year Bachelor's degree program. Although not born in Ukraine, their family is from Kiev, the capital of the country. Another participant started University in September 2023. They were born and raised in Kyiv, Ukraine's capital, and are currently pursuing their bachelor's degree entirely in English. Among the French participants, one reports a moderate English proficiency level between B1 and B2. They are in the third year of a Bachelor's program in applied foreign languages, conducted in French, and are originally from Rouen in Normandy. The other French participant has a higher English proficiency level at B2. Similarly enrolled in a third year Bachelor's program in applied foreign languages, taught in French, they come from Amiens in Somme, France. Among the British English speakers, one individual has a Master's degree in finance. Currently, they are employed as a Finance Investor. Despite being born in Nigeria, they spent nearly all their life in London, England. The second speaker did not pursue a traditional university education. Instead, they opted for a professional culinary course, and currently work as a Sous Chef in a restaurant. They were born and raised in London, England. All speakers were of similar ages. Two experts evaluated the Ukrainian-accented English. A foreign language learning specialist of Ukrainian descent and trainer of Dutch as a second language, and an assistant professor specializing in English as a foreign language and Ukrainian English. British and French accents were judged by our supervisor, an expert in world Englishes.

Only male speakers were used for the audio recordings in order to evade gender bias which in return allowed for a more controlled study environment. We used the expertise of professionals to assess the authenticity and genuineness of our speakers. Making use of the network of our supervisor, who forwarded our audio recordings to experts in the respective languages for evaluation. This process ensured the accuracy and reliability of our audio data. The speakers did not need to be doctors as we were only interested in the accent of the speakers

in the audio files and nothing else. Adding to this no further information about the speaker was given beforehand to the listener as this might have led to unwanted stereotyping or bias such as linguistic association (Babel & Russell, 2015). After completing the survey, the nationality of the speaker was shared with the participants.

Furthermore, a questionnaire for assessing the audio recordings based on perception of trustworthiness and competence was provided to the listeners in order to determine their perception of the accent they were exposed to. The same approach was taken in order to measure and determine the personality of the listener with the help of the Hexaco-60 model. These questionnaires were both containing Likert-scale type questions in order to determine their perception and personality. As our target group was Dutch university students, our entire data collection, including these questionnaires were conducted in Dutch.

Lastly, in order to be able to have the audio recordings, we first needed to set up the text prompt which the speakers should express. For this we chose to develop a prompt ourselves. We tried to make it as neutral as possible without invoking a lot of emotions or high stakes so that there were no hidden confounding variables such as stress that could influence the listeners perception on the accent they were exposed to.

Based off of the literature we reviewed, we developed this neutral script that be representative of a typical visit to a healthcare professional: “A headache can have several causes, but after the tests we did, we can tell that your blood pressure is within the normal range. In addition, your cholesterol levels are looking good. We can rule out things like migraines, sleep related issues and dehydration. You did mention that you moved away from your hometown to the UK recently. I can assume this comes with a certain amount of stress or anxiety, which can also be causes of tension-related headaches. This corresponds to the feeling you described of the headache being like a tight band around your head. Therefore, I expect the headaches to disappear once you are more adapted to your new life and new environment. However, just to rule out any other medical causes, I will send you to the building next door to have your blood drawn. You call me in three days so we can discuss the results. Good luck!”

## Participants

As already explained beforehand, for this study a total of 195 native Dutch university students were used as participants ( $M = 21.09$ ,  $SD = 1.75$ ). Only these 195 out of 299 participants were selected, as the others either did not fill out the mandatory parts of the survey or did not fit in our selection criteria of being Dutch and enrolled in a university program

currently. Out of these 195 participants, 119 identified as female, 69 as male, 5 as other, and 2 did not want to share that information with us. A Chi-square test showed no significant relation in the gender distributions of participants ( $\chi^2(15) = 18.36, p = .244$ ).

Table 1. Gender distributions of participants per condition

| Accent      | Male | Female | Other | N.S. | Total |
|-------------|------|--------|-------|------|-------|
| French 1    | 14   | 19     | 0     | 0    | 33    |
| French 2    | 12   | 19     | 1     | 0    | 32    |
| Ukrainian 1 | 11   | 21     | 0     | 0    | 32    |
| Ukrainian 2 | 14   | 17     | 2     | 0    | 33    |
| British 1   | 7    | 25     | 1     | 0    | 33    |
| British 2   | 11   | 18     | 1     | 2    | 32    |
| Total       | 69   | 119    | 5     | 2    | 195   |

As we wanted to observe how different English accents affect the perception of listeners, it was decided that it would be the most logical and easiest choice to make use of native Dutch people as our listeners. Furthermore, we decided in order to keep the results as relevant as possible to limit the relevant population for this study to native Dutch university students between the ages of 18 and 26 years old so that the possibility for undetected secondary variables do not skew or manipulate the test results. A Chi-square test showed no significant relation between age and associated accent ( $\chi^2(45) = 41.68, p = .613$ ).

Table 2. Mean age of participants per condition

| Accent     | Mean  | N   | Std. Deviation |
|------------|-------|-----|----------------|
| French1    | 20.91 | 33  | 1.55           |
| French2    | 21.06 | 32  | 1.64           |
| Ukrainian1 | 21.53 | 32  | 1.95           |
| Ukrainian2 | 21.09 | 33  | 1.81           |
| British1   | 21.18 | 33  | 1.76           |
| British2   | 20.78 | 32  | 1.79           |
| Total      | 21.09 | 195 | 1.75           |

It was decided therefore to first of all take this age group and secondly limit the participants of this age group to people who follow university level education. All participants

were born and raised in the Netherlands with Dutch as their mother tongue. Participants were selected by ads on social media asking students with the right profile to participate in our studies. Furthermore, participants were recruited directly by the researchers through their own connections may it be by being friends with them or asking other family members or friends to ask their colleagues who fit the required profile to participate in the study.

These selection criteria were used in order to keep and ensure the homogeneity of the sample of the population which was imperative for this study. The minimum required number of participants of our study was 180 students with a minimum of 30 participants necessary for each condition. In the end 195 participants were recruited and each condition had 32 or 33 completed answers. In order to keep it as impartial as possible, each participant was randomly selected for one of the six conditions. Said conditions will be discussed later on.

## Design

For this study we used a between-subjects design in order to determine how the speaker accent as well as the listeners personality affected the listeners perception on accented speech. Each participant was assigned to only one experimental condition which they were randomly assigned to out of the three levels for the accent variable. This randomization was done by using the random block generator built into Qualtrics to ensure that the selection was without bias and predictability. The study was set up in this way as this excluded any potential for a bias based on the order in which the recordings could be played in a within-subjects design as well as helping to control for personal differences.

The independent variables in this study were first of all Accents and secondly Personality. The accent (nominal) was the primary independent variable, which was manipulated in our study, containing three levels: Native British accent, French accent, and Ukrainian accent. This variable related to the accent which was used in the audio recordings of the doctor-patient interaction. The second major independent variable was the personality of the listener. This variable however was split into two different variables, being Extraversion and Conscientiousness (both nominal). This was decided based on the results gathered by Gaffney and Côté (2019) which found that Conscientiousness and Extraversion were the leading factors in explaining results of the influence of personality on accented speech. Based on the answers of the listener to the questionnaire, they were split into either high or low on both of these personality dimensions. To determine these, we made use of the Dutch version of the Hexaco-60 model.

