Bachelor Thesis

Accents and Perceptions in Medical Communication: Impact of Doctor accents in English and Patient Personality on the Perceived Competence, Trustworthiness and Comprehensibility.

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Abstract

Previous research shows that speakers' accents can significantly affect interpersonal evaluations, with non-native accents being evaluated more negatively compared to the native British accent in English. The current study aimed to investigate to what extent the English speaking doctors with a Standard British accent, an Ukrainian accent and a French accent differ with regard to the listeners' perceptions of their competence, trustworthiness and comprehensibility. This study also investigated whether the personality of the participants had an effect on their perceptions. The listeners had to fill in a questionnaire, where they had answers questions regarding the audio fragment that they had listened to of an English doctor with a native or non-native accent. In the second part of the survey, they also had to fill in a personality test. The results showed that the standard British accented speakers were evaluated more positively on all the dependent variables compared to the Ukrainian accented and French accented speakers. The results also showed a significant relation between the dimensions 'emotionality', 'openness to experience', 'honesty and humility' and the perceived trustworthiness of the doctor. Therefore, we can conclude that the standard British English speaking doctor is perceived as more competent, trustworthy and comprehensible than the Ukrainian accented English speaking doctor and the French accented English speaking doctor. Additionally, certain personality traits of the listener can influence their perception of a doctor's trustworthiness, regardless of whether the doctor has a native or non-native accent.

Introduction

In the past years, the importance of English as a global language has increased. As a result, the number of non-native speakers of English has expanded substantially (Crystal, 2003). Consequently, conversations in English between non-native speakers and between native speakers have become more relevant. This is also true for the specific domain of health communication. Many doctors and medical students move to different countries to make use of training programs in healthcare or to take on employment opportunities. As a result, there are many doctors that do not speak the native language of the country they are employed in and they will have a foreign accent (Baquiran & Nicoladis, 2020). Therefore, more and more health organizations around the world have adopted English as a lingua franca (ELF) in communication with their patients and also with their colleagues (Van Meurs et al., 2013).

The interaction between patients and healthcare providers is influenced by various factors, including the personality traits of the patient and the accent characteristics of the healthcare provider (Baquiran & Nicoladis, 2020). Understanding how patients perceive and interact with nonnative accented doctors is crucial for ensuring effective communication and quality healthcare delivery.

Non-nativeness in English

As mentioned before, English has become a global language and is in some settings even the main lingua franca. Therefore, there are many non-native accents in English, but previous research has shown that these non-native accents have not always been perceived positively. For example, the research of Fuertes et al. (2012), has shown that speakers' accents can significantly affect interpersonal evaluations, with non-native accents being evaluated more negatively compared to native English speakers. They especially found that the native English speakers were rated higher on status, dynamism and solidarity than the non-native speakers. They also found that it was even more favourable to have a standard native accent in formal settings like employment or sales situations (Fuertes et al., 2012). The terms 'standard accents' in British and American English refer to accents that are with the national accent norm of these nations and are also in general similar to Received Pronunciation (RP) for a standard British English and General American (GA) for a standard American English accent (Nejjari et al., 2020). The results of the study of Fuertes et al. (2012) also showed that the

American accent generated more positive effects than the RP accent in other English speaking countries. The results of this study concluded that accents play a role in the formation of social stereotypes and can even impact social and professional outcomes, for example in the situation of applying for a job.

For example, the study of Hendriks et al. (2021) looked at lecturers with a slight or moderate Dutch accent in English and compared that to lecturers with a standard British accent. Their findings showed that the moderately non-native accented lecturers were evaluated more negatively than lecturers with a slight or native accent by both Dutch and international non-native listeners, but not by native English listeners. This suggests that the non-native listeners are more negatively impacted by the accents of the non-native lecturers than the native English speakers themselves. Additionally, the study of Hendriks et al. (2021) also found that Dutch listeners regard the moderately Dutch-accented speakers as having less status and teaching quality (Hendriks et al., 2021). These results suggest that listeners are more critical about speakers with whom they share their first language with. The listeners may experience vicarious shame when listening to someone speaking in their own accent. This study also examined if the comprehensibility of the accent had an impact on how the accents were evaluated. They found that the moderately accented Dutch lecturers were more difficult to understand than the slightly accented Dutch lectures, and therefore they were evaluated more negatively on teaching quality. This is in line with the study by Reber et al. (2004), where they found that the processing fluency of an accent is very important when determining people’s attitudes. Overall, the results of this study are also in line with the findings of Hendriks et al. (2021), which are that non-native accents in English are evaluated more negatively than the standard British accent.

This study will investigate different types of accents. It will compare Ukrainian accented English and French accented English to a standard British English accent. The languages in Europe are linguistically very diverse in terms of grammatical structures, vocabulary and phonetics (Derwing & Munro, 2009). Therefore, we will take one non-native English accent from Eastern Europe (Ukrainian) and one non-native English accent from Western Europe (French) and compare that to the standard British English accent. This study chooses to examine the Ukrainian accent in English, due to the current situation of many Ukrainian refugees that have fled to countries in Western Europe after the Russian invasion in 2022. In the United Kingdom, there are around 174.000 Ukrainian refugees and 61% of them are also employed in this country (Ukrainian Migration to the UK - Migration Observatory, 2023). It can be concluded from this that on a daily basis, many people in the UK are encountered with a Ukrainian accent. Therefore, due to the relevance and currency of this topic, we will examine a Ukrainian accent in English. The study of Petrochuk (2022) investigated the English speech of Ukrainians and its perception by non-native speakers of English. The study revealed that Ukrainian, who studied the English language for more than ten years and have on average a level of 'upper-immediate', speak with a slight foreign accent which makes their speech overall comprehensible and intelligible for foreigners. They were therefore evaluated rather positively.

This study also chooses to examine the French accent in English, because it is linguistically very different from a Ukrainian accent in English (Derwing & Munro, 2009). In the study by Derwing and Munro (2009), they found that Eastern European accents in English often exhibit phonetic features distinct from Western European accents. These features may include differences in vowel and consonant pronunciation, intonation patterns and rhythm. For example, Eastern European accents may have vowel reductions that are not typically found in Western European accents. Conversely, Western European accents, such as the standard British accent or French accented English, may have their own characteristic phonetic features (Derwing & Munro, 2009). This study also chooses to examine the French accent out of all the Western European accents, due to its high social status compared to the other West European accents (Woolard, 1985). This is a result of a combination of historical, cultural and socio-linguistic factors. Its recognition in global perceptions contribute to connotations with high culture, luxury and intellectualism (Calvet, 2006).

