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**The effects of pronouns of address in pandemic-related
messages on persuasiveness in Dutch and German students**

Bachelor Thesis

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Abstract

The COVID-19 pandemic has changed behavioral patterns worldwide and forced society to work collectively against it. Almost daily, new statements are published by politicians and health organizations to inform about preventive guidelines and measures. It is therefore of high importance to formulate those health messages most effectively to secure society's health. Previous research has shown that language use and more specifically pronoun use seems to affect how people perceive and evaluate pandemic-related messages. Furthermore, there seem to be cultural and generational differences related to language use and perception that have not been explored in a pandemic-related context yet. The main aim of the current study was to investigate to what extent do T vs. V pronouns of address have an effect on the persuasiveness of pandemic-related messages in Dutch and German students. It was hypothesized that the current study will find an effect of pronouns of address on persuasiveness, more specifically that pandemic-related messages will be more persuasive to German students when V pronouns are used, whereas Dutch students will be more persuaded when T pronouns are used. In a web-based experiment, 51 Dutch students (native speakers) and 43 German students (native speakers) evaluated different COVID-19 vaccination campaign posters on persuasiveness that either contained T- or V pronouns of address. The findings showed that German students evaluated the posters overall higher in quality than Dutch students. This suggests that there are cultural differences related to the evaluation of the quality of pandemic-related messages. Health organisations can take this into account to achieve effective pandemic-related communication with different cultures. Future research should therefore study the effect of quality in the context of pandemic-related messages more intensively.

1. Introduction

The COVID-19 pandemic has changed behavioral patterns worldwide and forced society to work collectively against it. Measures like social distancing, frequent hand-washing and disinfection as well as self-isolation were implemented, and the normal life was set on pause. Due to globalisation, the virus could spread worldwide in a short amount of time and almost 6 million people were already infected with the virus in May 2020 (World Health Organization, 2020). Almost daily, new statements are published by politicians and health organizations to inform about preventive guidelines and measures on how to protect vulnerable age and risk groups, such as the elderly and cancer patients in particular.

Research has found that the source of origin plays an essential role when it comes to effective message perception (Easten, 2001). In particular, public health organisations were perceived as important information sources about COVID-19 (Skarpa & Garoufallou, 2022). They not only provide information about current measurements but also call for citizens to get vaccinated against the virus (World Health Organization, 2022). A study by Brug et al. (2004) found that health officials were the most trusted sources of information during the SARS outbreak in the Netherlands. Further, Gehrau et al. (2021) concluded from their findings that health authorities seem to be most appropriate to spread information about COVID-19 vaccination because they are widely trusted. The findings further showed that information from experts and health organisations had a positive impact on vaccination intentions in Germany. Gehrau et al. (2021) also pointed out the threat of alternative information sources from for instance social networks which seemed to negatively affect vaccination intentions. The source origin therefore seems to have an effect on how people perceive messages in the context of COVID-19.

The question now arises how pandemic-related messages can be formulated most effectively by health institutions to increase behavior, such as vaccination intentions, that secures public health.

Social scientists have focused on which messages increase intentions to engage in prevention behaviors with the goal of minimising dangerous consequences the pandemic causes to public health (Heffner et al. 2021; Jordan et al. 2020; Lunn et al. 2020).

The effectiveness of persuasive messages in the promotion of healthy behavior has been shown to be particularly important in the context of COVID-19 (Van Bavel et al. 2020). Persuasiveness can be defined as the successful intentional effort at influencing another's mental state through communication in a circumstance in which the persuadee has some

measure of freedom (O’Keefe, 2002, p.5). Persuasive messages have the intention to persuade a certain audience, change certain behaviors or stimulate attitude change (Hoeken et al., 2019; Petty et al., 1981; Petty & Cacioppo, 1986).

A study by Carfora and Catellani (2021) showed that the highest persuasive effect was observed when pandemic-related messages were framed as non-loss, so messages that focus on the absence of negative outcomes. An example of their formulated messages was: “If you do physical activity at home, you will avoid worsening your fitness”. The authors also mentioned it will be necessary for future studies to investigate persuasive effects of pandemic-related messages in other contexts, for instance vaccination intentions, than home-based physical activities during COVID-19.

Moreover, language use seems to have an effect on how people perceive pandemic-related messages. A study by Tian et al. (2021) investigated the role of pronouns in supportive pandemic-related messages and hope appeals facilitating citizens’ coping with COVID-19. The purpose of the study was to examine whether the use of second-person pronouns (‘you-language’) or the use of first-person plural pronouns (‘we-language’) was more beneficial in relation to how people are coping with the current pandemic. Furthermore, they tested whether the presence or absence of hope appeals in those supportive messages are associated with more emotional improvement and more communal coping. Coping orientation meant whether participants perceived a stressor, in this study COVID-19, as individually or collectively owned. Tian et al. (2021) found that the use of second-person pronouns (‘you-language’) compared to the use of first-person plural pronouns (‘we-language’) in supportive messages were associated with more emotional improvement when communal coping orientation was high. The results also showed that participants perceived ‘you-language’ supportive messages more as a collaboration towards a shared goal, mainly to secure public health.