The dependent variable of this study was the perception of trustworthiness, competence, and comprehensibility. Participants answered the questionnaire after listening to their designated audio recording of one of the three levels and rate their perceived trustworthiness and competence of the doctor's accent by answering the questions which were Likert-scale type questions.

Furthermore, in order to minimize the chances of confounding or hidden variables, control measures were put in place. These included randomizing the selection for each experimental condition, as well as only using male speakers for the audio recordings in order to eliminate gender bias. Furthermore, all listeners as already explained were Dutch university level students aged between 17 and 26 in order to ensure homogeneity in the used sample.

## Instruments

The dependent variables in our study were trustworthiness and competence, which were measured through a questionnaire given to the participants after listening to the designated audio recordings.

Trustworthiness was assessed using Likert-scale questions, focusing on participants' perceptions of the doctor's sensitivity, understandability, and credibility. The reliability of perceived trustworthiness, comprising six items was good:  $\alpha = .803$ . Consequently, the mean of all six items was used to calculate the compound variable perceived trustworthiness, which was used in the further analyses. Competence was evaluated similarly, with questions addressing the doctor's knowledge, confidence, and reliability. The reliability of perceived competence, comprising five items was good:  $\alpha = .882$ . Consequently, the mean of all five items was used to calculate the compound variable perceived competence, which was used in the further analyses. Furthermore a 9-point Likert scale question was administered in order to test for the perceived comprehensibility of the speaker.

This questionnaire was administered through a Qualtrics survey in which we included all this information. We furthermore asked the respondents to answer some demographic question such as their mother tongue, nationality, educational level, age, and gender.

Adding to this the Dutch version of the HEXACO-60 personality test (Ashton & Lee, 2009) was added in order to determine the respondent's personality traits and type. This test was administered in Dutch as research by de Lange et al. (2011) demonstrated that individuals experience emotions more strongly in their native language, but they report emotions more strongly in their second language.

In our survey, we prioritized placing the personality test at the end of the study, primarily to account for the possibility of participants deciding to not finish the entire survey. This strategic placement ensures that we gather at least the necessary data from participants to complete the main part of the study. Furthermore, we refrained from labelling our assessment as a "personality test" to mitigate any personal desirability bias that participants may exhibit. Instead, we called it an "individuality test," emphasizing the exploration of unique traits and characteristics without imposing subjective expectations. This adjustment aimed to create a more genuine and unbiased response from participants, thereby enhancing the validity of our findings. The reliability of Extraversion, comprising ten items was good:  $\alpha = .815$ . Consequently, the mean of all ten items was used to calculate the compound variable Extraversion, which was used in the further analyses. The reliability of Conscientiousness, comprising ten items was acceptable:  $\alpha = .782$ . Consequently, the mean of all ten items was used to calculate the compound variable Conscientiousness, which was used in the further analyses.

The questionnaire for the dependent variables as well as the corresponding literature can be found in the appendix.

## Procedure

The procedure for our experiment involved obtaining consent forms from the participants to establish a legal framework for the experiment. The form contained information about the purpose, and confidentiality agreements of the study.

The audio recordings of two male speakers for each accent were created by speakers presenting a neutral message in a doctor-patient setting. A text prompt was developed for the audio recordings, designed to be neutral and free of emotional cues to avoid confounding variables such as stress. The prompt focused on addressing a headache in a doctor-patient interaction. No additional information about the speakers was provided to listeners to prevent biases such as linguistic association.

A questionnaire was created to assess participants' perceptions of trustworthiness and competence based on the audio recordings, as well as their personality traits. Likert-scale questions were used to gather data.

## Statistical treatment

In order to analyse the collected data, it is important to use the correct and relevant statistical instruments in order to be able to get meaningful results and draw relevant conclusions. For this the following statistical tests were conducted based on the filled-out questionnaires: In order to be able to answer the H1, H2 and H3, it was necessary to do the same test for all three, however based on the different variables in this case once for trustworthiness, once for competence and once for comprehensibility. We used an ANOVA test in order to analyse the association between the variable “Accent” and the perceived trustworthiness as well as for the perceived competence and perceived comprehension. Furthermore, an ANOVA was also beneficial to determine if there were significant differences between the mean ratings between groups (accent in this case). As significant differences have been detected, we have employed post-hoc tests to determine the further results. These post-hoc tests were the Bonferroni correction as well as the Games-Howell correction. In order to analyse the importance of personality on the results, we used Pearson’s correlation coefficient. Finally, a regression analysis was conducted to determine if and to what degree the two independent variables of personality could predict our dependent variables.

## Results

### Demographic Information

Out of the total 299 recorded responses, only 195 were valid and included in the study. The age of the participants ranged from 17 to 26 years, with a mean age of 21.09 years (SD = 1.75). Considering the fact that only students in the researchers primary and secondary network were asked this is considered a valid age range for our participants. Regarding gender, the majority of participants identified as female (61%). Meanwhile 35% identified as male, whereas 2.6% identified as "Other," and 1.0% preferred not to disclose their gender. The duration for the completion of the study sessions varied widely, with durations ranging from 93 to 10,758 seconds (approximately 1.55 to 179.3 minutes). The median duration was 596 seconds (approximately 9.93 minutes), with a mean duration of 909.14 seconds (approximately 15.15 minutes) (SD = 1287.51). These results might indicate that some people stopped midway in the survey and completed it at a later time.

### Perceived Competence

#### Per accent group

A one-way analysis of variance showed a significant effect of type of accent on perceived competence ( $F(2, 192) = 4.753, p = .010$ ). A post-hoc Bonferroni analysis was conducted to further examine the differences in perceived competence among different accent groups. The analysis revealed that the perceived competence of the French accent group ( $M = 4.80, SD = 0.96$ ) was lower than for the British accent group ( $p = .026$ , Bonferroni-correction;  $M = 5.26, SD = 1.00$ ). Furthermore, the analysis revealed that the perceived competence of the Ukrainian accent group ( $M = 4.79, SD = 0.99$ ) was also lower than for the British accent group ( $p = .023$ , Bonferroni-correction;  $M = 5.26, SD = 1.00$ ). Additionally, no significant differences were found between the French and Ukrainian accent groups ( $p > .05$ ).

Table 3. ANOVA accent group and perceived competence (min. M.: 4.79; max. M.: 5.26)

| Accent    | N   | Mean | Std. Deviation |
|-----------|-----|------|----------------|
| French    | 65  | 4.80 | .96            |
| Ukrainian | 65  | 4.79 | .99            |
| British   | 65  | 5.26 | 1.00           |
| Total     | 195 | 4.95 | 1.00           |

### Per speaker

Looking at the individual speakers, a one-way analysis of variance showed a significant effect of the speaker of accent on perceived competence ( $F(5, 189) = 2.784, p = .019$ ). A post-hoc Bonferroni analysis was conducted to further examine the differences in perceived competence among different speaker groups. The analysis revealed that the perceived competence of the Ukrainian 1 speaker ( $M = 4.56, SD = 1.12$ ) was lower than for the British 2 speaker ( $p = .030$ , Bonferroni-correction;  $M = 5.33, SD = 0.99$ ). Additionally, no significant differences were found between any of the other speaker pairs ( $p > .05$ ).

