Power Roles and Their Impact on Speech in Daily Life

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Abstract

Communication accommodation is a phenomenon that is present in every social situation. In literature on communication, both accommodation in speech and the effect of power roles are explored. This thesis examined the influence of power roles on speech accommodation for Dutch L2 speakers of English in a job interview setting. Being exposed to someone in a higher power role could cause the inferior party to adapt to the way of speaking of the superior party. Utterances from the superior party, the job interviewer, were manipulated on pitch and speech rate in order to examine whether the inferior party, the interviewee, was influenced by their way of speaking. The pitch and speech rate of the interviewees' responses were analyzed in an attempt to examine the presence and absence of speech accommodation.

The results did not provide evidence for the direct accommodation of the participants' speech, for neither pitch nor speech rate. However, this result might be related to a low number of participants and the manipulation of the recordings, which could be too subtle for the participants to perceive and then adapt their own speech accordingly.

Introduction

In daily life, people find themselves in a variety of social situations. In order to be approved by others in the social situation they are in, speakers may modify their speech to sound more like their interlocutor, in turn to achieve greater social integration with them (Gallois 2005). They might adapt their speech to the role they are playing. The Communication Accommodation Theory (CAT), proposed by Giles and Coupland (1991), states that people will take on different roles in their lives and will therefore have to switch between different power roles. Depending on the situation, a person takes on a superior role and other times an inferior role (Gallois 2005). The Speech Accommodation Theory (SAT) is part of the CAT. As explained by Thakerar et al. (1985), the SAT was formulated to explain some of the motivations underlying certain shifts in people's speech styles during social encounters, and some of the social consequences arising from them. It originated in order to clarify the cognitive and affective processes underlying speech convergence and divergence.

As stated by Giles & Gasiorek (2014), adjusting speech for others is essential for successful interaction. When there is a lack of adjustment in a particular social situation, speakers can be received as offensive. Additionally, if the adjustment is made but in an inappropriate manner, the communication is often received as problematic or dissatisfying (Giles 2014).

The current study aimed to obtain a deeper understanding of how inferior roles influence speech accommodation when one is in dialogue with an interlocutor in a superior role in English, with English being the second language of the speaker (L2). To this end, a speech analysis approach was taken in order to portray how speakers change their speech when interacting with a superior party. Data were elicited by means of an experiment, mimicking a job interview held via telephone. The audio files the participants were presented with were manipulated on both pitch and speech rate level. In the remainder of this section a brief outline will be given with regards to earlier presented theory on for example pitch, speech rate, the influence of power roles and speech manipulation. Afterwards, the research question and hypotheses are introduced, formed on the basis of the theory. Then, the experiment is reported in section 2, in which an L2 speaker of English performed a dialogue with a native speaker. The results from this experiment are presented in section 3. Finally, conclusions on whether power roles have an effect on the speech accommodation of L2 English speakers are formulated in section 4.

Theoretical Background

SAT and modifying one's speech

In order to fully understand the research question, a brief overview of the Speech Accommodation Theory (SAT) is now presented. The SAT posits that people shift their speech to converge, or diverge, from their interlocutor in social situations (Thakerar, 1985). To modify speech there are numerous properties that have to be taken into account, with pitch and speech rate amongst the most important (Gussenhoven 2003). The function of pitch is to signal meaning. According to Apple et al. (1979) pitch in human speech conveys paralinguistic information to a listener. They state that emotions affect the speaker's pitch. Whereas stress or anger increases pitch, indifference or sorrow leads to a lower pitch in speech. Gender can also affect pitch: as showed by Van Bezooijen (1995), typically women choose to speak in a higher pitch to sound more feminine, and vice versa for men, which results in a lower pitch on average. Changing the pitch of speech can make a person sound more certain and more authoritative, or alternatively, less confident (Babel 2009). These effects of pitch can influence how a person is received in social situations. In the current study, a job interview could be perceived as a stressful situation, thus the inferior speaker may have a higher pitch than usual.

There have been copious amounts of research on speech rate, or the speed at which utterances are pronounced. For example, Smith et al. (1975) examined the relationship between speech rate and personality perception. They found that when a speaker had a higher rate of speaking, it led to their interlocutors to see them as "less benevolent", while when the speaker decreased their rate, others judged them as "less competent". On the other hand, a natural speech rate that is neither too fast nor too slow, or the way a person speaks spontaneously, caused for the highest benevolence rating (Smith et al. 1975), meaning that a natural speech rate leads to optimal perception. It is worth noting however that these conclusions were based on the interlocutors' personal judgment. Interestingly, Koreman (2006) investigated whether listeners' perception of speech was based on their own speaking behavior, and found that it was independent of their own speaking habit. While the argument Smith et al. (1975) presented could be perceived as less valuable due to the issue of personal judgment, Koreman (2006) contradicted this. Natural speech rate may thus lead to optimal perception.

