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# The effect of the use of T or V pronouns in Dutch HR communication

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## ABSTRACT

In an online experiment among native speakers of Dutch we measured addressees' responses to emails written in the informal pronoun T or the formal pronoun V in HR communication. 172 participants (61 male, mean age 37 years) read either the V-versions or the T-versions of two invitation emails and two rejection emails by four different fictitious recruiters. After each email, participants had to score their appreciation of the company and the recruiter on five different scales each, such as *The recruiter who wrote this email seems ...* [scale from *friendly* to *unfriendly*]. We hypothesized that (i) the V-pronoun would be more appreciated in letters of rejection, and the T-pronoun in letters of invitation, and (ii) older people would appreciate the V-pronoun more than the T-pronoun, and the other way around for younger people. Although neither of these hypotheses was supported, we did find a small effect of pronoun: Emails written in V were more highly appreciated than emails in T, irrespective of type of email (invitation or rejection), and irrespective of the participant's age, gender, and level of education. At the same time, we observed differences in the strength of this effect across different scales.

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## 1. Introduction

In a translation of a famous poem by Pushkin (2016) into English, a distinction is made between two second person pronouns, *you* and *thou* (“The empty *you* with heartfelt *thou* – That slip she made, so accidental –”). Whereas in contemporary English *thou* is no longer used, in the past it was “the form of familiar address” and *you* the form of “reverence and of polite address” (Brown and Gilman, 1960: 253). Following Brown and Gilman and virtually all researchers of pronouns of address after them, we will use *T* and *V* (from Latin *tu* and *vos*) to refer to these two second person pronouns “as generic designators for a familiar and a polite pronoun in any language” (Brown and Gilman, 1960: 254). Brown and Gilman (1960) argued that while the V pronoun had once entered European languages as a form of addressing the more powerful people asymmetrically, over time the symmetrical relationship of solidarity had won out over power. They observed a concomitant change from V to T, but also salient differences across languages. For example, while the German T was primarily found to be based on family solidarity, in French mutual T increased among fellow students, fellow workers, and so on. Thus, French T appeared to encode acquired solidarity, i.e., developed out of “some sort of shared fate” (Brown and Gilman, 1960: 263). This shows that there are clear differences in the exact division of labor between the two pronouns in the languages of Europe.

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Levshina (2017), investigating translations of utterances containing second person pronouns from a set of original English movies to subtitles in ten European languages, found more T than V pronouns in Dutch (159 vs. 73), which was the opposite in for example German (91 vs. 133). Levshina investigated which factors were responsible for the distribution of these differences among the languages in her set. For example, in all languages except Swedish, the social circle to which the speaker and the addressee belong plays an important part in the choice between T and V. But whereas in situations with family and friends the use of a T pronoun is preferred in both German and Dutch, in Dutch also work situations favor a T pronoun, unless the addressee has a higher social status than the speaker.

The way we address each other by using formal or informal second person pronouns varies not only across languages, but also across groups, situations, and individual speakers. Most address research since Brown and Gilman (1960) has focused on speakers' choices of either T or V, and has shown that this choice depends on several factors, such as age, gender, level of education, religion, sameness or common ground, social distance, and individual preferences (cf. Clyne et al., 2009; Norrby and Warren, 2012). A recent comparative study of doctors' choice of T or V in medical consultations in Sweden and Finland found that differences between languages and nations may be related to sociocultural patterns, but on a continuous rather than a discrete scale (Wide et al., 2019). Consistent with what we already knew about the very low use of the V pronoun in Swedish – which has to do with the negative connotation of V originally being used asymmetrically only to address inferior interlocutors (Norrby, 2006) – the Swedish doctors used the V form zero times. By contrast, Finnish doctors used T mainly with young patients, and only in a few cases with older patients who the doctor had met before (Wide et al., 2019). Interestingly, a third data set from Finland–Swedish doctors revealed that they sometimes used V, which their Sweden–Swedish colleagues never did.

Even though the V pronoun is often referred to as *polite* (see for example the quote from Brown and Gilman above), “politeness cannot be separated from its evaluation” (House and Kádár, 2021: 57). Thus, a mismatch is possible between a speaker's intention and the hearer's evaluation of the use of V or T. As pointed out by Norrby (2006), whereas in Finland young people may use V to be polite, in Sweden one could feel offended when addressed with V, as evidenced by a 31-year-old woman's comment: “Yes, by disgusting young male and female shop assistants in fashionable expensive shops. I feel humiliated, I feel like I am a thousand years old or that they think I am stupid” (Norrby, 2006: 18.11). Thus, not every and not only V will be perceived as polite, and there may be a difference between the speaker's intentions and the addressee's evaluation, as well as between the addressee's assessment and that of a bystander (cf. Terkourafi, 2005). Terkourafi (2005) argues that a speaker can only be (im)polite if this is recognized as such by the addressee. Vismans (to appear) further explores the nature and deeper connections between address and politeness.

The impact of using T or V on the addressee has been studied relatively little in address research. Corpus research mostly provides us with information from the speaker's perspective (but see Truan 2022 for an exception), and questionnaires often focus on the choices in forms of address that speakers make rather than on the effects of that choice on the addressees. It is generally assumed that people who are being addressed by a pronoun they perceive as inappropriate in a given context, may feel either uncomfortable, upset, or even offended on the one hand, or quite on the contrary, pleased, flattered, or happy, as the lover whose beloved one accidentally switches from V to T in Pushkin's (2016) poem cited above. Braun (1988: 49) gives the example that even “nonreciprocal *du* [T in German] used by a superior can be perceived as a mark of appreciation more flattering than the V pronoun.”

Address research has revealed that T pronouns predominate on social media (Leung et al., 2022), for example in French online chat data (Williams and van Compernelle, 2007) and discussion fora (Williams and van Compernelle, 2009). In a study of language policy in companies, Norrby and Hajek (2011) found that IKEA's policy of prescribing the use of T in all market and customer communications was not consistently applied across 27 languages in 37 countries, since online customer information and catalogues showed variation in the actually used forms of address. In fact, only just over half of the speech communities always addressed the customers with T. This was also confirmed in House and Kádár's (2020) study of translations of IKEA catalogues into different languages. They interviewed native speakers, and asked them to evaluate the appropriateness of the choice of second person pronouns in the catalogue, and whether this use of second person pronouns was common in marketing materials in their culture. The responses showed that the translation strategy of opposition to IKEA's T policy was received more positively than the translation strategy of accepting it, although the negative evaluations focused more on the strangeness than the unacceptability of T use (House and Kádár, 2020).

Globalization as well as digitalization has led to variability in the use of address forms, for example in email communication (Clyne, 2009). It has promoted the use of T as a conventional practice in social media in languages such as French and German that would otherwise use V to address strangers (Williams and van Compernelle, 2007, 2009; Truan, 2022). Truan (2022) analyzed a corpus of tweets responding to a tweet from Deutsche Bahn, the German railway company, announcing that on a trial basis they would switch from V to T to address their customers. It turned out that a majority of responses (about 60%) favored this use of T, while 30% expressed a preference for the use of V. For the latter group of users, T was perceived as contradictory to what is normally expected of a company, regardless of whether the communication is online or offline. Truan (2022: 237) refers to this stance as “commercial Sie”, because V is the unmarked address form between a company and a customer. The position in favor of T can be summarized as “the Internet Du”, since T is the unmarked address form on social media. It was striking that the proponents of V mainly addressed their own feelings and preferences in their argumentation, while the proponents of T manifested themselves mainly through general statements with which they tried to ridicule the proponents of V, whom they characterized as typically German (Truan, 2022). Three months later, the Deutsche Bahn decided to stick with the T-form from then on. In doing so, they ignored the fact that the unilateral switch to T had been framed by as many as 30% of respondents as a violation of appropriate social distancing (Truan, 2022).