Table 4. ANOVA accent speaker and perceived competence (min. M.: 4.56; max. M.: 5.33)

| Accent      | N   | Mean | Std. Deviation |
|-------------|-----|------|----------------|
| French 1    | 33  | 4.73 | .92            |
| French 2    | 32  | 4.88 | 1.01           |
| Ukrainian 1 | 32  | 4.56 | 1.12           |
| Ukrainian 2 | 33  | 5.02 | .80            |
| British 1   | 33  | 5.19 | 1.02           |
| British 2   | 32  | 5.33 | .99            |
| Total       | 195 | 4.95 | 1.00           |

### Perceived Trustworthiness

#### Per accent group

A one-way analysis of variance showed a significant effect of type of accent on perceived trustworthiness ( $F(2, 192) = 14.074, p < .001$ ). A post-hoc Bonferroni analysis was conducted to further examine the differences in perceived trustworthiness among different accent groups. The analysis revealed that the perceived trustworthiness of the British accent group ( $M = 5.33, SD = 1.04$ ) was higher than for the Ukrainian accent group ( $p < .001$ , Bonferroni-correction;  $M = 4.36, SD = 1.16$ ) as well as for the French accent group ( $p = .002$ , Bonferroni-correction;  $M = 4.70, SD = 0.95$ ). Additionally, no significant differences were found between any of the other accent pairs ( $p > .05$ ).

Table 5. ANOVA accent group and perceived trustworthiness (min. M.: 4.36; max. M.: 5.33)

| Accent    | N  | Mean | Std. Deviation |
|-----------|----|------|----------------|
| French    | 65 | 4.70 | .95            |
| Ukrainian | 65 | 4.36 | 1.16           |

|         |     |      |      |
|---------|-----|------|------|
| British | 65  | 5.33 | 1.04 |
| Total   | 195 | 4.80 | 1.12 |

### Per speaker

Looking at the individual speakers, a one-way analysis of variance showed a significant effect of the speaker of accent on perceived trustworthiness ( $F(5, 189) = 6.760, p < .001$ ). A post-hoc Bonferroni analysis was conducted to further examine the differences in perceived trustworthiness among different speaker groups. The analysis revealed that the perceived trustworthiness of the Ukrainian 1 speaker ( $M = 4.07, SD = 1.12$ ) was lower than for the British 1 speaker ( $p < .001$ , Bonferroni-correction;  $M = 5.26, SD = 1.08$ ) as well as for the British 2 speaker ( $p < .001$ , Bonferroni-correction;  $M = 5.40, SD = 1.02$ ). Additionally, no significant differences were found between any of the other speaker pairs ( $p > .05$ ).

Table 6. ANOVA accent speaker and perceived trustworthiness (min. M.: 4.07; max. M.: 5.40)

| Accent      | N   | Mean | Std. Deviation |
|-------------|-----|------|----------------|
| French 1    | 33  | 4.67 | .76            |
| French 2    | 32  | 4.73 | 1.12           |
| Ukrainian 1 | 32  | 4.07 | 1.12           |
| Ukrainian 2 | 33  | 4.65 | 1.15           |
| British 1   | 33  | 5.26 | 1.08           |
| British 2   | 32  | 5.40 | 1.02           |
| Total       | 195 | 4.80 | 1.12           |

### Perceived Comprehension

#### Per accent group

A one-way analysis of variance showed a significant effect of type of accent on comprehensibility ( $F(2, 192) = 51.339, p < 0.001$ ). A post-hoc Games-Howell analysis was conducted to further examine the differences in perceived comprehension among different accent groups. The analysis revealed that the perceived comprehension of the British accent group ( $M = 8.02, SD = 1.65$ ) was higher than for the Ukrainian accent group ( $p < .001$ , Games-Howell-correction;  $M = 5.15, SD = 2.06$ ) as well as for the French accent group ( $p < .001$ , Games-Howell-correction;  $M = 4.94, SD = 2.06$ ). Additionally, no significant differences were found between any of the other accent pairs ( $p > .05$ ).

Table 7. ANOVA accent group and perceived trustworthiness (min. M.: 4.94; max. M.: 8.02)

| Accent    | N   | Mean | Std. Deviation |
|-----------|-----|------|----------------|
| French    | 65  | 4.94 | 2.06           |
| Ukrainian | 65  | 5.15 | 2.06           |
| British   | 65  | 8.02 | 1.65           |
| Total     | 195 | 6.04 | 2.38           |

#### Per speaker

Looking at the individual speakers, a one-way analysis of variance showed a significant effect of the speaker of accent on comprehensibility ( $F(5, 189) = 26.429, p < 0.001$ ). A post-hoc Games-Howell analysis was conducted to further examine the differences in perceived comprehension among different speaker groups. The analysis revealed that the perceived comprehension of the Ukrainian 2 speaker ( $M = 5.88, SD = 1.76$ ) was higher than for French 1 speaker ( $p = .003$ , Games-Howell-correction;  $M = 4.27, SD = 1.59$ ) as well as for the Ukrainian 1 speaker ( $p = .037$ , Games-Howell-correction;  $M = 4.41, SD = 2.09$ ). Additionally, the perceived comprehension of the British 1 speaker ( $M = 7.76, SD = 1.79$ ) and British 2 speaker ( $M = 8.28, SD = 1.49$ ) were higher than all the other speaker groups ( $p < .001$ ). These were French 1 speaker ( $M = 4.27, SD = 1.59$ ), French 2 speaker ( $M = 5.63, SD = 2.28$ ), Ukrainian 1 speaker ( $M = 4.41, SD = 2.09$ ) and Ukrainian 2 speaker ( $M = 5.88, SD = 1.76$ ). There was no significant difference found between the British 1 and British 2 speakers ( $p > .05$ ).

Table 8. ANOVA accent speaker and perceived trustworthiness (min. M.: 4.27; max. M.: 8.28)

| Accent      | N   | Mean | Std. Deviation |
|-------------|-----|------|----------------|
| French 1    | 33  | 4.27 | 1.59           |
| French 2    | 32  | 5.63 | 2.28           |
| Ukrainian 1 | 32  | 4.41 | 2.09           |
| Ukrainian 2 | 33  | 5.88 | 1.76           |
| British 1   | 33  | 7.76 | 1.79           |
| British 2   | 32  | 8.28 | 1.49           |
| Total       | 195 | 6.04 | 2.38           |

## Origin of Accent

A crosstabulation of participants' identification of the origin of the accent they were exposed to revealed that for the French accent, 69.23% of participants correctly guessed the origins of the exposed accent. For the Ukrainian accent, 1.54% of participants correctly guessed the origins of the exposed accent. For the British accent, 86.15% of participants correctly guessed the origins of the exposed accent. Overall, across all accents, there were 93 incorrect guesses and 102 correct guesses, amounting to a total of 195 responses.