This study compares the Ukrainian accented English and French accented English to the standard British English accent, because the setting is in the United Kingdom. It would be very interesting to see whether the linguistic differences between the Ukrainian accented English, French accented English and the standard British English accent, would influence the listeners' perception of the doctors with these different accents.

Health communication

Among all social behaviours, communication between members of various groups is undoubtedly the most complex. This is especially true in the domain of health, where it is frequently difficult for patients and healthcare providers to communicate (Baker & Watson, 2015). In the healthcare setting, communication failures are particularly concerning as they may inadvertently lead to poor patient care and patient injury. Doctors and patients from different ethnic backgrounds may have different perspectives, values and beliefs about sickness, which can lead to misunderstandings and challenges in intercultural communication. In the sense that our explanations of illness shape our perceptions of, experiences with, and strategies for coping with disease, illness is culturally dictated. Therefore, difficulties in intercultural doctor-patient communication may be due to cultural differences rather than the belief that some cultures are inferior (Paternotte et al., 2015).

In healthcare, there is an increasing amount of communication between doctors and patients, where accents have become an obstacle in certain situations. This is mainly due to the permanent or temporary migration that results in language barriers in health communication. Professionals from different countries frequently join multidisciplinary teams. It is challenging for these migrating medical professionals to interact with both their coworkers and the patients of the host country. For this reason, obstacles to communication lead to misunderstandings or a lack of contact between medical personnel and patients. This affects patient safety and quality care while raising the possibility of medical errors (Ellahham & Samer, 2021). Not only can a foreign accent of a doctor affect communication with their patients, it could also affect the patient's perception of their doctor. Previous research on this topic has found that a doctor's foreign accent affects perceptions in terms of competence (Baquiran & Nicoladis, 2020). This study investigated whether doctors with a foreign accent were perceived as less competent than the doctors with a standard accent. The standard accent in this study was a Canadian accent and the foreign accent in this study was a Chinese accent. The competence of the doctors with the standard Canadian accent and the Chinese accent was rated by Caucasian Canadian and Chinese Canadian undergraduates. The results showed that the Chinese-accented doctor's competence was perceived as more negatively by both the Caucasian Canadian and Chinese Canadian undergraduates than the standard Canadian-accented doctor. Therefore, it can be concluded from these results that foreign-accented doctors in Canada face biases from their patients about their competence. This is in line with the findings of Fuertes et al. (2012) where they found that it was more favourable to have a standard accent in British and American English. Another research regarding the competence also found that doctors are rated as more competent when they have a standard British English accent (Rakić, 2019). On the contrary, they found that a regional accent was perceived as more warmer, which is a quality that is necessary in the communication of sensitive and important information.

Trustworthiness and Competence

Non-native accents often lead to prejudicial judgments. There has been some research done in the past that has investigated whether non-native accents of speakers have an influence on the trustworthiness and the competence of the listeners. In a study of Geiger et al. (2023), they investigated if a job candidate with a Mandarin Chinese accent was perceived as less trustworthy by the hiring decision makers. They found that indeed a non-native accent had a significant negative impact on people's perceptions of trust, but also on their perceptions of competence. This leads hiring managers to make inaccurate and unfair decisions, because their trust and competence of the candidate is only based on the non-native accent. It is important for decision makers to realize that language is merely a tool for communication; it does not always convey the person's level of competence. A study by Nelson et al. (2016) also found that non-native accents were rated as less competent than native accents. In this study, speakers with a Spanish accent were rated as less competent in terms of communication and knowledge than the speakers with the North American English accents (native accents). They concluded that hearing non-indigenous speech can trigger unfavourable preconceptions or assumptions about particular ethnic groups and raise questions about potential communication problems.

Not much research has been done on the effects of non-native accents on competence and trustworthiness in a healthcare setting. However, the study of Chávez (2022) did found that when the patient and the doctor share the same language, more trust is built between them. If we therefore look at the findings of Rakić (2019), where he found that a regional accent was perceived as more warmer, we can conclude that there is also more trust built in communication when people have the same regional accent. The study of Segers (2022) investigated how perceived expertise affected the evaluations of a non-standard Dutch accent (Brabants) compared to a standard Dutch accent (Randstad) in persuasive health communication. They found that in terms of competence, the Brabant speakers was perceived as less competent when delivering persuasive health information, regardless of the perceived expertise. This paper suggests that when a speaker works in a field where standard pronunciation is expected, listeners may become more judgemental of the non-standard accented speech.

The significance of viewing the dynamics of communication between patients and non-native accented doctors as interactions between members of different social groups is highlighted by insights from intergroup communication theory (Giles & Soliz, 2010). Stereotypes, cultural biases, and prior experiences with individuals from similar linguistic backgrounds may influence patients' perceptions of trustworthiness and competence in nonnative accented doctors (Giles & Soliz, 2010). Understanding these dynamics can inform interventions aimed at improving cross-cultural communication and reducing inequality in healthcare delivery.

Comprehensibility

The degree to which spoken phrases are difficult for listeners to understand is known as comprehensibility (Munro & Derwing, 1995). Research has indicated that the strength of an accent has a significant role in determining how well non-native speakers are understood and regarded (Dragojevic, Giles, Beck, & Tatum, 2017). Research on the impact of non-native accents have been known to overlook the various degrees of accentedness (Hendriks et al., 2021). A heavier accent typically elicits more negative responses. Furthermore, because non-native accents have higher processing demands, non-native speakers may be interpreted differently in terms of comprehensibility (Munro & Derwing, 1995). As a result, this could unintentionally influence the rating of non-native speakers (Roessel et al., 2019).

On the other hand, with more listener experience and increased familiarity with the accent, non-native speech can become more comprehensible. For instance, listeners who are exposed to a wider variety of accents are more likely to comprehend non-native speech more effectively (Kennedy & Trofimovich, 2008). Additionally, the study of Fuse et al. (2018) found that bilinguals have a greater ability in understanding non-native accented speech compared to monolingual listeners. Over time, listeners can also adapt to non-native accents, which can improve their ability to comprehend accented speech (Norris et al., 2003). This method of perceptual learning helps mitigate initial comprehension difficulties. Furthermore, comprehensibility is also influenced by the context of the communication. Even with heavier accents, the semantic context can help listeners make sense of the non-native speech (Kennedy & Trofimovich, 2008). These findings suggest that listener adaptability and familiarity with the accent is important for determining how comprehensible a non-native accent is (Kennedy & Trofimovich, 2008; Fuse et al., 2003; Norris et al., 2003). Therefore, we can conclude that listener adaptability and familiarity with the accent is also very important in determining how comprehensible non-native English speaking doctors are perceived to be.

Personality

In this study, we will also investigate whether the personality of the listener has an influence on how people perceive the non-native English speaking doctor. Thus, not only the speaker can change the listener's perception with their accent, but instead the listener itself changes their perception of the speaker by their personality. Therefore, it could be that certain personality traits of a person influences their perception of others.