Truan's (2022) study shows that unilateral choices by organizations to move away from the traditionally unmarked use of the formal pronoun V and toward the more popular use of T in (online) communications can inadvertently lead to negative feelings among those addressed. The strength of such an emotional reaction to the use of T instead of V may also depend on whether T is used impersonally, for example in general tweets, advertisements, or in a catalog, or personally, such as in one-on-one correspondence between an organization and a customer, or between a recruiter and an applicant. Although most of the responses approved of the use of T on Twitter, this was mainly due to its use on social media and the offline use of T would be perceived as rude, as is evident from the following comment about the use of T (Truan, 2022: 234): *in den Social Media völlig okay – würde aber doch wohl ziemlich dumm aus der Wäsche schauen, wenn Schaffner sagt – Du, zeig mir Fahrkarte:)* 'in the social media completely okay – but it would probably look pretty stupid if conductor says – Du [T], show me ticket:)'.

More evidence for effects of the use of T or V on addressees in online communication is reported by Ollier et al. (2022). They examined users' preferences for either T or V in interaction with a healthcare Conversational Agent in two languages, (Swiss) French and (Swiss) German. Evaluation scores revealed that in French, older females and younger males appreciated the V-form more, while in German, younger users (both men and women) appreciated the T-form more. Thus, the evaluation scores for T and V differed per language (French or German), and were also dependent on age and gender. The results of the study also revealed that there are differences between the experimental effects of T and V in evaluation scores, and the participants' explicitly stated preferences for V or T. French speakers had a significantly greater preference for the V pronoun, irrespective of their age and gender, but for older French males, the highest user evaluation scores were generated by using the T-form.

Dutch is one of the languages that have a choice between an informal T or a formal V second person pronoun when addressing others. Whether speakers of Dutch choose T or V depends on the situation, differences and similarities between the speaker and the addressee (such as age), and their relationship, but how this choice turns out has changed considerably over the years (Aalberse, 2009; Vandekerckhove, 2005; Vermaas, 2002; Vismans, 2013, 2018). The general impression nowadays is that T has gained the upper hand in Dutch (cf. Levshina, 2017). The use of T rather than V has also been found to be more common in Dutch job advertisements for highly educated people (Vismans, 2007; Waterlot, 2014). Den Hartog, van Hoften, and Schoenmakers (2022) compared the use of T and V in recruitments ads in five different countries (the Netherlands, Belgium, France, Germany, Spain) by the same multinational companies. They found the strongest preference for the use of T over V in Netherlandic Dutch (90 times T vs. 5 times V in the ads), while French showed the complete opposite pattern with the strongest preference for V over T (93 times V vs. 5 times T).

Vismans (2007) pointed out that whereas Dutch job advertisements show a clear tendency nowadays towards more and more T, it is still unknown how potential applicants respond to these different forms of address. The general impression is that the use of a T pronoun has become the default in Dutch, for example when a recruiter sends an email to an applicant. But the effect of using either T or V in this type of communication has hardly been studied. The purpose of the research reported in this article is to find out if there is an effect and if so, what the effect is. Therefore, our research takes the addressee's perspective, and examines how the choice of a T or V pronoun in Dutch affects recipients in the field of HR management.

Section 2 outlines the results of previous research on the effect of T or V on the addressee in Dutch. Section 3 presents the hypotheses, analysis, and results of our own experimental study, which focuses on the effect of choosing T or V in a specific situation, i.e., a mock application procedure, in which applicants receive an email response from a recruiter to their application. The email they receive can be positive, i.e., an invitation for an interview, or negative, i.e., a rejection letter. We examine whether the recruiter's choice of T or V has an effect on the applicant's appreciation of the organization and the recruiter. The article ends with a conclusion in Section 4.

## 2. Previous research into the effect of T and V in Dutch

Since Brown and Gilman's (1960) seminal study, there have been numerous studies that have examined preferences for different forms of address in pragmatic research in different interactive settings and with different sociolinguistic variables. To date, however, little research has been done from the perspective of the addressee. One possible reason for this is that such information can only be obtained in carefully controlled experiments. Our study is a first step in that direction, starting with a specific register, namely rejection and invitation letters from recruiters to applicants in Dutch. We hope that other registers and communication channels in other languages will also be experimentally investigated, so that we can create an empirically sound, addressee-oriented theory of T/V forms.

So far, little research has been done in Dutch into the effect of the choice for T or V on the addressee. Some notable exceptions are van Zalk and Jansen (2004), Jansen and Janssen (2005), and Küppers (2018). We will discuss these studies below.

Van Zalk and Jansen (2004) noted that Dutch address research, such as Vermaas (2002), was mainly concerned with what people report that they use themselves across situations, i.e., T or V. The other side often remains underexposed: what is the effect on addressees when they are addressed by either T or V? To answer this question, Van Zalk and Jansen conducted two experiments in which the attitude of readers towards a persuasive web text was measured. In this text, the readers were addressed with either T or V. The text used consisted of 363 words. It came from an online travel brochure about a hiking holiday in Ireland. The participants in the two experiments were divided into two age groups, older people (mean age around 40) and younger people (mean age around 25). After reading the text, they were presented with statements about its attractiveness and persuasiveness, to which they responded on seven-point Likert scales. Surprisingly, van Zalk and Jansen (2004) not only found that older and younger people valued T and V differently, but also that the older people rated the T-text higher than the V-text, while the opposite was true for young people, who rated the V-text higher than the T-text. These results were the opposite from what they had predicted.

Van Zalk and Jansen (2004) proposed some possible explanations for their findings. First, the results could be specific for the text used, the subject of the text, or the fact that it was a web text. They referred to two master's theses in which similar research had been reported, but where offline texts were used. No age effects were found in either study. If it is true that the results could be attributed to the use of a web text instead of a paper text, however, then it is still not clear why older people valued the T-text more, and younger people the V-text. The second possible explanation they proposed was that the older and younger people had a different perception of the author of the text. The older people might have seen the author as belonging to the inner social group, which would make the use of T appropriate, while the youngsters viewed the author as a member of the outer group, making the use of V more appropriate. A third possible explanation van Zalk and Jansen (2004) suggested was that the change from V towards more T had stopped, and that perhaps even a countermovement from T to V had started. However, this explanation now, almost twenty years later, turns out to be untenable. The advance of T at the expense of V has not yet turned around in Dutch, quite the contrary (Vismans, 2019; den Hartog et al., 2022).

Van Zalk and Jansen (2004) concluded that only little was known about the relationship between use and appreciation of T and V pronouns. In any case, the linear relationship they had hypothesized was falsified. Perhaps younger people actually like to be addressed with V, because it gives them more prestige, and makes them feel flattered. Whether there is a difference between older and younger people in the appreciation of being addressed with T or V deserves further investigation.