Table 9. Crosstabulation for correct guess of accent origin per accent

| Accent    | False | True | Total |
|-----------|-------|------|-------|
| French    | 20    | 45   | 65    |
| Ukrainian | 64    | 1    | 65    |
| British   | 9     | 56   | 65    |
| Total     | 93    | 102  | 195   |

## Personality

### Extraversion

A multiple linear regression analysis showed that the two variables entered, Extraversion and Accent, explained 2.1% of the variance in perceived competence of the various accents ( $F(2, 166) = 2.764, p > .05$ ). The overall model is not statistically significant, suggesting that the combination of Accent Group and Extraversion does not significantly predict perceived competence at the 0.05 level. Extraversion was not a significant predictor ( $\beta = .039, p = .607$ ).

Table 10. Regression Analysis for Accent and Extraversion as Predictors of Perceived Competence

| Predictor variable | B    | SE B | $\beta$ |
|--------------------|------|------|---------|
| Intercept          | 4.30 | .52  |         |
| Extraversion       | .13  | .26  | .04     |
| R <sup>2</sup>     | .02  |      |         |
| F                  | 2.76 |      |         |

Note. \*\* =  $p < .01$ , \*\*\* =  $p < .001$

A multiple linear regression analysis showed that the two variables entered, Extraversion and Accent, explained 3.7% of the variance in perceived trustworthiness of the various accents ( $F(2, 166) = 4.193, p = .017$ ). Extraversion was not a significant predictor ( $\beta = .090, p = .238$ )’.

Table 11. Regression Analysis for Accent and Extraversion as Predictors of Perceived Trustworthiness

| Predictor variable | B    | SE B | $\beta$ |
|--------------------|------|------|---------|
| Intercept          | 3.62 | .59  |         |
| Extraversion       | .34  | .29  | .09     |
| R <sup>2</sup>     | .04  |      |         |
| F                  | 4.19 |      |         |

Note. \*\* =  $p < .01$ , \*\*\* =  $p < .001$

A multiple linear regression analysis showed that the two variables entered, Extraversion and Accent, explained 26.1% of the variance in perceived comprehension of the various accents ( $F(2, 166) = 30.594, p < .001$ ). Extraversion was not a significant predictor ( $\beta = -.026, p = .693$ )’.

Table 12. Regression Analysis for Accent and Extraversion as Predictors of Perceived Comprehension

| Predictor variable | B        | SE B | $\beta$ |
|--------------------|----------|------|---------|
| Intercept          | 3.45     | 1.09 |         |
| Extraversion       | -.21     | .54  | -.03    |
| R <sup>2</sup>     | .26      |      |         |
| F                  | 30.59*** |      |         |

Note. \*\* =  $p < .01$ , \*\*\* =  $p < .001$

### Conscientiousness

A multiple linear regression analysis showed that the two variables entered, Conscientiousness and Accent, explained 2.1% of the variance in perceived competence of the various accents ( $F(2, 166) = 2.821, p > .05$ ). The overall model is not statistically significant, suggesting that the combination of Accent Group and Conscientiousness does not significantly predict perceived

competence at the 0.05 level. Conscientiousness was not a significant predictor ( $\beta = -.047, p = .541$ )’.

Table 13. Regression Analysis for Accent and Conscientiousness as Predictors of Perceived Competence

| Predictor variable | B    | SE B | $\beta$ |
|--------------------|------|------|---------|
| Intercept          | 4.89 | .59  |         |
| Conscientiousness  | -.18 | .29  | -.05    |
| R <sup>2</sup>     | .02  |      |         |
| F                  | 2.82 |      |         |

Note. \*\* =  $p < .01$ , \*\*\* =  $p < .001$

A multiple linear regression analysis showed that the two variables entered, Conscientiousness and Accent, explained 3.5% of the variance in perceived trustworthiness of the various accents ( $F(2, 166) = 4.061, p = .019$ ). Conscientiousness was not a significant predictor ( $\beta = .081, p = .285$ )’.

Table 14. Regression Analysis for Accent and Conscientiousness as Predictors of Perceived Trustworthiness

| Predictor variable | B    | SE B | $\beta$ |
|--------------------|------|------|---------|
| Intercept          | 3.60 | .66  |         |
| Conscientiousness  | .35  | .33  | .08     |
| R <sup>2</sup>     | .04  |      |         |
| F                  | 4.91 |      |         |

Note. \*\* =  $p < .01$ , \*\*\* =  $p < .001$

A multiple linear regression analysis showed that the two variables entered, Conscientiousness and Accent, explained 26.2% of the variance in perceived comprehension of the various accents ( $F(2, 166) = 30.751, p < .001$ ). Conscientiousness was not a significant predictor ( $\beta = .041, p = .535$ )’.

Table 15. Regression Analysis for Accent and Conscientiousness as Predictors of Perceived Comprehension

| Predictor variable | B        | SE B | $\beta$ |
|--------------------|----------|------|---------|
| Intercept          | 2.34     | 1.22 |         |
| Conscientiousness  | .38      | .61  | .04     |
| R <sup>2</sup>     | .26      |      |         |
| F                  | 30.75*** |      |         |

Note. \*\* =  $p < .01$ , \*\*\* =  $p < .001$

## Conclusion

In this study, we investigated how accents, specifically French, Ukrainian, and Native British accents of international doctors, as well as how personality traits of the listener (results for this part might not be representative), influence perceptions of trustworthiness, competence, and comprehensibility in patient-doctor communication among native Dutch student listeners.

Our findings provide support for the hypotheses, we found that speakers of British accents were generally being perceived as more trustworthy and competent compared to speakers with French or Ukrainian accents (H1 & H2). However, no significant differences were found between the perceptions of trustworthiness and competence between the French and Ukrainian accent groups.

Furthermore, our results suggest that accents also influence perceived comprehensibility in patient-doctor communication (H3). Participants perceived speakers with British accents as more comprehensible compared to those with French or Ukrainian accents.

Our findings indicate that accent significantly influences perceptions of trustworthiness, competence, and comprehensibility, while personality traits such as Extraversion and Conscientiousness do not have a significant effect (H4). Therefore, personality traits did not significantly impact these perceptions in our study.

It should be noted that the final part of the results pertaining to the influence of personality traits on perceptions of patient-doctor communication should be interpreted with caution. The sample size for this aspect of the study was lower than desired, and therefore, these results might not be representative of the general population.

Further research with larger sample sizes and additional factors may provide deeper insights into this phenomenon.

## Discussion

In discussing the impact of our study, it is important to outline our focus: Our interest lies in the identification of accent, whether correct or not, and how this accent influences reactions. It is important to note that these reactions primarily concern the perceived competence, trustworthiness, and comprehension, rather than actual understanding.