The basis for comprehending individual differences in how patients view and communicate with doctors who do not speak their native language is provided by The Five-Factor Theory of Personality (Costa & McCrae, 1999). According to their study, this theory is a widely accepted framework in psychology that describes human personality based on five broad dimensions. These dimensions are openness to experience, conscientiousness, extraversion, agreeableness and neuroticism.

Previous research in psychology and communication studies have shown that individual differences in personality traits can shape how people interpret and respond to verbal and nonverbal cues from speakers. For example, the study of McCrea and John (1992) found that with regard to the dimension openness to experience, people with high openness to experience are typically curious, creative and open-minded. They might be more open to listen to speakers who offer fresh or unusual viewpoints, and they might value speakers who express creativity and intellectual depth. On the other hand, people with low openness to experience may prefer speakers who present information in a straightforward or conventional matter (McCrea & John, 1992). With regard to the dimension agreeableness, the study of Graziano and Eisenberg (1997) found that people with high agreeableness tend to be cooperative, compassionate and trustworthy. This means that they might prefer speakers who are kind, sympathetic and friendly. Therefore they are more likely to perceive speakers positively if they convey a sense of interpersonal connection. Conversely, those with low agreeableness could be more sceptical or critical about the speakers, especially if they think they are being deceptive or dishonest (Graziano & Eisenberg, 1997). The study of Roberts et al. (2005) found that with regard to the dimension conscientiousness, those that are conscientious are responsible, organized and goal-oriented. They may value speakers who present information clearly, logically and with attention to detail. They also found that speakers who demonstrate competence, professionalism and reliability may be perceived more positively by individuals high in conscientiousness, while unreliable or chaotic speakers may be viewed less favourably (Roberts et al., 2005). Another study of Costa and McCrae (1992) found that with regard to the dimension extraversion, extraverted people tend to be outgoing, sociable and energetic. They might prefer speakers who are dynamic, charismatic and engaging, and may be more drawn to speakers who use expressive gestures, vocal variety and humour. On the other hand, they found that introverted people may prefer speakers who communicate in a more reserved and thoughtful manner (Costa & McCrae, 1992). Lastly, the study of Lahey (2009) found that with regard to the dimension neuroticism, people with high neuroticism may be more sensitive to negative emotional cues from speakers. For example, signs of nervousness, insecurity or aggression. Additionally, the study also found that they are more likely to misinterpret ambiguous communication negatively (Lahey, 2009).

These studies have all shown that certain personality traits of the listener influences their perception of others and that the speakers can contribute to this by the way that they are communicating (McCrea & John, 1992; Graziano & Eisenberg, 1997; Roberts et al., 2005; Costa & McCrae, 1992; Lahey, 2009).

In this current study, we want to test whether the influence of the personality traits of the listener also applies with doctor-patient communication on the aspects trustworthiness, comprehensibility and competence. The patient in this case is the non-native English listener and the speaker is a non-native or native English speaking doctor. There has not been much research done yet specifically on this topic, but the study of Cousin and Mast (2013) did have some findings regarding the personality trait agreeableness of the patients. They found that the more agreeable a patient is, the more he or she perceives a high affiliative physician to be more competent as compared to a low affiliative physician. This means that they trust their high affiliative physician more and they adhere more to their treatment recommendations (Cousin & Mast, 2013).

We will test the influence of the personality traits with the personality test HEXACO-60. This test consists of sixty questions on the dimensions: Emotionality, Honesty and Humility, Extraversion, Openness to Experience, Agreeableness and Conscientiousness (the HEXACO Personality Inventory – Revised, n.d.) This test provides valuable insights into individual differences in behaviour and personality. When someone scores high in the dimension Emotionality, it means that they are very sensitive and are prone to worry. These people experience fear of physical dangers and anxiety in response to a lot of stress in life. They are also in need of emotional support from others. When someone scores high in the dimension Honesty and Humility, it means that they are sincere and modest. These people feel little temptation to break the rules and avoid manipulating others. They also feel no special entitlement to elevated social status. When someone scores high in the dimension Extraversion, it means that they are very outgoing and enthusiastic. These people normally feel positively about themselves and they are confident leaders. They also enjoy interactions and social gatherings. When someone scores high in the dimension Openness to Experience, it means that they are curious and open-minded. These people are curious about a wide range of topics and utilize their imagination freely in daily life. They also take an interest in unique people or ideas. When someone scores high in the dimension Agreeable, it means that they are tolerant and compassionate. These people are eager to make concessions and work with others. They are also very tolerant of others' wrongdoings. When someone scores high in the dimension Conscientiousness, it means that they are disciplined and efficient. These people aim for precision and excellence in their profession. They also consider their options carefully before making any judgements. Later on in this study, we will research whether there is a relation between the scores of the participants in these dimensions and the subjects trustworthiness, competence and comprehensibility (the HEXACO Personality Inventory – Revised, n.d.).

The current study

There has already been some research done on the influence of non-native accents on the characteristics trustworthiness, competence and comprehensibility in different settings. In this study we want to specifically conduct the research in a healthcare setting, to investigate whether the accent of the doctor has an influence on the perception of the patient regarding the doctor's trustworthiness, comprehensibility and competence. There has been no research done yet where they specifically studied these accents in English: Ukrainian accented English, French accented English and the standard British English accent. Therefore, we will investigate and compare these three accents. Another aspect that has not been investigated yet with regard to this topic is personality. We want to investigate whether the personality of a non-native English speaker can also have an influence on their perception of a doctor on the characteristics trustworthiness, competence and comprehensibility. On the basis of this we formulated the research question and two hypotheses:

Research question: To what extent do English speaking doctors with a Standard British accent, an Ukrainian accent and a French accent differ with regard to the listeners' perceptions of their competence, trustworthiness and comprehensibility, and how does the patients' personality affect these perceptions?

Hypotheses:

Taking into account that doctors are rated as more competent when they have a standard British English accent (Rakić, 2019), that non-native accents significantly damage people's perceptions of trust and competence (Geiger et al., 2023) and that non-native speakers may be interpreted differently in terms of comprehensibility (Munro & Derwing, 1995), the following hypothesis is presented:

H1: The standard British English speaking doctor will be perceived as more competent, trustworthy and comprehensible than the Ukrainian accented English speaking doctor and the French accented English speaking doctor.

Taking into account that certain personality traits of the listener influences the perception of others and that speakers can contribute to this by the way that they are communicating (McCrea & John, 1992; Graziano & Eisenberg, 1997; Roberts et al., 2005; Costa & McCrae, 1992; Lahey, 2009), the following hypothesis is presented:

H2: The personality of the non-native English listener will influence their perceptions of the speakers.