In relation to SAT, accommodating speech to the superior interlocutor will take place in both faster speech and slower speech. The possibility of being perceived less positively will then be eliminated, as the speaker would feel like they match the interlocutor and would obtain a more successful interaction.

Next, the effect of power in social situations should be discussed. Bierstedt (1950) presented a distinction between influence and power. He stated that influence is persuasive and power is coercive: whereas people conform to influence voluntarily, power requires submission from one party. For example, the power of a teacher in a classroom does not stem from the superior knowledge they have, but from the ability to apply a sanction to the inferior party in failure. On top of that, influence and power can occur in isolation from each other. When applied to the current study, the power that the job interviewer has is their ability to refuse the applicant the job. Whereas the inferior speaker will most likely be influenced by their interlocutor, this influence will not be sufficient on its own to decide whether the applicant is suitable for the job, as influence and power are relatively independent variables (Bierstedt 1950). However, during a job interview one party will be submissive, thus power will be exerted. As propagated by Giles &

Gasiorek (2014), adjusting speech is necessary for successful interaction. Successful interaction would in this case be a job interview that results in the inferior party obtaining the job they applied for.

Finally, as the SAT will be examined with respect to participants for whom English is their second language, the relationship between Second Language Acquisition (SLA) and the SAT needs to be explored. An abundant amount of research has been done on the influence of native speakers in the second language learning process. This however mainly focuses on the language acquisition itself, rather than speech accommodation. This would concern the age of acquisition for instance. In Introducing Second Language Acquisition, Hummel (2014) described that a person would obtain a nativelike accent in their second language when they are exposed to the language as a child rather than as an adult. Children will not be the subject of fossilization, which means that their brain has more plasticity as their first language has not fully settled. Beebe and Giles (1984) went even further than this, and analyzed the relationship between the two concepts of SAT and SLA. In order to do this, it is important to first outline the problems L2 speakers face when speaking. According to Beebe and Giles, L2 learners show a more limited repertoire of sociolinguistic appropriate registers in the target language, a higher variability in style shifting, a higher rate of performance errors and a more complex system of factors affecting performance compared to L1 speakers. Adult L2 learners can choose to use or add a register to their repertoire they learn from native speakers, meaning that they are in control of what they acquire. They can consciously choose to imitate or ignore the input they receive (Beebe & Giles 1984).

However, Beebe & Giles (1984) also argued that the difficulty in distinguishing ability to converge towards an L1 speaker and the motivation to converge is hard to pinpoint. This factor is important to consider for the current study, as motivation to converge might be greater due to the difference in power roles. Whereas there has been research on the relationship of SAT and SLA, it is still limited. Research up until this point has mainly been theoretical and there have not been many experiments examining speech accommodation in the context of SLA.

Research Question and Hypotheses

The above-reviewed studies suggested that power roles may influence the speakers' speech in dialogue in L2 English. To get a clearer understanding of this issue, the current study aimed to answer the following research question:

Will speakers in an inferior power role accommodate their speech to the speech of their superior interlocutor in L2 English?

The SAT posited that the elements of speech (pitch and rate) will be adjusted between dialogue partners with regards to power and influence. In the context of L2 interlocutors, this brings us to the hypothesis that the inferior speaker will accommodate their speech to reach successful interaction with their interlocutor. It is predicted that they will talk at a faster or slower speech rate than their usual speech rate when interacting with a superior interlocutor who has a fast or slow speech rate respectively (Prediction 1); and listening to a higher pitched question will cause for a higher pitched answer, and vice versa for lower pitch (Prediction 2).

By setting up this study the SAT was further tested with regards to power roles, leading to a more developed understanding of how a person adjusts their speech when speaking to someone that is superior to them in L2 English.

Methodology

Participants

In this experiment eight participants over the age of 18 were selected (six women, two men) with a B2 or higher level of English according to the Common European Framework of Reference for Language (First EF). The superior role in the script was fulfilled by a male native speaker of English.