Another study by Tu et al. (2021) found that language use, more specifically the use of different pronouns, in pandemic-related messages had an effect on people’s engagement with the measurements. They found that participants with high self-control followed measurements regardless of pronoun usage, whereas participants with low self-control followed measurements more when the pronoun “you” than when the pronoun “we” was used. The usage of the pronoun “you” is likely to promote a sense that the message speaks directly to the recipient. People with low self-control tend to be worse at monitoring their emotions and behavior and are more influenced by their environment (Redden & Haws, 2013). Furthermore, Tu et al. (2021) hypothesized that, based on De Ridder et al. (2012),

young adults are more likely to experience impulses and hence are more likely to experience low self-control. They, therefore, advised that health messages should use the pronoun “you” rather than “we” to increase young people’s engagement with the measurements.

The aforementioned studies indicate that the use of different pronouns has an effect on how respondents perceive and evaluate pandemic-related messages. Furthermore, the studies show that respondents, for instance with high or low self-control, seem to have different preferences when it comes to pronoun use (see Tu et al. 2021).

In general, pronouns are frequently used to communicate or construct identities and relationships (Cruz et al., 2017). Brewer and Gardner (1996) found that exposure to first-person plural pronouns (such as we, our, us) enhanced collective self-concept whereas exposure to first-person singular pronouns (I, my, me) promoted an individualist self-view. They concluded that different pronouns create different levels of inclusiveness.

More specifically, certain languages have pronouns that distinguish levels of politeness, social distance, and familiarity towards the addressee. In sociolinguistics, this is called a ‘T-V distinction’. Brown and Gilman (1960) were the first who made this distinction between the so-called familiar T pronouns and polite V pronouns. The T pronouns include second-person singular informal pronouns as well as second-person plural informal pronouns. The V pronouns include second-person singular formal as well as second-person plural formal pronouns. Brown and Gilman (1960) further concluded that social relations vary in two dimensions, which they defined as ‘power’ and ‘solidarity’. Power refers to social hierarchy and the authority one person has over the other. Solidarity refers to social distance, so referring to the level of frequency of contact. Through conversations with native speakers and a questionnaire, Brown and Gilman (1960) found that German speakers used T pronouns when speaking to family members, whereas French speakers used T pronouns to acquire solidarity from those with shared character traits. In their study, they found a relation between pronouns of address and the dimensions of power and solidarity among speakers of different languages, such as German, Dutch, Italian and French. They, therefore, concluded that countries differ in pronoun use and its perception.

A study by Levshina (2017) investigated language use by means of film subtitles and found that German speakers use the V form (*Sie*) more frequently than the T form (*du*), whereas Dutch speakers preferred the T form (*jij*) over the V form (*u*). She defined V pronouns as “not only distant but also respectful” (p.156) pronouns whereas T pronouns express warmth and friendliness (positive politeness) but could also seem to be too familiar (negative politeness). Levshina (2017) concluded similarly to Brown and Gilman (1960) that

T pronouns are generally used for intimate conversations with family members and friends, whereas V pronouns are used in formal conversations.

A more recent study by House and Kádár (2020) found that German respondents evaluated the T-form used in IKEA catalogues more negatively than the V-form. It is however relevant to note that older German respondents evaluated the T-form use to be more negative than younger respondents who were divided on this point. Therefore, House and Kádár (2020) found different effects for younger and older respondents. The fact that younger respondents were divided on their responses raises the question of whether this effect would also occur in a pandemic-related context, considering that previous studies (House & Kádár, 2020; Levshina, 2017) mainly focused on T/V pronouns in a marketing- or linguistic-related context.

Furthermore, there seems to be a lack of studies that investigated young adults' or students' responses to pandemic-related messages. It is relevant to investigate students' perceptions because they were not one of the initial priority groups for vaccinations (Silva et al., 2021). Therefore, it might be the case that the overall perception of pandemic-related measurements, such as vaccination intentions, is different for young adults' or students than for older respondents, who had vaccination priorities and were also allowed to participate in social life earlier.

There seem to be not only generational but also cultural differences that have not been explored in depth yet. Research has shown that cultures such as Germany and the Netherlands differ in their language and pronoun use (Brown & Gilman, 1960; Levshina, 2017). However, there seems to be little research done that investigated whether those two cultures not only differ in language use but also language perception and, more specifically, the perception of T/V pronouns.