Method

Materials

There were two independent variables in this study: the type of accent (Standard British English, Ukrainian accented English and French accented English) and the personality of the listener. Whether the scores of the listener personality test were perceived as high or low was determined when all of the scores of the personality test were collected and compared.

The listeners in this study were highly educated Dutch students between the ages of 18 to 25 and they were studying in the United Kingdom. In the questionnaire that they had to fill in, the situation is delineated where they are visiting a healthcare facility in the United Kingdom and they are helped by a English speaking doctor with a non-native or native accent. They individually heard an audio fragment of their doctor who delivers them general information about a problem what they went to the doctor for. The reason why we chose to deliver general information is based on research of Maynard (1998). He found that when giving bad news, there could be a 'blame the messenger' bias. This means that people can rate the doctor as less competent just because he tells them bad news. This also counts for the other way around, so there is a positivity bias in which patients could rate doctors higher just because the doctor brings good news. Therefore, we chose that the doctor will only provide general information. This is the text of the audio fragment: “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 3 days so we can discuss the results. Good luck!” The doctor either had a standard British English accent, a Ukrainian English accent or a French English accent. For each accent were two audio fragments recorded with the same text, but with two different speakers. A verbal guise experiment was conducted to investigate the perception of different accents, specifically focusing on standard British English, French accented English and Ukrainian accented English. For each accent, the experiment included two speakers to ensure representation. Prior to the main experiment, a pretest was conducted to validate the suitability of the selected speakers and their accents. For each accent, two experts in that accent evaluated the representation of the accent. This way we selected for each accent the two most representative of that accent. Only one Ukrainian accent was not really representative according to one expert. Due to the short amount of time we had to conduct our survey, we did choose to select this one.

Subjects

The experiment has a 3 x 1 mixed-subjects design. The aim was to have at least thirty participants per design, which would be around 180 potential participants. The potential participants were asked to provide demographic information, including age, gender, educational level, nationality and their native language at the beginning of the questionnaire. Convenience sampling and network sampling methods were used to recruit potential participants. The age of the participants had to be between 18 and 25 years old. The participants also had to be native Dutch speakers and they should have been highly educated students. In the Dutch education system this means that they should be students that are studying at a HBO school or at a university. In this study, we wanted to avoid the ‘blame the messenger bias’. This means that individuals tend to criticize the person delivering unpleasant news rather than focusing on the message itself (John et al., 2019). To avoid the ‘blame the messenger bias’ in this study, the participants were asked what they are studying. The survey took around 15 minutes to be completed, which was longer than expected. Therefore, many participants quit the survey without filling in the personality test. At first, 300 participants participated in the survey. After filtering out everyone that did not met the requirements for the survey and who did not completely finish the first part of the survey, we ended up with 193 participants. The speakers of the audio fragments were all young adults and male, so gender would not have an indirect effect on the listeners perception of the speakers. Both the Ukrainian speakers were in their first year of their Bachelor degree and they were also both born in Kiev which is the capital of Ukraine. Both the French speakers were in their third year of their Bachelor degree and they are studying applied foreign languages. The first French speaker was born and raised in Rouen in Normandy (France) and the second French speaker was born and raised in Amiens in Somme (France). The first British speaker is following the Master Finance at university and is already a finance investor for his career. The second

British speaker did not have an university degree, he took a professional culinary course and he is now a sous chef in a restaurant. The first British speaker was born in Nigeria and was raised in London (England) and the second British speaker was born and raised in London (England).

Design

The design is a 3 x 1 mixed-subjects design, with three levels of accents (Standard British English, Ukrainian accented English and French accented English) and personality. This means that we did not only examine the potential differences between the separate groups of participants, but we also assessed change in the individual members of each group. The participants were divided in a way that they listened to only one accent with either the standard British accent, the Ukrainian accent or the French accent. In this study this meant that we examined the differences between the standard British accent, the Ukrainian accent or the French accent, but we also examined whether the personality of every individual participants also had an influence on how the participants perceived the accents.
So, in this study we examined to differences between the different groups of participants and we also examined all the individual participants on their personality.

Instruments

The dependent variables in this study were trustworthiness, competence and comprehensibility. These three variables form the overall perception of the speaker, argued by Hendriks et al. (2014), Brockway (1978) and Munto & Derwig (1995). For each construct, Cronbach's alpha was used to measure the reliability. The items of the construct competence were measured by the statement 'In my opinion, the speaker sounds…'. The construct competence consisted of the items reliable, intelligent, competent, hardworking and educated ($\alpha = .87$). These items were measured using a 7-point Likert scale in the questions, ranging from 1=totally disagree to 7= totally agree (Hendriks et al., 2014). For the construct trustworthiness, the participants rated the speaker on six statements based on how trustworthy the doctor came across after listening to the audio fragment ($\alpha = .80$). They rated the speaker on a 7-point Likert scale, ranging from 1= totally disagree to 7= totally agree (Brockway, 1978). For the construct comprehensibility, the participants were asked one question on how comprehensible the speaker was. They rated the speaker on a 9-point Likert scale, ranging from 1= not difficult to understand at all to 9= very difficult to understand (Munto & Derwig, 1995). The questions for the dependent variables trustworthiness, competence and comprehensibility can be found in Appendix B. The Hexaco-60 personality test consisted of the dimensions: Honesty and Humility (α = .17), Emotionality (α = .82), Extraversion (α = .81), Agreeableness (α = .67), Conscientiousness (α = .78) and Openness to experience (α = .76). The participants were asked 60 statements regarding their personality on the basis of these six dimensions. They rated themselves on a 5-point Likert scale, ranging from 1= totally disagree and 5= totally agree (Ashton & Lee, 2009). The questions for the Hexaco-60 personality test can be found in Appendix A.

Procedure

In this study, the experiment took place by using questionnaires that were distributed online utilizing a survey platform. The survey platform was used by the participants to complete the questions and they were recruited through the researchers' personal networks. The questions were randomized in order to avoid any order effects. The experiment was conducted on an individual basis, and the procedure was the same for all subjects. Before they filled out the items, the participants were first asked to fill out a consent form to take part in the study. Next, they were asked to fill in the Likert scales in the questionnaire concerning the dependent variables trustworthiness and competence. They were also asked if they were already familiar with the accent of the doctor, because this could have influenced their perception of the accent. Finally, the participants had to complete the Hexaco-60 personality test. This test consisted of 60 questions that discover how much your behaviour varies according to the six traits: openness to experience, conscientiousness, extraversion, agreeableness, emotionality and honesty/humanity. The participants had to do this test, so we could see if certain personality traits had an influence on how they perceived the accented doctor. The questionnaire and the Hexaco-60 personality test were all in Dutch, because we only wanted Dutch respondents in this study.