Jansen and Janssen (2005) hypothesized that, in addition to the medium (online or offline), the subject of the text could also influence whether or not an effect of T or V is found. Possibly T or V only has an effect if the reader has a 'positive feeling' about the subject. Van Zalk and Jansen (2004) used a text about vacation, which gave the reader a positive feeling. Jansen and Janssen investigated the effect of T or V in government information brochures, and expected to find an effect of pronoun of address only if the readers strongly agree with the advice given in the text. They used two texts on two different topics, senseless violence and spoiled food. These texts contained about 80 sentences. There were four versions of both texts, a T-version and a V-version, and an online and offline version, leading to eight versions in total. A between-subjects design was chosen where each subject was given one version to rate. All texts were assessed by groups of young participants (mean age 24 years) and older ones (mean age 58 years), with 28 subjects per group. 37 statements were rated on a 7-point Likert scale.

Jansen and Janssen (2005) found no effect of medium (online or offline), but they did find an effect of topic, such that a higher appreciation of the subject of the text, and agreement with the advice given in the text, led to higher scores for the V version. This preference for V over T was the same for both age groups. Unlike van Zalk and Jansen (2004), Jansen and Janssen (2005) did not find any differences between younger and older participants in their appreciation of the T and V versions of the texts.

Küppers (2018) examined whether the use of T or V in webcare conversations influenced the likeability of a brand, under the assumption that communicating with consumers in an informal tone of voice is beneficial for brands (Kelleher, 2009). In Küppers' experimental study, 352 participants read two fictitious Facebook conversations consisting of a consumer comment and a company response. Each participant saw either two complaints or two compliments, and the companies' responses in either T or V. The conversations had a length of 44–50 words. Küppers hypothesized that in webcare conversations, using V instead of T would decrease the brand likeability, whereas the use of T instead of V would increase it. The latter effect was expected to be weaker for German than for Dutch consumers. Finally, whether the consumer message was positive (a compliment) or negative (a complaint) was also hypothesized to have an effect on brand likeability. The overall positive effect of using T rather than V would be enhanced in case of a compliment but weakened in case of a complaint to which the brand responded.

Contrary to Küppers' expectations, the use of T instead of V did not increase the brand's likeability in the perception of the participants, nor did the use of V instead of T decrease it. This was the same for both Dutch and German participants. There was a significant effect of the use of V instead of T in case of a complaint, however, which actually increased the brand likeability. In case of a compliment, no effect of T or V was found. Küppers (2018: 38) concludes that "informal addressing is not harmful for brands unless the brand is responding to negative word-of-mouth".

A limitation of Küppers' research in comparison with van Zalk and Jansen (2004) and Jansen and Janssen (2005) is that the participants in her experiment were not themselves the addressees. Instead, they read someone else's complaint or compliment as well as the brand's response to that, and they were asked to rate the brand likeability based on that fictitious Facebook conversation. The assumption was that the participants in the experiment would empathize with the consumer and choose their side, which need not be true. Research by Bašnáková et al. (2015) indicated that a situation where participants are addressed themselves draws upon affective systems more than when they only overhear a conversation. In our experimental study to be reported in the next section, the participants are the addressees, not observers, although they do have to put themselves in someone else's shoes, namely the shoes of an applicant.

### 3. The experiment

The experiment was approved by the Ethics Assessment Committee Humanities of the Radboud University Nijmegen (ETC-GW number 2021-9598).

#### 3.1. Hypotheses

Vermaas (2002) found that the majority of Dutch people of all ages report using V in formal situations, for example in a conversation with the management of the company where they work. In a more recent study, Vismans (2018) examined the reflections of 107 Dutch respondents to a questionnaire on their own choice of T or V when addressing others. The respondents

fell into two age groups, young (17–33) and middle (40–66). Age turned out to be the most frequent factor mentioned by both age groups, in that representatives of both age groups reported that they addressed younger people and people of the same age with T and older people with V. In accordance with these findings of Vermaas (2002) and Vismans (2018) on the relation between the speaker's choice of T or V and the addressee's age, and despite the opposite result in the study by van Zalk and Jansen (2004), we expect that older people prefer to be addressed with V rather than T in a job application procedure, and vice versa for younger people. That is to say, we expect that older people will find it more comfortable to be addressed with V, while younger people may feel more comfortable being addressed with T, which will in both cases lead to higher evaluation scores of the recruiter and organization. Note that we expect this to be an unconscious effect of being addressed with T or V, not a conscious preference to be addressed with T or V in the given context (cf. Ollier et al., 2022).

In line with Küppers (2018), we furthermore hypothesize that the use of V will be more appreciated in negative messages, in our case letters of rejection, and the use of T will be more appreciated in positive messages, here letters of invitation.

### 3.2. Methodology

#### 3.2.1. Participants

The study was conducted among Dutch subjects who have Dutch as their mother tongue. The questionnaire was administered to 193 subjects in total. 17 subjects who completed the questionnaire in less than 5 min were removed. In addition, one subject who was over 70 years of age, and three subjects who had guessed the purpose of the experiment, were removed for these reasons. The final sample of the experiment consisted of 172 respondents, of whom 111 were female, and 61 male. Their mean age was 37 years ( $SD = 15.6$ ), ranging between 18 and 69 years. Most participants were highly educated. One participant had only attended primary education, 13 attended or had completed secondary education, the others secondary vocational training (26), university (58) or applied university education (74).

#### 3.2.2. Material

The stimulus material consisted of four different emails in which recruiters respond to a job application: two emails in which the applicant is rejected and two emails in which the applicant is invited for an interview. To control for a potential effect of recruiters' gender, two of the emails (one rejection letter and one invitation letter) were signed by a female recruiter and the other two by a male. There were two versions of each email, one in which the applicant was addressed with the formal pronoun V, and one where the applicant was addressed with the informal pronoun T. In this version, the full form *jij/jou/jouw* 'you(r)' was chosen rather than the reduced T-pronoun *je* 'you', because the reduced form is more neutral, whereas the full form puts more emphasis on the informal character of the T-pronoun (Vermaas, 2002) and will therefore be more salient to the reader.

In addition to these four emails, a fifth email was added as filler text. This email was a very negative and impersonal rejection letter, avoiding the use of second person pronouns altogether. The purpose of this very negative filler mail was to encourage participants to use the full scale when rating the five emails. Vismans (2007) shows that in some branches T is common, while in others V is preferred. Because this could potentially affect the results, the letters used fictitious company names that reveal nothing about the type of company. The type of position applied for was also made invisible. An example of one of the rejection emails in T is provided in Fig. 1. Table 1 gives an overview of the four experimental emails and the conditions.

**Table 1**  
Overview of stimulus material.

Recruiter/company	Type of email	Ben/Falrafox invitation	Isabel/Lunablack rejection	Juliëtte/Centurox invitation	Tom/Endax rejection
pronoun	T	T	T	T	T
	V	V	V	V	V

After each email, participants had to score their appreciation of the company and the recruiter on five different scales each, such as *The recruiter who wrote this email seems ...* [scale from *friendly* to *unfriendly*] (see below for the complete overview of the different scales).