The findings of our study align with existing literature regarding the influence of accents on perceptions of trustworthiness, competence, and comprehensibility in communication contexts. Consistent with prior research (Jiang et al., 2019; Rakić, 2019), our results suggest that accents play a significant role in shaping the perceptions in patient-doctor communication. Specifically, speakers with British accents were perceived as more trustworthy and competent compared to those with French or Ukrainian accents. This could be attributed to the familiarity and perceived prestige associated with British accents, as well as potential cultural biases or stereotypes. As demonstrated by Lev-Ari and Keysar (2010), non-native speech is perceived as less credible due to processing difficulties, which might have also been the case in our study. Moreover, the perceived comprehensibility of speakers with British accents was higher compared to speakers with French or Ukrainian accents, which could be attributed to factors such as linguistic clarity and ease of understanding.

The lack of significant differences between perceptions of trustworthiness and competence among the French and Ukrainian accent groups is striking. This finding suggests that, despite differences in linguistic features between these accents, listeners may perceive them similarly in terms of trustworthiness and competence. Possible explanations could include the influence of other factors, such as non-verbal cues, intonation, or cultural associations, which may mitigate the effects of accent variation on perceived trustworthiness and competence. Furthermore, voice characteristics of the individual speakers used for our study might be at play here and indirectly influence the ratings given by our participants.

Our findings revealed that while accent identification was generally accurate, there were occasional misidentifications, notably in cases like associating an Ukrainian accent with the Middle East. In general, participants did not seem to have any familiarity with the origin of the Ukrainian accents. This suggests that listeners possess some awareness of the speaker's origin based on recognizable accent traits for the French and British accented speech but not for the Ukrainian accented speech.

As for the influence of personality, our findings show no significant influence of Extraversion or Conscientiousness on perceived competence, trustworthiness, or

comprehensibility. This is not consistent with research from Gaffney & Côté (2019) which found these two dimensions of personality according to the Big-Five model to be the leading factors in explaining results of the influence of personality on accented speech. Our results showed no significant influence which might be due to hidden variables or a bias in our sample population. For example, a sample population bias may have affected the results, as the participants were from a specific demographic group, leading to non-generalizable responses. Secondly, measurement differences in how personality traits and perceptions were assessed between Gaffney & Côté (2019) which used the Big Five model and our approach which used the HEXACO-60 model could contribute to the variance in findings. Lastly, due to a smaller sample size in our study, our findings could be less reliable, making it harder to detect significant influences.

Some limitations should be acknowledged when interpreting the results of this study. Firstly, the sample size for the personality trait aspect of the study was lower than desired with only 169 out of the 195 chosen participants having completed the personality test at the end of our study. This could potentially be limiting the generalizability of our findings of the effect that personality has on the perception of accented speech. Additionally, the use of native Dutch student listeners may introduce cultural biases or preferences that could influence the perceptions of accents differently than a more diverse and representative sample. Student listeners might be more tolerant and less biased than other patient groups. They were relatively young, generally healthy, and likely have limited experience with the healthcare system. This demographic's openness might contrast with other groups who may have more negative views, first-hand experience, or scepticism about healthcare advice due to past experiences or health issues. The lack of prior health concerns among students could contribute to their openness, as they might be less influenced by previous negative encounters with healthcare providers. Therefore, other patient groups, especially those with more frequent interactions with the healthcare system, might respond differently to healthcare communications.

Furthermore, the study focused solely on accents and personality traits as influencing factors, neglecting other potentially relevant variables such as non-verbal communication cues, patient demographics, and contextual factors. Adding to this, familiarity with a language or accent can bridge some gaps between native and non-native speakers, but differences should remain (Baquiran & Nicoladis, 2019). Native speakers understand expressions and cultural references that non-native speakers might miss. Even with high familiarity, non-native speakers may still face challenges with these aspects of the language. Therefore, familiarity might help

and have influenced our results, but it should not have fully eliminated the differences between native and non-native speakers as also discussed by Munro and Derwing (1995).

To address the limitations of this study and deepen our understanding of the complex interaction between accents, personality traits, and perceptions in patient-doctor communication, several possibilities for further research can be suggested. Firstly, future studies could employ larger and more diverse samples to enhance the generalizability of our findings and explore potential differences across demographic or cultural groups. Additionally, researchers could investigate additional factors that may influence perceptions, such as non-verbal communication cues, cultural attitudes towards accents, familiarity of the accent and patient characteristics. Longitudinal studies could also be conducted to assess how perceptions may evolve over time and in different contexts. Adding to this, experimental designs could be employed to manipulate accent features systematically and examine their effects on perceptions in controlled settings. Finally, investigating how the accents in question are portrayed in media and entertainment could help us understand the broader societal influences on accent perceptions and how they influence patient perceptions and expectations.

In conclusion, this study contributes to our understanding of the role of accents and personality traits in shaping perceptions in patient-doctor communication. By identifying the factors that influence trustworthiness, competence, and comprehensibility, healthcare practitioners can better tailor their communication strategies to enhance patient outcomes and satisfaction.

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## Appendix

### Literature used to establish our questionnaire

#### **Competence : Hendriks et al. (2014) and Nejjari et al. (2012)**

I think the doctor is (from 1 to 7): Reliable, Intelligent, Competent, Hardworking, Educated

#### **Trustworthiness: Brockway (1978)**

Statements(ranked from 1 to 7):

The doctor put me at ease, The doctor spoke clearly and was easily understood, The doctor seemed sensitive to my concerns, The doctor did not give me sufficient information on health problems, The doctor was thorough and complete, Overall, I am satisfied with the doctor.

#### **Comprehensibility: Munro and Derwing (1995)**

This doctor is (from 1 to 9), not difficult , slightly difficult, somewhat difficult, moderately difficult, neutral, somewhat difficult, quite difficult, difficult, very difficult to understand.

### Qualtrics Survey

## Bachelor survey

---

### Start of Block: Toestemming

Hallo,

Hartelijk dank voor uw deelname aan deze enquête! Lees de volgende informatie nauwkeurig door voordat u begint aan de enquête:

#### TOESTEMMINGSVERKLARING

U wordt uitgenodigd om mee te doen aan een onderzoek naar de beoordeling van sprekers. Dit onderzoek wordt uitgevoerd door studenten International Business Communication van de Radboud Universiteit. Meedoen aan het onderzoek houdt in dat u naar een kort audio fragment luistert en een online vragenlijst invult. Het invullen van de vragenlijst kost slechts 10 minuten en helpt ons enorm met het uitvoeren van ons onderzoek!

#### Vrijwillig

U doet vrijwillig mee aan dit onderzoek en kunt op elk moment tijdens het invullen van de vragenlijst stoppen. U hoeft niet aan te geven waarom u stopt. Omdat de data meteen geanonimiseerd worden, is het na het voltooien van het experiment niet mogelijk om uw onderzoeksgegevens te laten verwijderen.

#### Onderzoeksgegevens

Wat gebeurt er met mijn gegevens? De onderzoeksgegevens die in dit onderzoek worden verzameld zullen gebruikt worden voor datasets, artikelen en presentaties. Er wordt op discrete en beveiligde wijze volgens de privacy richtlijnen van de Radboud Universiteit met deze gegevens omgegaan.