Task and experiment design

A simulated telephone job interview was used to elicit production data. This method was adapted from a similar task used in Chen & Boves (2018). Before the dialogue was initiated, the participants were asked to familiarize themselves with a short script of questions and answers. During the dialogue, the participants were asked to convincingly act out the script as if they were doing a job interview via the telephone with a search committee of a school. Since the superior interlocutors were invisible to them, their speech was the main factor the participants would focus on. The research aimed to obtain natural speech from the participants. This resembled spontaneous speech, which provided data minimizing the problem of idealizing what is said (Campbell, 2002). Even though in the current study the script was presented to the participants, they were encouraged and able to speak naturally as they were acting out the script rather than reading it out. The first answer the participant gave was a prewritten response to an unadjusted speech sample of the superior. This recording served as a baseline measurement of their mean pitch and natural speech rate to take into consideration during the analysis.

In order to successfully conduct this research, the experimental variables needed to be identified. This study aimed at understanding whether the interlocutor's changes in pitch and rate influence the speech rate and pitch of the participants. Specifically, there were two independent variables, i.e., the interlocutor's speech changes in pitch (baseline, higher & lower), and rate (baseline, faster & slower), as they were manipulated in order to elicit different responses from the participants. The dependent variables were the speech rate and the mean pitch of the participants.

Several (external) factors were kept the same to ensure the validity and reliability of the experiment. The recording, script, instructions, materials, and experimenter's behavior during the research were all controlled.

Materials

As mentioned above, a short script consisting of question-answer sequences was composed and used to elicit a dialogue between a search committee of a school and an applicant who wanted to obtain a job at said school. The part of the job interviewer was recorded first and manipulated to ensure a difference in their speech afterwards. The pitch, as well as the speed rate, was altered in the computer program Praat. In Praat you can analyze, synthesize, and manipulate speech, and create high-quality pictures (Boersma 2020). To get the recording with a lower pitch, the average pitch was decreased by 20Hz. To get the recording with a higher pitch, the average pitch was multiplied by 1.2. The alterations were not similar for the increase or decrease, as the difference between the unaltered recording and the altered would become very obvious. For example, by increasing the recording with 20Hz, the pitch of this particular recording would be so high that the participant would have immediately known what had

changed, as the voice did not sound human anymore, even though normally pitch range of humans in daily interactions is larger than 20Hz. It also needed to stay distinguishable as a male voice. Now, by multiplying the original Hertz level by 1.2, the change was present but subtle. The change was noticeable, meaning that participants could entrain to the different committee members as they sounded different from each other.

For a decrease in speed rate, the original rate of the recording was lengthened by a ratio of 90%. For an increase in speed rate, the original rate of the recording was set to 110%. By increasing or decreasing the recording of the superior in this way, the manipulated recordings would only show a subtle change.

All of these choices were made because in this way the recording is manipulated, but not easily distinguishable from the original version. The manipulations should be audible but remain subtle to avoid attracting too much attention from the participants to the manipulation, causing the chance for a less reliable result (see Appendix C for technical details of manipulating the recording).

A male native speaker of British English recorded their six lines of the script which, after manipulation, resulted in five variations: two default, one high pitched, one lower pitched, one faster rated and one slower rated. In the script a distinction was made between the members of the search committee. This was to let it appear as if the respondent was talking to four different people. The script for the interviewers consisted of one to two sentences at each turn. The participants' script consisted of one- to two-sentence responses (Appendix A). The participant gave five answers per dialogue. The gathered data from all participants sufficed for an analysis

on speech accommodation, as the data of each participant per condition were combined to form a conclusion. Every dialogue was recorded using an audio recording device on a laptop.

Furthermore, a written instruction was presented to the participants (Appendix B). This explained what was expected of them during the experiment.

The pre-recorded questions and answers of the job interviewers were placed on separate PowerPoint slides, paired with the answers of the applicant to the questions from the script. These were presented to the participants during the experiment. This eliminated the chance of the participant forgetting their lines.

Procedure

The participants were invited into a closed room to act out their dialogue. The participant had obtained the script prior to the experiment, so that they had enough time to familiarize themselves with the short answers. Before the experiment, they received the written instructions. They could ask questions and give their consent to participate. To test materials, a test run was held. If there were no further questions, the dialogue started.

The questions of the interviewers were distributed over different conditions, following a Latin Square Design. This design was used to simultaneously control two sources of variability. The answers remained the same throughout for all participants but the order of the pitch and speech rate conditions were mixed. This was done so that the participants did not need to answer the same questions in four different prosodic conditions. In table 1 the distribution of the questions and conditions is shown.