#### 3.2.3. Procedure

The experiment was conducted online through Qualtrics. Prior to completing the questionnaire, subjects gave explicit consent to participate in the experiment. The introductory text was written in V, as we assumed this is the most neutral pronoun in this type of context. However, once the experiment started, the use of second person pronouns was avoided so that subjects could not be influenced by the use of T or V in the questions. The subjects were first shown an instruction and sample question, after which they were shown the five emails one by one in random order.

After each email, participants were asked about their attitude towards the organization mentioned in the email, and about their impression of the recruiter who sent the email. Attitude towards the organization was measured using semantic differential scales (Spears and Spring, 2004) by means of the question "Based on the email, I consider [name of organization] ... " with five associated scales:

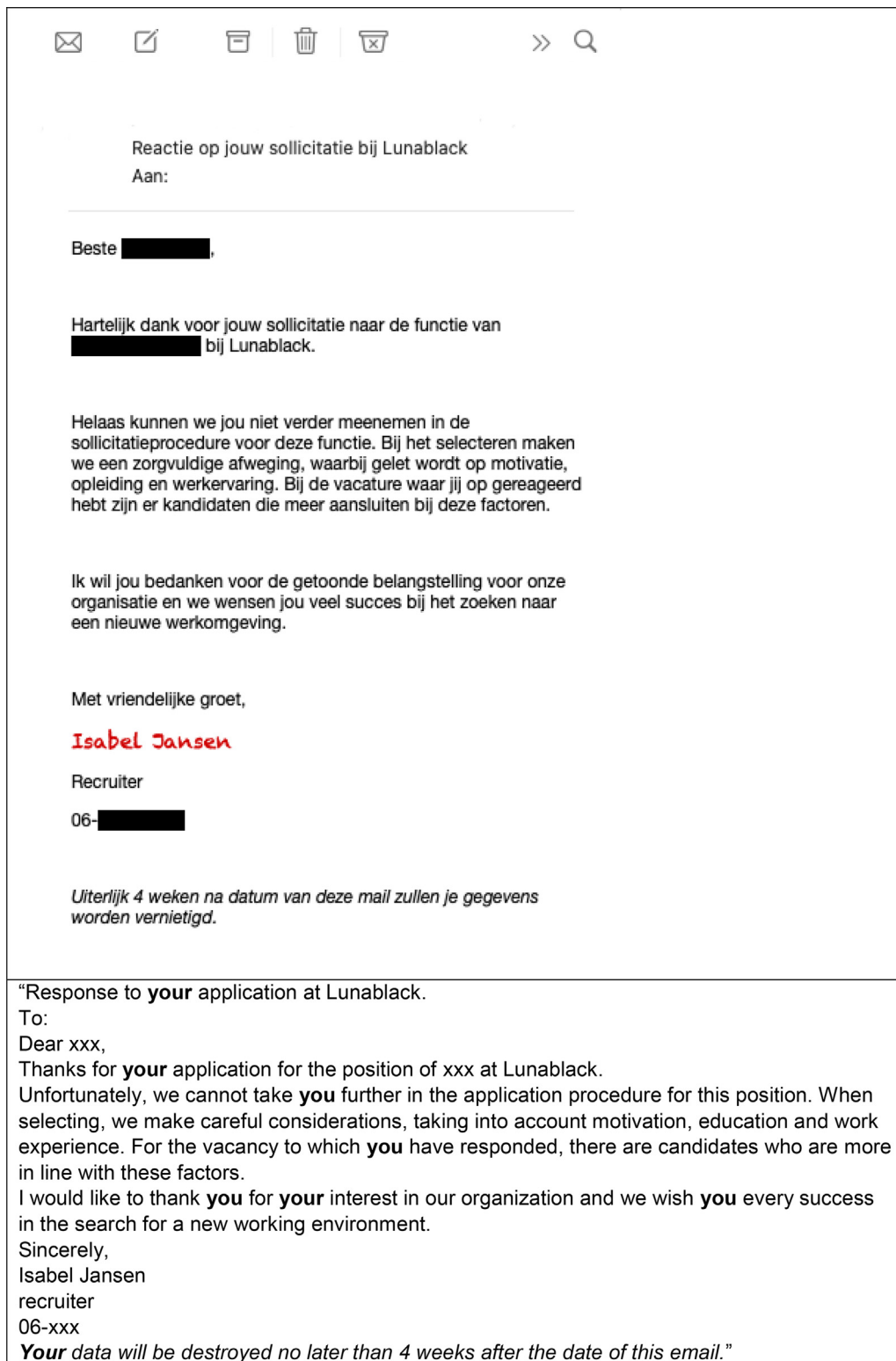


Fig. 1. Example of an experimental rejection email. The second person pronouns are in boldface in the translation.

- *ongunstig* ‘unfavorable’ – *gunstig* ‘favorable’
- *negatief* ‘negative’ – *positief* ‘positive’
- *slecht* ‘bad’ – *goed* ‘good’
- *onaangenaam* ‘unpleasant’ – *aangenaam* ‘pleasant’
- *helemaal niet leuk* ‘not nice at all’ – *heel erg leuk* ‘very nice’

The semantic differential scales of Hoeken et al. (2012: 224) for determining the attractiveness of a source were used to measure the attractiveness of the recruiter. The somewhat archaic term *beminnelijk* ‘amiable’ was replaced by *charmant* ‘charming’ and instead of the terms on the scale *innemend* ‘appealing’ and *afstotend* ‘repulsive’ two terms were chosen that correspond to the definitions of T and V in the literature, namely *sociaal* ‘social’ for T and *afstandelijk* ‘distant’ for V. In addition, one of Hoeken et al.’s (2012) items was removed, so that the two scales measuring the attitude towards the organization and the attractiveness of the recruiter contained an equal number of five items. Thus, the question “The recruiter who wrote this email seems to me ...” was assessed with five associated scales:

- *onsympathiek* ‘unsympathetic’ – *sympathiek* ‘sympathetic’
- *onaardig* ‘unkind’ – *aardig* ‘nice’
- *vervelend* ‘annoying’ – *charmant* ‘charming’
- *onvriendelijk* ‘unfriendly’ – *vriendelijk* ‘friendly’
- *afstandelijk* ‘distant’ – *sociaal* ‘social’

Each item was measured on a slider scale from 0 to 100. For example, the items ranged from 0 = *distant* to 100 = *social*. After reading each letter, participants were presented with both sets of questions, so they completed ten scales five times in total.

After the subjects had read and rated the five emails, a question was added to verify that possible effects were not caused by pre-existing beliefs about the fictitious organizations mentioned in the emails, following Hagtvedt et al. (2008): “Have you ever heard of one or more of the five organizations (Centurox, Endax BV, Falrafox, Lunablack, and Salient), and if so, which one(s)?” None of the respondents was familiar with any of the organizations. To test whether participants had guessed the purpose of the experiment, the following control question was added: “What do you think this experiment was about? What did we really want to find out?” The answers to these questions showed that three participants had guessed the purpose of the experiments. The data of these respondents were not included in the analyses.