Door te klikken op ‘Ja, ik ga akkoord’ geeft u aan dat u: Bovenstaande informatie heeft gelezen, Instemt met deelname aan het onderzoek zoals in bovenstaande informatie is beschreven,

Begrijpt hoe de gegevens van het onderzoek bewaard zullen worden en waarvoor ze gebruikt zullen worden, Vrijwillig meedoet aan het onderzoek, 18 jaar of ouder bent

Mocht u na het lezen van dit toestemmingsformulier nog vragen hebben dan kunt u mailen naar: ([patrycja.kaminska@ru.nl](mailto:patrycja.kaminska@ru.nl)). Nogmaals hartelijk dank voor uw deelname aan dit onderzoek.

Met vriendelijke groet,

Patrycja Kaminska, Esmee Kuipers, Diana Oliveira Vieira, Tom Velasco Luna, Elisa Wiegerinck, Eelkje Winkelmolen

Ja, ik ga akkoord

**End of Block: Toestemming**

---

**Start of Block: Demografische gegevens**

Wat is uw nationaliteit?

Nederlands

Anders \_\_\_\_\_

---

Wat is uw moedertaal?

Nederlands

Anders \_\_\_\_\_

---

Bent u een HBO/WO student?

Ja

Nee

---

Wat is uw leeftijd?

\_\_\_\_\_

---

Wat is uw geslacht?

- Man
- Vrouw
- Anders \_\_\_\_\_
- Ik zeg dat liever niet
- 

Hoe beoordeelt u uw eigen taalvaardigheid in het Engels op een schaal van 1 tot 7 (waarbij 1 = heel slecht en 7 = heel goed)?

|   | 1                     | 2                     | 3                     | 4                     | 5                     | 6                     | 7                     |
|---|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Hoe goed is uw taalvaardigheid in het Engels? | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

**End of Block: Demografische gegevens**

---

**Start of Block: Inleiding audio fragment**

Vanaf nu begint het tweede deel van de vragenlijst. Stelt u zich voor dat u een uitwisselingsstudent bent in het Verenigd Koninkrijk en u daar naar de dokter moet, omdat u vaak last heeft van hoofdpijn. U krijgt een audio fragment te horen waarin een dokter u een aanbeveling geeft wat betreft uw aandoening. Concentreer u alstublieft tijdens het luisteren, want u krijgt maar één gelegenheid om naar het fragment te luisteren.

**End of Block: Inleiding audio fragment**

---

**Start of Block: Accenten blok**

**End of Block: Accenten blok**

---

**Start of Block: Vragen accenten**

U zult nu een aantal schaalvragen worden gesteld met betrekking tot het audio fragment. Beoordeel de volgende stellingen in hoeverre u er mee eens bent:

|   | Helemaal<br>mee<br>oneens | Mee<br>oneens         | Een<br>beetje<br>mee<br>oneens | Neutraal<br>(noch<br>mee<br>eens<br>noch<br>mee<br>oneens) | Een<br>beetje<br>mee<br>eens | Mee<br>eens           | Helemaal<br>mee eens  |
|---|---------------------------|-----------------------|--------------------------------|--|------------------------------|-----------------------|-----------------------|
| Ik vind de dokter betrouwbaar.  | <input type="radio"/>     | <input type="radio"/> | <input type="radio"/>          | <input type="radio"/>                                      | <input type="radio"/>        | <input type="radio"/> | <input type="radio"/> |
| Ik vind de dokter intelligent.  | <input type="radio"/>     | <input type="radio"/> | <input type="radio"/>          | <input type="radio"/>                                      | <input type="radio"/>        | <input type="radio"/> | <input type="radio"/> |
| Ik vind de dokter bekwaam.  | <input type="radio"/>     | <input type="radio"/> | <input type="radio"/>          | <input type="radio"/>                                      | <input type="radio"/>        | <input type="radio"/> | <input type="radio"/> |
| Ik vind de dokter hardwerkend.  | <input type="radio"/>     | <input type="radio"/> | <input type="radio"/>          | <input type="radio"/>                                      | <input type="radio"/>        | <input type="radio"/> | <input type="radio"/> |
| Ik vind de dokter goed opgeleid.  | <input type="radio"/>     | <input type="radio"/> | <input type="radio"/>          | <input type="radio"/>                                      | <input type="radio"/>        | <input type="radio"/> | <input type="radio"/> |
| De dokter stelde mij op mijn gemak.   | <input type="radio"/>     | <input type="radio"/> | <input type="radio"/>          | <input type="radio"/>                                      | <input type="radio"/>        | <input type="radio"/> | <input type="radio"/> |
| De dokter sprak duidelijk en was makkelijk te begrijpen.                    | <input type="radio"/>     | <input type="radio"/> | <input type="radio"/>          | <input type="radio"/>                                      | <input type="radio"/>        | <input type="radio"/> | <input type="radio"/> |
| De dokter leek gevoelig voor mijn zorgen.                                   | <input type="radio"/>     | <input type="radio"/> | <input type="radio"/>          | <input type="radio"/>                                      | <input type="radio"/>        | <input type="radio"/> | <input type="radio"/> |
| De dokter gaf mij niet voldoende informatie over mijn gezondheidsproblemen. | <input type="radio"/>     | <input type="radio"/> | <input type="radio"/>          | <input type="radio"/>                                      | <input type="radio"/>        | <input type="radio"/> | <input type="radio"/> |
| De dokter was grondig en volledig.  | <input type="radio"/>     | <input type="radio"/> | <input type="radio"/>          | <input type="radio"/>                                      | <input type="radio"/>        | <input type="radio"/> | <input type="radio"/> |
| Over het algemeen, ben ik tevreden met de dokter.                           | <input type="radio"/>     | <input type="radio"/> | <input type="radio"/>          | <input type="radio"/>                                      | <input type="radio"/>        | <input type="radio"/> | <input type="radio"/> |

U zult nu een schaalvraag worden gesteld met betrekking tot de verstaanbaarheid van de spreker:

|                                     | 1                     | 2                     | 3                     | 4                     | 5                     | 6                     | 7                     | 8                     | 9                     |                                    |
|-------------------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|------------------------------------|
| De dokter is makkelijk verstaanbaar | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | De dokter is moeilijk verstaanbaar |

---

Uit welk land denkt u dat de spreker afkomstig is?

\_\_\_\_\_

**End of Block: Vragen accenten**

---

**Start of Block: Debriefing Frans accent**

De dokter waar u zojuist naar heeft geluisterd komt uit Frankrijk. Zou u het goed vinden om door een dokter uit Frankrijk geholpen te worden?

Ja

Misschien \_\_\_\_\_

Nee

---

Heeft u nog andere opmerkingen?

\_\_\_\_\_

**End of Block: Debriefing Frans accent**

---

**Start of Block: Debriefing Oekraïens accent**

De dokter waar u zojuist naar heeft geluisterd komt uit Oekraïne. Zou u het goed vinden om door een dokter uit Oekraïne geholpen te worden?

Ja

Misschien \_\_\_\_\_

Nee

---

Heeft u nog andere opmerkingen?

---

**End of Block: Debriefing Oekraïens accent**

---

**Start of Block: Debriefing Brits accent**

De dokter waar u zojuist naar heeft geluisterd komt uit het Verenigd Koninkrijk. Zou u het goed vinden om door een dokter uit het Verenigd Koninkrijk geholpen te worden?