Culture can generally be defined as “the collective programming of the mind shared among members of a particular group“ (Hofstede, 2011, p.3). German and Dutch for instance are referred to as Germanic languages which have their lexical similarities but also cultural differences (Van Haeringen, 1956). These cultural differences were shown for instance by Hofstede (2001; 2011) when he established the so-called ‘cultural dimensions’. These are a framework used to understand cultural differences across countries. In total, six dimensions were introduced. The cultures of the Netherlands and Germany seem to differ particularly on the dimensions of masculinity versus femininity and indulgence. The dimension masculinity versus femininity refers to the preference of society for achievement. Germany for instance scores high on masculinity, which means that society is driven by competition and success.

The Netherlands however can be considered a feminine society, where the quality of life is the sign of success. Both cultures also differed immensely on the dimension of indulgence. This dimension is defined as the extent to which people try to control their desires and impulses. Strong control of these is called “restraint” whereas a weak control is called “indulgent” (Hofstede, 2011, pp.15-16). Germany counts as a restrained culture, which tends to be more pessimistic and has more control over desires. The Netherlands can be classified as an indulgent culture, which exhibits a willingness to realize impulses and desires with regard to enjoying life.

The aforementioned cultural differences between Germany and the Netherlands on Hofstede’s dimensions are likely to be reflected in the way people communicate. Most probably, differences in cultural values or dimensions are also reflected in the way evaluations or perceptions are verbally expressed by respondents with different cultural backgrounds. A study by Gudykunst and Ting-Toomey (1988) related a group’s verbal style to the group’s cultural dimensions as outlined in Hofstede’s work (2001). They suggested that if a culture is characterized by preferences for specific values, it also features a corresponding preference for a specific verbal style. Specific values could be that masculine cultures (such as Germany) are driven by competition and success whereas feminine cultures value the quality of life (such as the Netherlands). It can be hypothesized that German and Dutch respondents have different preferences for verbal styles and therefore evaluate pandemic-related messages differently.

In conclusion, there seem to be differences in the perception of messages in the context of the current COVID-19 pandemic and also in the perception of pronouns of address used in pandemic-related messages. Moreover, there seem to be cultural and generational differences related to language use and perception that have not been explored yet.

Therefore, we want to know whether pandemic-related messages with T/V pronouns of address have a different effect on persuasiveness in German and Dutch students.

The present study will address the mentioned research gap and the theoretical overview presented in this section leads to the following research question:

To what extent do T vs. V pronouns of address have an effect on the persuasiveness of pandemic-related messages in Dutch and German students?

With regard to previous research findings, we can expect our study to find an effect of pronouns of address on persuasiveness in the context of pandemic-related messages (Tian et

al. 2021; Tu et al. 2021). Furthermore, regarding the findings by Gudykunst and Ting-Toomey (1988) who propose that a culture's preference for certain values also features a corresponding preference for a specific verbal style, we hypothesize that German and Dutch students differ in their evaluation of pandemic-related messages. Due to the different use of pronouns in German and Dutch cultures shown by Brown and Gilman (1960) and Levshina (2017), we assume that German students prefer messages that use the V form since they use it more frequently and are therefore also more accustomed to this form. Furthermore, we assume that Dutch students prefer messages that use the T form.

We, therefore, expect that pandemic-related messages will be more persuasive to German students when V pronouns are used. Dutch students will be more persuaded when T pronouns are used.

2. Methods

In a web-based experiment, Dutch and German students (native speakers) evaluated pandemic-related posters on persuasiveness which was divided into the factors of effectiveness, quality, and capability. The posters contained either T or V pronouns of address.

2.1. Materials

The materials for this study consisted of sixteen different COVID-19 vaccination campaign posters in total. The posters varied in design and slogan. The exact conditions can be found in Table 1. The posters were created by the researchers and were inspired by official posters from the World Health Organisation because previous studies showed that participants seem to trust expert sources more (Botterill et al. 2021; Gehrau et al. 2021). The four different Dutch sentences for the V-condition were: *“Laat u vaccineren!”*, *“Bent u al gevaccineerd?”*, *“Bent u gevaccineerd? Dan bent u beschermd.”* and *“Bescherm uzelf en alle anderen. Laat u vaccineren!”*. The four different Dutch sentences for the T-condition were: *“Laat je vaccineren!”*, *“Ben je al gevaccineerd?”*, *“Ben je gevaccineerd? Dan ben je beschermd.”* and *“Bescherm jezelf en alle anderen. Laat je vaccineren!”*. The four different German sentences for the V-condition were: *“Lassen Sie sich impfen!”*, *“Sind Sie schon geimpft?”*, *“Sie sind geimpft? Dann sind Sie geschützt.”* and *“Schützen Sie sich selbst und alle anderen. Lassen Sie sich impfen!”*. The four different German sentences for the T-condition were:

“Lass dich impfen!”, “Bist du schon geimpft?”, “Du bist geimpft? Dann bist du geschützt.” and “Schütze dich selbst und alle anderen. Lass dich impfen!”. All posters can be found in Appendix 7.2. until 7.5.