Finally, some demographic questions were asked that provided insight into the age, gender, and education level of the subjects. The control and demographic questions used the reduced T pronoun *je* ‘you’ to address the participants, as it is almost unavoidable to avoid second person pronouns in such questions, and also because the pronouns could no longer influence the results of the experiment in this stage. Care was taken to ensure that subjects could not return to previous questions once they arrived at the control questions.

### 3.3. Data analysis and results

We fitted a series of Bayesian mixed-effects regression models with the help of the R package *brms* (Bürkner, 2018). The response variable was the scores given by the subjects. The main predictor of interest was the pronoun (T or V). The fixed effects related to the individual subjects were Sex, Age, and Education. The Age variable was normalized, such that it centred around the mean age and the scores represented the number of standard deviations from the mean. Since Education is an ordinal variable, it was encoded with the help of Helmert coding, which allows to test every higher level of education against the average of all lower levels. For variable selection, we used the Watanabe Information Criterion (WAIC) commonly used in Bayesian regression. WAIC and the credible intervals suggested that only the pronoun has an effect on the scores. None of the sociolinguistic variables played a role in the final models. We also tried testing the effect of whether the letter contained an invitation or a rejection, but this variable could not be tested reliably because this information overlapped greatly with the information about the four letters. This resulted in very large variability in the posteriors. We also tested all binary interactions between the fixed effects. The criterion for adding a slope or interaction was again WAIC. If the more complex model was better than a simpler model according to WAIC, and the difference in WAIC between the models was larger than two standard errors of this difference, then the more complex model was chosen. None of the interactions turned out to be useful.

For selection of the random effect structure, we used WAIC as well. Subject ID, Letter ID and Adjective (the ten semantic differential scales) were tested as random effects and slopes. In the final models, Subject ID was used as a random intercept, and there were random intercepts for an interaction between LetterID and Adjective. The effects of each letter and each adjective were not additive. This means that the scores depended on the specific combination of adjective and letter.

One serious problem with using the sliding scale format is that the scores cannot be less than zero or greater than 100. A linear Gaussian model would predict such scores, however. The scores obtained in the experiment are distributed as shown in Fig. 2. One can see that the scores around the middle are more likely than the scores towards the end, with the exception of the maximal scores 0 and 100. This is not a normal bell-shaped curve. Moreover, the extreme values 0 and 100 are highly frequent.

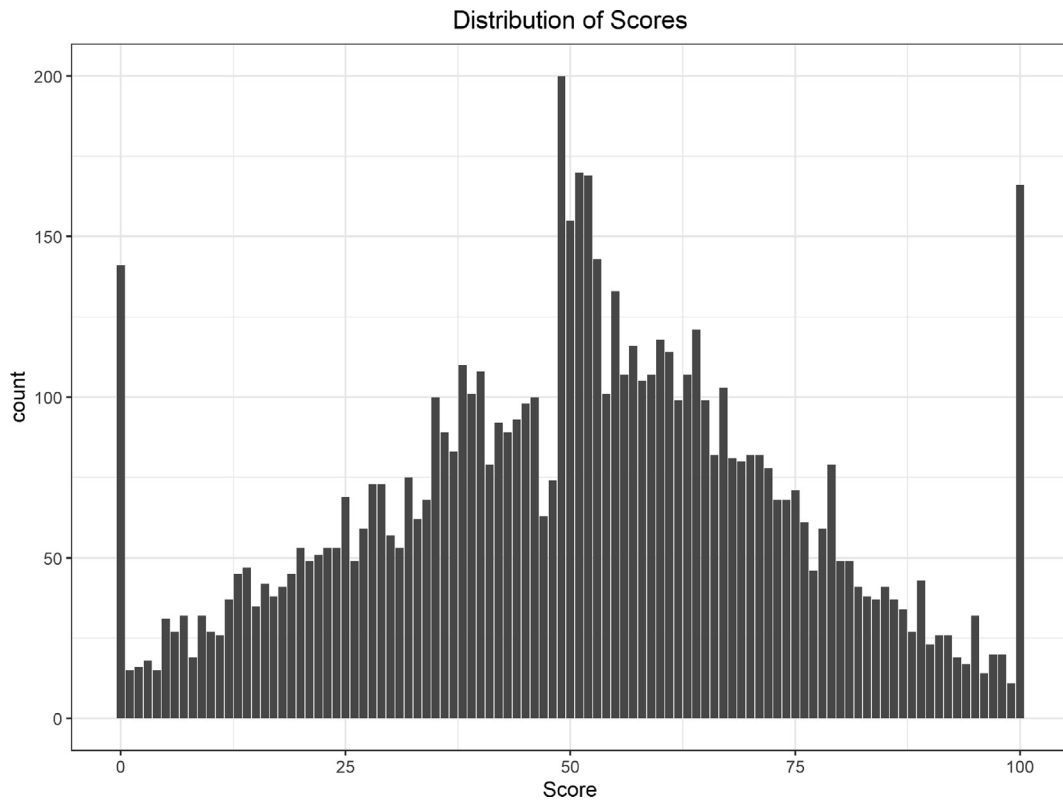


Fig. 2. Distribution of the scores on the scales. The heights of the bars show how many times a score occurred in the data.

Another problem is that the spread of the scores greatly varied from one participant to another. Fig. 3 displays the histograms of individual scores given by three participants. The first participant, whose scores are shown in the panel on the left-hand side, uses almost the whole range of possible scores. The second participant (the middle panel) only uses the range from 35 to 64. Finally, the third participant, whose scores are on the right-hand plot, gives only scores close to the extremes: 0, 1, 2, 99 or 100. This variability should be taken into account.

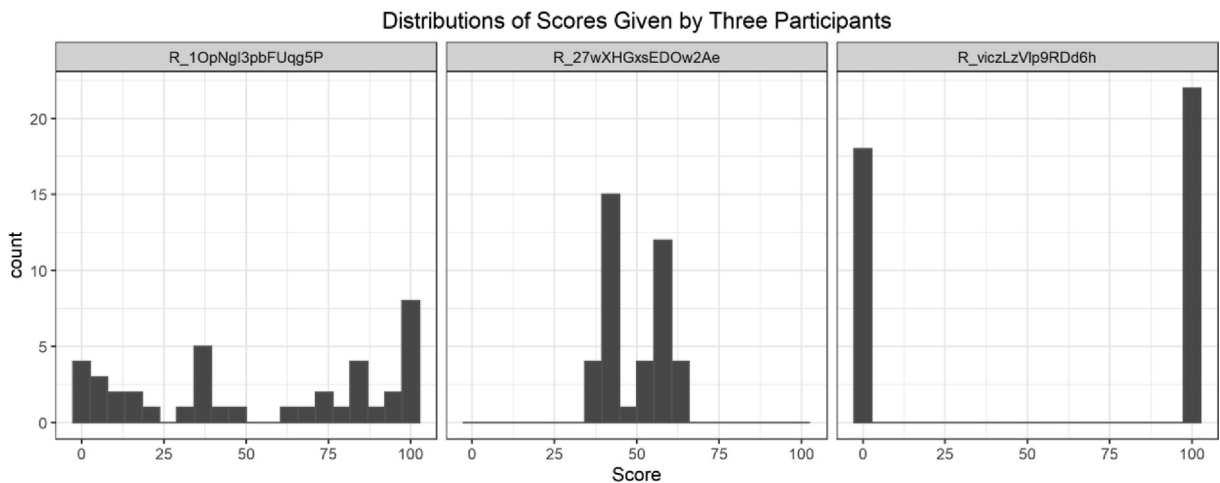


Fig. 3. Histograms of scores given by three participants.