Statistical treatment

To analyse the results, a one-way univariate analysis of variance was performed. With this test we investigated whether there were any differences between the individual speakers/type of accent and the dependent variables (trustworthiness, comprehensibility and competence). This aimed to investigate how the independent variables influence the dependent variables in addition to finding out a possible interaction effect. We also conducted a chi-square test, to measure if there was a relation between the familiarity with the accent and the type of accent. Lastly, we conducted a correlation test between the six dimensions of the HEXACO-60 test (Emotionality, Honesty and Humility, Openness to Experience, Agreeableness, Conscientiousness and Extraversion) and the dependent variables (trustworthiness, comprehensibility and competence) to test whether there was a correlation between these variables.

Results

In this results section, the findings of this study will be presented. This study aimed to investigate whether the accent of the doctor has an influence on the perception of the patient regarding the doctor's trustworthiness, comprehensibility and competence and whether the personality of the patient also has an influence on their perception.

The first hypothesis 'The standard British English speaking doctor will be perceived as more competent, trustworthy and comprehensible than the Ukrainian accented English speaking doctor and the French accented English speaking doctor.' and the second hypothesis ' The personality of the non-native English listener will influence their perceptions of the speakers.' were also answered in this section following the results.

Section 1 – Speakers x Dependent variables

One-way ANOVA tests were conducted to investigate whether the individual speakers differed in terms of the means of the dependent variables competence, comprehensibility and trustworthiness.

Speakers x perceived competence one-way ANOVA:

Table 1. *Means and Standard Deviations for the perceived competence of the individual speakers (1= very low perceived competence, 7= very high perceived competence).*

	N	Mean	Std. Deviation	Minimum	Maximum
British_1	31	5.26	.81	3	7
British_2	32	5.32	.99	2	7
French_1	33	4.73	.92	2	6
French_2	32	4.87	1.01	3	6
Ukrainian_1	32	4.52	1.09	2	7
Ukrainian_2	32	5.01	.81	3	7
Total	192	4.95	.98	2	7

A one-way analysis of variance showed a significant effect of perceived competence on the individual speakers (F (5, 186) = 3.43, p = .006, η2 = .08). There was no significant difference found between the first British speaker (M = 5.26, SD = .81) and the second British speaker (p = 1.000, Bonferroni-correction; M = 5.32, SD = 0.99). There was also no significant difference found between the first Ukrainian speaker (M = 4.52, SD = 1.09) and the second Ukrainian speaker (p = .608, Bonferroni-correction; M = 5.02, SD = .81). In addition, there was also no significant difference found between the first French speaker (*M* = 4.73, *SD* = 0.92) and the second French speaker (*p* = 1.000, Bonferroni-correction; *M* = 4.87, *SD* = 1.01). Table 1 presents the means and standard deviations for the perceived competence of the individual speakers.

Speakers x perceived Trustworthiness one-way ANOVA:

Table 2. *Means and Standard Deviations for the perceived Trustworthiness of the individual speakers (1= very low perceived trustworthiness, 7= very high perceived trustworthiness).*

	N	Mean	Std. Deviation	Minimum	Maximum
British_1	31	5.31	.94	3	7
British_2	32	5.40	1.02	2	7
French_1	33	4.67	.76	3	6
French_2	32	4.73	1.12	3	7
Ukrainian_1	32	4.05	1.10	2	6
Ukrainian_2	32	4.60	1.13	2	6
Total	192	4.79	1.11	2	7

A one-way analysis of variance showed a significant effect of perceived Trustworthiness on the individual speakers (F (5, 186) = 7.63, $p < .001$, η2 = .17). There was no significant difference found between the first British speaker (*M* = 5.31, *SD* = .94) and the second British speaker (*p* = 1.000, Bonferroni-correction*;* *M* = 5.40, *SD* = 1.02). There was also no significant difference found between the first Ukrainian speaker (*M* = 4.05, *SD* = 1.10) and the second Ukrainian speaker (*p* = .475, Bonferroni-correction; *M* = 4.60, *SD* = 1.13). In addition, there was also no significant difference found between the first French speaker (*M* = 4.67, *SD* = 0.76) and the second French speaker (*p* = 1.000, Bonferroni-correction; *M* = 4.73, *SD* = 1.12). Table 2 presents the means and standard deviations for the perceived trustworthiness of this individual speakers.

Speakers x perceived Comprehensibility Welch's one-way ANOVA:

A Welch's one-way ANOVA was conducted, because the assumption of equal variances was violated.

Table 3. *Means and Standard Deviations for the perceived Comprehensibility of the individual speakers (1= very low perceived comprehensibility, 9= very high perceived comprehensibility).*

	N	Mean	Std. Deviation	Minimum	Maximum
British_1	31	7.94	1.34	2	9
British_2	32	8.28	1.49	1	9
French_1	33	4.27	1.59	2	8
French_2	32	5.63	2.28	1	9
Ukrainian_1	32	4.47	2.17	1	8
Ukrainian_2	32	5.81	1.75	2	9
Total	192	6.05	2.36	1	9

A one-way analysis of variance showed a significant effect of perceived Comprehensibility on the individual speakers (F (5, 86) = 35.68, $p < .001$). There was no significant difference found between the first British speaker (M = 7.94, SD = 1.34) and the second British speaker (p = .926, Bonferroni-correction; M = 8.28, SD = 1.49). There was also no significant difference found between the first Ukrainian speaker (M = 4.47, SD = 2.17) and the second Ukrainian speaker (p = .085, Bonferroni-correction; M = 5.81, SD = 1.75). In addition, there was also no significant difference found between the first French speaker (M = 4.27, SD = 1.59) and the second French speaker (p = .079, Bonferroni-correction; M = 5.63, SD = 2.28). Table 3 presents the means and standard deviations for the perceived comprehensibility of the individual speakers

From the results of the one-way ANOVA tests between the individual speakers and the dependent variables (competence, trustworthiness and comprehensibility), we can conclude that there is little difference between the individual speakers with the same accent in terms of the means.

Section 2 – Type of accent x Dependent variables

In section 1 we concluded from the results that there was little difference between the individual speakers with the same accent in terms of the means. Therefore, we grouped these individual speakers with the same accent together in the variable 'type of accent'. One-way ANOVA tests were conducted to investigate whether the type of accent differed in terms of the means of the dependent variables competence, comprehensibility and trustworthiness.

These tests were conducted to answer the first hypothesis: 'The standard British English speaking doctor will be perceived as more competent, trustworthy and comprehensible than the Ukrainian accented English speaker doctor and the French accented English speaking doctor.'