Table 1. Conditions of experiment (grouped by nationality and pronoun of address)

	T-condition	V-condition
Dutch	Design A Slogan 1	Design A Slogan 1
	Design B Slogan 2	Design B Slogan 2
	Design C Slogan 3	Design C Slogan 3
	Design D Slogan 4	Design D Slogan 4
German	Design A Slogan 1	Design A Slogan 1
	Design B Slogan 2	Design B Slogan 2
	Design C Slogan 3	Design C Slogan 3
	Design D Slogan 4	Design D Slogan 4

2.2. Subjects

A total of 204 participants (age range = 18-25) took part in our online questionnaire. However, we had to exclude 110 participants. Four participants did not want to participate in the study, nine participants did not match the age range from 18-25, and 97 participants did not complete the survey. Therefore, 94 participants were ultimately included in the analysis. All participants were recruited by social media posts via WhatsApp, Facebook, and Instagram. Out of the participants included in the analysis, a total of 50 participants (53.2%) were female, a total of 43 participants (45.7%) were male and one participant (1.1%) identified as non-binary or third gender. A total of 51 Dutch participants (54.3%) took part in the study, from which a total of 51 (54.3%) also identified Dutch as their (most) native language. A total of 43 German participants (45.7%) took part in our study, from which a total of 43 participants (45.7%) also identified German as their (most) native language. All participants were currently enrolled as students. For the experiment, a total of 48 participants (51.1%) were randomly categorized into the condition T, while 46 participants (48.9%) were randomly categorized into the condition V.

There was no significant relationship among participants' characteristics for the conditions gender ($\chi^2(2) = 1.25, p = .54$) and nationality/ language ($\chi^2(1) = .16, p = .69$).

2.3. Design

A 2 (language/nationality: Dutch or German) x 2 (pronoun of address: V or T) between-subjects experimental design was used for this study. The first independent variable was language/nationality (categorical) of the message (Dutch or German) and thus of the participants. Furthermore, the second independent variable in this experiment was the use of either V or T pronouns of address (categorical) in the message. In Dutch, it was either 'jij' or 'u' and in German it was either 'du' or 'Sie'. All messages were translated from Dutch to German and from German to Dutch to guarantee the same meaning.

2.4. Instruments

The concept of persuasiveness was measured by using the 7-point Likert scale (1 = strongly disagree; 7 = strongly agree) developed by Thomas et al. (2019). In our study, we used the three main factors of effectiveness, quality, and capability the authors established to measure persuasiveness.

The factor effectiveness was measured with the following three scale items: "This message will cause changes in my behavior", "This message causes me to make some changes in my behavior" and "After viewing this message, I will make changes in my attitude". The reliability of three items for effectiveness was excellent $\alpha = .97$.

The factor quality was measured with the following three scale items: "This message/campaign is accurate", "This message/campaign is trustworthy" and "I believe this message/campaign is true". The reliability of three items for quality was excellent $\alpha = .90$.

The factor capability was measured with the following three scale items: "This message has the potential to change behavior", "This message has the potential to influence behavior" and "This message has the potential to inspire". The reliability of three items for capability was excellent $\alpha = .90$. The items for each construct can be found in Appendix 7.6.

The current study used the criterion that values of around .70 or greater will be considered as 'acceptable' and will stay in the experiment. Values of around .90 and greater will be considered as 'excellent' and will also stay in the experiment (Taber, 2018). Therefore, no items had to be removed for this study. The whole questionnaire can be found in Appendix 7.1.

2.5. Procedure

The questionnaire was administered in English using the online questionnaire tool Qualtrics (<https://www.qualtrics.com>). Participants were discarded if they were younger than 18 and older than 25, were not current students and were not Dutch or German native speakers. The participants first read an introduction page with a consent form, in which they were asked to give their consent for their data to be used by clicking on 'I agree to participate in this study'. Participants were then asked demographic questions about their age, gender, nationality and (most) native language. Participants were then randomly categorized to either a T or a V condition. They received a short explanation that they would see four different posters and were asked to fill out the same set of questions after each poster. Furthermore, it was explained that the sets would consist of several questions and statements regarding behavior towards the COVID-19 pandemic and vaccinations and participants should indicate their level of agreement towards the statements on the provided scales. The debriefing explained the actual aim of the experiment to the participants, and they were also given hypotheses for the possible outcomes of the experiment. The participants did not receive any kind of reward for their participation. The questionnaire took approximately 10-15 minutes to fill in.

2.6. Statistical analysis

For this study, three reliability analyses were conducted to measure the reliability of effectiveness, quality and capability using the statistical software platform SPSS (<https://www.ibm.com>). Since all three items had a value of .90 and higher no items had to be removed. In addition, three two-way ANOVAs with between-subjects' factors were run to investigate whether there was a significant interaction between the two groups (Dutch and German) and their perception of T versus V pronouns. The two-way ANOVAs also investigated whether there were significant effects regarding the persuasiveness of the messages, measured by the factors of effectiveness, quality, and capability. The current study used the criterion that a value of .05 or smaller would show a significant interaction or effect.