In order to take these peculiarities into account, one can use a zero-or-one inflated beta (ZOIB) regression model (Liu and Eugenio, 2018). It requires a transformation of the scores to the range from 0 to 1, which is a trivial operation. We simply divide all scores by 100. A ZOIB model is in fact a combination of several regression models: 1) a traditional beta regression of the scores between 0 and 1, excluding those, 2) a model of the so-called centrality parameter  $\phi$ , which shows how variable the data are, 3) a logistic model predicting 0 or 1 vs. all other scores, and 4) a logistic model predicting 1 vs. 0, given that the

outcome is either 1 or 0. ZOIB models do not predict values outside the extremes and allow the researcher to test the conditions under which the extreme values are chosen.

In our case, it makes sense to model the individual variability by including a centrality parameter, allowing the shape of the distribution to vary from one participant to another, i.e.,  $\phi_i \sim (1|\text{SubjectID})$  in the R syntax. We can also see which participants prefer the extreme values 0 and 100 by including the logistic model predicting 0 or 1 vs. all other scores, which we will call the zero-or-one inflation model. It will also vary across the participants, or  $\text{zoi} \sim (1|\text{SubjectID})$ . We were not interested in modelling in which cases 1 is used vs. 0, so we did not include that model in the regression specification.

For comparison, we also fitted a traditional beta regression. In beta regression, the values 0 and 1 are not allowed. This can be fixed by adding a small quantity (0.01) to 0 and subtracting the same small quantity from 1.

When fitting Bayesian regression models, it is wise to use regularizing priors, which help to avoid unrealistic extreme values and improve stability. For the coefficients, we used weakly informative priors based on the normal distribution with zero mean and standard deviation of 20 for the Gaussian model and 0.2 for the beta and ZOIB models. In this way, it did not affect the direction of the coefficients, but avoided extremely strong effects. For example, very strong effects when one unit of a variable increased the score by more than 50 points, which would be unrealistic, were considered unlikely. For the random effects we used half normal priors with the same parameters.

The performance of the models was not exorbitant, however. The mean Bayesian pseudo- $R^2$  was 0.423 (0.412, 0.439) for the Gaussian model, 0.34 (0.323, 0.357) for the beta model with modified scores, and 0.285 (0.27, 0.302) for the ZOIB model. This means that there were probably other factors that influenced the participants' behavior that were not taken into account. Fig. 4 displays the posterior predictive checks showing that the Gaussian and beta models underestimate the tails of the actual scores. All three distributions underpredict the scores in the middle, which are more frequent in the actual data.

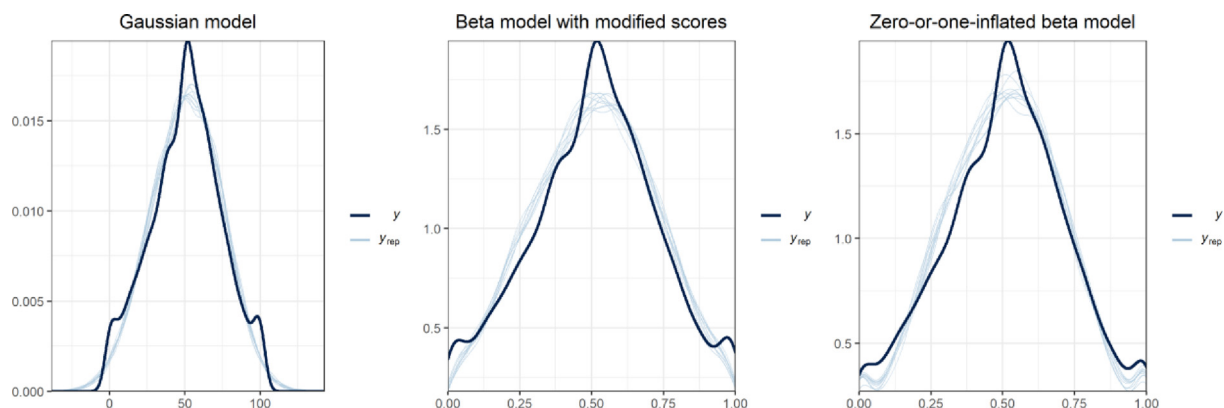


Fig. 4. Distribution (density) of the observed (dark blue) and predicted (light blue) scores in three regression models. (For interpretation of the references to color in this figure legend, the reader is referred to the Web version of this article).

Table 2 displays the mean posteriors, 95% credible intervals and probabilities that the coefficient is positive ( $b > 0$ ) if the pronoun is V in three models: Gaussian linear regression (based on the original data), the beta model with modified extreme values, and the zero-or-one inflated beta model. The numbers show that the effect of the pronoun V is positive and reliable. The credible intervals do not include zero, and the posterior probability is 100% or very close.

Table 2

Estimates of the effect of Pronoun = V in three Bayesian models. The Gaussian coefficient is on the actual scale from 0 to 100, while the beta models are on the log scale.

Model	Mean posterior of Pronoun	Lower boundary of 95% Credible Interval	Upper boundary of 95% Credible Interval	Posterior probability of positive effect
Gaussian	0.90 (on original scale)	0.06	1.74	100%
beta with modified scores	0.04 (on logit scale)	0.01	0.07	99.3%
zero-one-inflated (ZOIB) beta	0.03 (on logit scale)	0.00	0.06	98.6%

How to interpret the effect size? For the Gaussian model, the interpretation is straightforward. If the pronoun V is used in a letter, this increases the score only by 0.90 points. For comparison, the mean intercept value, which represent the mean scores for T, is 50.51. In the beta models, the interpretation is less straightforward. The coefficients represent a log-transformed factor. If we exponentiate (“un-log”) the mean posteriors shown in the table, the result is that the score increases approximately by the factor of 1.04, or by 4% if the pronoun is V, in comparison with T. This effect is not additive, but multiplicative. It will depend on the score for T, which is expressed by the intercept value. The intercepts are very close to 0 in both beta models. This means that the mean ratings for T are approximately 0.5 on the transformed scale from 0 to 1 and 50 on the original scale. Using the logit-to-probability transformation, we can compute the average ratings for the pronoun V. It is 0.5098 (or about 50.98 on the original scale) for the traditional beta model with modified scores, and 0.508 (or about 50.8 on

the original scale) for the ZOIB model. We see thus that all models produce very similar results. The difference between the average scores for V and T is somewhat less than 1 point on the original scale. This is a small effect.

Fig. 5 displays the random intercept estimates from the Gaussian model for the persons and companies, depending on the adjective used in the scales. For the beta models, the results look similar. There is substantial variability among the different scales.