- Ja
- Misschien \_\_\_\_\_
- Nee

---

Heeft u nog andere opmerkingen?

---

**End of Block: Debriefing Brits accent**

---

**Start of Block: Persoonlijkheidstest**

Als laatste willen we u vragen deze individualiteitstest in te vullen:

|   | Helemaal<br>mee oneens | Mee oneens            | Neutraal<br>(noch mee<br>eens, noch<br>mee oneens) | Mee eens              | Helemaal<br>mee eens  |
|---|------------------------|-----------------------|--|-----------------------|-----------------------|
| 1 Ik zou me vervelen bij een bezoek aan een kunstgalerie.   | <input type="radio"/>  | <input type="radio"/> | <input type="radio"/>                              | <input type="radio"/> | <input type="radio"/> |
| 2 Ik maak vooraf plannen en regel alvast zaken om te vermijden dat ik op het laatste moment nog dingen moet doen. | <input type="radio"/>  | <input type="radio"/> | <input type="radio"/>                              | <input type="radio"/> | <input type="radio"/> |
| 3 Ik houd zelden een wrok tegen iemand, zelfs niet als ik erg slecht behandeld ben.                               | <input type="radio"/>  | <input type="radio"/> | <input type="radio"/>                              | <input type="radio"/> | <input type="radio"/> |
| 4 Alles bij elkaar heb ik wel een tevreden gevoel over mezelf.  | <input type="radio"/>  | <input type="radio"/> | <input type="radio"/>                              | <input type="radio"/> | <input type="radio"/> |
| 5 Ik zou bang worden als ik in slecht weer zou moeten reizen.   | <input type="radio"/>  | <input type="radio"/> | <input type="radio"/>                              | <input type="radio"/> | <input type="radio"/> |
| 6 Ik zou niet vleien om op het werk opslag of promotie te krijgen, zelfs al zou het succes hebben.                | <input type="radio"/>  | <input type="radio"/> | <input type="radio"/>                              | <input type="radio"/> | <input type="radio"/> |
| 7 Ik kom graag meer te weten over de geschiedenis en politiek van andere landen.                                  | <input type="radio"/>  | <input type="radio"/> | <input type="radio"/>                              | <input type="radio"/> | <input type="radio"/> |
| 8 Ik span me vaak tot het uiterste in als ik een doel tracht te bereiken.   | <input type="radio"/>  | <input type="radio"/> | <input type="radio"/>                              | <input type="radio"/> | <input type="radio"/> |
| 9 Mensen vertellen me soms dat ik te kritisch op anderen ben.   | <input type="radio"/>  | <input type="radio"/> | <input type="radio"/>                              | <input type="radio"/> | <input type="radio"/> |
| 10 Ik geef zelfden mijn mening in groepsbijeenkomsten.  | <input type="radio"/>  | <input type="radio"/> | <input type="radio"/>                              | <input type="radio"/> | <input type="radio"/> |

- |   |                       |                       |                       |                       |                       |
|---|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| 11 Ik maak me soms<br>zorgen over<br>onbenulligheden.   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 12 Als ik niet gepakt<br>zou worden, dan zou<br>ik er geen probleem<br>mee hebben om een<br>miljoen Euro te<br>stelen.        | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 13 Ik zou graag iets<br>kunstzinnigs doen,<br>zoals een boek<br>schrijven, een lied<br>componeren of een<br>schilderij maken. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 14 Als ik aan iets<br>werk, besteed ik<br>weinig aandacht aan<br>kleine details.  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 15 Mensen vertellen<br>me soms dat ik te<br>koppig ben.   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 16 Ik heb liever een<br>baan waarin men veel<br>met andere mensen<br>omgaat dan één<br>waarin men alleen<br>dient te werken.  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 17 Na een pijnlijke<br>ervaring heb ik<br>iemand nodig om me<br>te troosten.  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 18 Veel geld<br>bezitten vind ik<br>onbelangrijk.   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 19 Ik vind het<br>tijdverlies om<br>aandacht te besteden<br>aan radicale ideeën.  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 20 Ik neem<br>beslissingen op basis<br>van 'hier-en-nu'<br>gevoelens in plaats<br>van zorgvuldig<br>beraad.                   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 21 Mensen vinden<br>me een heethoofd.   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

- 22 De meeste dagen  
voel ik me blij en  
optimistisch.
- 23 Ik voel tranen  
opkomen als ik  
anderen zie huilen.
- 24 Ik vind dat ik  
meer recht op respect  
heb dan de  
gemiddelde persoon.
- 25 Als ik de  
gelegenheid had, zou  
ik graag een klassiek  
concert bijwonen.
- 26 Ik haal me soms  
problemen op de hals  
omdat ik slordig ben.
- 27 Mijn houding ten  
aanzien van mensen  
die mij slecht  
behandeld hebben is  
“vergeven en  
vergeten”.
- 28 Ik heb het gevoel  
dat ik een impopulair  
persoon ben.
- 29 Als het gaat om  
fysiek gevaar, ben ik  
een angsthaas.
- 30 Als ik iets van  
iemand wil, lach ik  
om diens slechte  
grappen.
- 31 Ik heb nooit met  
veel plezier in een  
encyclopedie  
gekeken.
- 32 Ik verricht zo min  
mogelijk werk, maar  
net genoeg om rond  
te komen.
- 33 Ik heb de neiging  
andere mensen mild  
te beoordelen.

- 34 Als ik anderen ontmoet, ben ik meestal diegene die het contact op gang brengt.
- 35 Ik maak me veel minder zorgen dan de meeste mensen.
- 36 Ik zou nooit ingaan op een poging tot omkoping, zelfs niet als het om een erg hoog bedrag ging.
- 37 Mensen vertellen me vaak dat ik een levendige verbeelding heb.
- 38 Ik probeer altijd zo nauwkeurig mogelijk te werken, zelfs al kost het me extra tijd.
- 39 Ik ben gewoonlijk vrij flexibel in mijn opvattingen als mensen het met mij oneens zijn.
- 40 Het eerste dat ik altijd doe als ik ergens nieuw ben, is vrienden maken.
- 41 Moeilijke situaties kan ik aan zonder emotionele steun van anderen nodig te hebben.
- 42 Ik zou veel plezier beleven aan het bezit van dure luxe goederen.
- 43 Ik houd wel van mensen met onconventionele ideeën.

- 44 Ik maak veel fouten omdat ik niet nadenk voordat ik iets doe.
- 45 De meeste mensen hebben de neiging sneller boos te worden dan ik.
- 46 De meeste mensen zijn levenslustiger en dynamischer dan ik over het algemeen ben.
- 47 Ik raak erg geëmotioneerd als iemand die me na staat voor een lange tijd weg gaat.
- 48 Ik wil dat mensen weten hoe belangrijk ik ben.
- 49 Ik beschouw mezelf niet als een artistiek of creatief type.
- 50 Mensen noemen me vaak een perfectionist.
- 51 Zelfs als mensen veel fouten maken, zeg ik zelden iets negatiefs.
- 52 Soms heb ik het gevoel dat ik een waardeloos persoon ben.
- 53 Zelfs in crisissituaties blijf ik rustig.
- 54 Ik zou niet net doen alsof ik iemand mag om te zorgen dat die persoon mij een dienst bewijst.