3. Results

The main purpose of this study was to investigate to what extent T vs. V pronouns of address had an effect on the persuasiveness of pandemic-related messages in Dutch and German students. Persuasiveness was divided into three different factors, effectiveness, quality, and

capability and for each factor a two-way ANOVA was performed using the statistical software platform SPSS (<https://www.ibm.com>).

A two-way analysis of variance for effectiveness with nationality (Dutch vs. German) and pronoun of address (T vs. V) as factors showed no significant main effect of nationality ($F(1, 90) = 1.48, p = .227$), no significant effect for pronoun of address ($F(1, 90) = 1.00, p = .759$) and no significant interaction ($F(1, 90) = .08, p = .774$). Means, standard deviations and number of observations for effectiveness can be found in Table 1.

Table 1. Means and standard deviations and number of observations for effectiveness in function of persuasiveness with the conditions nationality and pronoun of address (1 = low effectiveness score; 7 = high effectiveness score)

Effectiveness	Native language	Pronoun of address	<i>M</i>	<i>SD</i>	<i>n</i>
	Dutch	T	3.35	1.16	27
		V	3.50	1.10	24
		Total	3.42	1.13	51
	German	T	3.72	1.43	21
		V	3.73	1.10	22
		Total	3.73	1.25	43
	Total	T	3.51	1.29	48
		V	3.61	1.09	46
		Total	3.56	1.19	94

A two-way analysis of variance for quality with nationality (Dutch vs. German) and pronoun of address (T vs. V) as factors showed a significant main effect of nationality ($F(1, 90) = 7.096, p = .009$), no significant effect for pronoun of address ($F(1, 90) = 3.548, p = .063$) and no significant interaction ($F(1, 90) = .318, p = .574$). German students did evaluate the messages higher on quality ($M = 4.60, SD = 1.08; M = 4.86, SD = .78$) than Dutch students ($M = 3.98, SD = 1.07; M = 4.45, SD = .76$). Means, standard deviations and number of observations for quality can be found in Table 2.

Table 2. Means and standard deviations and number of observations for quality in function of persuasiveness with the conditions nationality and pronoun of address (1 = low quality score; 7 = high quality score)

Quality	Native language	Pronoun of address	<i>M</i>	<i>SD</i>	<i>n</i>
	Dutch	T	3.98	1.07	27
		V	4.45	.76	24
		Total	4.20	.96	51
	German	T	4.60	1.08	21
		V	4.86	.78	22
		Total	4.73	.94	43
Total		T	4.25	1.11	48
		V	4.65	.79	46
		Total	4.44	.98	94

A two-way analysis of variance for capability with nationality (Dutch vs. German) and pronoun of address (T vs. V) as factors showed no significant main effect of nationality ($F(1, 90) = .367, p = .546$), no significant effect for pronoun of address ($F(1, 90) = .311, p = .579$) and no significant interaction ($F(1, 90) = .239, p = .626$). Means, standard deviations and number of observations for capability can be found in Table 3.

Table 3. Means and standard deviations and number of observations for capability in function of persuasiveness with the conditions nationality and pronoun of address (1 = low capability score; 7 = high capability score)

Capability	Native language	T or V Condition	<i>M</i>	<i>SD</i>	<i>n</i>
	Dutch	T	4.31	.99	27
		V	4.30	.78	24
		Total	4.30	.89	51
	German	T	4.52	1.11	21
		V	4.32	.89	22
		Total	4.42	1.00	43
Total		T	4.40	1.04	48
		V	4.31	.82	46
		Total	4.36	.94	94

4. Conclusion and discussion

In conclusion, the main purpose of this study was to investigate to what extent T/V pronouns of address had an effect on the persuasiveness of pandemic-related messages in Dutch and German students. The current study found that Dutch and German students differed in their perception of the quality of pandemic-related messages but not in their perception of

effectiveness or capability. German students rated the messages higher on quality, regardless of the pronoun use. In the current study, pronouns of address (T vs. V) did not have an effect on the persuasiveness of pandemic-related messages in Dutch and German students.

The results showed that there was no effect of pronouns of address on the persuasiveness of the message. Therefore, the findings of the current study are incoherent with Tian et al. (2021) and Tu et al. (2021) who found that pronouns of address had an effect on persuasiveness in the context of pandemic-related messages. It is possible that the findings of the current study contradict previous findings because the participant group was rather small ($N = 94$) compared to Tian et al. (2021) ($N = 256$) and Tu et al. (2021) ($N = 223$) and therefore it is possible that pronouns did not have a significant effect on a smaller sample size. Both studies also included American participants only and their perception of pronouns might differ from Dutch and German participants. Additionally, in both studies the mean age was 40-50 years, whereas the current study focused on students that were between 18-25 years old. Therefore, perception could also differ due to age and generational differences. A study by House and Kádár (2020) for instance found that older German respondents evaluated T-forms used in IKEA catalogues more negatively than younger respondents. Another reason why the results of the current study are incoherent with the findings by Tian et al. (2021) and Tu et al. (2021) could be that they did not specifically focus on the T-V distinction but rather on “you- vs. we-language”, so pronouns that include the individual or a collective group of people. Furthermore, Tu et al. (2021) hypothesized that, based on De Ridder et al. (2012), young adults are more likely to experience impulses and hence are more likely to experience low self-control, so health messages should use the pronoun “you”. However, the current study did not find an effect of pronoun of address in Dutch and German students. It is possible that the current study did not find this effect because Tu et al. (2021), as previously mentioned, focused on “you- vs. we-language” instead of the T-V distinction.