	Slow	Low	Fast	High	
Participants 1, 2	Q1	Q2	Q3	Q4	Dialogue 1
Participants 3, 4	Q4	Q1	Q2	Q3	Dialogue 2
Participants 5, 6	Q3	Q4	Q1	Q2	Dialogue 3
Participants 7, 8	Q2	Q3	Q4	Q1	Dialogue 4

Table 1: Distribution of questions and manipulations conditions via a Latin SquareDesign

The label Q in table 1 is given to each speaking turn of the members of the search committee. The question used to determine the baseline was similar for all participants and not presented in the table. The labels slow, fast, low and high referred to the manipulations of the recordings that the participant were exposed to per question. According to this design, each participant only needed to answer each question once.

After the data had been gathered as recordings, they were converted to AIFF files. They were then entered into Praat and analyzed for mean pitch per sentence. This was done for all sentences in each condition and for all participants. Speech rate was calculated in terms of words per minute. Again, this was done for all utterances in each condition.

Motivation for methodology

Using this set-up, the experiment provided the participant with a calm setting in which they could freely speak and were not influenced by other factors. Providing the script and instructions on paper beforehand, as well as doing test runs per participant, ensured that they had no questions when the experiment started and that the results of the experiment were more reliable.

Additionally, because the order of the adjusted recordings varied in the experiment per participant, the risk of observing a biased pattern in the prosodic condition between participants was decreased, which ensured more reliable results.

Praat was chosen as the program to use for both the manipulation of the recording of the superior part and the analysis of the recordings of the inferior parts, for the program is often used for speech analysis and provides multiple ways to analyze the data.

Analysis and Results

The effect of interlocutors' pitch

In table 2 the mean pitches in Hertz are presented per condition the participant was exposed to. P1 through P8 refer to the different participants.

	P1	Р2	Р3	P4	Р5	P6	P7	P8
Baseline	152	216	131	224	177	222	243	255
Higher	150	224	134	208	174	205	260	238
Lower	140	218	137	208	184	196	200	218

Table 2: Mean pitch in Hertz per participant per condition

As shown in figure 2, P1 and P3 had a lower mean pitch compared to the other participants. This was due to the fact that they were the two male speakers.

When comparing the mean pitch of the responses to the higher pitched samples to the responses to the lower pitched samples, a few observations can be made. Firstly, the mean pitch for P4 was the same in both conditions. Then, for P3 and P5 an increase in mean pitch was seen from exposure to a higher pitched speech sample to a lower pitched speech sample. For the other participants there was a decrease in mean pitch from a higher pitched speech sample to a lower pitched speech sample to a lower results of the higher and lower samples for P5 and P7. For P2, the baseline mean pitch was lower

than that of the response to the higher pitched. For the other participants, the baseline mean pitch was higher than the two measurements of higher and lower mean pitch.

When calculating the average of the individual results per condition, the following is obtained:

Baseline203Higher199Lower187

Average mean pitch

Table 3: Average mean pitch in Hertz per condition

Table 3 shows that the baseline mean pitch average was greater than the higher pitched average. The higher pitched average was however greater than the lower pitched average.

Following the analysis of the means, the data was statistically analyzed using the Friedman Test. The Friedman Test is the non-parametric alternative to a one-way ANOVA test with repeated measures. Differences between groups can be measured when the dependent variable is ordinal or continuous. In this experiment the data gathered was continuous, as the data were numeric values. If there was a significant effect of pitch of the interviewers on the participants' pitch, post-hoc tests needed to be carried out in order to show between what conditions the difference is found. A Friedman Test was carried out in SPSS for the data set as shown in figure 2. It gave the result for the number of participants, the Chi-Square value, the degrees of freedom and the significance level (p-value). These are presented in table 4.



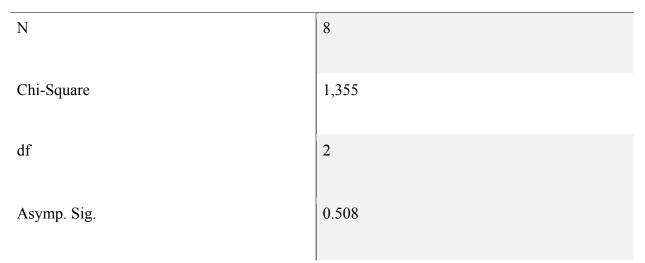


Table 4: Friedman Test for pitch condition

There was no statistically significant difference in pitch in the answers of the participants between different pitches they were exposed to, $\chi^2(2) = 1,355$, p = 0.508.