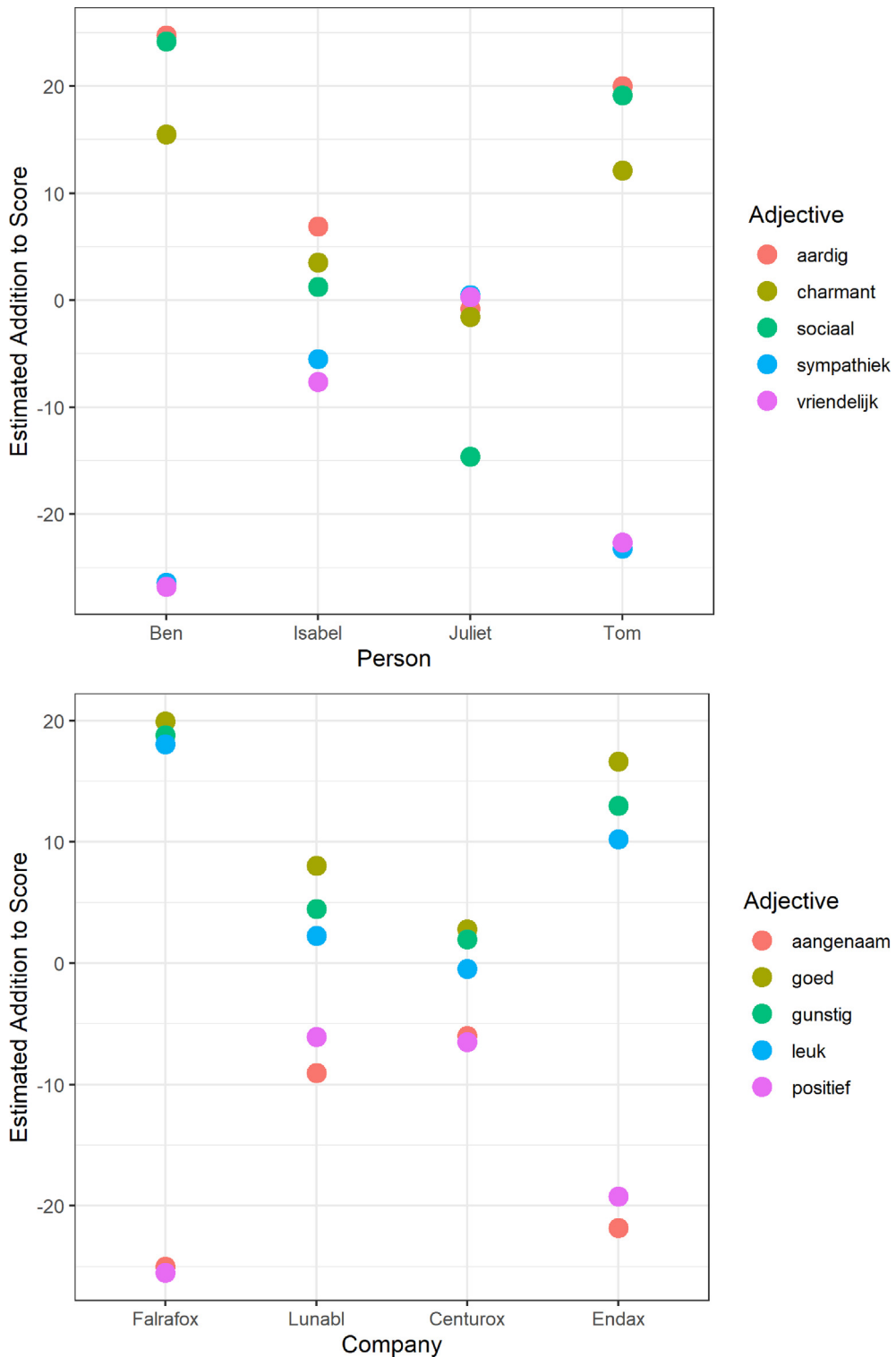


Fig. 5. Random intercept estimates (estimated additions to the mean scores) for recruiters (top) and companies (bottom) depending on the adjective, based on the Gaussian model.

Fig. 5 shows that for three recruiters out of four, the adjectives *aardig* ‘nice’, *charmant* ‘charming’, and *sociaal* ‘social’ produce higher scores than *sympathiek* ‘sympathetic’ and *vriendelijk* ‘friendly’. For the companies, the adjectives *goed* ‘good’, *gunstig* ‘favorable’, and *leuk* ‘nice’ add more to the overall scores in comparison with *aangenaam* ‘pleasant’ and *positief* ‘positive’. We also observe that for some of the recruiters and companies the random intercepts vary more depending on the adjectives than for the others. For example, the spread of the intercepts for the men (Ben and Tom) and their companies (Falrafox and Endax) depending on the adjective is greater than that for the women (Isabel and Juliëtte) and their companies (Lunablack and Centurox). More research is needed in order to understand what may explain these differences (for example, whether the gender of the recruiter may have had an effect on estimation of some qualities), but we see clearly that including the interaction between the adjective and the letter (that is, the person/company) as a random effect was a correct decision. The stimuli, data, and analysis scripts are available in a repository.<sup>1</sup>

### 3.4. Discussion

We investigated whether the assessment of a fictitious company and a fictitious recruiter differs according to whether the recipients are addressed with T or V pronouns in Dutch invitation or rejection emails. The main finding of our study is that it does indeed matter whether the emails were written in T or V. We found a small but significant effect of pronoun type. The results show that emails written in V were generally rated higher than emails written in T. This result is in line with the findings of Jansen and Janssen (2005) and Küppers (2018) who also found a preference for V over T. However, Jansen and Janssen (2005) only found an effect for texts that the readers agreed with, while Küppers (2018) only found an effect for companies' reactions to complaints and not for reactions to compliments. The present study found an overall positive effect of the use of V, independent of type of email (invitation or rejection), and independent of participants' characteristics, such as age, gender, and level of education.

Fig. 5 above clearly shows that there are substantial differences among the different scales used to measure the appreciation for the fictitious organizations and recruiters on the basis of the emails. It is unclear what causes these large differences. Obviously, the emails differed in more ways than just in whether they were invitations or rejections. Two emails were signed by a male and two by a female recruiter. The tone was also different per letter. For example, one invitation letter started with *Gefeliciteerd!* ‘Congratulations!’, so the recruiter who wrote that could have come across as more friendly than the recruiter of the other invitation letter. Apparently, this was not the case, however, as shown in Fig. 6 below. Ben was the recruiter who started his email with congratulations and is considered less friendly than Juliet, who was the other recruiter who wrote an invitation email.

Perhaps congratulations are not considered appropriate until an applicant is hired for a job, not when they are only invited for an interview.