Furthermore, the hypothesis that German speakers prefer messages when the V form is used, and Dutch speakers prefer messages when the T form is used was rejected. Pandemic-related messages were not more persuasive to Dutch students when T pronouns were used. German students were also not more persuaded when V pronouns were used. Therefore, the current findings differ from the findings by Brown and Gilman (1960) who concluded that countries, such as Germany and the Netherlands, differ in pronoun perception. It is possible that our results differ from Brown and Gilman (1960) because their participants were all male and American native speakers. As previously mentioned, American participants might differ in their perception of pronouns of address. Brown and Gilman (1960) also

mentioned that the participants described their understanding of pronouns before they answered the questions. Therefore, it is possible that their answers might have been biased because they thought about the concept of pronouns for a longer amount of time before answering the questions.

The results of the current study further showed that there was a significant main effect of nationality on quality. German students did evaluate the messages higher on quality than Dutch students did. This could mean that Dutch students are generally more critical when evaluating pandemic-related messages. In Hofstede's dimensions, German culture is defined as driven by competition and success, whereas for Dutch culture the quality of life is the sign of success. It could be possible that the quality of life could also be related back to general health and therefore Dutch students tend to be more critical of health information related to COVID-19. However, there are currently no studies that have tested this.

Another possible explanation for the significant main effect of nationality on quality could be that Dutch respondents tend not to consider COVID-19 measures as well as vaccinations as necessary. A study by Han et al. (2021) for instance showed that Dutch participants compared to German participants scored significantly lower on personal health behavior. The authors examined the factor of personal health behavior with items such as "To minimize my chances of getting coronavirus, I avoid crowded spaces" or "To minimize my chances of getting coronavirus, I put myself in quarantine". These results implicate that Dutch respondents do not consider these measures necessary and do not comply with them. It could be hypothesized that if Dutch respondents see certain measurements, such as avoiding crowded spaces or going into quarantine, as not necessary, they might have similar attitudes towards vaccinations, which would be a more drastic step in terms of personal health behavior. In the study by Han et al. (2021), German respondents, however, scored high on personal health behavior. Therefore, it could be assumed that German respondents are more serious about the virus and want to protect themselves against it more than Dutch respondents.

Since the factor of quality in the current study was examined with items such as "This message/campaign is trustworthy" or "This message/campaign is true", it might also be possible that German respondents do believe more in messages communicated by health authorities than Dutch respondents and therefore rate them higher on quality. A study by Gehrau et al. (2021) concluded that pandemic-related messages from health authorities had a positive impact on vaccination intentions in Germany. The authors also found that health

authorities in Germany were widely trusted, which is also reflected by the results of the factor of quality in the current study.

Future studies should investigate this effect of quality more intensely, also regarding possible differences between Germany and the Netherlands. Future studies should also extend the factor of personal health behavior used by Han et al. (2021) and add scale items related to vaccination intentions.

Some limitations of the current study need to be considered. Firstly, while this study provided new insights related to the quality perception of pandemic-related messages in Dutch and German students, there were no significant interactions found for pronouns of address and nationality. It is possible that due to the drastic reduction of participants the effects for pronoun of address, nationality, effectiveness, and capability were insignificant. It is possible that the results would be different if more participants had taken part in the study.

Secondly, as the current study focused on university students between 18-25 years, we cannot generalize to other age groups or educational levels. It is therefore uncertain if our results also apply to older individuals or young adults with different education levels. Research showed that especially older German native speakers (House & Kádár, 2020) evaluated T pronouns more negatively than V pronouns. Therefore, it might be possible that there are certain generational differences when it comes to pronoun perception and preferences for specific pronouns of address. Future research would benefit from including a more diverse sample regarding age and education level.

The findings of the current study are relevant for health organizations as they show that German and Dutch students differ in their assessment of quality. It therefore displays that health communication should implement different posters for different nationalities such as German and Dutch in order to effectively communicate to university students regarding COVID-19 vaccination intentions. Health institutions should take the factor of quality into account when formulating pandemic-related messages as it can help to preserve societal health and minimize dangers of the virus.

5. References

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6. Appendix:

7.1. Questionnaire

1) Informed consent form

Information and Consent

You are invited to participate in a research project in which the effect of formal (V) and informal (T) pronouns of address on the persuasiveness of pandemic-related messages in Dutch and German students will be tested. This research project is conducted by third-year bachelor students of International Business Communication at Radboud University.