The effect of the interlocutors' speech rate

Next, the results for speech rate are presented; speech rate was measured in terms of words uttered per minute (wpm). Words per minute is calculated by dividing the total number of words spoken by the time it took in minutes. For example, for P1 when exposed to the faster speech sample, their 34-word response took 10.7 seconds (0.18 minutes). The speech rate for P1 was thus 188 wpm for P1 when responding to the faster speech sample. The number was rounded down as only complete words could be counted.

	P1	Р2	Р3	Р4	Р5	P6	P7	P8
Baseline	169	176	235	273	235	222	200	204
Faster	188	187	228	188	261	314	200	188
Slower	275	234	213	200	219	202	212	216

Table 5: Speech rate in words per minute (wpm) per participant per condition

Table 5 shows that for P1, P2, P4, P7 and P8 the number of words per minute was greater when exposed to the slower speech sample than to the faster speech sample. For P3, P5 and P6 the opposite pattern was found.

For P1 and P2 the baseline measurement was slower than for both the faster speech sample and the slower speech sample. For P7 the baseline measurement was the same as the measurement from the faster speech sample. For P3 and P4 the baseline measurement was faster than for both the faster speech sample and the slower speech sample. For the other participants the baseline measurement was in between the two results of the conditions.

Average speech rate

Baseline	214
Faster	219
Slower	221

Table 6: Average speech rate in words per minute per condition

Table 6 shows the average speech rate in words per minute per condition, of all the participants combined. The baseline measurement was lower than the averages in both conditions. The slower speech sample gave the highest wpm.

A Friedman Test was carried out in SPSS for the data set as shown in figure 5. It gave the result for the number of participants, the Chi-Square value, the degrees of freedom and the significance level (p-value). These are presented in table 7.

Test Statistics

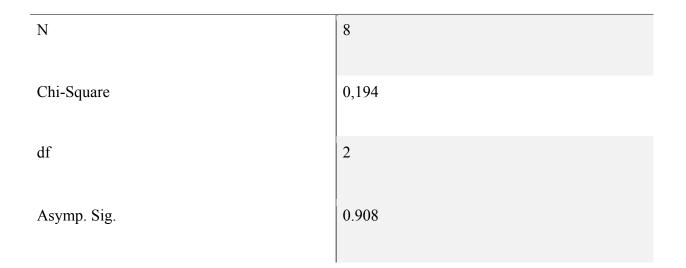


Table 7: Friedman Test for speech rate condition

There was no statistically significant difference in speech rate in the answers of the participants between different speech rate conditions they were exposed to, $\chi^2(2) = 0,194$, p = 0.908.

Summary

In sum, in both statistical analyses, there was no significant change found in the participants' speech. For pitch, the participants did not significantly change the pitch in their answers to the interlocutors' questions, even if the questions were asked in varying mean pitch values. Regarding the difference in mean pitch between the baseline and the mean pitch in the

higher or lower conditions, there was also no significant change to be observed. Only some participants answered their questions in a higher pitch during the baseline measurement than during the measurement of a condition. The theory presented in chapter 2 by Apple et al. (1979) and Babel (2009) was not supported by the outcome of the current experiment. They stated that stress would increase pitch in people their speech. The mimicked stressful situation of the job interview in the current experiment did not show this effect on all participants.

For speech rate, the participants did not significantly change the speech rate in their answers to the interlocutors' questions, even if the questions were asked with varying speech rates. Similar to the results for pitch, there was also no clear distinction to be observed for mean speech rates when comparing the baseline answers to the answers in the faster or slower conditions. Even though the participants' speech rates did sometimes vary, it cannot be irrevocably attributed to the variation in the speech rate of the interviewers.

Discussion and Conclusion

The research question discussed in this thesis is:

Will speakers in an inferior power role accommodate their speech to the speech of their superior interlocutor in L2 English?.

The aim of this thesis was to examine the influence of power roles on speech accommodation for Dutch L2 speakers of English in a job interview setting. It was hypothesized that the inferior speaker would accommodate their speech to reach successful interaction with their interlocutor in L2 English. It was predicted that the participants would talk at a faster or slower speech rate than their usual speech rate when interacting with a superior interlocutor who had a fast or slow speech rate respectively (Prediction 1); and that listening to a higher pitched speech sample would lead to a higher pitched answer, and vice versa for lower pitch (Prediction 2). Neither Prediction 1 nor Prediction 2 were supported by the data acquired. The answer to the research question is thus that there was no evidence emerging from the experiment to indicate clear speech accommodation of the inferior when conversing with a superior in L2 English.