Type of accent x perceived Competence one-way ANOVA:

Table 4. *Means and Standard Deviations for the perceived Competence of the type of accent (1= very low perceived competence, 7= very high perceived competence).*

	N	Mean	Std. Deviation	Minimum	Maximum
British	63	5.29	.90	2	7
French	65	4.80	.96	2	6
Ukrainian	64	4.76	.98	2	7
Total	192	4.95	.98	2	7

A one-way analysis of variance showed a significant effect of perceived Competence on the Type of accent (F (2, 189) = 6.15, p = .003, $\eta 2$ = .06). The British accent (M = 5.29, SD = 0.90) scored significantly higher on competence than the French accent (p = .011, Bonferroni-correction; M = 4.80, SD = 0.96) and the Ukrainian accent (p = .006, Bonferroni-correction; M = 4.76, SD = 0.98). Table 4 presents the means and standard deviations for the perceived competence of the type of accent.

Type of accent x perceived Trustworthiness one-way ANOVA:

Table 5. *Means and Standard Deviations for the perceived Trustworthiness of the type of accent (1= very low perceived trustworthiness, 7= very high perceived trustworthiness).*

	N	Mean	Std. Deviation	Minimum	Maximum
British	63	5.35	.97	2	7
French	65	4.70	.95	3	7
Ukrainian	64	4.32	1.14	2	6
Total	192	4.79	1.11	2	7

A one-way analysis of variance showed a significant effect of perceived Trustworthiness on the Type of accent (F (2, 189) = 16.46, p < .001, η2 = .15). The British accent (M = 5.35, SD = 0.97) scored significantly higher on trustworthiness than the French accent (p = .001, Bonferroni-correction; M = 4.70, SD = 0.95) and the Ukrainian accent (p < .001, Bonferroni-correction; M = 4.32, SD = 1.11). Table 5 presents the means and standard deviations for the perceived trustworthiness of the type of accent.

Type of accent x perceived Comprehensibility one-way ANOVA:

Table 6. *Means and Standard Deviations for the perceived Comprehensibility of the type of accent (1= very low perceived comprehensibility, 9= very high perceived comprehensibility).*

	N	Mean	Std. Deviation	Maximum
British	63	8.11	1.42	9
French	65	4.94	2.06	9
Ukrainian	64	5.14	2.07	9
Total	192	6.05	2.36	9

A one-way analysis of variance showed a significant effect of perceived Comprehensibility on the Type of accent (F (2, 189) = 56.91, p < .001, η2 = .38). The British accent (M = 8.11, SD = 1.42) scored significantly higher on trustworthiness than the French accent (p < .001, Bonferroni-correction; M = 4.94, SD = 2.06) and the Ukrainian accent (p < .001, Bonferroni-correction; M = 5.14, SD = 2.07). Table 6 presents the means and standard deviations for the perceived comprehensibility of the type of accent.

From the results of the one-way ANOVA tests between the type of accent and the dependent variables (competence, trustworthiness and comprehensibility), we can conclude that the standard British English speaking doctor is perceived as more competent, trustworthy and comprehensible than the Ukrainian accented English speaking doctor and the French accented English speaking doctor. For all the dependent variables, the standard British English doctor scored the highest in terms of the means. The Ukrainian accented English speaking doctor scored the lowest in terms of the means for the dependent variables competence and trustworthiness. The French accented English speaking doctor scored the lowest in terms of the means for the dependent variable comprehensibility.

Section 3 – Accent type x Familiarity

A Chi-square test was conducted to measure if there was a relation between the familiarity with the accent and the type of accent (British, French and Ukrainian).

Chi-square:

Table 7. *Chi-square test between the familiarity with the accent and the type of accent.*

			Type of accent			
			British	French	Ukrainian	Total
Familiarity	correct	Count	55_a	46_a	0_b	101
		Expected Count	33.1	34.2	33.7	101.0
		% within Type_accent	87.3%	70.8%	0.0%	52.6%
		Standardized Residual	3.8	2.0	-5.8	
	incorrect	Count	8_a	19_a	64_b	91
		Expected Count	29.9	30.8	30.3	91.0
		% within Type_accent	12.7%	29.2%	100.0%	47.4%
		Standardized Residual	-4.0	-2.1	6.1	
Total		Count	63	65	64	192
		Expected Count	63.0	65.0	64.0	192.0
		% within Type_accent	100.0%	100.0%	100.0%	100.0%

A Chi-square test showed a significant relation between Familiarity and the Type of accent ($\chi2$ (2) = 110.06, $p < .001$). This relation was strong (Cramer's V = .757). The participants were relatively more familiar with the British accent (87.3%) and the French accent (70.8%) than with the Ukrainian accent (0.0%). Table 7 presents the results of the Chi-square test between the familiarity with the accent and the type of accent.

From these results, we can conclude that the participants were more familiar with the British and French accent than with the Ukrainian. We can also conclude from these results that none of the participants recognized the Ukrainian accent and therefore they were not familiar with this accent. This could be a possible explanation for the previous results, where they found that that the Ukrainian accent was evaluated the lowest on the subjects competence and trustworthiness.

Section 4 – The dependent variables x The six dimensions

A correlation test was conducted, to test whether there was a relation between the dependent variables (comprehensibility, competence and trustworthiness) and the six dimensions of the personality test (emotionality, extraversion, honesty and humility, agreeableness, conscientiousness and openness to experience).

This test was conducted to answer the second hypothesis: 'The personality of non-native English listener will influence their perceptions of the speakers.'

Correlation test:

Table 8. *Pearson Correlations between the dependent variables and the six dimensions.*

		Competence	*Trust*	*Comprehensibility*
Openness_Experience	Pearson Correlation	.098	.159	.037
	Sig. (2-tailed)	.207	.039	.636
	N	169	169	169
Conscientiousness	Pearson Correlation	.020	.105	.087
	Sig. (2-tailed)	.797	.175	.259
	N	169	169	169
Agreeableness	Pearson Correlation	.010	.044	.011
	Sig. (2-tailed)	.900	.570	.886
	N	169	169	169
Extraversion	Pearson Correlation	-.031	-.018	-.071
	Sig. (2-tailed)	.691	.815	.359
	N	169	169	169
Emotionality	Pearson Correlation	.076	.184*	.179*
	Sig. (2-tailed)	.328	.017	.020
	N	169	169	169
Honesty_Humility	Pearson Correlation	-.076	-.054	.010
	Sig. (2-tailed)	.326	.482	.895
	N	169	169	169

Emotionality

A significant positive relation was found between the dimension Emotionality and the perceived Trustworthiness of the doctor (r = .18, p = .020, N = 169). The perceived trustworthiness of the doctor increased, because the listener scored high on the dimension emotionality of the personality test.