What is going to happen to you?

The procedure involves filling out an online survey. The questions concern your attitude towards COVID-19 vaccinations and for this you will see four different posters. Filling out the survey will take approximately 10 minutes.

Voluntary participation

Your participation in this research is voluntary. This means that you can withdraw your participation and consent at any time during the research, without giving a reason. Because the data is immediately anonymized, it is not possible to have your research data removed after the completion of the experiment.

What will happen to my data?

The research data we collect during this study will be used by scientists as part of data sets, articles and presentations. The anonymized research data is accessible to other scientists for a period of at least 10 years. When we share data with other researchers, these data cannot be traced back to you. All research and personal data are safely stored following the Radboud University guidelines.

More information?

Should you want more information on this research study, please contact the project supervisors Maria den Hartog (maria.denhartog@ru.nl) and/or Patricia Sanchez Carrasco (patricia.sanchezcarrasco@ru.nl).

Ethical assessment and complaints

This research study has been approved by the Ethics Assessment Committee Humanities of Radboud University. Should you have any questions or complaints regarding this research or data processing, please contact one of the project supervisors.

You can also file a complaint with the secretary of the Ethics Assessment Committee Humanities of Radboud University (etc-gw@ru.nl).

Consent

Please select your choice below. Clicking on the "I Agree" button below indicates that:

- you have read the above information
- you consent to participating in the research study as described in the above information
- you understand how the data of the research study will be stored and how they will be used
- you voluntarily agree to participate
- you are between 18-25 years old
- you are currently a student

If you do not wish to participate in this research study, please decline participation by clicking on the "I do not want to participate" button

2) Demographics

Q1: What is your age?

Answer option drop-down menu (18-25 years/ other)

Q2: What gender do you identify as?

Answer option drop-down menu with female, male, third gender/non-binary, prefer not to say

Q3: What is your nationality?

Answer option drop-down menu Dutch/German

Q4: Which language would you consider your (most) native language?

Drop-down menu Dutch/German

3) Introduction to material

In the following part of this questionnaire, you will be asked to answer several questions. You can indicate your level of agreement on the provided scales. Since the study is

concerned with reactions and behaviour regarding the COVID-19 pandemic/vaccination, any question on 'behaviour' refers to behaviour towards the COVID-19 vaccination. You will see four different posters and you are asked to answer the same set of questions after each poster.