In order to continue the research on the topic of the Speech Accommodation Theory and Second Language Acquisition, a few suggestions for further research can be made. Firstly, due to the outbreak of the 2020 Covid-19 pandemic, the number of participants in the experiment was severely limited. Further research could expand the current experimental set-up by testing more participants .

Secondly, L2 proficiency can be included as a variable in the experimental design. This way, one can test whether highly proficient speakers would exhibit more power-related speech accommodation than less proficient speakers. In the current experiment the boundary to

participate was set at a B2 level of English or higher in the Common European Framework of Reference for Language. This could instead be increased.

Lastly, the manipulation of the recordings can be more substantial. In the current study, it was ensured that the manipulation was not clearly audible to the participants, as there was a chance that this might influence participants and draw their attention too much to the interlocutors' pitch and speech rate. However, if participants could not perceive or detect the differences in mean pitch and speech rate (compared to their own mean pitch and speech rate), they would be not able to accommodate. More substantial manipulation in mean pitch and speech rate accommodate.

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Appendices

Appendix A: Script

Search committee members: A

Participant: B

A: Hello, this is the search committee of the International School of Amsterdam. Thank you for agreeing to do this interview over the telephone. There are four of us conducting this interview today.

(baseline) B: Hello, nice to meet you. My name is Respondent and I am here for the job as an English teacher.

A: My name is Mike. First of all, how are you today?

B: Thank you, I am fine and looking forward to the interview. (11 words)

A: Good to hear that. I am John. You have applied for the job as an English teacher here. Could you explain why you chose this school?

B: I started teaching when I was 26 at the International School of Rotterdam, but now I am moving to Amsterdam since my current partner is living there. (27 words)

A: Thanks for this information. I am Peter. Besides this practical factor, could you tell us more about your motivation to work at our school? What do you think that you can contribute to this school?

B: I believe that my passion for the subject shows in my teaching. I always try to make my classes fun through interactive activities and hopefully this will motivate the students to get better results. (34 words)

A: Great, thank you. My name is David. You are a professional in most topics, but do you have one or two that you prefer?

B: Yes, I do. I would love to teach children on Shakespeare's works in a creative way. (16 words)

A: Nice to hear. I am afraid that this is all we have time for. Thank you very much for talking to us. We will get back to you as soon as possible.

Appendix B: Written instructions

Dear participant,

Thank you for participating in this experiment.

In this experiment you will conduct a job interview for a teaching position as an English teacher at the International School of Amsterdam. You are 26 years old and already have teaching experience. You are talking over the phone with the search committee of the school. The committee has four members.

First, you will be provided with a prewritten script and you have max. 5 minutes to familiarize yourself with the lines of person B (highlighted in red). You will then be shown a PowerPoint presentation, which includes your lines as well as the recording of person A. First, listen to the audio file presented. Then, speak the prewritten response. Try to act as if you are the applicant. Try not to just read out the lines, but say them as if they are your own words in a natural way. There will be a test run to practice the way this experiment will be carried out. After the test run, the dialogue is recorded. Again, try not to read out the lines or be monotonous, but play the part.

Do you consent to this process?

Thank you again for participating and don't hesitate to ask me any questions.

Sterre

Appendix C: Technical details accompanying manipulations

The program Praat was used to manipulate the recordings of the superior role. It was also used to analyze mean pitch and speech rate of the participants' responses. Afterwards the data were entered into SPSS, a program to perform statistical analyses, to get a result that could be analyzed on significance. The technical details of how the manipulations in Praat were made are listed below.

For pitch and duration, the sound file was imported to a file on Praat. To manipulate that file, "manipulate" was selected in the program on the right, followed by "To manipulate". Here, the minimum pitch (70Hz) and maximum pitch (200Hz) were entered. A manipulation object is now created. This file was then entered into a window that provided the chance for manipulation through "View & Edit". The utterances of the file were portrayed as dots. To change pitch, these dots needed to be stylized by going to "Pitch" and selecting "Stylize pitch (2st)". Only two dots remained, which could be increased or decreased in Hertz level to increase or decrease pitch. To change duration, duration points were made that were in turn altered to slow down the sentences.

To speed up the utterance, the duration was changed from 1 to 0.9. To slow down the utterance, the duration was changed from 1 to 1.1.