A significant positive relation was found between the dimension emotionality and the perceived comprehensibility of the doctor (r = .18, p = .017, N = 169). The perceived comprehensibility of the doctor increased, because the listener scored high on the dimension emotionality of the personality test.

Openness to experience

A significant positive relation was found between the dimension Openness to Experience and the perceived Comprehensibility of the doctor (r = .16, p = .039, N = 169). The perceived trustworthiness of the doctor increased, because the listener scored high on the dimension openness to experience of the personality test

Honesty and Humility

A significant positive relation was found between the dimension Honesty and Humility and the perceived Trustworthiness of the doctor (r = .21, p = .005, N =169). The perceived trustworthiness of the doctor increased, because the listener scored high on the dimension honesty and humility of the personality test.

Overall, we found that there was a significant relation between the dimensions 'Emotionality', 'Openness to Experience', 'Honesty and Humility' and the perceived trustworthiness of the doctor. In addition, we also found a significant relation between the dimension Emotionality and the perceived Comprehensibility of the doctor. This means that in these cases, the personality traits of the participants had an influence on how they perceived the doctor. For the other dimensions, we did not find a significant relation with the dependent variables. Table 8 presents the results of the correlation test between the dependent variables and the six dimensions of the personality test.

Conclusion

The current study aimed to investigate to what extent the English speaking doctors with a Standard British accent, an Ukrainian accent and a French accent differ with regard to the listeners' perceptions of their competence, trustworthiness and comprehensibility. This study also investigated whether the personality of the participants also had an effect on their perceptions.

From the results, we can conclude that the standard British accented speakers were evaluated more positively on all the dependent variables compared to the Ukrainian accented and French accented speakers. So, they were seen as more competent, trustworthy and comprehensible. This means that the first hypothesis 'The Ukrainian accented English speaking doctor and the French accented English speaking doctor will be perceived as less competent, trustworthy and comprehensible than the standard British English speaking doctor' is confirmed.

The second hypothesis, ' The personality of a non-native English speaking patient will influence their perception of the accented doctor' was partially confirmed. The results showed a significant relation between the dimensions 'emotionality', 'openness to experience', 'honesty and humility' and the perceived trustworthiness of the doctor. In addition, we also found a significant relation between the dimension emotionality and the perceived comprehensibility of the doctor. This means that in these cases, the personality traits of the participants had an influence on how they perceived the doctor. For the dimensions Conscientiousness, Extraversion and Agreeableness, no correlation was found between the dimension and the dependent variables.

Discussion

The current study reveals that the standard British English speaking doctor is perceived as more competent, trustworthy and comprehensible than the Ukrainian accented English speaking doctor and the French accented English speaking doctor. We can conclude from these findings that the Ukrainian accent and the French accent, were evaluated more negatively than the standard British accent in English. This aligns with the findings of Hendriks et al. (2021) and Fuertes et al. (2012), who also observed that non-native accents in English are evaluated more negatively than the standard British accent. A possible explanation for this phenomenon is that non-native accents often contribute to the formation of social stereotypes (Fuertes et al., 2012). It can therefore be argued that due to certain stereotypes associated with non-native accents, individuals tend to evaluate them more negatively. Furthermore, this is in line with the study of Giles and Soliz (2010) where they found that stereotypes, cultural biases, and prior experiences with individuals from similar linguistic backgrounds can influence patients' perceptions of trustworthiness and competence in non-native accented doctors. These biases towards non-native accents originates form generalized negative perceptions and difficulties in comprehensibility (Tan et al., 2021). For example, in this study we found that the French accent and the Ukrainian accent were less favourably perceived in terms of comprehensibility than the standard British accent. Therefore, we can conclude that some participants had difficulties with understanding the French accent and the Ukrainian accent, which according to the study of Tan et al. (2021) can result in a negative bias towards these accents. As a result, these negative biases could have an impact on professional evaluations and social interactions (Tan et al., 2021). It can even affect patient outcomes and interactions in healthcare settings. The study of Gu and Shah (2019) revealed that accent-related communication problems could lead to misunderstandings and reduced patient satisfaction, which can ultimately affect the quality of the care that is provided. These findings suggest that the negative perception on non-native accents in English can have serious consequences in the medical profession.

The current study further reveals that, in terms of the perceived competence and the perceived trustworthiness of the doctor, the non-native accents were consistently evaluated more negatively than the native accent. These findings are in line with the study of Geiger et al. (2023) and Nelson et al. (2016), which indicated that a non-native accent has a significant negative impact on people’s perception of trust and competence. Additionally, the study of Baquiran and Nicoladis (2020) also found that in the medical field, doctors with a non-native accent were perceived as less competent than doctors with a standard accent. However, it is important to note that the differences between the British accent and the French and Ukrainian accent in terms of the trustworthiness, competence and comprehensibility were very small. Therefore, it does not mean that the Ukrainian and French-accented speakers were seen as significantly untrustworthy, incompetent or incomprehensible. It was only the case that the standard British accent was evaluated slightly higher for all the dependent variables. This could be due to the familiarity of the accent. When examining the results of the chi-square test between the familiarity of the accent and the individual speakers, it was found that both the first and second standard British speaker had a much higher score on familiarity than the French and Ukrainian accented speakers. It was even found that for both the first and second Ukrainian speaker, the familiarity was zero percent. This indicates that nobody even recognised the Ukrainian accent, which could have led to wrongful associations. From these results, we could argue that due to the familiarity of the standard British English accent, the participants evaluated them more positively on the subjects comprehensibility, competence and trustworthiness. According to the study of Gu and Shah (2019), familiarity with an accent plays a crucial role in how speakers are perceived. People tend to have positive biases towards accents they are more familiar with, which can result in higher ratings for them in various dimensions, including competence and trustworthiness. This finding is in line with the study of Tan et al. (2021), which showed that the perception of non-native accents is significantly influenced by the listeners' familiarity and exposure to those accents.

This study also reveals a significant relationship between the personality dimensions 'emotionality', 'openness to experience', 'honesty and humility' and the perceived trustworthiness of the doctor. This suggests that certain personality traits of the listener can influence their perception of a doctor's trustworthiness, regardless of whether the doctor has a native or non-native accent. The relation between the dimension openness to experience and the perceived trustworthiness of the listener can be explained by the study of McCrea and John (1992). They found that people who score high on this dimension, often value speakers who share intellectual depth. Thus, such individuals may perceive their doctor as very trustworthy, because they view their doctor as someone who shares valuable intellectual information with them.

There is also a significant relationship between the dimension emotionality and the perceived trustworthiness of the doctor**.** People that score high on the dimension emotionality tend to experience fear for physical dangers and anxiety to stress in life (the HEXACO Personality Inventory – Revised, n.d.).