4) Dutch/ U

5) Questions on the material

Q5: This message will cause changes in my behaviour

7-point Likert scale from 1=strongly disagree to 7= strongly agree

Q6: This message causes me to make some changes in my behaviour

7-point Likert scale from 1=strongly disagree to 7= strongly agree

Q7: After viewing this message, I will make changes in my attitude

7-point Likert scale from 1=strongly disagree to 7= strongly agree

Q8: This message/campaign is accurate

7-point Likert scale from 1=strongly disagree to 7= strongly agree

Q9: This message/campaign is trustworthy

7-point Likert scale from 1=strongly disagree to 7= strongly agree

Q10: I believe this message/campaign is true

7-point Likert scale from 1= strongly disagree to 7= strongly agree

Q11: This message has the potential to change behaviour

7-point Likert scale from 1= strongly disagree to 7= strongly agree

Q12: This message has the potential to influence behaviour

7-point Likert scale from 1= strongly disagree to 7= strongly agree

Q13: This message has the potential to inspire

7-point Likert scale from 1= strongly disagree to 7= strongly agree

6) Dutch/ Jij

7) Questions on the material

Q14: This message will cause changes in my behaviour

7-point Likert scale from 1= strongly disagree to 7= strongly agree

Q15: This message causes me to make some changes in my behaviour

7-point Likert scale from 1= strongly disagree to 7= strongly agree

Q16: After viewing this message, I will make changes in my attitude

7-point Likert scale from 1= strongly disagree to 7= strongly agree

Q17: This message/campaign is accurate

7-point Likert scale from 1= strongly disagree to 7= strongly agree

Q18: This message/campaign is trustworthy

7-point Likert scale from 1= strongly disagree to 7= strongly agree

Q19: I believe this message/campaign is true

7-point Likert scale from 1= strongly disagree to 7= strongly agree

Q20: This message has the potential to change behaviour

7-point Likert scale from 1= strongly disagree to 7= strongly agree

Q21: This message has the potential to influence behaviour

7-point Likert scale from 1= strongly disagree to 7= strongly agree

Q22: This message has the potential to inspire

7-point Likert scale from 1= strongly disagree to 7= strongly agree

8) German/ Sie

9) Questions on the material

Q23: This message will cause changes in my behaviour

7-point Likert scale from 1= strongly disagree to 7= strongly agree

Q24: This message causes me to make some changes in my behaviour

7-point Likert scale from 1= strongly disagree to 7= strongly agree

Q25: After viewing this message, I will make changes in my attitude

7-point Likert scale from 1= strongly disagree to 7= strongly agree

Q26: This message/campaign is accurate

7-point Likert scale from 1= strongly disagree to 7= strongly agree

Q27: This message/campaign is trustworthy

7-point Likert scale from 1= strongly disagree to 7= strongly agree

Q28: I believe this message/campaign is true

7-point Likert scale from 1= strongly disagree to 7= strongly agree

Q29: This message has the potential to change behaviour

7-point Likert scale from 1= strongly disagree to 7= strongly agree

Q30: This message has the potential to influence behaviour

7-point Likert scale from 1= strongly disagree to 7= strongly agree

Q31: This message has the potential to inspire

7-point Likert scale from 1= strongly disagree to 7= strongly agree

10) German/Du

11) Questions on the material

Q32: This message will cause changes in my behaviour

7-point Likert scale from 1= strongly disagree to 7= strongly agree

Q33: This message causes me to make some changes in my behaviour

7-point Likert scale from 1= strongly disagree to 7= strongly agree

Q34: After viewing this message, I will make changes in my attitude

7-point Likert scale from 1= strongly disagree to 7= strongly agree

Q35: This message/campaign is accurate

7-point Likert scale from 1= strongly disagree to 7= strongly agree

Q36: This message/campaign is trustworthy

7-point Likert scale from 1= strongly disagree to 7= strongly agree

Q37: I believe this message/campaign is true

7-point Likert scale from 1= strongly disagree to 7= strongly agree

Q38: This message has the potential to change behaviour

7-point Likert scale from 1= strongly disagree to 7= strongly agree

Q39: This message has the potential to influence behaviour

7-point Likert scale from 1= strongly disagree to 7= strongly agree

Q40: This message has the potential to inspire

7-point Likert scale from 1= strongly disagree to 7= strongly agree

12) Debriefing

Thank you for your participation in our study. The aim of this experiment was to study the effect of formal (e.g. "u" in Dutch or "Sie" in German) and informal (e.g. "jij" in Dutch or "du" in German) pronouns of address on the persuasiveness of pandemic-related messages in Dutch and German students. It is expected that pronouns of address do have an effect on persuasiveness in pandemic-related messages. It is also expected that different pronouns of address have a different effect on persuasiveness for Dutch students than for German students. In this study we have asked participants to look at COVID-19 vaccination messages/campaigns, answer questions about persuasiveness of those posters and provide their answers on 7-point Likert scales.

Please contact project supervisors Maria den Hartog (maria.denhartog@ru.nl) and/or Patricia Sanchez Carrasco (patricia.sanchezcarrasco@ru.nl) if you have any questions or complaints about this study.

13) End of survey

We thank you for your time spent taking this survey. Your response has been recorded.

7.2. Posters - German/Sie condition



7.3. Posters - German/Du condition



7.4. Posters - Dutch/U condition





7.5. Posters - Dutch/Jij condition



7.6. All scale items used

This message will cause changes in my behaviour

7-point Likert scale from 1=strongly disagree to 7= strongly agree

This message causes me to make some changes in my behaviour

7-point Likert scale from 1=strongly disagree to 7= strongly agree

After viewing this message, I will make changes in my attitude

7-point Likert scale from 1=strongly disagree to 7= strongly agree

This message/campaign is accurate

7-point Likert scale from 1=strongly disagree to 7= strongly agree

This message/campaign is trustworthy

7-point Likert scale from 1=strongly disagree to 7= strongly agree

I believe this message/campaign is true

7-point Likert scale from 1= strongly disagree to 7= strongly agree

This message has the potential to change behaviour

7-point Likert scale from 1= strongly disagree to 7= strongly agree

This message has the potential to influence behaviour

7-point Likert scale from 1= strongly disagree to 7= strongly agree

This message has the potential to inspire

7-point Likert scale from 1= strongly disagree to 7= strongly agree

Appendix A. Statement of own work

Sign this *Statement of own work* form and add it as the last appendix in the final version of the Bachelor's thesis that is submitted as to the first supervisor.

Student name: Hannah Schneiders

Student number: s1034078

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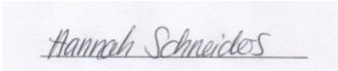
DECLARATION:

a. I hereby declare that I am familiar with the faculty manual (<https://www.ru.nl/facultyofarts/stip/rules-guidelines/rules/fraud-plagiarism/>) and with Article 16 "Fraud and plagiarism" in the Education and Examination Regulations for the Bachelor's programme of Communication and Information Studies.

b. I also declare that I have only submitted text written in my own words

c. I certify that this thesis is my own work and that I have acknowledged all material and sources used in its preparation, whether they be books, articles, reports, lecture notes, and any other kind of document, electronic or personal communication.

Signature:



Place and date: Nijmegen, the Netherlands, 13/06/2022