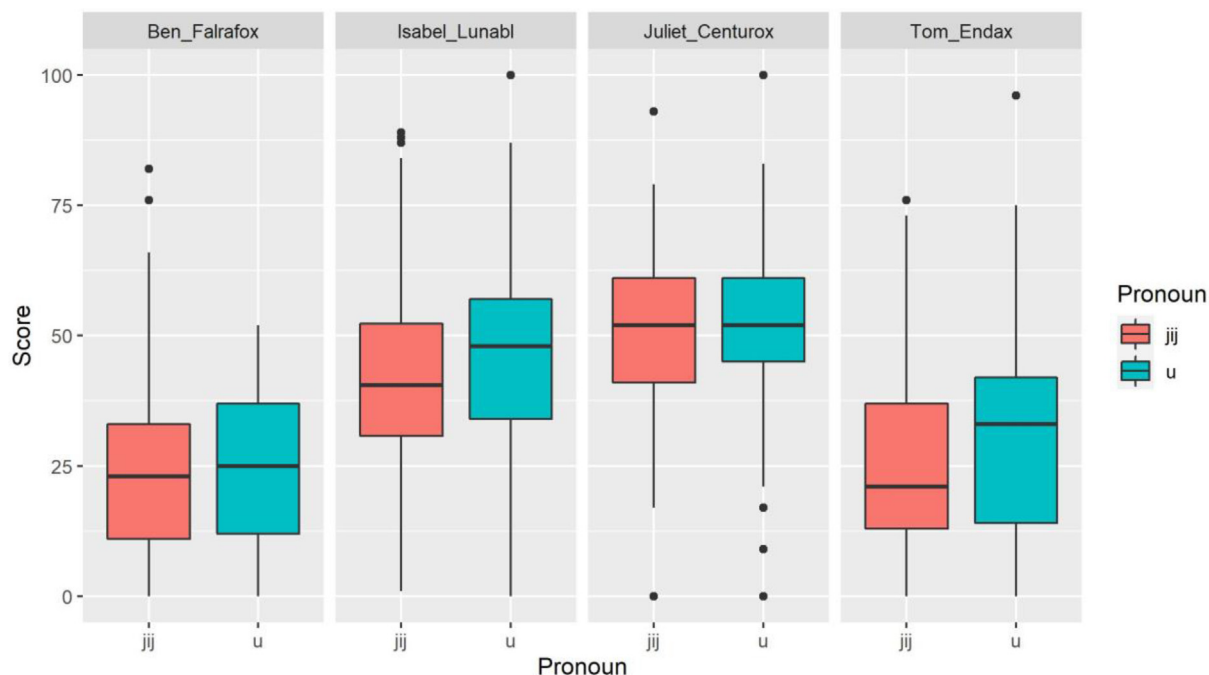


Fig. 6. Assessment of the recruiter on the semantic scale *onvriendelijk* ‘unfriendly’ (0) – *vriendelijk* ‘friendly’ (100).

<sup>1</sup> Link to data repository: <https://doi.org/10.34973/2ksw-jp26>.

Although nowadays T appears to be the preferred pronoun in generic recruitment advertisements in the Netherlands (den Hartog et al., 2022), V might still be considered a more appropriate pronoun in formal situations such as an application procedure. Because the reduced T form *je* ‘you/your’ is considered more neutral and weaker than the unreduced T forms *jij*, *jou*, and *jouw* ‘your’, we decided to use the stronger forms where possible (i.e., unless they would sound really unnatural). These strong unreduced forms of the T pronoun may be quite salient in a formal context, as they seem to emphasize the fact that the speaker uses an informal pronoun more than reduced T pronouns would (Vermaas, 2002). Indeed, the participants whose data were removed because they guessed the purpose of the study all had the T version of the emails. Still, there were only three out of 175 participants who guessed the purpose of the study.

In our study, we did not collect qualitative data, so unfortunately we cannot provide examples of evaluative responses to the use of T or V in the letters. We could have asked participants about their preference to be addressed with T or V in different situations and their reasons for this preference, which would have been a valuable addition. It would have allowed us to distinguish (as Ollier et al., 2022 did) between conscious preferences to be addressed with T or V and unconscious effects of being addressed with T or V (as we measured). Depending on the research question, future research could benefit from such a combination of methods.

#### 4. Conclusion

To date, little research has been done on the effect of using either a formal or an informal second person pronoun. Our study is an attempt to fill in this gap and also to develop a methodology for subsequent studies of related phenomena. We examined the effect of using an informal or formal pronoun in emails inviting or rejecting applicants for an interview. Our main finding is that the use of the formal pronoun has an overall positive effect. It does not depend on the contents of the message (invitation or rejection) or participants’ characteristics, such as age, gender, and level of education.

Based on the research of Vismans (2018) and others, we expected that older people would prefer to be addressed formally rather than informally in a job application process, and vice versa for younger people. This would then be an unconscious effect of being addressed with one or the other pronoun of address, not a conscious preference. In line with Küppers (2018), we also expected that the use of the formal pronoun would be valued more in rejection letters and the use of the informal pronoun more in letters of invitation. Yet, we did not find such effects.

We also report some important methodological findings. First of all, the scores vary greatly for different evaluative adjectives and different texts. From this follows that it is important to test participants on many different stimuli and scales in order to get a maximally objective picture possible. We also tried different statistical models for analyzing this very special type of data – responses in the sliding scale format – and saw that the different models converge, giving us similar results. We hope that these methodological observations will be useful for future studies of address.

Our experimental approach has enabled us to gather large amounts of data, but some limitations should be kept in mind. Most importantly, the participants could not negotiate the use of pronouns, in contrast with naturalistic face-to-face interaction. In a Twitter corpus study on the approval or disapproval of Deutsche Bahn’s switch to using the informal pronoun instead of the formal one, Truan (2022) found that the motivations for approval or disapproval differ. Customers who were in favour of using the informal pronoun had the sole argument that this pronoun is now the default in social media such as Twitter. It was also noticeable that they ridiculed opponents of this new informal pronoun usage. Conversely, customers who were against the use of the informal pronoun did not ridicule its proponents. They just thought its use to be inappropriate and disrespectful, and they indicated that they were uncomfortable being addressed unilaterally with the informal pronoun without that form of address being negotiated (negotiated usage).

Recipients of an e-mail in an application process in our study also did not choose to be addressed with the informal pronoun by a recruiter they did not know. The difference between the higher rating for the informal pronoun in, for instance, advertisement texts (Leung et al., 2022) and the somewhat higher rating for the formal pronoun of address that we found with regard to letters from recruiters is perhaps caused by the difference between a text addressed personally to the addressee and an impersonal advertisement text.

Surely, designing an experiment with negotiated usage of formal and informal pronouns would provide important insights. At the same time, it would be much more difficult to collect large amounts of quantitative data, which are necessary in order to detect small effects, as in our study. There is therefore a trade-off of quantity and naturalness.

It can be concluded from the results of this study that participants have more appreciation for the organizations and recruiters by which they are addressed with the formal pronoun than with the informal pronoun, even though the effect was small. Because of the small effect size, we cannot recommend that all companies immediately change their style of communicating with potential employees or customers towards formal address forms. Moreover, there seems to be a tendency to use the informal pronoun more and more in the Netherlands, also in formal contexts, such as HR communication with unknown applicants, so one may wonder if this preference will persist for a long time. We hope to discover in the future in which areas of communication the impact of choosing a formal or informal form of address might be larger. We believe that our experimental methodology can provide a useful starting point for such studies.

## Author contributions

**Helen de Hoop:** Conceptualization, Writing – Original draft, Writing – Review & editing, Funding acquisition.

**Natalia Levshina:** Formal analysis, Writing – Original draft, Writing – Review & editing.

**Marianne Segers:** Conceptualization, Investigation, Writing – Review & editing.

## Declaration of competing interest

There is no conflict of interest.

## Data availability

Data will be available in repository after publication: <https://doi.org/10.34973/2ksw-jp26>

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