This suggests that these individuals are likely to perceive their doctor as very trustworthy. They view their doctor as someone that will protect them from their fears, which makes them trust the doctor more.

Additionally, there is also a relationship found between the dimension honesty and humility and the perceived trustworthiness of the doctor. These individuals that scored high on the dimension honesty and humility, often do not feel entitled to elevated status. (the HEXACO Personality Inventory – Revised, n.d.). They may perceive their doctor as superior and therefore feel a strong inclination to trust and listen to them.

Limitations

Naturally, the current study has several limitations which could have had an influence on the results. Firstly, one of the Ukrainian speakers used for the audio fragments in the survey was not representative according to one expert. Prior to conducting the survey, two experts evaluated the representation of the Ukrainian accent. One of the two Ukrainian speakers was considered unrepresentative of the accent by one expert. Due to the time constraints and difficulties in finding Ukrainian speakers, we decided to use this accent in our survey. The results of this study showed that none of the participants recognized the Ukrainian accent of either speaker. Therefore, the results of this study might have been different if we had replaced this speaker with one who was representative of the Ukrainian accent according to an expert.

Another limitation in the survey was that many participants quit the survey without completing the personality test at the end. Feedback indicated that participants found the survey longer than expected and chose to exit early. The personality test was intended to be a key part of the study, as we aimed to determine whether the listeners' personality influenced their perception of the doctor, regardless whether the doctor had a native or non-native accent. To ensure we had a sufficient number of participants, we decided to retain the participants that finished the first part of the survey (questions about the perceived trustworthiness, competence and comprehensibility of the doctor), but not the second part (personality test). However, the consequence of this was that we did not have a clear representation of the influence of the personality of the listener on their perception of the speaker. Therefore, we had to reduce the emphasis on the role of personality in our study and focus more on the influence of the doctor's accent on the patients' perceptions regarding the doctor's trustworthiness, comprehensibility and competence.

Lastly, in this study we only had students as our participants. Young adults who are studying may be more open to non-native listeners than older people, because students may be more exposed to non-native accents. For example, students are often more exposed to diverse linguistic environments. Therefore, the results might have been different if an older target group had been used in this study. Additionally, the target group in this study might not had extensive experience with healthcare. However, patients do have more familiarity with patient-doctor communication. Thus, the results might have been different if we only used patients as participants in this study.

Future research

As mentioned in the limitations, future research should pay attention to using a different target group beyond only students. Investigating an older target group or people with more experience in patient-doctor communication might lead to different outcomes. Additionally, future research could compare other non-native accents to the standard British accent in English. For example, examining non-native English accents from countries outside of Europe might yield different stereotypes and perceptions, potentially leading to different study outcomes. Lastly, future research could combine quantitative surveys with qualitative interviews to gain a more comprehensive understanding of the perceptions and the underlying reasons.

Once more, the current study confirms that the standard British English speaking doctor is perceived as more competent, trustworthy and comprehensible than the Ukrainian accented English speaking doctor and the French accented English speaking doctor. Additionally, certain personality traits of the listener can influence their perception of a doctor's trustworthiness, regardless of whether the doctor has a native or non-native accent.

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Appendices

Appendix A Hexaco-60 personality test in Dutch (Ashton & Lee, 2009)

1= helemaal mee oneens 2= mee oneens 3= neutraal (noch mee eens, noch mee oneens) 4= mee eens 5= helemaal mee eens

1. ______ Ik zou me vervelen bij een bezoek aan een kunstgalerie.
2. ______ Ik maak vooraf plannen en regel alvast zaken om te vermijden dat ik op het laatste moment nog dingen moet doen.
3. ______ Ik houd zelden een wrok tegen iemand, zelfs niet als ik erg slecht behandeld ben.
4. ______ Alles bij elkaar heb ik wel een tevreden gevoel over mijzelf.
5. ______ Ik zou bang worden als ik in slecht weer zou moeten reizen.
6. ______ Ik zou niet vleien om op het werk opslag of promotie te krijgen, zelfs al zou het succes hebben.
7. ______ Ik kom graag meer te weten over de geschiedenis en politiek van andere landen.
8. ______ Ik span me vaak tot het uiterste in als ik een doel tracht te bereiken.
9. ______ Mensen vertellen me soms dat ik te kritisch op anderen ben.
10. ______ Ik geef zelden mijn mening in groepsbijeenkomsten.
11. ______ Ik maak me soms zorgen over onbenulligheden.
12. ______ Als ik niet gepakt zou worden, dan zou ik er geen probleem mee hebben om een miljoen Euro te stelen.
13. ______ Ik zou graag iets kunstzinnigs doen, zoals een boek schrijven, een lied componeren of een schilderij maken.
14. ______ Als ik aan iets werk, besteed ik weinig aandacht aan kleine details.
15. ______ Mensen vertellen me soms dat ik te koppig ben.
16. ______ Ik heb liever een baan waarin men veel met andere mensen omgaat dan één waarin men alleen dient te werken.
17. ______ Na een pijnlijke ervaring heb ik iemand nodig om me te troosten.
18. ______ Veel geld bezitten vind ik onbelangrijk.
19. ______ Ik vind het tijdverlies om aandacht te besteden aan radicale ideeën.
20. ______ Ik neem beslissingen op basis van 'hier-en-nu' gevoelens in plaats van zorgvuldig beraad.
21. ______ Mensen vinden me een heethoofd.
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

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 slechtste 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.

Appendix B Questionnaire questions in Dutch

Leeftijd

Mijn leeftijd is:

▼

Geslacht

Ik identificeer mij als:

○ Man ○ Vrouw ○ Anders/zeg ik liever niet

Opleidingsniveau

Mijn huidige of afgeronde opleidingsniveau is:

○ Basisonderwijs

○ Middelbare school

○ Middelbaar beroepsonderwijs (mbo)

○ Hoger beroepsonderwijs (hbo)

○ Wetenschappelijk onderwijs (wo)

Competence

Instruments used to measure competence based on Hendriks et al. (2014) (I think the doctor is)…

1. Reliable
2. Intelligent
3. Competent
4. Hardworking
5. Educated

Trustworthiness

Study by Brockway (1978):

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

Comprehensibility

Munto and Derwig (1995)

This doctor is…

1. not difficult to understand at all
2. slightly difficult to understand
3. somewhat difficult to understand
4. moderately difficult to understand
5. neutral
6. somewhat difficult to understand
7. quite difficult to understand
8. difficult to understand
9. Very difficult to understan

Appendix D Checklist Ethics Review

Radboud University

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

☒ Nee → 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 → 12: standard questionnaire research → 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.