55 Ik vind het saai om over filosofie te discussiëren.

56 Ik doe liever dingen spontaan dan vast te houden aan een plan.

57 Als mensen mij vertellen dat ik het mis heb, is mijn eerste reactie dit aan te vechten.

58 Als ik met andere mensen samen ben, ben ik vaak de woordvoerder van de groep.

59 Ik raak niet snel geëmotioneerd, zelfs niet in situaties waarin anderen erg sentimenteel worden.

60 Ik zou in de verleiding komen om vals geld te gebruiken als ik er zeker van was dat ik er mee weg zou komen.

End of Block: Persoonlijkheidstest

---

## Statement of own work – BA thesis

By signing this declaration, the undersigned  
[first name, surname and student number],

Tom Velasco Luna, s1078750

Bachelor's student at the Radboud University Faculty of Arts,

declares that the submitted BA thesis is entirely original and was written exclusively by himself/herself, and without the use of AI tools, such as ChatGPT. The undersigned has indicated explicitly and in detail where all the information and ideas derived from other sources can be found by referencing all sources used, both in the text and in the bibliography.

By signing this declaration, the undersigned also declares that the research data presented in this thesis were collected by the undersigned himself/herself using the methods described in this thesis.

Place and date:

Arnhem, 6th of June 2024

Signature:

A handwritten signature in black ink, appearing to read 'Velasco', followed by a long, sweeping horizontal stroke that extends to the right.

# Ethics Checklist

## Checklist EACH (version 1.11, September 2023)

You fill in the questions by clicking on the square next to the chosen answer

After clicking, a cross will appear in this square

1. Will you be collecting data from social media platforms?

Yes → consult the [guidelines](#). If in doubt, contact the EACH to see if assessment is necessary

No → continue with questionnaire

2. Will you use an existing dataset?

Yes → continue with questionnaire

No → go to question 4

3. When using an existing dataset, do you comply with the EACH guidelines\*\*?

Yes → continue with questionnaire

No or in doubt → contact the EACH to see if assessment is necessary

\*\* Guidelines: ethics approval is obtained for the original data collection, participants have consented to the reuse of the research data, or the reuse fits within the original research purpose. Or: dataset is completely anonymous

4. Will you be collecting data from participants?

Yes → continue with questionnaire

No → end of questionnaire

5. Is a health care institution involved in the research?

*Explanation: A health care institution is involved if one of the following (A/B/C) is the case:*

A. One or more employees of a health care institution is/are involved in the research as principle or in the carrying out or execution of the research.

B. The research takes place within the walls of the health care institution and should, following the nature of the research, generally not be carried out outside the institution.

C. Patients / clients of the health care institution participate in the research (in the form of treatment).

No → continue with questionnaire

Yes → Did a Dutch Medical Institutional Review Board (MIRB) decide that the Wet Medisch Onderzoek (Medical Research Involving Human Subjects Act) is not applicable or does the research comply with one of the [standard research methods](#) described by the EACH

Yes → continue with questionnaire

No → This application should be reviewed by a Medical Institutional Review Board, for example, the Dutch [METC Oost-Nederland](#). If review by an MIRB has already taken place → continue with questionnaire. If this review has not yet taken place → end of questionnaire

6. Does the research include [medical-scientific research](#) that might carry risks for the participant?

Yes → This application should be reviewed by a Medical Institutional Review Board, for example, the Dutch [METC Oost-Nederland](#) → end of questionnaire

- No → continue with questionnaire

## Standard research method

7. Does this research fall under one of the stated [standard research methods](#) of the Faculty of Arts or the Faculty of Philosophy, Theology and Religious Studies?

- Yes → ..... **(fill in name and number of standard research method)** → continue with questionnaire
- No → assessment necessary, end of checklist

## Participants

8. Is the participant population a healthy one?

- Yes → continue with questionnaire
- No → assessment necessary\*\*, end of questionnaire → [go to assessment procedure](#)

\*\*Exception for studies with patients participating in one of the described standard studies in the field of language and speech pathology

9. Will the research be conducted amongst minors (<16 years of age) or amongst (legally) incapable persons?

- Yes → assessment necessary, end of questionnaire → [go to assessment procedure](#)
- No → continue with questionnaire

## Method

10. Will the study heavily burden participants?

- Yes → assessment necessary, end of questionnaire → [go to assessment procedure](#)
- No → continue with questionnaire

11. Are the estimated risks connected to the research minimal?

- Yes → continue with questionnaire
- No → assessment necessary, end of questionnaire → [go to assessment procedure](#)

12. Are the participants offered a higher compensation than the [usual](#) one?

- Yes → assessment necessary, end of questionnaire → [go to assessment procedure](#)
- No → continue with questionnaire

13. Should [deception](#) take place, does the procedure meet the standard requirements?

- Yes → continue with questionnaire
- No → assessment necessary, end of questionnaire → [go to assessment procedure](#)
- deception is not applicable

14. Are the standard regulations regarding [anonymity and privacy](#) met?

- Yes → continue with questionnaire
- No → assessment necessary, end of questionnaire → [go to assessment procedure](#)

## Conducting the research

15. Are participants recruited via the Radboud Research Participation System (SONA) and/or is the research conducted in the CLS Lab?

- Yes → assessment necessary, end of questionnaire → [go to assessment procedure](#)
- No → continue with questionnaire

16. Will the research be carried out at an external location (such as a school)?

- Yes → Do you have/will you receive written permission from this institution?
- No → assessment necessary, end of questionnaire → [go to assessment procedure](#)
  - Yes → continue with questionnaire
- No → continue with questionnaire

17. Is there a contact person to whom participants can turn to with questions regarding the research and are they informed of this?

- Yes → continue with questionnaire
- No → assessment necessary, end of questionnaire → [go to assessment procedure](#)

18. Is it clear for participants where they can file complaints with regard to participating in the research and how these complaints will be dealt with?

- Yes → continue with questionnaire
- No → assessment necessary, end of questionnaire → [go to assessment procedure](#)

19. Are the participants free to participate in the research, and to stop at any given point, whenever and for whatever reason they should wish to do so?

- Yes → continue with questionnaire
- No → assessment necessary, end of questionnaire → [go to assessment procedure](#)

20. Before participating, are participants informed by means of an information document about the aim, nature and risks and objections of the study? (see [explanation on informed consent](#) and [sample documents](#)).

- Yes → continue with questionnaire
- No → assessment necessary, end of questionnaire → [go to assessment procedure](#)

21. Do participants and/or their representatives sign a consent form? (see [explanation on informed consent](#) and [sample documents](#)).

- Yes → questionnaire finished
- No → assessment necessary, end of questionnaire → [go to assessment procedure](#)

**If you want to record the results of this checklist, please save the completed file.**

**If you need approval from the EACH due to the requirement of a publisher or research grant provider, you will have to follow the formal assessment procedure of the EACH.**